



MUTHAYAMMAL ENGINEERING COLLEGE, RASIPURAM – 637 408

(Autonomous)

REGULATIONS 2016

CHOICE BASED CREDIT SYSTEM

Common to all B.E. / B.Tech. Full Time Programmes

(For the students admitted to B.E. / B.Tech. Programmes from the Academic year 2016 - 2017 onwards)

## 1. PRELIMINARY DEFINITIONS AND NOMENCLATURE

In this Regulation, unless the context otherwise specifies:

AY	Academic Year
CIA	Continuous Internal Assessment
CAM	Continuous Assessment Marks
CBCS	Choice Based Credit System
PE	Professional Elective
Programme	A degree with a major specialization in an Engineering/ Technology discipline offered by the College
Course	Course is any subject of study that may be classified as Theory only, Lab only, Lab embedded Theory, Project embedded Theory or Project.
ESE	End Semester Examination
PC	Professional Core
BS	Basic Sciences
ES	Engineering Sciences
OE	Open Elective
UG	Under Graduate
University	Anna University, Chennai, India
College	Muthayammal Engineering College, Rasipuram.

## 2. PREAMBLE

Students of today are much different from the students of the past in many ways. They want to be independent and like to make decisions on their own. Employers expect students to have the right attitude with diverse skill sets to work in a team. The present rigid, cohort system of learning doesn't allow the students in selecting the courses of their choice to become a holistic personality.

In this direction MEC is introducing the Choice Based Credit System (CBCS) into its academic curriculum. Wherein the students can register courses of their choice to enable fast, average and slow learners to plan and pace the same in a Semester as may be necessary and register for more/average/less Credits within limits from the prescribed value, based on their learning capacities as observed and alter the pace of learning within the broad framework of academic course and credit requirements. CBCS allows students in deciding their academic plan and permits students to alter it as they progress in time.

Students will have the option of choosing courses from a 'Group of courses' within each classification. Ample options are given to choose interdisciplinary courses from other Engineering Departments which will help the student to develop additional skills. Slow learners will also benefit since important courses will be made available in both semesters. Suitable provisions are included to reward academically sound students.

CBCS offers flexibility for students to build their own curriculum in addition to the enhancement of their skill in planning. A Faculty Adviser facilitates a student in identifying the courses based on programme requirement, course prerequisites, student's ability and interest in various academic disciplines.

### 3. ADMISSION PROCEDURE

Students for admission to the first semester of the eight semester B.E. / B.Tech. Degree Programme shall be admitted as per the regulations of Department of Technical Education, Government of Tamil Nadu and Anna University, Chennai.

### 4. PROGRAMMES OFFERED

A student may be offered admission to any one of the programme of study approved by the University and offered at Muthayammal Engineering College, Rasipuram.

Details of programmes currently being offered by Muthayammal Engineering College, Rasipuram are listed below

1. B.E. Mechanical Engineering
2. B.E. Civil Engineering
3. B.E. Electronics and Communication Engineering
4. B.E. Electrical and Electronics Engineering
5. B.E. Computer Science Engineering
6. B.Tech. Information Technology

### 5. STRUCTURE OF THE PROGRAMMES

#### 5.1 Credit Assignment

Each course is assigned certain number of credits based on the following:

Contact period per week	Credits
1 Lecture Period	1
2 Tutorial Periods	1
2 Practical Periods (Laboratory / Seminar / Project Work / etc.)	1

The Contact Periods per week for Tutorials and Practical can only be in multiples of two.

#### 5.2 Categorization of Courses

Every B.E. / B. Tech. Programme will have a curriculum with syllabi consisting of theory and practical courses that shall be categorized as follows:

- i. **Humanities and Social Sciences (HS)** courses include Technical English, Employability Skills, Engineering Ethics and Human Values, Communication Skills and Environmental Science and Engineering.
- ii. **Basic Sciences (BS)** courses include Mathematics, Physics, Chemistry, Biology, etc.
- iii. **Engineering Sciences (ES)** courses include Engineering practices, Engineering Graphics, Basics of Electrical / Electronics / Mechanical / Computer Engineering, Instrumentation etc.
- iv. **Professional Core (PC)** courses include the core courses relevant to the chosen specialization/branch.
- v. **Professional Elective (PE)** courses include the elective courses relevant to the chosen specialization/ branch.
- vi. **Open Elective (OE)** courses include the courses relevant to the chosen specialization / branch which a student can choose from the curriculum of other B.E. / B. Tech. / B. Arch. programmes and courses offered by the Departments under the Faculty of Science and Humanities
- vii. **Employability Enhancement Courses (EEC)** include Project Work and/or Internship, Seminar, Professional Practices, Case Study and Industrial/Practical Training.

S. No.	Category	Range of Total Credits(%)		Suggested Breakdown of Credits (for Total=180)
		Min	Max	
1.	Humanities and Social Sciences (HS), including Management.	5	10	14
2.	Basic Sciences(BS) including Mathematics, Physics, Chemistry, Biology.	15	20	28
3.	Engineering Sciences (ES), including Materials, Workshop, Drawing, Basics of Electrical/Electronics/Mechanical/Computer Engineering, Instrumentation.	15	20	30
4.	Professional Core (PC), relevant to the chosen specialization/branch; (May be split into Hard (no choice) and Soft(with choice), if required.	30	40	61
5.	Professional Electives (PE), relevant to the chosen specialization/ branch.	10	15	20
6.	Open Subjects- Electives (OE), from other technical and/or emerging subject areas.	5	10	9
7.	Employability Enhancement Courses (EEC)	10	15	18
<b>Total Credits</b>				<b>180</b>

### 5.3. Personality and Character Development

Students will be encouraged to enroll in any one of the personality and character development programmes (NCC/NSS/Sports/YRC) and undergo training for about 40 hours and attend a camp of about seven days. The training shall include classes on hygiene and health awareness and also training in first-aid.

- **National Cadet Corps (NCC)** will have about 20 parades.
- **National Service Scheme (NSS)** will have social service activities in and around the College / Institution.
- **Sports** will have sports, Games, Drills and Physical exercises.
- **Youth Red Cross (YRC)** will have activities related to social services in and around College/Institutions. While the training activities will normally be during weekends, the camp will normally be during vacation period.

### 5.4 Number of Courses per Semester

Curriculum of a semester shall normally have a blend of 5 to 8 courses including Theory /Lab Embedded Theory / Project Embedded Theory / Laboratory courses. Each course may have credits assigned as per clause 5.1.

### 5.5. Industrial Training / Internship

**5.5.1** The students may undergo Industrial training for a period as specified in the Curriculum during summer / winter vacation. In this case the training has to be undergone continuously for the entire period. The students may undergo Internship at Industries/ Research organization / Universities of repute (after due approval from the Department Consultative Committee) for the period prescribed in the curriculum during summer / winter vacation, in lieu of Industrial training.

**5.5.2.** If Industrial Training / Internship is not prescribed in the curriculum, the student may undergo

Industrial Training / Internship optionally and the credits earned will be indicated in the Grade Sheet. However, the number of credits earned shall not be considered for classification of the degree.

- 5.5.3. The student is allowed to undergo a maximum of 6 weeks Industrial Training during the entire duration of study.

DURATION OF TRAINING / INTERNSHIP	CREDITS
2 Weeks	1
4 Weeks	2
6 Weeks	3

#### 5.6 Industrial Visit

Every student will be encouraged to go for at least one Industrial Visit every year starting from the second year of the Programme. The Heads of Departments shall ensure that necessary arrangements are made in this regard.

#### 5.7 Self Study Courses

- 5.7.1 Students may be permitted to credit a maximum of four Self Study course with the approval of Departmental Consultative Committee.

- 5.7.2 The student can opt for **four** Self Study courses provided the student does not have current arrears and maintains a CGPA of 8.5 and above.

- 5.7.3 The student can opt for **two** Self Study courses provided the student does not have current arrears and maintains a CGPA of 8.0 to 8.5.

The Department may offer self study courses. The purpose of the course is to permit the student to study a course / a topic of the student's choice. The students shall study on their own under the guidance of a faculty member. No formal lectures need be delivered. The syllabus of the course and mode of assessments shall be approved by the Departmental Consultative Committee and forwarded to the Dean for Academic Courses for the formal approval of the course by the academic bodies; the Head of the Department shall be responsible for the periodic monitoring and evaluation of the course before the commencement of the semester.

- 5.7.5 The self study course course can be considered instead of one elective course. If a student opts for more than one self study course (vide clause 5.7.3 and 5.7.4) he / she can substitute more number of electives.

#### 5.8 Medium of Instruction

The medium of instruction is English for all courses, examinations, seminar presentations and project / thesis / dissertation reports.

#### 6. DURATION OF THE PROGRAMMES

- 6.1 A student is normally expected to complete the B.E. / B.Tech. Programme in 4 years (8 Semesters) but in any case not more than 8 years (16 Semesters).

- 6.2 Each semester shall normally consist of 90 teaching days (including examination days). The Head of the Department shall ensure that every teacher imparts instruction as per the number of periods specified in the syllabus covering the full content of the syllabus for the course being taught.

- 6.3 The total duration for completion of the programme reckoned from the commencement of the first semester to which the student was admitted shall not exceed the maximum duration specified in clause 6.1 irrespective of the period of break of study (vide clause 17) or prevention (vide clause 8.4) in order that the student may be eligible for the award of the degree (vide clause 15).

## 7. COURSE ENROLLMENT AND REGISTRATION

- 7.1 Each student shall be assigned to a Faculty Advisor (vide clause 9) who shall advise and counsel the student about the details of the academic programme and the choice of courses considering the student's academic background and career objectives.
- 7.2 Depending on academic and non academic resources available to each programme, courses offered may vary. Students will get a chance to make their own plan of study by changing the pace with which they study (fast/ normal/slow) and to opt for a faculty member of their choice.
- 7.3 The number of credits registered for during a semester should not be less than 16 credits and should not exceed 30 credits (Normally it is 23 credits).
- 7.4 Every student shall enroll for the courses of the succeeding semester in the current semester. However, the student shall confirm the enrollment by registering for the courses within the first **five** working days after the commencement of the concerned semester.
- 7.5 No course shall be offered by a Department unless a minimum of 30 students register for that course.
- 7.6 After registering for a course, a student shall attend the classes, satisfy the attendance requirements, earn Continuous Assessment marks and appear for the End Semester Examinations.
- 7.6.1 Each student on admission shall register for **all the courses prescribed in the curriculum in the student's first Semester of study.**
- 7.6.2 The enrollment for all the courses of the Semester II to VIII will commence 10 working days prior to the last working day of the preceding semester. The student shall confirm the enrollment by registering for the courses within the first five working days after the commencement of the Semester II to VIII. However, the student is allowed to register for courses for which the student has been stopped due to shortage of attendance.
- 7.6.3 The student shall enroll for the courses with the guidance of the student's Faculty Advisor. If the student wishes, the student may drop or add courses (vide clause 7.7) within **five** working days after the commencement of the concerned semester and complete the registration process duly authorized by the Faculty Advisor. The student is allowed to register for courses for which the student has not enrolled, if these are the courses in which the student has failed.
- 7.7 **Flexibility to Add or Drop courses**
- 7.7.1 From the II to VIII semesters, the student has the option of registering for additional courses or dropping existing courses. Total number of credits of such courses cannot exceed seven. However the maximum number of credits the student can register in a particular semester cannot exceed 30 credits.
- 7.7.2 A student has to earn the total number of credits specified in the curriculum of the respective Programme of study in order to be eligible to obtain the degree. However, if the student wishes, then the student is permitted to earn more than the total number of credits prescribed in the curriculum of the student's programme.
- 7.7.3 The student shall register for the project work in the VII/VIII semester only.
- 7.8 **Reappearance Registration**
- 7.8.1 If a student fails in a course, the student shall take it as an arrear. The student can retain the already earned Continuous Assessment marks for two subsequent appearances only and thereafter he/she will solely be assessed by the End Semester Examination.
- 7.8.2 If the theory course, in which the student has failed, is a professional elective or an open elective, the student may register for the same or any other professional elective or open elective course respectively in the subsequent semesters.
- 7.8.3 The student who fails in any Laboratory Course shall also take it as an arrear.
- 7.8.4 If a student is prevented from writing End Semester Examination of a course due to lack of attendance, the student has to register for that course again, when offered next, attend the classes and fulfill the attendance requirements as per clause 8. If the course, in which the student has lack of attendance, is a Professional Elective or an Open Elective, the student may register for the same

or any other Professional Elective or Open Elective course respectively in the subsequent semesters.

## **8. REQUIREMENTS FOR APPEARING FOR THE END SEMESTER EXAMINATION OF A COURSE**

A student who has fulfilled the following conditions (vide clause 8.1 and 8.2) shall be deemed to have satisfied the attendance requirements for appearing for End Semester Examination of a particular course.

- 8.1** Ideally every student is expected to attend all periods and earn 100% attendance. However, the student shall secure not less than 80% attendance course wise taking into account the number of periods required for that course as specified in the curriculum.
- 8.2** If a student secures attendance between 70% and less than 80% in any course in the current semester due to medical reasons (hospitalization / accident / specific illness) or due to participation in the College / University / State / National / International level Sports events with prior permission from the Head of the Department concerned, the student shall be given exemption from the prescribed attendance requirement and the student shall be permitted to appear for the end semester examination of that course. In all such cases, the students should submit the required documents on joining after the absence to the Head of the Department through the Faculty Advisor.
- 8.3** A student shall normally be permitted to appear for End Semester Examination of the course if the student has satisfied the attendance requirements (vide Clause 8.1 – 8.2) and has registered for examination in those courses of that semester by paying the prescribed fee.
- 8.4** Students who do not satisfy clause 8.1 and 8.2 and who secure **less than 70%** attendance in a course will not be permitted to write the End-Semester Examination of that course. The student has to register and repeat this course in a subsequent semester when it is offered next (vide clause 7.8.4).
- 8.5** A student who has already appeared for a course in a semester and passed the examination is not entitled to reappear in the same course for improvement of letter grades / marks.

## **9. FACULTY ADVISOR**

To help the students in planning their courses of study and for general advice on the academic programme, the Head of the Department of the students will attach a certain number of students to a teacher of the Department who shall function as Faculty Advisor for those students throughout their period of study. The Faculty Advisor shall advise the students in registering of courses, authorizes the process, monitor their attendance and progress and counsel them periodically. If necessary, the Faculty Advisor may also discuss with or inform the parents about the progress / performance of the students concerned.

The responsibilities for the faculty advisor shall be:

- To inform the students about the various facilities and activities available to enhance the student's curricular and co-curricular activities.
- To guide student enrollment and registration of the courses.
- To authorize the final registration of the courses at the beginning of each semester.
- To monitor the academic and general performance of the students including attendance and to counsel them accordingly.

## **10. COURSE COMMITTEES**

### **10.1 COMMON COURSE COMMITTEE**

A theory course handled by more than one teacher shall have a "Common Course Committee" comprising of all teachers teaching that course and some students who have registered for that course. There shall be two student representatives from each batch of that course. One of the teachers shall be nominated as Course Coordinator by the Head of the Department duly approved by

the Dean, Academic Courses.

The first meeting of the Common Course Committee shall be held within fifteen days from the date of commencement of the semester. The nature and weightage of the continuous assessments shall be decided in the first meeting, within the framework of the Regulations. Two or three subsequent meetings in a semester may be held at suitable intervals. During these meetings, the student members shall meaningfully interact and express their opinions and suggestions of all the students to improve the effectiveness of the teaching-learning process. It is the responsibility of the student representatives to convey the proceedings of these meetings to the whole batch.

In addition the "Common Course Committee" (without the student representatives) shall meet to ensure uniform evaluation of continuous assessments after arriving at a common scheme of evaluation for the assessments (vide clause 11).

Wherever feasible, the common course committee (without the student representatives) shall prepare a common question paper for the continuous assessment tests also. The question paper for the end semester examination is common and shall be set by the Course Coordinator in consultation with all the teachers.

#### **10.2 MULTIPLE COURSES COMMITTEE**

If a programme has in a semester, course(s) handled by a single teacher, there will be a "Multiple Courses Committee" comprising of all the above teachers and two student representatives from each course. One of the above teachers, nominated by the Head of the Department shall coordinate the activities of this committee. The functions of this committee is similar to that of the common course committee, which is as follows:

The first meeting of the Multiple Courses Committee shall be held within fifteen days from the date of commencement of the semester. The nature and weightage of the continuous assessments shall be decided in the first meeting, within the framework of the Regulations. Two or three subsequent meetings in a semester may be held at suitable intervals. During these meetings, the student members shall meaningfully interact and express their opinions and suggestions of all the students to improve the effectiveness of the teaching-learning process. It is the responsibility of the student representatives to convey the proceedings of these meetings to all the students.

#### **10.3 OVERALL MONITORING COMMITTEE**

**10.3.1** In addition, there shall be a overall monitoring committee for each semester of a programme which comprises of (i) the Course Coordinators / Course teachers (as applicable), (ii) the Faculty-in-charge of the programme and (iii) the Head of Department. This overall monitoring committee shall meet periodically to discuss academic related matters, progress and status of the students of the semester concerned.

**10.3.2** The overall monitoring committee can invite the Faculty Advisors or students for any of the committee meetings if necessary.

#### **11. ASSESSMENT PROCEDURES FOR AWARDING MARKS**

All B.E./B.Tech. Programmes consist of Theory Courses, Laboratory Courses and Employability Enhancement Courses. Employability Enhancement Courses include Project Work, Seminar, Professional Practices, Case Study and Industrial/Practical Training. Appearance in End Semester Examination is mandatory for all courses including Theory, Laboratory and Project work.

Performance in each course of study shall be evaluated based on (i) Continuous Assessments throughout the semester and (ii) End Semester Examination at the end of the semester. For Theory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks. For Laboratory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks. The continuous assessment is 50 marks for the Project Work, and project report evaluation and viva-voce examination carries 50 marks. All other courses included under Employability Enhancement Courses are evaluated by Continuous Assessments only. Each course

shall be evaluated for a maximum of 100 marks as shown below:

S. No.	Category of course	Continuous Assessments	End Semester Examinations
1	Theory Courses	50 Marks	50 Marks
2	Laboratory Courses	50 Marks	50 Marks
3	Project Work	50 Marks	50 Marks
4	All other EEC Courses	100 Marks	-

Every teacher is required to maintain an 'ATTENDANCE AND ASSESSMENT RECORD' for every semester which consists of attendance marked in each theory / Laboratory/EEC class, the assessment marks and the record of class work (topics covered), separately for each course handled by the teacher. This should be submitted to the Head of the Department periodically (at least three times in a semester) for checking the syllabus coverage and the records of assessment marks and attendance. The Head of the Department will affix his/her signature and date after due verification. At the end of the semester, the record should be verified by the Head of the Department who shall keep this document in safe custody (for eight years). The records of attendance and assessment of both current and previous semesters should be available for inspection.

#### 11.1 ASSESSMENT FOR THEORY COURSES:

For Theory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks.

Continuous Assessment comprises of three Continuous Internal Assessment (CIA) test, conducted by the course instructor / coordinator / department. The total marks obtained in the three CIA tests put together shall be reduced to 30 marks, two unit tests put together shall be reduced to 10 marks and assessment of assignments/ quiz/ online exams shall be reduced to 10 marks and rounded to the nearest integer. A minimum of two CIA tests would be conducted in a day and a CIA test would be of one and a half hours durations each. Students will not have regular classes on the scheduled day of these tests. In case a student misses the CIA test or unit test due to medical reasons (hospitalization / accident / specific illness) or due to participation in the College / University / State / National / International level Sports events with prior permission from the Head of the Department and approval from the Dean of Academic courses, a **Reassessment** may be given at the end of the semester.

The End Semester Examination for theory courses will be of three hours duration. End Semester Examination is mandatory requirement for passing the courses with ESE component in assesment)

#### 11.2 ASSESSMENT FOR LABORATORY COURSES:

For Laboratory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks. Every laboratory exercise / experiment shall be evaluated based on the student performance during the laboratory class and the student's records maintained. The total marks for all the laboratory exercises shall be reduced to 25 marks. There shall be at least two online tests/ viva voce/ assessment. The total marks in the two assessments shall be reduced to 20 marks and the maintenance of record shall be assessed for five marks. The End Semester Examinations for Laboratory courses will be of the same duration as that of the regular lab course.

#### 11.3 ASSESSMENT FOR LAB EMBEDDED THEORY COURSES:

The assessment for the embedded theory shall be as that of the theory (vide clause 11.1) and the assessment for the embedded lab shall be as that of the lab (vide clause 11.2) and the cumulative mark will be calculated based on the credit distribution.

For a course with L: T: P: C of 3:0:2:4 the theory component shall be reduced to 75% and the lab

component reduced to 25% and together will be determined for 100. For a course with L: T: P: C of 3:0:4:5 the theory component shall be reduced to 60% and the lab component reduced to 40% and together will be determined for 100.

#### 11.4 ASSESSMENT FOR PROJECT WORK:

For Project work out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination (project report evaluation and viva-voce examination) carries 50 marks. Project work may be assigned to a single student or to a group of students not exceeding 4 per group.

There shall be **two assessments** (each 100 marks) during the semester by a review committee. The student shall make presentation on the progress made before the committee. The Head of the Department shall constitute a review committee for each programme. There shall be a minimum of three members in the review committee. The project **Guide** will be one of the members of the Review Committee. The total marks obtained in the two Reviews shall be 50 marks.

The student(s) is expected to submit the project report on or before the last working day of the semester. The End Semester Examination for project work shall consist of evaluation of the final project report submitted by the student or students of the project group by an external examiner followed by a viva-voce examination conducted separately for each student by a committee consisting of the external examiner, the guide of the project group and an internal examiner. The Head of the Department with the approval of the Dean for Academic courses shall appoint Internal and External Examiners for the End Semester Examinations of the Project Work.

The Continuous Assessment and End Semester Examinations marks for Project Work and the Viva-Voce Examination will be distributed as indicated below.

Continuous Assessment (60 Marks)				End Semester Examination (40 Marks)			
Review I (25 Marks)		Review II (25 Marks)		Report Evaluation (25 Marks)		Viva – Voce (25 Marks)	
Review Committee (excluding guide)	Guide	Review Committee (excluding guide)	Guide	External Examiner	Internal Examiner	External Examiner	Internal Examiner
15	10	15	10	15	10	15	10

- 11.4.1 If the project report is not submitted on or before the specified deadline then the student(s) is deemed to have failed in the Project Work. The failed student(s) shall register for the same in the subsequent semester and repeat the project work again.

#### 11.5 ASSESSMENT FOR PROJECT EMBEDDED THEORY COURSES:

The assessment for the Project embedded theory shall be as that of the theory (vide clause 11.1) and the assessment for the embedded project shall be as that of the project (vide clause 11.4) and the cumulative mark will be calculated based on the credit distribution.

For a course with L: T: P: C of 3:0:2:4 the theory component shall be reduced to 75% and the project component reduced to 25% and together will be determined for 100. For a course with L: T: P: C of 3:0: 4:5 the theory component shall be reduced to 60% and the project component reduced to 40% and together will be determined for 100.

#### 11.6 ASSESSMENT FOR SEMINAR / PROFESSIONAL PRACTICES / CASE STUDY:

The Seminar / Case study shall carry 100 marks and shall be evaluated through Continuous Assessment only. Every student is expected to present a minimum of two seminars per semester before the evaluation committee and for each seminar, marks can be equally apportioned. The three member committee appointed by Head of the Department will evaluate the seminar and at the end of the semester the marks can be consolidated and taken as the final mark. The evaluation shall be based on the seminar paper / report (40%), presentation (40%) and response to the questions asked during presentation (20%).

**11.7 ASSESSMENT FOR INDUSTRIAL / PRACTICAL TRAINING / INTERNSHIP / SUMMER PROJECT**

The Industrial / Practical Training shall carry 100 marks and shall be evaluated through Continuous Assessment only. At the end of Industrial / Practical training / internship / Summer Project, the student shall submit a brief report on the training undergone and a certificate from the organization concerned. The evaluation will be made based on this report and a Viva-Voce Examination, conducted internally by a three member Departmental Committee constituted by the Head of the Department. Certificates (issued by the Organization) submitted by the student shall be attached to the mark list and sent to Controller of Examinations by the Head of the Department.

**11.8 ASSESSMENT FOR SELF STUDY COURSE**

The Faculty member approved by the Head of the Department shall be responsible for periodic monitoring and evaluation of the course. The course shall be evaluated through Continuous Assessment (as decided by the Departmental Consultative Committee) and End Semester Examination. The evaluation methodology shall be the same as that of a theory course. (vide clause 11.1) A committee consisting of the Head of the Department, the Faculty Member and another Senior Faculty member nominated by the Head of the Department shall assign the grades to the students based on their performance.

**12. PASSING REQUIREMENTS**

- 12.1** The Passing requirement for a student in a course is that the student should have 50% marks in the End Semester Examinations and should have 50% of the total marks by putting both the Continuous Assessment and End Semester Examinations together.
- 12.1.1** If a student fails in a professional elective or an open elective, the student may be permitted to register for the same course as arrear or opt for new registration to any other professional elective or open elective course respectively in the subsequent semesters. Registering for a new course will require fulfillment of attendance vide clause 8.
- 12.2** The passing requirement for the courses which are assessed only through continuous assessment (EEC courses except project work), shall be determined based on the marks obtained in continuous assessment tests.
- 12.3** A student can apply for revaluation of the student's semester examination answer paper in a theory course, within two weeks from the declaration of results, on payment of a prescribed fee along with prescribed application to the Controller of Examinations (CoE) through the Head of Departments. The CoE will arrange for the revaluation and the results will be intimated to the student concerned through the Head of the Department. Revaluation is not permitted for laboratory courses and project work.

**13 AWARD OF LETTER GRADES**

- 13.1.** The performance of a student will be reported using letter grades, each carrying certain points as detailed below:

Letter Grade	Range of Marks	Grade Points
S (Outstanding)	100 - 91	10

A (Excellent)	90 - 81	9
B (Very Good)	80 - 71	8
C (Good)	70 - 61	7
D (Above average)	60 - 50	6
U (Fail)	-	0
U* (Absent)	-	0
SA (Shortage of Attendance)	-	0

*Note: 'U' denotes fail for that particular course. U\* denotes absent for that particular course. 'SA' denotes shortage of attendance (as per Clause 8) and hence prevented from writing End Semester Examinations.*

- 13.2** For the Co-curricular activities such as National Cadet Corps (NCC)/ National Service Scheme (NSS) / sports / YRC, a satisfactory / not satisfactory grading will appear in the mark sheet. Every student shall put in a minimum of 75% attendance in the training and attend the camp compulsorily. The training and camp shall be completed during the first year of the programme. However, for valid reasons, the Head of the Institution may permit a student to complete this requirement in the second year. **A satisfactory grade in the above co-curricular activities is compulsory for the award of degree.**

#### **14. GPA AND CGPA CALCULATION**

- 14.1** The CoE shall call for a meeting of the passing board after the End Semester Examinations, to pass the results and with the approval of the board will declare the results. After results are declared, Grade Sheets will be issued to each student which will contain the following details:

- the list of courses registered during the semester and the grades scored.
- the Grade Point Average (GPA) for the semester and
- the Cumulative Grade Point Average (CGPA) of all courses registered from first semester onwards.

During each semester, the list of courses registered and the grades scored in each course are used to compute the Grade Point Average (GPA). GPA is the ratio of the sum of the products of the number of credits of courses registered and the grade points corresponding to the grades scored in those courses, taken for all the courses, to the sum of the number of credits of all the courses registered in the semester.

$$GPA = \frac{\sum(C_i \times g_i)}{\sum C_i}$$

where,  $C_i$  - is the Credits assigned to the course

$g_i$  - is the grade point corresponding to the letter grade obtained for each course.

$n$  - is number of all Courses successfully cleared during the particular semester in the case of GPA and during all the semesters in the case of CGPA.

CGPA will be calculated in a similar manner, considering all the courses enrolled from first semester. U, U\* and "SA" grades will be excluded for calculating GPA and CGPA.

- 14.2** If a student studies more number of electives (PE/OE) than required as per the student's programme curriculum, the courses with higher grades alone will be considered for calculation of CGPA.

#### **15. ELIGIBILITY FOR THE AWARD OF DEGREE**

- 15.1.** A student shall be declared to be eligible for the award of the B.E. / B.Tech. Degree provided the student has
- Successfully gained the required number of total credits as specified in the curriculum

- corresponding to the student's programme within the stipulated time (vide Clause 5.2).
- ii. Successfully completed the course requirements, appeared for the End Semester Examinations and passed all the courses prescribed in all the eight semesters within a maximum period of eight years reckoned from the commencement of the first semester to which the candidate was admitted.
  - iii. Successfully passed any additional courses prescribed by the Dean, Academic Courses whenever readmitted under regulations other than R-2016
  - iv. Successfully completed the NCC / NSS / Sports / YRC requirements.
  - v. No disciplinary action pending against the student.

## 15.2 CLASSIFICATION OF THE DEGREE AWARDED

### 15.2.1 FIRST CLASS WITH DISTINCTION:

A student who satisfies the following conditions shall be declared to have passed the examination in First class with Distinction:

- Should have passed the examination in all the courses of all the eight semesters in the student's First Appearance within **five** years, which includes authorized break of study of one year. Withdrawal from examination (vide Clause 16) will not be considered as an appearance.
- Should have secured a CGPA of not less than 8.50
- Should NOT have been prevented from writing end semester examination due to lack of attendance in any of the courses.

### 15.2.2 FIRST CLASS:

A student who satisfies the following conditions shall be declared to have passed the examination in **First class**:

- Should have passed the examination in all the courses of all eight semesters **within five years**, which includes one year of authorized break of study (if availed) or prevention from writing the End Semester Examination due to lack of attendance (if applicable).
- Should have secured a CGPA of not less than **7.00**

### 15.2.3 SECOND CLASS:

All other students (not covered in clauses 15.2.1 and 15.2.2) who qualify for the award of the degree (vide Clause 15.1) shall be declared to have passed the examination in **Second Class**.

15.2.4. A student who is absent in End Semester Examination of a course / project work after having registered for the same shall be considered to have appeared in that examination (except approved withdrawal from end semester examinations as per clause 16) for the purpose of classification.

## 16. PROVISION FOR WITHDRAWAL FROM EXAMINATION

- 16.1 A student may, for valid reasons, (medically unfit / unexpected family situations / sports approved by HOD) be granted permission to withdraw from appearing for the End Semester Examination in any course or courses in **ANY ONE** of the semester examinations during the entire duration of the degree programme. The application shall be sent to Dean, Academic Courses through HOD with required documents.
- 16.2 Withdrawal application shall be valid only if the student is otherwise eligible to write the examination (Clause 8) and if it is made within TEN working days before the commencement of the End Semester Examination in that course or courses and also recommended by the Head of the Department.
- 16.3 Notwithstanding the requirement of mandatory TEN working days notice, applications for withdrawal for special cases under extraordinary conditions will be considered on the merit of the case.


- 16.4 Withdrawal shall not be considered as an appearance for deciding the eligibility of a student for First Class with Distinction.
- 16.5 Withdrawal is permitted for the End Semester Examination in the final semester only if the period of study of the student concerned does not exceed 5 years as per clause 15.2.1.

#### 17. BREAK OF STUDY FROM A PROGRAMME


- 17.1 A student is permitted to go on break of study for a maximum period of one year either as two breaks of one semester each or a single break of one year.
- a. The student applies for break of study, the student shall apply to the Dean, Academic Courses in advance, in any case, not later than the last date of the first assessment period. The application duly filled by the student shall be submitted through the Head of the Department. In the case of short term employment/ training/ internship, the application for break of study shall be approved and forwarded by the Departmental Consultative Committee to the Dean for Academic Courses.
- b. The students permitted to rejoin the programme after break of study / prevention due to lack of attendance, shall be governed by the Curriculum and Regulations in force at the time of rejoining. The students rejoining in new Regulations shall apply to the Dean for Academic Courses in the prescribed format through Head of the Department at the beginning of the readmitted semester itself for prescribing additional/equivalent courses, if any, from any semester of the regulations in-force, so as to bridge the curriculum in-force and the old curriculum.
- 17.2 The total period for completion of the programme reckoned from, the commencement of the first semester to which the student was admitted shall not exceed the maximum period specified in clause 6.1 irrespective of the period of break of study in order that the student may be eligible for the award of the degree (vide clause 15).
- 17.3 In case there is any period of break of study more than the permitted duration of break of study, the student shall be permitted to continue the programme only if the approval is obtained from the Dean for Academic Courses through the concerned HOD before the end of the semester in which the student has taken break of study.
- 17.4 If a student has not reported to the department for a period of two consecutive semesters without any intimation, the name of the student shall be deleted permanently from the college enrollment. Such students are not entitled to seek readmission under any circumstances.
- 17.5 If a student indulges in malpractice in any of the examinations, the student shall be liable to be punitive action as prescribed by the College from time to time.

#### 18. REVISION OF REGULATIONS, CURRICULUM AND SYLLABI

The College may from time to time revise, amend or change the Regulations, Curriculum, Syllabus and Scheme of examinations through the Academic Council with the approval of the Chairman of Academic council.

  
**CONTROLLER OF EXAMINATIONS**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM - 637 408. NAMAKKAL DIST.**



  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU.

  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU.



**MUTHAYAMMAL ENGINEERING COLLEGE, RASIPURAM – 637 408**

**(Autonomous)**

**REGULATIONS 2019**

**CHOICE BASED CREDIT SYSTEM**

**Common to all B.E. / B.Tech. Full Time Programmes**

**(For the students admitted to B.E. / B.Tech. Programmes from the Academic year 2019 - 2020 onwards)**

## **1. PRELIMINARY DEFINITIONS AND NOMENCLATURE**

In this Regulation, unless the context otherwise specifies:

AY	Academic Year
CIA	Continuous Internal Assessment
CAM	Continuous Assessment Marks
CBCS	Choice Based Credit System
PE	Professional Elective
Programme	A degree with a major specialization in an Engineering/ Technology discipline offered by the College
Course	Course is any subject of study that may be classified as Theory only, Lab only, Self Study, MOOC or Project.
ESE	End Semester Examination
PC	Professional Core
BS	Basic Sciences
ES	Engineering Sciences
OE	Open Elective
UG	Under Graduate
University	Anna University, Chennai, India
College	Muthayammal Engineering College (MEC), Rasipuram.

## **2. PREAMBLE**

Students of today are much different from the students of the past in many ways. They want to be independent and like to make decisions on their own. Employers expect students to have the right attitude with diverse skill sets to work in a team. The present rigid, cohort system of learning doesn't allow the students in selecting the courses of their choice to become a holistic personality.

In this direction, MEC is introducing the Choice Based Credit System (CBCS) into its academic curriculum. Wherein the students can register courses of their choice to enable fast, average and slow learners to plan and pace the same in a Semester as may be necessary and register for more/average/less Credits within limits from the prescribed value, based on their learning capacities as observed and alter the pace of learning within the broad framework of academic course and credit requirements. CBCS allows students in deciding their academic plan and permits students to alter it as they progress in time.

Students will have the option of choosing courses from a 'Group of courses' within each classification. Ample options are given to choose interdisciplinary courses from other Engineering Departments which will help the student to develop additional skills. Slow learners will also benefit since important courses will be made available in both semesters. Suitable provisions are included to reward academically sound students.

CBCS offers flexibility for students to build their own curriculum in addition to the enhancement of their skill in planning. A Faculty Adviser facilitates a student in identifying the

**PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist  
TAMILNADU.**

courses based on programme requirement, course prerequisites, student's ability and interest in various academic disciplines.

### 3. **ADMISSION PROCEDURE**

Students for admission to the first semester of the eight semester B.E. / B.Tech. Degree Programme shall be admitted as per the regulations of Department of Technical Education, Government of Tamil Nadu and Anna University, Chennai.

### 4. **PROGRAMMES OFFERED**

A student may be offered admission to any one of the programme of study approved by the University and offered at Muthayammal Engineering College, Rasipuram. Details of programmes currently being offered by the college are listed below,

1. B.E. Biomedical Engineering
2. B.E. Computer Science Engineering
3. B.E. Civil Engineering
4. B.E. Cyber Security
5. B.E. Electronics and Communication Engineering
6. B.E. Electrical and Electronics Engineering
7. B.E. Mechanical Engineering
8. B.E. Mechatronics Engineering
9. B.E. Medical Electronics
10. B.E. Robotics and Automation
11. B.Tech. Artificial Intelligence and Data Science
12. B.Tech. Bio-Technology
13. B.Tech. Chemical Engineering
14. B.Tech. Information Technology

### 5. **STRUCTURE OF THE PROGRAMMES**

#### 5.1. **Credit Assignment**

Each course is assigned certain number of credits based on the following:

Contact period per week	Credits
1 Lecture Period	1
1 Tutorial Periods	1
2 Practical Periods (Laboratory / Seminar / Project Work / etc.)	1

#### 5.2 **Categorization of Courses**

Every B.E. / B. Tech. Programme will have a curriculum with syllabi consisting of theory and practical courses that shall be categorized as follows:

- i. **Humanities and Social Sciences (HS)** courses include Technical English, Employability Skills, Engineering Ethics and Human Values, Communication Skills and Environmental Science and Engineering.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

- ii. **Basic Sciences (BS)** courses include Mathematics, Physics, Chemistry, Biology, etc.
- iii. **Engineering Sciences (ES)** courses include Engineering practices, Engineering Graphics, Basics of Electrical / Electronics / Mechanical / Computer Engineering, Instrumentation etc.
- iv. **Professional Core (PC)** courses include the core courses relevant to the chosen specialization/branch.
- v. **Professional Elective (PE)** courses include the elective courses relevant to the chosen specialization/ branch.
- vi. **Open Elective (OE)** courses include the courses relevant to the chosen specialization / branch which a student can choose from the curriculum of other B.E. / B. Tech. / B. Arch. programmes and courses offered by the Departments under the Faculty of Science and Humanities
- vii. **Employability Enhancement Courses (EEC)** include Project Work and/or Internship, Seminar, Professional Practices, Case Study and Industrial/Practical Training.

S. No.	Category	Range of Total Credits(%)		Suggested Breakdown of Credits (for Total=160)
		Min	Max	
1.	Humanities and Social Sciences (HS), including Management.	5	10	9
2.	Basic Sciences(BS) including Mathematics, Physics, Chemistry, Biology.	15	20	24
3.	Engineering Sciences (ES), including Materials, Workshop, Drawing, Basics of Electrical/Electronics/Mechanical/Computer Engineering, Instrumentation.	15	20	27
4.	Professional Core (PC), relevant to the chosen specialization/branch; (May be split into Hard (no choice) and Soft(with choice), if required.	30	40	58
5.	Professional Electives (PE), relevant to the chosen specialization/ branch.	10	15	18
6.	Open Subjects- Electives (OE), from other technical and/or emerging subject areas.	5	10	9
7.	Employability Enhancement Courses (EEC)	10	15	15
<b>Total Credits</b>				<b>160</b>

### 5.3. Personality and Character Development

Students shall enroll in any one of the personality and character development programmes (NCC/NSS/Sports/YRC) and undergo training for about 40 hours and attend a camp of about seven days. The training shall include classes on hygiene and health awareness and also training in first-aid.

- i. **National Cadet Corps (NCC)** will have about 20 parades.
- ii. **National Service Scheme (NSS)** will have social service activities in and around the College / Institution.
- iii. **Sports** will have sports, Games, Drills and Physical exercises.
- iv. **Youth Red Cross (YRC)** will have activities related to social services in and around College/Institutions. While the training activities will normally be during weekends, the camp will normally be during vacation period.

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 TASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

#### 5.4. Number of Courses per Semester

Curriculum of a semester shall normally have a blend of courses including Theory / Laboratory / Project, not exceeding 7 theory courses or 3 laboratory courses. Each course may have credits assigned as per clause 5.1.

#### 5.5. Industrial Training / Internship

- 5.5.1 The students may undergo Industrial training for a period as specified in the Curriculum during summer / winter vacation. In this case the training has to be undergone continuously for the entire period. The students may undergo Internship at Industries/ Research organization / Universities of repute (after due approval from the Department Consultative Committee) for the period prescribed in the curriculum during summer / winter vacation, in lieu of Industrial training.
- 5.5.2. If Industrial Training / Internship are not prescribed in the curriculum, the student may undergo Industrial Training / Internship optionally and the credits earned will be indicated in the Grade Sheet. However, the number of credits earned shall not be considered for classification of the degree.
- 5.5.3. The student is allowed to undergo a maximum of 6 weeks Industrial Training during the entire duration of study.

DURATION OF TRAINING / INTERNSHIP	CREDITS
2 Weeks	1
4 Weeks	2
6 Weeks	3

#### 5.6. Industrial Visit

Every student will be encouraged to go for at least one Industrial Visit every year starting from the second year of the Programme. The Heads of Departments shall ensure that necessary arrangements are made in this regard.

#### 5.7. Self Study Courses

- 5.7.1. Students may be permitted to credit a maximum of one Self Study course with the approval of Departmental Consultative Committee.
- 5.7.2. The student can opt for **one** Self Study courses provided the student does not have current arrears and maintains a CGPA of 8.5 and above.
- 5.7.3. The student can opt for **two** Self Study courses provided the student does not have current arrears and maintains a CGPA of **7.0** and **above**.
- 5.7.4. The Department may offer self study courses. The purpose of the course is to permit the student to study a course / a topic of the student's choice. The students shall study on their own under the guidance of a faculty member. No formal lectures need be delivered. The syllabus of the course and mode of assessments shall be approved by the Departmental Consultative Committee and forwarded to the Dean for Academic Courses for the formal approval of the course by the academic bodies; the Head of the Department shall be responsible for the periodic monitoring and evaluation of the course before the commencement of the semester.
- 5.7.5 The self study course can be considered as equivalent to mini project/in-plant training with **one credit** weightage.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

## 5.8 Medium of Instruction

The medium of instruction is English for all courses, examinations, seminar presentations and project / thesis / dissertation reports.

## 5.9. MOOC Courses

Students may be permitted to credit only one online course of 3 credits with the approval of **Head of the Institution**.

Students may be permitted to credit one online course (which is provided with certificate) subject to a maximum of **three** credits. The approved list of online courses will be provided by the department or Controller of Examinations from time to time. The student needs to obtain certification or credit to become eligible for writing the End Semester Examination to be conducted by Controller of Examinations. The details regarding online courses taken up by students should be sent to the Controller of Examinations one month before the commencement of End Semester Examination.

## 5.10. Value Added Courses

The Students may choose Value Added Courses and the credits earned through the Value Added Courses shall be over and above the total credit requirement prescribed in the curriculum for the award of the degree. One credit courses shall be offered by a Department of an institution with the prior approval from the Head of the Institution. The details of the syllabus, time table and faculty may be sent to the Controller of Examinations after approval from the Head of the Institution concerned at least one month before the course is offered.

## 6. DURATION OF THE PROGRAMMES

- 6.1. A student is normally expected to complete the B.E. / B.Tech programme in 4 years (8 Semesters) but in any case not more than 7 years (14 Semesters).
- 6.2. Each semester shall normally consist of 90 teaching days (including examination days). The Head of the Department shall ensure that every teacher imparts instruction as per the number of periods specified in the syllabus covering the full content of the syllabus for the course being taught.
- 6.3. The total duration for completion of the programme reckoned from the commencement of the first semester to which the student was admitted shall not exceed the maximum duration specified in clause 6.1 irrespective of the period of break of study (vide clause 17) or prevention (vide clause 8.4) in order that the student may be eligible for the award of the degree (vide clause 15).

## 7. COURSE ENROLLMENT AND REGISTRATION

- 7.1. Each student, shall be assigned to a Faculty Advisor (vide clause 9) who shall advice and counsel the student about the details of the academic programme and the choice of courses considering the student's academic background and career objectives.
- 7.2. Depending on academic and non academic resources available to each programme, courses offered may vary. Students will get a chance to make their own plan of study by changing the pace with which they study (fast/ normal/slow) and to opt for a faculty member of their choice.
- 7.3. The number of credits registered for during a semester should not be less than 16 credits and should not exceed 30 credits (Normally it is 23 credits).
- 7.4. Every student shall enroll for the courses of the succeeding semester in the current semester. However, the student shall confirm the enrollment by registering for the courses within the first **five** working days after the commencement of the concerned semester.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
ASIPURAM-637 408, NAMAKKAL Dist.

- 7.5. **No elective course** shall be offered by a Department unless a minimum of **10 students** register for that course.
- 7.6. After registering for a course, a student shall attend the classes, satisfy the attendance requirements, earn Continuous Assessment marks and appear for the End Semester Examinations.
- 7.6.1. Each student on admission shall register for **all the courses prescribed in the curriculum** in the Student's **first Semester of study**.
- 7.6.2. The enrollment for all the courses of the Semester II to VIII will commence 10 working days prior to the last working day of the preceding semester. The student shall confirm the enrollment by registering for the courses within the first five working days after the commencement of the Semester II to VIII. However, the student is allowed to register for courses for which the student has been stopped due to shortage of attendance.
- 7.6.3. The student shall enroll for the courses with the guidance of the student's Faculty Advisor. If the student wishes, the student may drop or add courses (vide clause 7.7) within **five** working days after the commencement of the concerned semester and complete the registration process duly authorized by the Faculty Advisor. The student is allowed to register for courses for which the student has not enrolled, if these are the courses in which the student has failed.

7.7. **Flexibility to Add or Drop courses**

- 7.7.1. From the II to VIII semesters, the student has the option of registering for additional courses or dropping existing courses. Total number of credits of such courses cannot exceed seven. However the maximum number of credits the student can register in a particular semester cannot exceed 30 credits.
- 7.7.2. A student has to earn the total number of credits specified in the curriculum of the respective Programme of study in order to be eligible to obtain the degree. However, if the student wishes, then the student is permitted to earn more than the total number of credits prescribed in the curriculum of the student's programme.

7.8. **Reappearance Registration**

- 7.8.1. If a student fails in a course, the student shall take it as an arrear. The student can retain the already earned Continuous Assessment marks for **three** subsequent appearances only and thereafter he/she **will redo the course for continuous assessment and end semester examinations**.
- 7.8.2. If the theory course, in which the student has failed, is a professional elective or an open elective, the student may register for the same or any other professional elective or open elective course respectively in the subsequent semesters.
- 7.8.3. The student who fails in any Laboratory Course shall also take it as an arrear.
- 7.8.4. Supplementary examinations shall be considered for VII / VIII semesters.

8. **REQUIREMENTS FOR APPEARING FOR THE END SEMESTER EXAMINATION OF A COURSE**

A student who has fulfilled the following conditions (vide clause 8.1 and 8.2) shall be deemed to have satisfied the attendance requirements for appearing for End Semester Examination of a particular course.

- 8.1. Ideally every student is expected to attend all periods and earn 100% attendance. However, the student shall secure not less than 80% attendance course wise taking into account the number of periods required for that course as specified in the curriculum.
- 8.2. If a student secures attendance between 70% and less than 80% in any course in the current semester due to medical reasons (hospitalization / accident / specific illness) or due to participation in the College / University / State / National / International level Sports events with prior permission from the Head of the Department concerned, the student shall be given exemption

PRINCIPAL,  
HAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
SIPURAM-637 408. NAMAKKAL Dist.  
TAMIL NADU

from the prescribed attendance requirement and the student shall be permitted to appear for the end semester examination of that course. In all such cases, the students should submit the required documents on joining after the absence to the Head of the Department through the Faculty Advisor.

- 8.3. A student shall normally be permitted to appear for End Semester Examination of the course if the student has satisfied the attendance requirements (vide Clause 8.1 – 8.2) and has registered for examination in those courses of that semester by paying the prescribed fee.
- 8.4. Students who do not satisfy clause 8.1 and 8.2 and who secure **less than 70%** attendance in a course will not be permitted to write the End-Semester Examination of that course. The student has to register and repeat this course in a subsequent semester when it is offered next (vide clause 7.8.4).
- 8.5. A student who has already appeared for a course in a semester and passed the examination is not entitled to reappear in the same course for improvement of letter grades / marks.

## 9. FACULTY ADVISOR

To help the students in planning their courses of study and for general advice on the academic programme, the Head of the Department of the students will attach a certain number of students to a teacher of the Department who shall function as Faculty Advisor for those students throughout their period of study. The Faculty Advisor shall advise the students in registering of courses, authorizes the process, monitor their attendance and progress and counsel them periodically. If necessary, the Faculty Advisor may also discuss with or inform the parents about the progress / performance of the students concerned.

The responsibilities for the faculty advisor shall be:

- i. To inform the students about the various facilities and activities available to enhance the student's curricular and co-curricular activities.
- ii. To guide student enrollment and registration of the courses.
- iii. To authorize the final registration of the courses at the beginning of each semester.
- iv. To monitor the academic and general performance of the students including attendance and to counsel them accordingly.

## 10. COURSE COMMITTEES

### 10.1. COMMON COURSE COMMITTEE

A theory course handled by more than one teacher shall have a "Common Course Committee" comprising of all teachers teaching that course and some students who have registered for that course. There shall be two student representatives from each batch of that course. One of the teachers shall be nominated as Course Coordinator by the Head of the Department duly approved by the Dean, Academic Courses.

The first meeting of the Common Course Committee shall be held within fifteen days from the date of commencement of the semester. The nature and weightage of the continuous assessments shall be decided in the first meeting, within the framework of the Regulations. Two or three subsequent meetings in a semester may be held at suitable intervals. During these meetings, the student members shall meaningfully interact and express their opinions and suggestions of all the students to improve the effectiveness of the teaching-learning process. It is the responsibility of the student representatives to convey the proceedings of these meetings to the whole batch.

In addition the "Common Course Committee" (without the student representatives) shall meet to ensure uniform evaluation of continuous assessments after arriving at a common scheme of evaluation for the assessments (vide clause 11).

Wherever feasible, the common course committee (without the student representatives)

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

shall prepare a common question paper for the continuous assessment tests also. The question paper for the end semester examination is common and shall be set by the Course Coordinator in consultation with all the teachers.

## 10.2. MULTIPLE COURSES COMMITTEE

If a programme has in a semester, course(s) handled by a single teacher, there will be a "Multiple Courses Committee" comprising of all the above teachers and two student representatives from each course. One of the above teachers, nominated by the Head of the Department shall coordinate the activities of this committee. The functions of this committee are similar to that of the common course committee, which is as follows:

The first meeting of the Multiple Courses Committee shall be held within fifteen days from the date of commencement of the semester. The nature and weightage of the continuous assessments shall be decided in the first meeting, within the framework of the Regulations. Two or three subsequent meetings in a semester may be held at suitable intervals. During these meetings, the student members shall meaningfully interact and express their opinions and suggestions of all the students to improve the effectiveness of the teaching-learning process. It is the responsibility of the student representatives to convey the proceedings of these meetings to all the students.

## 10.3. OVERALL MONITORING COMMITTEE

10.3.1. In addition, there shall be a overall monitoring committee for each semester of a programme which comprises of (i) the Course Coordinators / Course teachers (as applicable), (ii) the Faculty-in-charge of the programme and (iii) the Head of Department. This overall monitoring committee shall meet periodically to discuss academic related matters, progress and status of the students of the semester concerned.

10.3.2 The overall monitoring committee can invite the Faculty Advisors or students for any of the committee meetings if necessary.

## 11. ASSESSMENT PROCEDURES FOR AWARDING MARKS

All B.E./B.Tech Programmes consist of Theory Courses, Laboratory Courses and Employability Enhancement Courses. Employability Enhancement Courses include Project Work, Seminar, Professional Practices, Self study and Industrial/Practical Training. Appearance in End Semester Examination is mandatory for all courses including Theory, Laboratory and Project work.

Performance in each course of study shall be evaluated based on (i) Continuous Assessments throughout the semester and (ii) End Semester Examination at the end of the semester. For Theory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks. For Laboratory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks. The continuous assessment is 50 marks for the Project Work, and project report evaluation and viva-voce examination carries 50 marks. All other courses included under Employability Enhancement Courses are evaluated by Continuous Assessments only. Each course shall be evaluated for a maximum of 100 marks as shown below:

S. No.	Category of course	Continuous Assessments	End Semester Examinations
1	Theory Courses	50 Marks	50 Marks
2	Laboratory Courses	50 Marks	50 Marks
3	Project Work	50 Marks	50 Marks
4	All other EEC Courses	100 Marks	-

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Every teacher is required to maintain an 'ATTENDANCE AND ASSESSMENT RECORD' for every semester which consists of attendance marked in each theory / Laboratory/EEC class, the assessment marks and the record of class work (topics covered), separately for each course handled by the teacher. This should be submitted to the Head of the Department periodically (at least three times in a semester) for checking the syllabus coverage and the records of assessment marks and attendance. The Head of the Department will affix his/her signature and date after due verification. At the end of the semester, the record should be verified by the Head of the Department who shall keep this document in safe custody (for eight years). The records of attendance and assessment of both current and previous semesters should be available for inspection.

#### 11.1 ASSESSMENT FOR THEORY COURSES:

For Theory Courses out of 100 marks, the maximum marks for Continuous Internal Assessment (CIA) is fixed as 50 and the End Semester Examination carries 50 marks. The assessment weightage is given in the following Table.

CATEGORY	DESCRIPTION
CIA – I – 50 Marks	10 Marks (Marks secured will be reduced to a maximum of 10 during processing)
CIA – II – 50 Marks	10 Marks (Marks secured will be reduced to a maximum of 10 during processing)
Model Examination – 100 Marks	15 Marks (Marks secured will be reduced to a maximum of 15 during processing)
Online Examination	10 Marks
Oral Examination	5 Marks
End Semester Examinations – 100 Marks	50 Marks (Marks secured will be reduced to a maximum of 50 during processing)

In case a student misses the CIA test or unit test due to medical reasons (hospitalization / accident / specific illness) or due to participation in the College / University / State / National / International level Sports events with prior permission from the Head of the Department and approval from the Dean of Academic courses, a **Reassessment** may be given at the end of the semester.

The End Semester Examination for theory courses will be of three hours duration. End Semester Examination is mandatory requirement for passing the courses with ESE component in assessment)

#### 11.2 ASSESSMENT FOR LABORATORY COURSES:

For Laboratory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks. Every laboratory exercise / experiment shall be evaluated based on the student performance during the laboratory class and the student's records maintained. The total marks for all the laboratory exercises shall be reduced to 25 marks. There shall be at least two online tests/ viva voce/ assessment. The total marks in the two assessments shall be reduced to 20 marks and the maintenance of record shall be

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
ASIPURAM-637 408, NAMAKKAL Dist.  
TAMIL NADU

assessed for five marks. The End Semester Examinations for Laboratory courses will be of the same duration as that of the regular lab course.

### 11.3 ASSESSMENT FOR PROJECT WORK:

For Project work out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination (project report evaluation and viva-voce examination) carries 50 marks. Project work may be assigned to a single student or to a group of students not exceeding 4 per group.

There shall be **two assessments** (each 100 marks) during the semester by a review committee. The student shall make presentation on the progress made before the committee. The Head of the Department shall constitute a review committee for each programme. There shall be a minimum of three members in the review committee. The project **Guide** will be one of the members of the Review Committee. The total marks obtained in the two Reviews shall be 50 marks.

The student(s) is expected to submit the project report on or before the last working day of the semester. The End Semester Examination for project work shall consist of evaluation of the final project report submitted by the student or students of the project group by an external examiner followed by a viva-voce examination conducted separately for each student by a committee consisting of the external examiner, the guide of the project group and an internal examiner. The Head of the Department with the approval of the Dean for Academic courses shall appoint Internal and External Examiners for the End Semester Examinations of the Project Work. The Continuous Assessment and End Semester Examinations marks for Project Work and the Viva-Voce Examination will be distributed as indicated below.

Continuous Assessment (50 Marks)				End Semester Examination (50 Marks)			
Review I (25 Marks)		Review II (25 Marks)		Report Evaluation (25 Marks)		Viva – Voce (25 Marks)	
Review Committee (excluding guide)	Guide	Review Committee (excluding guide)	Guide	External Examiner	Internal Examiner	External Examiner	Internal Examiner
15	10	15	10	15	10	15	10

- 11.3.1 If the project report is not submitted on or before the specified deadline then the student(s) is deemed to have failed in the Project Work. The failed student(s) shall register for the same in the subsequent semester and repeat the project work again.

### 11.4 ASSESSMENT FOR PROJECT EMBEDDED THEORY COURSES:

The assessment for the Project embedded theory shall be as that of the theory (vide clause 11.1) and the assessment for the embedded project shall be as that of the project (vide clause 11.4) and the cumulative mark will be calculated based on the credit distribution.

For a course with L: T: P: C of 3:0:2:4 the theory component shall be reduced to 75% and the project component reduced to 25% and together will be determined for 100. For a course with L: T: P: C of 3:0: 4:5 the theory component shall be reduced to 60% and the project component reduced to 40% and together will be determined for 100.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

#### **11.5 ASSESSMENT FOR SEMINAR / PROFESSIONAL PRACTICES / CASE STUDY:**

The Seminar / Case study shall carry 100 marks and shall be evaluated through Continuous Assessment only. Every student is expected to present a minimum of two seminars per semester before the evaluation committee and for each seminar, marks can be equally apportioned. The three member committee appointed by Head of the Department will evaluate the seminar and at the end of the semester the marks can be consolidated and taken as the final mark. The evaluation shall be based on the seminar paper / report (40%), presentation (40%) and response to the questions asked during presentation (20%).

#### **11.6 ASSESSMENT FOR INDUSTRIAL / PRACTICAL TRAINING / INTERNSHIP / SUMMER PROJECT**

The Industrial / Practical Training shall carry 100 marks and shall be evaluated through Continuous Assessment only. At the end of Industrial / Practical training / internship / Summer Project, the student shall submit a brief report on the training undergone and a certificate from the organization concerned. The evaluation will be made based on this report and a Viva-Voce Examination, conducted internally by a three member Departmental Committee constituted by the Head of the Department. Certificates (issued by the Organization) submitted by the student shall be attached to the mark list and sent to Controller of Examinations by the Head of the Department.

#### **11.7 ASSESSMENT FOR SELF STUDY COURSE**

The Faculty member approved by the Head of the Department shall be responsible for periodic monitoring and evaluation of the course. The course shall be evaluated through Continuous Assessment (as decided by the Departmental Consultative Committee) and End Semester Examination. The evaluation methodology shall be the same as that of a theory course. (vide clause 11.1) A committee consisting of the Head of the Department, the Faculty Member and another Senior Faculty member nominated by the Head of the Department shall assign the grades to the students based on their performance.

### **12. PASSING REQUIREMENTS**

- 12.1. The Passing requirement for a student in a course is that the student should have 50% marks in the End Semester Examinations and should have 50% of the total marks by putting both the Continuous Assessment and End Semester Examinations together.
- 12.1. If a student fails in a professional elective or an open elective, the student may be permitted to register for the same course as arrear or opt for new registration to any other professional elective or open elective course respectively in the subsequent semesters. Registering for a new course will require fulfillment of attendance vide clause 8.
- 12.2. The passing requirement for the courses which are assessed only through continuous assessment (EEC courses except project work), shall be determined based on the marks obtained in continuous assessment tests.
- 12.3. A student can apply for revaluation of the student's semester examination answer paper in a theory course, within two weeks from the declaration of results, on payment of a prescribed fee along with prescribed application to the Controller of Examinations (CoE) through the Head of Departments. The CoE will arrange for the revaluation and the results will be intimated to the student concerned through the Head of the Department. Revaluation is not permitted for laboratory courses and project work.

### **13. AWARD OF LETTER GRADES**

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

- 13.1. The performance of a student will be reported using letter grades, each carrying certain points as detailed below:

Letter Grade	Range of Marks	Grade Points
O (Outstanding)	100 - 91	10
A+ (Excellent)	90 - 81	9
A (Very Good)	80 - 71	8
B+ (Good)	70 - 61	7
B (Above average)	60 - 50	6
U (Fail)	-	0
U* (Absent)	-	0
SA (Shortage of Attendance)	-	0

*Note: 'U' denotes fail for that particular course. U\* denotes absent for that particular course. 'SA' denotes shortage of attendance (as per Clause 8) and hence prevented from writing End Semester Examinations.*

- 13.2 For the Co-curricular activities such as National Cadet Corps (NCC)/ National Service Scheme (NSS) / sports / YRC, a satisfactory / not satisfactory grading will appear in the mark sheet. Every student shall put in a minimum of 75% attendance in the training and attend the camp compulsorily. The training and camp shall be completed during the first year of the programme. However, for valid reasons, the Head of the Institution may permit a student to complete this requirement in the second year. **A satisfactory grade in the above co-curricular activities is compulsory for the award of degree.**

#### 14. GPA AND CGPA CALCULATION

- 14.1. The CoE shall call for a meeting of the passing board after the End Semester Examinations, to pass the results and with the approval of the board will declare the results. After results are declared, Grade Sheets will be issued to each student which will contain the following details:
- the list of courses registered during the semester and the grades scored.
  - the Grade Point Average (GPA) for the semester and
  - the Cumulative Grade Point Average (CGPA) of all courses registered from first semester onwards.

During each semester, the list of courses registered and the grades scored in each course are used to compute the Grade Point Average (GPA). GPA is the ratio of the sum of the products of the number of credits of courses registered and the grade points corresponding to the grades scored in those courses, taken for all the courses, to the sum of the number of credits of all the courses registered in the semester.

$$GPA = \frac{\sum(C_i \times g_i)}{\sum C_i}$$

where,  $C_i$  - is the Credits assigned to the course

$g_i$  - is the grade point corresponding to the letter grade obtained for each course.

$n$  - is number of all Courses successfully cleared during the particular semester in the case of GPA and during all the semesters in the case of CGPA.

CGPA will be calculated in a similar manner, considering all the courses enrolled from first semester. U, U\* and "SA" grades will be excluded for calculating GPA and CGPA.

- 14.2. If a student studies more number of electives (PE/OE) than required as per the student's programme curriculum, the courses with higher grades alone will be considered for calculation of CGPA.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**7ASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMIL NADU**

## 15. ELIGIBILITY FOR THE AWARD OF DEGREE

15.1. A student shall be declared to be eligible for the award of the B.E. / B.Tech. Degree provided the student has

- i. Successfully gained the required number of total credits as specified in the curriculum corresponding to the student's programme within the stipulated time (vide Clause 5.2).
- ii. Successfully completed the course requirements, appeared for the End Semester Examinations and passed all the courses prescribed in all the eight semesters within a maximum period of eight years reckoned from the commencement of the first semester to which the candidate was admitted.
- iii. Successfully passed any additional courses prescribed by the Dean, Academic Courses whenever readmitted under regulations other than R-2015
- iv. Successfully completed the NCC / NSS / Sports / YRC requirements.
- v. No disciplinary action pending against the student.

## 15.2. CLASSIFICATION OF THE DEGREE AWARDED

### 15.2.1. FIRST CLASS WITH DISTINCTION:

A student who satisfies the following conditions shall be declared to have passed the examination in First class with Distinction:

- i. Should have passed the examination in all the courses of all the eight semesters in the student's First Appearance within **five** years, which includes authorized break of study of one year. Withdrawal from examination (vide Clause 16) will not be considered as an appearance.
- ii. Should have secured a CGPA of not less than 8.50
- iii. Should NOT have been prevented from writing end semester examination due to lack of attendance in any of the courses.

### 15.2.2. FIRST CLASS:

A student who satisfies the following conditions shall be declared to have passed the examination in **First class**:

- i. Should have passed the examination in all the courses of all eight semesters **within five years**, which includes one year of authorized break of study (if availed) or prevention from writing the End Semester Examination due to lack of attendance (if applicable).
- ii. Should have secured a CGPA of not less than **7.00**

### 15.2.3. SECOND CLASS:

All other students (not covered in clauses 15.2.1 and 15.2.2) who qualify for the award of the degree (vide Clause 15.1) shall be declared to have passed the examination in **Second Class**.

15.2.4. A student who is absent in End Semester Examination of a course / project work after having registered for the same shall be considered to have appeared in that examination (except approved withdrawal from end semester examinations as per clause 16) for the purpose of classification.

## 16. PROVISION FOR WITHDRAWAL FROM EXAMINATION

16.1. A student may, for valid reasons, (medically unfit / unexpected family situations / sports approved by HOD) be granted permission to withdraw from appearing for the End Semester

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL DIST.  
TAMIL NADU

Examination in any course or courses in **ANY ONE** of the semester examinations during the entire duration of the degree programme. The application shall be sent to Dean, Academic Courses through HOD with required documents.

- 16.2. Withdrawal application shall be valid only if the student is otherwise eligible to write the examination (Clause 8) and if it is made within TEN working days before the commencement of the End Semester Examination in that course or courses and also recommended by the Head of the Department.
- 16.3. Notwithstanding the requirement of mandatory TEN working days notice, applications for withdrawal for special cases under extraordinary conditions will be considered on the merit of the case.
- 16.4. Withdrawal shall not be considered as an appearance for deciding the eligibility of a student for First Class with Distinction.
- 16.5. Withdrawal is permitted for the End Semester Examination in the final semester only if the period of study of the student concerned does not exceed 5 years as per clause 15.2.1.

## 17. BREAK OF STUDY FROM A PROGRAMME

- 17.1. A student is permitted to go on break of study for a maximum period of one year either as two breaks of one semester each or a single break of one year.
- 17.2. The student applies for break of study; the student shall apply to the Dean, Academic Courses in advance, in any case, not later than the last date of the first assessment period. The application duly filled by the student shall be submitted through the Head of the Department. In the case of short term employment/ training/ internship, the application for break of study shall be approved and forwarded by the Departmental Consultative Committee to the Dean for Academic Courses.
- 17.3. The students permitted to rejoin the programme after break of study / prevention due to lack of attendance, shall be governed by the Curriculum and Regulations in force at the time of rejoining. The students rejoining in new Regulations shall apply to the Dean for Academic Courses in the prescribed format through Head of the Department at the beginning of the readmitted semester itself for prescribing additional/equivalent courses, if any, from any semester of the regulations in-force, so as to bridge the curriculum in-force and the old curriculum.
- 17.4. The total period for completion of the programme reckoned from, the commencement of the first semester to which the student was admitted shall not exceed the maximum period specified in clause 6.1 irrespective of the period of break of study in order that the student may be eligible for the award of the degree (vide clause 15).
- 17.5. In case there is any period of break of study more than the permitted duration of break of study, the student shall be permitted to continue the programme only if the approval is obtained from the Dean for Academic Courses through the concerned HOD before the end of the semester in which the student has taken break of study.
- 17.6. If a student has not reported to the department for a period of two consecutive semesters without any intimation, the name of the student shall be deleted permanently from the college enrollment. Such students are not entitled to seek readmission under any circumstances.
- 17.7. If a student indulges in malpractice in any of the examinations, the student shall be liable to be punitive action as prescribed by the College from time to time.

## 18. REVISION OF REGULATIONS, CURRICULUM AND SYLLABI

The College may from time to time revise, amend or change the Regulations, Curriculum, Syllabus and Scheme of examinations through the Academic Council with the approval of the Chairman of Academic council.

**CONTROLLER OF EXAMINATIONS**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM - 637 408. NAMAKKAL DIST.**



**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408. NAMAKKAL Dist.**  
**TAMILNADU.**

**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408. NAMAKKAL Dist.**



MUTHAYAMMAL ENGINEERING COLLEGE, RASIPURAM – 637 408

(Autonomous)

REGULATIONS 2016

CHOICE BASED CREDIT SYSTEM

Common to all M.E Full-Time Programmes

(For the students admitted to M.E Programmes from the Academic year 2016 - 2017 onwards)

## 1. PRELIMINARY DEFINITIONS AND NOMENCLATURE

In this Regulation, unless the context otherwise specifies:

AY	Academic Year
CIA	Continuous Internal Assessment
CBCS	Choice Based Credit System
FC	Foundation Courses
PE	Professional Elective
Programme	Degree Programme. E.g. M.E Degree Programme
Course	Course is any Subject of study that may be classified as Theory, Lab , Lab Embedded Theory or Project
ESE	End Semester Examination
PC	Professional Core
EEC	Employability Enhancement Course
PG	Post Graduate
University	Anna University, Chennai, India
College	Muthayammal Engineering College, Rasipuram.

## 2. PREAMBLE

Students of today are much different from the students of the past in many ways. They want to be independent and like to make decisions on their own. Employers expect students to have the right attitude with diverse skill sets to work in a team. The present rigid, cohort system of learning doesn't allow the students in selecting the courses of their choice to become a holistic personality.

In this direction MEC is introducing the Choice Based Credit System (CBCS) into its academic curriculum. Wherein the students can register courses of their choice to enable fast, average and slow learners to plan and pace the same in a Semester as may be necessary and register for more/average/less Credits within limits from the prescribed value, based on their learning capacities as observed and alter the pace of learning within the broad framework of academic course and credit requirements. CBCS allows students in deciding their academic plan and permits students to alter it as they progress in time.

CBCS offers flexibility for students to build their own curriculum in addition to the enhancement of their skill in planning. A Faculty Adviser facilitates a student in identifying the courses based on programme requirement, course prerequisites, student's ability and interest in various academic disciplines.

## 3. ADMISSION PROCEDURE

Students for admission to the first semester of the Four semester M.E Degree Programme shall be admitted as per the regulations of Department of Technical Education, Government of Tamil Nadu and Anna University, Chennai.

#### 4. PROGRAMMES OFFERED

A student may be offered admission to any one of the Post Graduate Engineering programme of study approved by the University and offered at Muthayammal Engineering College, Rasipuram. Post Graduate Engineering programmes currently being offered by Muthayammal Engineering College are listed below:

1. M.E. Computer Science and Engineering
2. M.E. Communication Systems
3. M.E. VLSI Design
4. M.E. Power Electronics and Drives
5. M.E. Power Systems Engineering
6. M.E. CAD/CAM

#### 5. STRUCTURE OF THE PROGRAMMES

##### 5.1 Credit Assignment

Each course is assigned certain number of credits based on the following:

Contact period per week	CREDITS
1 Lecture Period	1
2 Tutorial Periods	1
2 Practical Periods (Laboratory / tutorial / Project Work / etc.)	1

The Contact Periods per week for Tutorials and Practical can only be in multiples of 2.

##### 5.2 Categorization of Courses

Every M.E Programme will have a curriculum with syllabi consisting of theory and practical courses that shall be categorized as follows:

- Foundation Courses (FC):** Courses include Applied Mathematics and other basic courses.
- Professional Core (PC):** Courses include the core courses relevant to the chosen specialization/branch.
- Professional Elective (PE):** Courses include the elective courses relevant to the chosen specialization/branch.
- Employability Enhancement Courses (EEC):** Include Project Work and Entrepreneurship Development, etc.

S. No.	Category	Range of Total Credits (%)		Suggested Breakdown of Credits (for Total=67)
		Min	Max	
1.	Foundation Courses (FC)	5	10	6
2.	Professional Core (PC)	35	40	25
3.	Professional Elective (PE)	25	30	18
4.	Employability Enhancement Courses (EEC)	25	30	18
<b>Total Credits</b>				<b>67</b>

##### 5.3 Number of Courses per Semester

Curriculum of a semester shall normally have a blend of 5 to 8 courses including Theory /Practical /Project work courses. Each course may have credits assigned as per clause 5.1.

#### 5.4 Industrial Training / Internship

- 5.4.1 If Industrial Training / Internship is not prescribed in the curriculum, the student may undergo Industrial Training / Internship optionally and the credits earned will be indicated in the Grade Sheet. However, the number of credits earned shall not be considered for classification of the degree.
- 5.4.2 The student is allowed to undergo a maximum of six weeks Industrial Training during the entire duration of study.

DURATION OF TRAINING / INTERNSHIP	CREDITS
2 Weeks	1
4 Weeks	2
6 Weeks	3

#### 5.5 Self Study Courses

- 5.5.1 Students may be permitted to credit a maximum of four Self Study course with the approval of Departmental Consultative Committee.
- 5.5.2 The student can opt for four self study course provided the student does not have current arrears and maintains a CGPA of 8.5 and above.
- 5.5.3 The student can opt for two Self Study courses provided the student does not have current arrears and maintains a CGPA of 8.0 to 8.5.  
The Department may offer self study courses. The purpose of the course is to permit the student to study a course / a topic of the student's choice. The students shall study on their own under the guidance of a faculty member. No formal lectures need be delivered. The syllabus of the course and mode of assessments shall be approved by the Departmental Consultative Committee and forwarded to the Dean for Academic Courses for the formal approval of the course by the academic bodies; the Head of the Department shall be responsible for the periodic monitoring and evaluation of the course before the commencement of the semester.
- 5.5.4 The self study course of three credits can be considered instead of one elective course. If a student opts for more than one self study course (vide clause 5.6.3 and 5.6.4) he/she can substitute more number of electives.

#### 5.6 Medium of Instruction

The medium of instruction is English for all courses, examination and project / thesis / dissertation reports.

#### 6. DURATION OF THE PROGRAMMES

- 6.1 A student is normally expected to complete the M.E Programme in two years (4 Semesters) but in any case not more than four years (8 Semesters).
- 6.2 Each semester shall normally consist of 90 teaching days (including examination days). The Head of the Department shall ensure that every teacher imparts instruction as per the number of periods specified in the syllabus covering the full content of the syllabus for the course being taught.
- 6.3 The total duration for completion of the programme reckoned from the commencement of the first semester to which the student was admitted shall not exceed the maximum duration specified in clause 6.1 irrespective of the period of break of study (vide clause 17) or prevention (vide clause 8.4) in order that the student may be eligible for the award of the degree (vide clause 15).

#### 7. COURSE ENROLLMENT AND REGISTRATION

- 7.1 Each student, shall be assigned to a Faculty Advisor (vide clause 9) who shall advise and counsel the student about the details of the academic programme and the choice of courses considering the student's academic background and career objectives.
- 7.2 Depending on academic and non academic resources available to each programme, courses offered may vary. Students will get a chance to make their own plan of study by changing the pace with which they study (fast/ normal/slow) and to opt for a faculty member of their choice.
- 7.3 The number of credits registered for during a semester should not be less than 14 credits and should not exceed 30 credits (Normally it is 20 credits)
- 7.4 Every student shall enroll for the course of the succeeding semester in the current semester. However, the student shall confirm the enrollment by registering for the courses within the first five working days after the commencement of the concerned semester.
- 7.5 No course shall be offered by a Department unless a minimum of 10 students register for that course.
- 7.6 After registering for a course, a student shall attend the classes, satisfy the attendance requirements, earn Continuous Assessment marks and appear for the End Semester Examinations.
- 7.6.1 Each student on admission shall register for **all the courses prescribed in the curriculum in the student's first Semester of study**. The enrollment for all the courses of the Semester II to IV will commence 10 working days prior to the last working day of the preceding semester. The student shall confirm the enrollment by registering for the courses within the first five working days after the commencement of the Semester II to IV. However, the student is allowed to register for courses for which the student has been stopped due to shortage of attendance.
- 7.6.2 The student shall enroll for the courses with the guidance of the student's Faculty Advisor. If the student wishes, the student may drop or add courses (vide clause 7.6) within **five** working days after the commencement of the concerned semester and complete the registration process duly authorized by the Faculty Advisor. The student is allowed to register for courses for which the student has not enrolled, if these are the courses in which the student has failed.
- 7.7 **Flexibility to Add or Drop courses**
- 7.7.1 From the II to IV semesters, the student has the option of registering for additional courses or dropping existing courses. However the maximum number of credits the student can register in a particular semester cannot exceed 30 credits.
- 7.7.2 A student has to earn the total number of credits specified in the curriculum of the respective Programme of study in order to be eligible to obtain the degree. However, if the student wishes, then the student is permitted to earn more than the total number of credits prescribed in the curriculum of the student's programme.
- 7.7.3 The student shall register for the project work in the III/IV semester only.
- 7.8 **Reappearance Registration**
- 7.8.1 If a student fails in a course, the student shall take it as an arrear. The student can retain the already earned Continuous Assessment marks for two subsequent appearances only and thereafter he/she will solely be assessed by the End Semester Examination of that course.
- 7.8.2 If the theory course, in which the student has failed, is a professional elective, the student may register for the same or any other professional elective course in the subsequent semesters.
- 7.8.3 The student who fails in any Laboratory Course shall also take it as arrear.
- 7.8.4 If a student is prevented from writing End Semester Examination of a course due to lack of attendance, the student has to register for that course again, when offered next, attend the classes and fulfill the attendance requirements as per clause 8. If the course, in which the student has lack of attendance, is a Professional Elective, the student may register for the same or any other Professional Elective course in the subsequent semesters.

## 8. REQUIREMENTS FOR APPEARING FOR THE END SEMESTER EXAMINATION OF A COURSE

A student who has fulfilled the following conditions (vide clause 8.1 and 8.2) shall be deemed to have satisfied the attendance requirements for appearing for End Semester Examination of a particular course.

- 8.1** Ideally every student is expected to attend all periods and earn 100% attendance. However, the student shall secure not less than 80% attendance course wise taking into account the number of periods required for that course as specified in the curriculum.
- 8.2** If a student secures attendance between 70% and less than 80% in any course in the current semester due to medical reasons (hospitalization / accident / specific illness) or due to participation in the College / University / State / National / International level Sports events with prior permission from the Head of the Department concerned, the student shall be given exemption from the prescribed attendance requirement and the student shall be permitted to appear for the end semester examination of that course. In all such cases, the students should submit the required documents on joining after the absence to the Head of the Department through the Faculty Advisor.
- 8.3** A student shall normally be permitted to appear for End Semester Examination of the course if the student has satisfied the attendance requirements (vide Clause 8.1 – 8.2) and has registered for examination in those courses of that semester by paying the prescribed fee.
- 8.4** Students who do not satisfy clause 8.1 and 8.2 and who secure **less than 70%** attendance in a course will not be permitted to write the End Semester Examination of that course. The student has to register and repeat this course in a subsequent semester when it is offered next (vide clause 7.8.4).
- 8.5** A student who has already appeared for a course in a semester and passed the examination is not entitled to reappear in the same course for improvement of letter grades / marks.
- 8.6** It is mandatory for the students to present/ publish one paper in the conference/journal related to his/her project work. Otherwise, submission of the project thesis will not be permitted.

## **9. FACULTY ADVISOR**

To help the students in planning their courses of study and for general advice on the academic programme, the Head of the Department of the students will attach a certain number of students to a teacher of the Department who shall function as Faculty Advisor for those students throughout their period of study. The Faculty Advisor shall advise the students in registering of courses, authorizes the process, monitor their attendance and progress and counsel them periodically. If necessary, the Faculty Advisor may also discuss with or inform the parents about the progress / performance of the students concerned.

The responsibilities for the faculty advisor shall be:

- To inform the students about the various facilities and activities available to enhance the student's curricular activities.
- To guide student enrollment and registration of the courses.
- To authorize the final registration of the courses at the beginning of each semester.
- To monitor the academic and general performance of the students including attendance and to counsel them accordingly.

## **10. COURSE COMMITTEES**

### **10.1 Common Course Committee**

A theory course handled by more than one teacher shall have a "Common Course Committee" comprising of all teachers teaching that course and some students who have registered for that course. There shall be two student representatives from each batch of that course. One of the teachers shall be nominated as Course Coordinator by the Head of the Department duly approved by the Dean, Academic Courses.

The first meeting of the Common Course Committee shall be held within fifteen days from the date of commencement of the semester. The nature and weightage of the continuous assessments shall be decided in the first meeting, within the framework of the Regulations. Two or three subsequent meetings in a semester may be held at suitable intervals. During these meetings, the student members shall meaningfully interact and express their opinions and suggestions of all the

students to improve the effectiveness of the teaching-learning process. It is the responsibility of the student representatives to convey the proceedings of these meetings to the whole batch.

In addition the "Common Course Committee" (without the student representatives) shall meet to ensure uniform evaluation of continuous assessments after arriving at a common scheme of evaluation for the assessments (vide clause 11).

Wherever feasible, the common course committee (without the student representatives) shall prepare a common question paper for the continuous assessment tests also. The question paper for the end semester examination is common and shall be set by the Course Coordinator in consultation with all the teachers.

## 10.2 Multiple Courses Committee

If a programme has in a semester, course(s) handled by a single teacher, there will be a "Multiple Courses Committee" comprising of all the above teachers and two student representatives from each course. One of the above teachers, nominated by the Head of the Department shall coordinate the activities of this committee. The functions of this committee are similar to that of the common course committee, which is as follows:

The first meeting of the Multiple Courses Committee shall be held within fifteen days from the date of commencement of the semester. The nature and weightage of the continuous assessments shall be decided in the first meeting, within the framework of the Regulations. Two or three subsequent meetings in a semester may be held at suitable intervals. During these meetings, the student members shall meaningfully interact and express their opinions and suggestions of all the students to improve the effectiveness of the teaching-learning process. It is the responsibility of the student representatives to convey the proceedings of these meetings to all the students.

## 10.3 Overall Monitoring Committee

10.3.1 In addition, there shall be an overall monitoring committee for each semester of a programme which comprises of (i) the Course Coordinators / Course teachers (as applicable), (ii) the Faculty-in-charge of the programme and (iii) the Head of Department. This overall monitoring committee shall meet periodically to discuss academic related matters, progress and status of the students of the semester concerned.

10.3.2 The overall monitoring committee can invite the Faculty Advisors or students for any of the committee meetings if necessary.

## 11. ASSESSMENT PROCEDURES FOR AWARDING MARKS

All M.E Programmes consist of Theory Courses, Laboratory Courses and Employability Enhancement Courses. Appearance in End Semester Examination is mandatory for all courses including Theory, Laboratory and Project work.

Performance in each course of study shall be evaluated based on (i) Continuous assessments throughout the semester and (ii) End Semester Examination at the end of the semester. For Theory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks. For Laboratory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks. The continuous assessment is 50 marks for the Project Work, and project report evaluation and viva-voce examination carries 50 marks. All other courses included under Employability Enhancement Courses are evaluated by Continuous Assessments only. Each course shall be evaluated for a maximum of 100 marks as shown below:

S.No	Category of course	Continuous Assessments	End Semester Examinations
1.	Theory Courses	50 Marks	50 Marks
2.	Laboratory Courses	50 Marks	50 Marks
3.	Project Work	50 Marks	50 Marks
4.	All other EEC Courses	100 Marks	-

Every teacher is required to maintain an 'ATTENDANCE AND ASSESSMENT RECORD' for every semester which consists of attendance marked in each Theory / Laboratory/EEC class, the assessment marks and the record of class work (topics covered), separately for each course handled by the teacher. This should be submitted to the Head of the Department periodically (at least three times in a semester) for checking the syllabus coverage and the records of assessment marks and attendance. The Head of the Department will affix his/her signature and date after due verification. At the end of the semester, the record should be verified by the Head of the Department who shall keep this document in safe custody (for four years). The records of attendance and assessment of both current and previous semesters should be available for inspection.

**11.1 Assessment for Theory Courses:**

For Theory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks.

Continuous Assessment comprises of three Continuous Internal Assessment (CIA) test, conducted by the course instructor / coordinator / department. The total marks obtained in the three CIA tests put together shall be reduced to 30 marks, the marks obtained in the seminar shall be reduced to 10 marks and the marks obtained in assignment/quiz/on-line, etc shall be reduced to 10 marks. The total CIA marks is 50. A minimum of two CIA tests would be conducted in a day and a CIA test would be of one and a half hours durations each. Students will not have regular classes on the scheduled day of these tests. In case a student misses the CIA test due to medical reasons (hospitalization / accident / specific illness) or due to participation in the College / University / State / National / International level Sports events with prior permission from the Head of the Department and approval from the Dean of Academic courses, a **Reassessment** may be given at the end of the semester.

The End Semester Examination for theory courses will be of three hours duration and shall normally be conducted between October and December during the odd semesters and between April and June during the even semesters. End semester Examination is mandatory requirement for passing the course and every student should appear for the examination for theory, laboratory courses and project work.

**11.2 Assessment For Laboratory Courses:**

For Laboratory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks.

Every laboratory exercise / experiment shall be evaluated based on the student performance during the laboratory class and the student's records maintained. The total marks for all the laboratory exercises shall be reduced to 25 marks. There shall be at least two viva voce. The total marks in the two viva voce shall be reduced to 20 marks and the maintenance of record shall be assessed for five marks. The End Semester Examinations for Laboratory courses will be of the same duration as that of the regular lab course.

**11.3 Assessment for Lab Embedded Theory Courses:**

The assessment for the embedded theory shall be as that of the theory (vide clause 11.1) and the assessment for the embedded lab shall be as that of the lab (vide clause 11.2) and the cumulative mark will be calculated based on the credit distribution.

For a course with L:T:P:C of 3:0:2:4 the theory component shall be reduced to 75% and the lab component reduced to 25% and together will be determined for 100. For a course with L:T:P:C of 3:0:4:5 the theory component shall be reduced to 60% and the lab component reduced to 40% and together will be determined for 100.

**11.4 Assessment for Project Work:**

The evaluation of project works for Phase I and Phase II in the case of M.E programme shall be done independently in the respective semesters. For Project work out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination (project report evaluation and viva-voce examination) carries 50 marks.

There shall be **two assessments** (each 100 marks) during the semester by a review committee.

The student shall make presentation on the progress made before the committee. The Head of the Department shall constitute a review committee for each programme. There shall be a minimum of three members in the review committee. The total marks obtained in the two Reviews shall be 50 marks.

The student(s) is expected to submit the project report on or before the last working day of the semester as per vide clause 8.6. The End Semester Examination for project work shall consist of evaluation of the final project report submitted by the student or students of the project group by an external examiner followed by a viva-voce examination conducted separately for each student by a committee consisting of the external examiner, the guide of the project group and an internal examiner. The Head of the Department with the approval of the Dean Academic courses shall appoint Internal and External Examiners for the End Semester Examinations of the Project Work. The continuous assessment and End Semester Examinations marks for Project Work and the Viva-Voce Examination will be distributed as indicated below.

Continuous Assessment (50 Marks)				End Semester Examination (50 Marks)			
Review I (25 Marks)		Review II (25 Marks)		Report Evaluation (25 Marks)		Viva – Voce (25 Marks)	
Review Committee (excluding guide)	Guide	Review Committee (excluding guide)	Guide	External Examiner	Internal Examiner	External Examiner	Internal Examiner
15	10	15	10	15	10	15	10

**11.4.1** If the project report is not submitted on or before the specified deadline then the student(s) is deemed to have failed in the Project Work. The failed student(s) shall register for the same in the subsequent semester and repeat the project work again.

**11.5 Assessment for Self Study Course**

The Faculty member approved by the Head of the Department shall be responsible for periodic monitoring and evaluation of the course. The course shall be evaluated through Continuous Assessment (as decided by the Departmental Consultative Committee) and End Semester Examination. The evaluation methodology shall be the same as that of a theory course. (vide clause 11.1) A committee consisting of the Head of the Department, the Faculty Member and another Senior Faculty member nominated by the Head of the Department shall assign the grades to the students based on their performance.


**12. PASSING REQUIREMENTS**

**12.1** The Passing requirement for a student in a course is that the student should have 50% marks in the End Semester Examination and should have 50% of the total marks by putting both the Continuous Assessment and End Semester Examinations together.

**12.1.2** If a student fails in a professional elective or an open elective, the student may be permitted to register for the same course as arrear or opt for new registration to any other professional elective or open elective respectively in the subsequent semester. Registering for a new course will require fulfillment of attendance vide clause 8.

**12.2** The passing requirement for the courses which are assessed only through continuous assessment (EEC courses except project work), shall be determined based on the marks obtained in continuous assessment tests.

**12.3** A student can apply for revaluation of the student's semester examination answer paper in a theory course, within 2 weeks from the declaration of results, on payment of a prescribed fee along with prescribed application to the Controller of Examination (CoE) through the Head of Departments. The CoE will arrange for the revaluation and the results will be intimated to the student concerned through the Head of the Department. Revaluation is not permitted for

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU.**

laboratory course and project work.

### 13 AWARD OF LETTER GRADES

- 13.1. The performance of a student will be reported using letter grades, each carrying certain points as detailed below:

Letter Grade	Range of Marks	Grade Points
S (Outstanding)	100 - 91	10
A (Excellent)	90 - 81	9
B (Very Good)	80 - 71	8
C (Good)	70 - 61	7
D (Above average)	60 - 50	6
U (Fail)	-	0
U* (Absent)	-	0
SA (Shortage of Attendance)	-	0

*Note: 'U' denotes fail for that particular course. U\* denotes absent for that particular course. 'SA' denotes shortage of attendance (as per Clause 8) and hence prevented from writing End Semester Examinations.*

### 14. GPA AND CGPA CALCULATION

- 14.1 The CoE shall call for a meeting of the passing board after the End Semester Examinations, to pass the results and with the approval of the board will declare the results. After results are declared, Grade Sheets will be issued to each student which will contain the following details:

- the list of courses registered during the semester and the grades scored.
- the Grade Point Average (GPA) for the semester and
- the Cumulative Grade Point Average (CGPA) of all courses registered from first semester onwards.

During each semester, the list of courses registered and the grades scored in each course are used to compute the Grade Point Average (GPA). GPA is the ratio of the sum of the products of the number of credits of courses registered and the grade points corresponding to the grades scored in those courses, taken for all the courses, to the sum of the number of credits of all the courses in the semester.

$$GPA = \frac{\sum(C_i \times g_i)}{\sum C_i}$$

where,  $C_i$  - is the Credits assigned to the course  
 $g_i$  - is the grade point corresponding to the letter grade obtained for each course  
 $n$  - is number of all Courses successfully cleared during the particular semester in the case of GPA and during all the semesters in the case of CGPA.

CGPA will be calculated in a similar manner, considering all the courses enrolled from first semester. U, U\* and "SA" grades will be excluded for calculating GPA and CGPA.

- 14.2 If a student studies more number of electives (PE) than required as per the student's programme curriculum, the courses with higher grades alone will be considered for calculation of CGPA.

### 15. ELIGIBILITY FOR THE AWARD OF DEGREE

- 15.1. A student shall be declared to be eligible for the award of the M.E Degree provided the student has

- i. Successfully gained the required number of total credits as specified in the curricular

- corresponding to the student's programme within the stipulated time (vide Clause 5.2).
- ii. Successfully completed the course requirements, appeared for the End Semester Examinations and passed all the courses prescribed in all the four semesters within a maximum period of four years reckoned from the commencement of the first semester to which the candidate was admitted.
  - iii. Successfully passed any additional courses prescribed by the Dean, Academic Courses whenever readmitted under regulations other than R-2016.
  - iv. No disciplinary action pending against the student.

## **15.2 CLASSIFICATION OF THE DEGREE AWARDED**

### **15.2.1 First Class with Distinction:**

A student who satisfies the following conditions shall be declared to have passed the examination in First class with Distinction:

- Should have passed the examination in all the courses of all the four semesters in the student's First Appearance within **Three** years, which includes authorized break of study of one year. Withdrawal from examination (vide Clause 16) will not be considered as an appearance.
- Should have secured a CGPA of not less than 8.50
- Should NOT have been prevented from writing end semester examination due to lack of attendance in any of the courses.

### **15.2.2 First Class:**

A student who satisfies the following conditions shall be declared to have passed the examination in **First class**:

- Should have passed the examination in all the courses of all four semesters **within Three years**, which includes one year of authorized break of study (if availed) or prevention from writing the End Semester Examination due to lack of attendance (if applicable).
- Should have secured a CGPA of not less than **7.00**

### **15.2.3 Second Class:**

All other students (not covered in clauses 15.2.1 and 15.2.2) who qualify for the award of the degree (vide Clause 15.1) shall be declared to have passed the examination in **Second Class**.

- 15.2.4.** A student who is absent in End Semester Examination in a course / project work after having registered for the same shall be considered to have appeared in that examination (except approved withdrawal from End Semester Examinations as per clause 16) for the purpose of classification.

## **16. PROVISION FOR WITHDRAWAL FROM EXAMINATION:**

- 16.1** A student may, for valid reasons, (medically unfit / unexpected family situations / sports approved by HOD) be granted permission to withdraw from appearing for the End Semester Examination in any course or courses in **ANY ONE** of the semester examinations during the entire duration of the degree programme. The application shall be sent to Dean, Academic Courses through HOD with required documents.
- 16.2** Withdrawal application shall be valid only if the student is otherwise eligible to write the examination (Clause 8) and if it is made within TEN working days before the commencement of the End Semester Examination in that course or courses and also recommended by the Head of the Department.
- 16.3** Notwithstanding the requirement of mandatory TEN working days notice, applications for withdrawal for special cases under extraordinary conditions will be considered on the merit of the case.
- 16.4** Withdrawal shall not be considered as an appearance for deciding the eligibility of a student for First Class with Distinction.
- 16.5** Withdrawal is permitted for the End Semester Examinations in the final semester only if the

period of study of the student concerned does not exceed 3 years as per clause 15.2.1.

## 17. BREAK OF STUDY FROM A PROGRAMME

- 17.1 A student is permitted to go on break of study for a maximum period of one year either as two breaks of one semester each or a single break of one year.
- The student applies for break of study, the student shall apply to the Dean for Academic Courses in advance, in any case, not later than the last date of the first assessment period. The application duly filled by the student shall be submitted through the Head of the Department. In the case of short term employment/ training/ internship, the application for break of study shall be approved and forwarded by the Departmental Consultative Committee to the Dean for Academic Courses.
  - The students permitted to rejoin the programme after break of study / prevention due to lack of attendance, shall be governed by the Curriculum and Regulations in force at the time of rejoining. The students rejoining in new Regulations shall apply to the Dean for Academic Courses in the prescribed format through Head of the Department at the beginning of the readmitted semester itself for prescribing additional/equivalent courses, if any, from any semester of the regulations in-force, so as to bridge the curriculum in-force and the old curriculum.
- 17.2 The total period for completion of the programme reckoned from, the commencement of the first semester to which the student was admitted shall not exceed the maximum period specified in clause 6.1 irrespective of the period of break of study in order that the student may be eligible for the award of the degree (vide clause 15).
- 17.3 In case there is any period of break of study more than the permitted duration of break of study, the student shall be permitted to continue the programme only if the approval is obtained from the Dean for Academic Courses through the concerned HOD before the end of the semester in which the student has taken break of study.
- 17.4 If a student has not reported to the department for a period of two consecutive semesters without any intimation, the name of the student shall be deleted permanently from the college enrollment. Such students are not entitled to seek readmission under any circumstances.
- 17.5 If a student indulges in malpractice in any of the examinations, the student shall be liable for punitive action as prescribed by the College from time to time.

## 18. REVISION OF REGULATIONS, CURRICULUM AND SYLLABI

The College may from time to time revise, amend or change the Regulations, Curriculum, Syllabus and Scheme of examinations through the Academic Council with the approval of the Chairman of Academic council.

**CONTROLLER OF EXAMINATIONS**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM - 637 408. NAMAKKAL DIST.**



169

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU



MUTHAYAMMAL ENGINEERING COLLEGE, RASIPURAM – 637 408

(Autonomous)

REGULATIONS 2019

CHOICE BASED CREDIT SYSTEM

Common to all M.E Full-Time Programmes

(For the students admitted to M.E Programmes from the Academic year 2019 - 2020 onwards)

## 1. PRELIMINARY DEFINITIONS AND NOMENCLATURE

In this Regulation, unless the context otherwise specifies:

AY	Academic Year
CIA	Continuous Internal Assessment
CBCS	Choice Based Credit System
FC	Foundation Courses
PE	Professional Elective
Programme	Degree Programme. E.g. M.E Degree Programme
Course	Course is any Subject of study that may be classified as Theory, Lab , Lab Embedded Theory or Project
ESE	End Semester Examination
PC	Professional Core
EEC	Employability Enhancement Course
PG	Post Graduate
University	Anna University, Chennai, India
College	Muthayammal Engineering College, Rasipuram.

## 2. PREAMBLE

Students of today are much different from the students of the past in many ways. They want to be independent and like to make decisions on their own. Employers expect students to have the right attitude with diverse skill sets to work in a team. The present rigid, cohort system of learning doesn't allow the students in selecting the courses of their choice to become a holistic personality.

In this direction MEC is introducing the Choice Based Credit System (CBCS) into its academic curriculum. Wherein the students can register courses of their choice to enable fast, average and slow learners to plan and pace the same in a Semester as may be necessary and register for more/average/less Credits within limits from the prescribed value, based on their learning capacities as observed and alter the pace of learning within the broad framework of academic course and credit requirements. CBCS allows students in deciding their academic plan and permits students to alter it as they progress in time.

CBCS offers flexibility for students to build their own curriculum in addition to the enhancement of their skill in planning. A Faculty Adviser facilitates a student in identifying the courses based on programme requirement, course prerequisites, student's ability and interest in various academic disciplines.

## 3. ADMISSION PROCEDURE

Students for admission to the first semester of the Four semester M.E Degree Programme shall be admitted as per the regulations of Department of Technical Education, Government of Tamil Nadu and Anna University, Chennai.

#### 4. PROGRAMMES OFFERED

A student may be offered admission to any one of the Post Graduate Engineering programme of study approved by the University and offered at Muthayammal Engineering College, Rasipuram. Post Graduate Engineering programmes currently being offered by Muthayammal Engineering College are listed below:

1. M.E. Computer Science and Engineering
2. M.E. Communication Systems
3. M.E. VLSI Design
4. M.E. Power Electronics and Drives
5. M.E. Power Systems Engineering
6. M.E. CAD/CAM

#### 5. STRUCTURE OF THE PROGRAMMES

##### 5.1 Credit Assignment

Each course is assigned certain number of credits based on the following:

Contact period per week	CREDITS
1 Lecture Period	1
2 Tutorial Periods	1
2 Practical Periods (Laboratory / tutorial / Project Work / etc.)	1

The Contact Periods per week for Tutorials and Practical can only be in multiples of 2.

##### 5.2 Categorization of Courses

Every M.E Programme will have a curriculum with syllabi consisting of theory and practical courses that shall be categorized as follows:

- i. **Foundation Courses (FC):** Courses include Applied Mathematics and other basic courses.
- ii. **Professional Core (PC):** Courses include the core courses relevant to the chosen specialization/branch.
- iii. **Professional Elective (PE):** Courses include the elective courses relevant to the chosen specialization/branch.
- iv. **Employability Enhancement Courses (EEC):** Include Project Work and Entrepreneurship Development, etc.

S. No.	Category	Range of Total Credits (%)		Suggested Breakdown of Credits (for Total=67)
		Min	Max	
1.	Foundation Courses (FC)	5	10	6
2.	Professional Core (PC)	35	40	25
3.	Professional Elective (PE)	25	30	18
4.	Employability Enhancement Courses (EEC)	25	30	18
<b>Total Credits</b>				<b>67</b>

##### 5.3 Number of Courses per Semester

Curriculum of a semester shall normally have a blend of 5 to 8 courses including Theory /Practical /Project work courses. Each course may have credits assigned as per clause 5.1.

#### 5.4 Industrial Training / Internship

- 5.4.1 If Industrial Training / Internship is not prescribed in the curriculum, the student may undergo Industrial Training / Internship optionally and the credits earned will be indicated in the Grade Sheet. However, the number of credits earned shall not be considered for classification of the degree.
- 5.4.2 The student is allowed to undergo a maximum of six weeks Industrial Training during the entire duration of study.

DURATION OF TRAINING / INTERNSHIP	CREDITS
2 Weeks	1
4 Weeks	2
6 Weeks	3

#### 5.5 Self Study Courses

- 5.5.1 Students may be permitted to credit a maximum of four Self Study course with the approval of Departmental Consultative Committee.
- 5.5.2 The student can opt for four self study course provided the student does not have current arrears and maintains a CGPA of 8.5 and above.
- 5.5.3 The student can opt for two Self Study courses provided the student does not have current arrears and maintains a CGPA of 8.0 to 8.5.  
The Department may offer self study courses. The purpose of the course is to permit the student to study a course / a topic of the student's choice. The students shall study on their own under the guidance of a faculty member. No formal lectures need be delivered. The syllabus of the course and mode of assessments shall be approved by the Departmental Consultative Committee and forwarded to the Dean for Academic Courses for the formal approval of the course by the academic bodies; the Head of the Department shall be responsible for the periodic monitoring and evaluation of the course before the commencement of the semester.
- 5.5.4 The self study course of three credits can be considered instead of one elective course. If a student opts for more than one self study course (vide clause 5.6.3 and 5.6.4) he/she can substitute more number of electives.

#### 5.6 Medium of Instruction

The medium of instruction is English for all courses, examination and project / thesis / dissertation reports.

#### 6. DURATION OF THE PROGRAMMES

- 6.1 A student is normally expected to complete the M.E Programme in two years (4 Semesters) but in any case not more than four years (8 Semesters).
- 6.2 Each semester shall normally consist of 90 teaching days (including examination days). The Head of the Department shall ensure that every teacher imparts instruction as per the number of periods specified in the syllabus covering the full content of the syllabus for the course being taught.
- 6.3 The total duration for completion of the programme reckoned from the commencement of the first semester to which the student was admitted shall not exceed the maximum duration specified in clause 6.1 irrespective of the period of break of study (vide clause 17) or prevention (vide clause 8.4) in order that the student may be eligible for the award of the degree (vide clause 15).

#### 7. COURSE ENROLLMENT AND REGISTRATION

- 7.1 Each student, shall be assigned to a Faculty Advisor (vide clause 9) who shall advise and counsel the student about the details of the academic programme and the choice of courses considering the student's academic background and career objectives.
- 7.2 Depending on academic and non academic resources available to each programme, courses offered may vary. Students will get a chance to make their own plan of study by changing the pace with which they study (fast/ normal/slow) and to opt for a faculty member of their choice.
- 7.3 The number of credits registered for during a semester should not be less than 14 credits and should not exceed 30 credits (Normally it is 20 credits)
- 7.4 Every student shall enroll for the course of the succeeding semester in the current semester. However, the student shall confirm the enrollment by registering for the courses within the first five working days after the commencement of the concerned semester.
- 7.5 No course shall be offered by a Department unless a minimum of 10 students register for that course.
- 7.6 After registering for a course, a student shall attend the classes, satisfy the attendance requirements, earn Continuous Assessment marks and appear for the End Semester Examinations.
- 7.6.1 Each student on admission shall register for **all the courses prescribed in the curriculum in the student's first Semester of study**. The enrollment for all the courses of the Semester II to IV will commence 10 working days prior to the last working day of the preceding semester. The student shall confirm the enrollment by registering for the courses within the first five working days after the commencement of the Semester II to IV. However, the student is allowed to register for courses for which the student has been stopped due to shortage of attendance.
- 7.6.2 The student shall enroll for the courses with the guidance of the student's Faculty Advisor. If the student wishes, the student may drop or add courses (vide clause 7.6) within **five** working days after the commencement of the concerned semester and complete the registration process duly authorized by the Faculty Advisor. The student is allowed to register for courses for which the student has not enrolled, if these are the courses in which the student has failed.
- 7.7 **Flexibility to Add or Drop courses**
- 7.7.1 From the II to IV semesters, the student has the option of registering for additional courses or dropping existing courses. However the maximum number of credits the student can register in a particular semester cannot exceed 30 credits.
- 7.7.2 A student has to earn the total number of credits specified in the curriculum of the respective Programme of study in order to be eligible to obtain the degree. However, if the student wishes, then the student is permitted to earn more than the total number of credits prescribed in the curriculum of the student's programme.
- 7.7.3 The student shall register for the project work in the III/IV semester only.
- 7.8 **Reappearance Registration**
- 7.8.1 If a student fails in a course, the student shall take it as an arrear. The student can retain the already earned Continuous Assessment marks for two subsequent appearances only and thereafter he/she will solely be assessed by the End Semester Examination of that course.
- 7.8.2 If the theory course, in which the student has failed, is a professional elective, the student may register for the same or any other professional elective course in the subsequent semesters.
- 7.8.3 The student who fails in any Laboratory Course shall also take it as arrear.
- 7.8.4 If a student is prevented from writing End Semester Examination of a course due to lack of attendance, the student has to register for that course again, when offered next, attend the classes and fulfill the attendance requirements as per clause 8. If the course, in which the student has lack of attendance, is a Professional Elective, the student may register for the same or any other Professional Elective course in the subsequent semesters.

## 8. REQUIREMENTS FOR APPEARING FOR THE END SEMESTER EXAMINATION OF A COURSE

A student who has fulfilled the following conditions (vide clause 8.1 and 8.2) shall be deemed to have satisfied the attendance requirements for appearing for End Semester Examination of a particular course.

- 8.1 Ideally every student is expected to attend all periods and earn 100% attendance. However, the student shall secure not less than 80% attendance course wise taking into account the number of periods required for that course as specified in the curriculum.
- 8.2 If a student secures attendance between 70% and less than 80% in any course in the current semester due to medical reasons (hospitalization / accident / specific illness) or due to participation in the College / University / State / National / International level Sports events with prior permission from the Head of the Department concerned, the student shall be given exemption from the prescribed attendance requirement and the student shall be permitted to appear for the end semester examination of that course. In all such cases, the students should submit the required documents on joining after the absence to the Head of the Department through the Faculty Advisor.
- 8.3 A student shall normally be permitted to appear for End Semester Examination of the course if the student has satisfied the attendance requirements (vide Clause 8.1 – 8.2) and has registered for examination in those courses of that semester by paying the prescribed fee.
- 8.4 Students who do not satisfy clause 8.1 and 8.2 and who secure **less than 70%** attendance in a course will not be permitted to write the End Semester Examination of that course. The student has to register and repeat this course in a subsequent semester when it is offered next (vide clause 7.8.4).
- 8.5 A student who has already appeared for a course in a semester and passed the examination is not entitled to reappear in the same course for improvement of letter grades / marks.
- 8.6 It is mandatory for the students to present/ publish one paper in the conference/journal related to his/her project work. Otherwise, submission of the project thesis will not be permitted.

## 9. FACULTY ADVISOR

To help the students in planning their courses of study and for general advice on the academic programme, the Head of the Department of the students will attach a certain number of students to a teacher of the Department who shall function as Faculty Advisor for those students throughout their period of study. The Faculty Advisor shall advise the students in registering of courses, authorizes the process, monitor their attendance and progress and counsel them periodically. If necessary, the Faculty Advisor may also discuss with or inform the parents about the progress / performance of the students concerned.

The responsibilities for the faculty advisor shall be:

- To inform the students about the various facilities and activities available to enhance the student's curricular activities.
- To guide student enrollment and registration of the courses.
- To authorize the final registration of the courses at the beginning of each semester.
- To monitor the academic and general performance of the students including attendance and to counsel them accordingly.

## 10. COURSE COMMITTEES

### 10.1 Common Course Committee

A theory course handled by more than one teacher shall have a "Common Course Committee" comprising of all teachers teaching that course and some students who have registered for that course. There shall be two student representatives from each batch of that course. One of the teachers shall be nominated as Course Coordinator by the Head of the Department duly approved by the Dean, Academic Courses.

The first meeting of the Common Course Committee shall be held within fifteen days from the date of commencement of the semester. The nature and weightage of the continuous assessments shall be decided in the first meeting, within the framework of the Regulations. Two or three subsequent meetings in a semester may be held at suitable intervals. During these meetings, the student members shall meaningfully interact and express their opinions and suggestions of all the

students to improve the effectiveness of the teaching-learning process. It is the responsibility of the student representatives to convey the proceedings of these meetings to the whole batch.

In addition the "Common Course Committee" (without the student representatives) shall meet to ensure uniform evaluation of continuous assessments after arriving at a common scheme of evaluation for the assessments (vide clause 11).

Wherever feasible, the common course committee (without the student representatives) shall prepare a common question paper for the continuous assessment tests also. The question paper for the end semester examination is common and shall be set by the Course Coordinator in consultation with all the teachers.

### 10.2 Multiple Courses Committee

If a programme has in a semester, course(s) handled by a single teacher, there will be a "Multiple Courses Committee" comprising of all the above teachers and two student representatives from each course. One of the above teachers, nominated by the Head of the Department shall coordinate the activities of this committee. The functions of this committee are similar to that of the common course committee, which is as follows:

The first meeting of the Multiple Courses Committee shall be held within fifteen days from the date of commencement of the semester. The nature and weightage of the continuous assessments shall be decided in the first meeting, within the framework of the Regulations. Two or three subsequent meetings in a semester may be held at suitable intervals. During these meetings, the student members shall meaningfully interact and express their opinions and suggestions of all the students to improve the effectiveness of the teaching-learning process. It is the responsibility of the student representatives to convey the proceedings of these meetings to all the students.

### 10.3 Overall Monitoring Committee

10.3.1 In addition, there shall be an overall monitoring committee for each semester of a programme which comprises of (i) the Course Coordinators / Course teachers (as applicable), (ii) the Faculty-in-charge of the programme and (iii) the Head of Department. This overall monitoring committee shall meet periodically to discuss academic related matters, progress and status of the students of the semester concerned.

10.3.2 The overall monitoring committee can invite the Faculty Advisors or students for any of the committee meetings if necessary.

## 11. ASSESSMENT PROCEDURES FOR AWARDING MARKS

All M.E Programmes consist of Theory Courses, Laboratory Courses and Employability Enhancement Courses. Appearance in End Semester Examination is mandatory for all courses including Theory, Laboratory and Project work.

Performance in each course of study shall be evaluated based on (i) Continuous assessments throughout the semester and (ii) End Semester Examination at the end of the semester. For Theory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks. For Laboratory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks. The continuous assessment is 50 marks for the Project Work, and project report evaluation and viva-voce examination carries 50 marks. All other courses included under Employability Enhancement Courses are evaluated by Continuous Assessments only. Each course shall be evaluated for a maximum of 100 marks as shown below:

S.No	Category of course	Continuous Assessments	End Semester Examinations
1.	Theory Courses	50 Marks	50 Marks
2.	Laboratory Courses	50 Marks	50 Marks
3.	Project Work	50 Marks	50 Marks
4.	All other EEC Courses	100 Marks	-

Every teacher is required to maintain an 'ATTENDANCE AND ASSESSMENT RECORD' for every semester which consists of attendance marked in each Theory / Laboratory/EEC class, the assessment marks and the record of class work (topics covered), separately for each course handled by the teacher. This should be submitted to the Head of the Department periodically (at least three times in a semester) for checking the syllabus coverage and the records of assessment marks and attendance. The Head of the Department will affix his/her signature and date after due verification. At the end of the semester, the record should be verified by the Head of the Department who shall keep this document in safe custody (for four years). The records of attendance and assessment of both current and previous semesters should be available for inspection.

**11.1 Assessment for Theory Courses:**

For Theory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks.

Continuous Assessment comprises of three Continuous Internal Assessment (CIA) test, conducted by the course instructor / coordinator / department. The total marks obtained in the three CIA tests put together shall be reduced to 30 marks, the marks obtained in the seminar shall be reduced to 10 marks and the marks obtained in assignment/quiz/on-line, etc shall be reduced to 10 marks. The total CIA marks is 50. A minimum of two CIA tests would be conducted in a day and a CIA test would be of one and a half hours durations each. Students will not have regular classes on the scheduled day of these tests. In case a student misses the CIA test due to medical reasons (hospitalization / accident / specific illness) or due to participation in the College / University / State / National / International level Sports events with prior permission from the Head of the Department and approval from the Dean of Academic courses, a **Reassessment** may be given at the end of the semester.

The End Semester Examination for theory courses will be of three hours duration and shall normally be conducted between October and December during the odd semesters and between April and June during the even semesters. End semester Examination is mandatory requirement for passing the course and every student should appear for the examination for theory, laboratory courses and project work.

**11.2 Assessment For Laboratory Courses:**

For Laboratory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks.

Every laboratory exercise / experiment shall be evaluated based on the student performance during the laboratory class and the student's records maintained. The total marks for all the laboratory exercises shall be reduced to 25 marks. There shall be at least two viva voce. The total marks in the two viva voce shall be reduced to 20 marks and the maintenance of record shall be assessed for five marks. The End Semester Examinations for Laboratory courses will be of the same duration as that of the regular lab course.

**11.3 Assessment for Lab Embedded Theory Courses:**

The assessment for the embedded theory shall be as that of the theory (vide clause 11.1) and the assessment for the embedded lab shall be as that of the lab (vide clause 11.2) and the cumulative mark will be calculated based on the credit distribution.

For a course with L:T:P:C of 3:0:2:4 the theory component shall be reduced to 75% and the lab component reduced to 25% and together will be determined for 100. For a course with L:T:P:C of 3:0:4:5 the theory component shall be reduced to 60% and the lab component reduced to 40% and together will be determined for 100.

**11.4 Assessment for Project Work:**

The evaluation of project works for Phase I and Phase II in the case of M.E programme shall be done independently in the respective semesters. For Project work out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination (project report evaluation and viva-voce examination) carries 50 marks.

There shall be **two assessments** (each 100 marks) during the semester by a review committee.

The student shall make presentation on the progress made before the committee. The Head of the Department shall constitute a review committee for each programme. There shall be a minimum of three members in the review committee. The total marks obtained in the two Reviews shall be 50 marks.

The student(s) is expected to submit the project report on or before the last working day of the semester as per vide clause 8.6. The End Semester Examination for project work shall consist of evaluation of the final project report submitted by the student or students of the project group by an external examiner followed by a viva-voce examination conducted separately for each student by a committee consisting of the external examiner, the guide of the project group and an internal examiner. The Head of the Department with the approval of the Dean Academic courses shall appoint Internal and External Examiners for the End Semester Examinations of the Project Work. The continuous assessment and End Semester Examinations marks for Project Work and the Viva-Voce Examination will be distributed as indicated below.

Continuous Assessment (50 Marks)				End Semester Examination (50 Marks)			
Review I (25 Marks)		Review II (25 Marks)		Report Evaluation (25 Marks)		Viva – Voce (25 Marks)	
Review Committee (excluding guide)	Guide	Review Committee (excluding guide)	Guide	External Examiner	Internal Examiner	External Examiner	Internal Examiner
15	10	15	10	15	10	15	10

11.4.1 If the project report is not submitted on or before the specified deadline then the student(s) is deemed to have failed in the Project Work. The failed student(s) shall register for the same in the subsequent semester and repeat the project work again.

**11.5 Assessment for Self Study Course**

The Faculty member approved by the Head of the Department shall be responsible for periodic monitoring and evaluation of the course. The course shall be evaluated through Continuous Assessment (as decided by the Departmental Consultative Committee) and End Semester Examination. The evaluation methodology shall be the same as that of a theory course. (vide clause 11.1) A committee consisting of the Head of the Department, the Faculty Member and another Senior Faculty member nominated by the Head of the Department shall assign the grades to the students based on their performance.

**12. PASSING REQUIREMENTS**

12.1 The Passing requirement for a student in a course is that the student should have 50% marks in the End Semester Examination and should have 50% of the total marks by putting both the Continuous Assessment and End Semester Examinations together.

12.1.2 If a student fails in a professional elective or an open elective, the student may be permitted to register for the same course as arrear or opt for new registration to any other professional elective or open elective respectively in the subsequent semester. Registering for a new course will require fulfillment of attendance vide clause 8.

12.2 The passing requirement for the courses which are assessed only through continuous assessment (EEC courses except project work), shall be determined based on the marks obtained in continuous assessment tests.

12.3 A student can apply for revaluation of the student's semester examination answer paper in a theory course, within 2 weeks from the declaration of results, on payment of a prescribed fee along with prescribed application to the Controller of Examination (CoE) through the Head of Departments. The CoE will arrange for the revaluation and the results will be intimated to the student concerned through the Head of the Department. Revaluation is not permitted for

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU.**

laboratory course and project work.

### 13 AWARD OF LETTER GRADES

- 13.1. The performance of a student will be reported using letter grades, each carrying certain points as detailed below:

Letter Grade	Range of Marks	Grade Points
O (Outstanding)	100 - 91	10
A+ (Excellent)	90 - 81	9
A (Very Good)	80 - 71	8
B+ (Good)	70 - 61	7
B (Above average)	60 - 50	6
U (Fail)	-	0
U* (Absent)	-	0
SA (Shortage of Attendance)	-	0

*Note: 'U' denotes fail for that particular course. U\* denotes absent for that particular course. 'SA' denotes shortage of attendance (as per Clause 8) and hence prevented from writing End Semester Examinations.*

### 14. GPA AND CGPA CALCULATION

- 14.1. The CoE shall call for a meeting of the passing board after the End Semester Examinations, to pass the results and with the approval of the board will declare the results. After results are declared, Grade Sheets will be issued to each student which will contain the following details:

- the list of courses registered during the semester and the grades scored.
- the Grade Point Average (GPA) for the semester and
- the Cumulative Grade Point Average (CGPA) of all courses registered from first semester onwards.

During each semester, the list of courses registered and the grades scored in each course are used to compute the Grade Point Average (GPA). GPA is the ratio of the sum of the products of the number of credits of courses registered and the grade points corresponding to the grades scored in those courses, taken for all the courses, to the sum of the number of credits of all the courses in the semester.

$$GPA = \frac{\sum(C_i \times g_i)}{\sum C_i}$$

where,  $C_i$  - is the Credits assigned to the course  
 $g_i$  - is the grade point corresponding to the letter grade obtained for each course  
 $n$  - is number of all Courses successfully cleared during the particular semester in the case of GPA and during all the semesters in the case of CGPA.

CGPA will be calculated in a similar manner, considering all the courses enrolled from first semester. U, U\* and "SA" grades will be excluded for calculating GPA and CGPA.

- 14.2. If a student studies more number of electives (PE) than required as per the student's programme curriculum, the courses with higher grades alone will be considered for calculation of CGPA.

### 15. ELIGIBILITY FOR THE AWARD OF DEGREE

- 15.1. A student shall be declared to be eligible for the award of the M.E Degree provided the student has

- i. Successfully gained the required number of total credits as specified in the curriculum

- corresponding to the student's programme within the stipulated time (vide Clause 5.2).
- ii. Successfully completed the course requirements, appeared for the End Semester Examinations and passed all the courses prescribed in all the four semesters within a maximum period of four years reckoned from the commencement of the first semester to which the candidate was admitted.
  - iii. Successfully passed any additional courses prescribed by the Dean, Academic Courses whenever readmitted under regulations other than R-2016.
  - iv. No disciplinary action pending against the student.

## 15.2 CLASSIFICATION OF THE DEGREE AWARDED

### 15.2.1 First Class with Distinction:

A student who satisfies the following conditions shall be declared to have passed the examination in First class with Distinction:

- Should have passed the examination in all the courses of all the four semesters in the student's First Appearance within **Three** years, which includes authorized break of study of one year. Withdrawal from examination (vide Clause 16) will not be considered as an appearance.
- Should have secured a CGPA of not less than 8.50
- Should NOT have been prevented from writing end semester examination due to lack of attendance in any of the courses.

### 15.2.2 First Class:

A student who satisfies the following conditions shall be declared to have passed the examination in **First class**:

- Should have passed the examination in all the courses of all four semesters **within Three years**, which includes one year of authorized break of study (if availed) or prevention from writing the End Semester Examination due to lack of attendance (if applicable).
- Should have secured a CGPA of not less than **7.00**

### 15.2.3 Second Class:

All other students (not covered in clauses 15.2.1 and 15.2.2) who qualify for the award of the degree (vide Clause 15.1) shall be declared to have passed the examination in **Second Class**.

- 15.2.4. A student who is absent in End Semester Examination in a course / project work after having registered for the same shall be considered to have appeared in that examination (except approved withdrawal from End Semester Examinations as per clause 16) for the purpose of classification.

## 16. PROVISION FOR WITHDRAWAL FROM EXAMINATION:

- 16.1 A student may, for valid reasons, (medically unfit / unexpected family situations / sports approved by HOD) be granted permission to withdraw from appearing for the End Semester Examination in any course or courses in **ANY ONE** of the semester examinations during the entire duration of the degree programme. The application shall be sent to Dean, Academic Courses through HOD with required documents.
- 16.2 Withdrawal application shall be valid only if the student is otherwise eligible to write the examination (Clause 8) and if it is made within TEN working days before the commencement of the End Semester Examination in that course or courses and also recommended by the Head of the Department.
- 16.3 Notwithstanding the requirement of mandatory TEN working days notice, applications for withdrawal for special cases under extraordinary conditions will be considered on the merit of the case.
- 16.4 Withdrawal shall not be considered as an appearance for deciding the eligibility of a student for First Class with Distinction.
- 16.5 Withdrawal is permitted for the End Semester Examinations in the final semester only if the


period of study of the student concerned does not exceed 3 years as per clause 15.2.1.

## 17. BREAK OF STUDY FROM A PROGRAMME

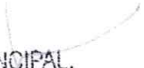
- 17.1 A student is permitted to go on break of study for a maximum period of one year either as two breaks of one semester each or a single break of one year.
- The student applies for break of study, the student shall apply to the Dean for Academic Courses in advance, in any case, not later than the last date of the first assessment period. The application duly filled by the student shall be submitted through the Head of the Department. In the case of short term employment/ training/ internship, the application for break of study shall be approved and forwarded by the Departmental Consultative Committee to the Dean for Academic Courses.
  - The students permitted to rejoin the programme after break of study / prevention due to lack of attendance, shall be governed by the Curriculum and Regulations in force at the time of rejoining. The students rejoining in new Regulations shall apply to the Dean for Academic Courses in the prescribed format through Head of the Department at the beginning of the readmitted semester itself for prescribing additional/equivalent courses, if any, from any semester of the regulations in-force, so as to bridge the curriculum in-force and the old curriculum.
- 17.2 The total period for completion of the programme reckoned from, the commencement of the first semester to which the student was admitted shall not exceed the maximum period specified in clause 6.1 irrespective of the period of break of study in order that the student may be eligible for the award of the degree (vide clause 15).
- 17.3 In case there is any period of break of study more than the permitted duration of break of study, the student shall be permitted to continue the programme only if the approval is obtained from the Dean for Academic Courses through the concerned HOD before the end of the semester in which the student has taken break of study.
- 17.4 If a student has not reported to the department for a period of two consecutive semesters without any intimation, the name of the student shall be deleted permanently from the college enrollment. Such students are not entitled to seek readmission under any circumstances.
- 17.5 If a student indulges in malpractice in any of the examinations, the student shall be liable for punitive action as prescribed by the College from time to time.

## 18. REVISION OF REGULATIONS, CURRICULUM AND SYLLABI

The College may from time to time revise, amend or change the Regulations, Curriculum, Syllabus and Scheme of examinations through the Academic Council with the approval of the Chairman of Academic council.

  
**CONTROLLER OF EXAMINATIONS**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM - 637 408. NAMAKKAL DIST.,**



  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU.

  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU.



**MUTHAYAMMAL ENGINEERING COLLEGE, RASIPURAM – 637 408**

**(Autonomous)**

**REGULATIONS 2016**

**CHOICE BASED CREDIT SYSTEM**

**MBA DEGREE PROGRAMME**

**(For the batches of candidates admitted in 2016 – 2017 and subsequently)**

**1. PRELIMINARY DEFINITIONS AND NOMENCLATURE**

In this Regulation, unless the context otherwise specifies:

AY	Academic Year
CIA	Continuous Internal Assessment
CBCS	Choice Based Credit System
FC	Foundation Courses
PE	Professional Elective
PROGRAMME	M.B.A Degree Programme
COURSE	Course is any subject of study that may be classified as Theory, Lab or Project
ESE	End Semester Examination
PC	Professional Core
EEC	Employability Enhancement Course
PG	Post Graduate
UNIVERSITY	Anna University, Chennai, India
COLLEGE	Muthayammal Engineering College, Rasipuram.

**2. PREAMBLE**

Students of today are much different from the students of the past in many ways. They want to be independent and like to make decisions on their own. Employers expect students to have the right attitude with diverse skill sets to work in a team. The present rigid, cohort system of learning doesn't allow the students in selecting the courses of their choice to become a holistic personality.

In this direction MEC is introducing the Choice Based Credit System (CBCS) into its academic curriculum. Wherein the students can register courses of their choice to enable fast, average and slow learners to plan and pace the same in a Semester as may be necessary and register for more/average/less Credits within limits from the prescribed value, based on their learning capacities as observed and alter the pace of learning within the broad framework of academic course and credit requirements. CBCS allows students in deciding their academic plan and permits students to alter it as they progress in time.

CBCS offers flexibility for students to build their own curriculum in addition to the enhancement of their skill in planning. A Faculty Adviser facilitates a student in identifying the courses based on programme requirement, course prerequisites, student's ability and interest in various academic disciplines.

**3. ADMISSION PROCEDURE**

Students for admission to the first semester of the Four semester MBA Degree Programme shall be admitted as per the regulations of Department of Technical Education, Government of Tamil Nadu and Anna University, Chennai.

**4. PROGRAMME OFFERED**

A student may be offered admission to the Post graduate programme in Business Administration approved by the University and offered at Muthayammal Engineering College, Rasipuram.

**5. STRUCTURE OF THE PROGRAMMES**

**5.1 Credit Assignment**

Each course is assigned certain number of credits based on the following:

Contact period per week	Credits
1 Lecture Period	1
2 Tutorial Periods	1
2 Practical Periods (Laboratory / tutorial / Project Work / etc.)	1

The Contact Periods per week for Tutorials and Practical can only be in multiples of two.

### 5.2 Categorization of Courses

MBA Programme will have a curriculum with syllabi consisting of theory and practical courses that shall be categorized as follows:

- i. **Foundation Courses (FC)** may include Mathematics or other basic courses
- ii. **Professional Core (PC)** courses include the core courses relevant to the chosen specialization.
- iii. **Professional Elective (PE)** courses include the elective courses relevant to the chosen specialization.
- iv. **Employability Enhancement Courses (EEC)** include Project Work and Internship, Seminar, Professional Practices, Case Study and Industrial / Practical Training.

S. No.	Category	Range of Total Credits (%)		Suggested Breakdown of Credits (for Total=94)
		Min	Max	
1	Foundation Courses (FC)	20	25	23
2	Professional Core (PC)	35	45	35
3	Professional Electives (PE)	20	25	21
4	Employability Enhancement Courses (EEC)	15	20	15
<b>Total Credits</b>				<b>94</b>

### 5.3 Number of Courses per Semester

Curriculum of a semester shall normally have a blend of 5 to 8 courses including Theory /Lab /project work courses. Each course may have credits assigned as per clause 5.1.

### 5.4 Industrial Training / Internship

**5.4.1** The students may undergo Industrial training for a period as specified in the curriculum during summer / winter vacation. In this case the training has to be undergone continuously for the entire period.

The students may undergo Internship at Research organization / University (after due approval from the Department Consultative Committee) for the period prescribed in the

curriculum during summer / winter vacation, in lieu of Industrial training.

- 5.4.2 If Industrial Training / Internship is not prescribed in the curriculum, the student may undergo Industrial Training / Internship optionally and the credits earned will be indicated in the Grade Sheet. If the student earns three credits in Industrial Training / Internship, the student may drop one Professional Elective. In such cases Industrial Training / Internship needs to be undergone continuously from one organization only. However, if the number of credits earned is 1 or 2, these credits shall not be considered for classification of the degree. The student is only allowed to undergo a maximum of 6 weeks Industrial Training / Internship during the entire duration of study.

DURATION OF TRAINING / INTERNSHIP	CREDITS
2 Weeks	1
4 Weeks	2
6 Weeks	3

### 5.5 Self Study Courses

- 5.5.1 Students may be permitted to credit a maximum of four Self Study course with the approval of Departmental Consultative Committee.
- 5.5.2 The student can opt for four Self Study course provided the student does not have current arrears and maintains a CGPA of 8.5 and above.
- 5.5.3 The student can opt for two Self Study course provided the student does not have current arrears and maintains a CGPA of 8.0 to 8.5.
- The Department may offer self study courses. The purpose of the course is to permit the student to study a course / a topic of the student's choice. The students shall study on their own under the guidance of a faculty member. No formal lectures need be delivered. The syllabus of the course and mode of assessments shall be approved by the Departmental Consultative Committee and forwarded to the Dean for Academic Courses for the formal approval of the course by the academic bodies; the Director shall be responsible for the periodic monitoring and evaluation of the course before the commencement of the semester.
- 5.5.4 The self study course can be considered instead of one elective course. If a student opts for more than one self study course (vide clause 5.5.3 and 5.5.4) he/she can substitute more number of electives.

### 5.6 Medium of Instruction

The medium of instruction is English for all courses, examination and project / thesis / dissertation reports.

## 6. DURATION OF THE PROGRAMMES

- 6.1 A student is normally expected to complete the MBA Programme in 2 years (4 Semesters) but in any case not more than 4 years (8 Semesters).
- 6.2 Each semester shall normally consist of 90 teaching days (including examination days). The Director shall ensure that every teacher imparts instruction as per the number of periods specified in the syllabus covering the full content of the syllabus for the course being taught.
- 6.3 The total duration for completion of the programme reckoned from the commencement of the first semester to which the student was admitted shall not exceed the maximum duration specified in clause 6.1 irrespective of the period of break of study (vide clause 17) or prevention (vide clause 8.4) in order that the student may be eligible for the award of the degree (vide clause 15).

## 7. COURSE ENROLLMENT AND REGISTRATION

- 7.1 Each student, shall be assigned to a Faculty Advisor (vide clause 9) who shall advise and counsel the student about the details of the academic programme and the choice of courses considering the student's academic background and career objectives.
- 7.2 Depending on academic and non academic resources available to each programme, courses offered may vary. Students will get a chance to make their own plan of study by changing the

- pace with which they study (fast/ normal/slow) and to opt for a faculty member of their choice.
- 7.3 The number of credits registered for during a semester should not be less than 20 credits and should not exceed 30 credits (Normally it is 24 credits)
- 7.4 Every student shall enroll for the course of the succeeding semester in the current semester. However, the student shall confirm the enrollment by registering for the courses within the first five working days after the commencement of the concerned semester.
- 7.5 No course shall be offered by a Department unless a minimum of 20 students register for that course.
- 7.6 After registering for a course, a student shall attend the classes, satisfy the attendance requirements, earn Continuous Assessment marks and appear for the End Semester Examinations.
- 7.6.1 Each student on admission shall register for **all the courses prescribed in the curriculum in the student's first Semester of study**. The enrollment for all the courses of the Semester II to IV will commence 10 working days prior to the last working day of the preceding semester. The student shall confirm the enrollment by registering for the courses within the first five working days after the commencement of the Semester II to IV. However, the student is allowed to register for courses for which the student has been stopped due to shortage of attendance.
- 7.6.2 The student shall enroll for the courses with the guidance of the student's Faculty Advisor. If the student wishes, the student may drop or add courses (vide clause 7.7) within **five** working days after the commencement of the concerned semester and complete the registration process duly authorized by the Faculty Advisor. The student is allowed to register for courses for which the student has not enrolled, if these are the courses in which the student has failed.
- 7.7 Flexibility to Add or Drop courses
- 7.7.1 From the II to IV semesters, the student has the option of registering for additional courses or dropping existing courses. Total number of credits of such courses cannot exceed seven. However the maximum number of credits the student can register in a particular semester cannot exceed 30 credits
- 7.7.2 A student has to earn the total number of credits specified in the curriculum of the respective Programme of study in order to be eligible to obtain the degree. However, if the student wishes, then the student is permitted to earn more than the total number of credits prescribed in the curriculum of the student's programme.
- 7.7.3 The student shall register for the project work in the III/IV semester only.
- 7.8 Reappearance Registration
- 7.8.1 If a student fails in a course, the student shall take it as an arrear. The student can retain the already earned Continuous Assessment marks for two subsequent appearances only and thereafter he/she will solely be assessed by the End Semester Examination of that Course.
- 7.8.2 If the theory course, in which the student has failed, is a professional elective, the student may register for the same or any other professional elective course respectively in the subsequent semesters.
- 7.8.3 The student who fails in any Laboratory Course shall also take it as arrear.
- 7.8.4 If a student is prevented from writing End Semester Examination of a course due to lack of attendance, the student has to register for that course again, when offered next, attend the classes and fulfill the attendance requirements as per clause 8. If the course, in which the student has lack of attendance, is a Professional Elective, the student may register for the same or any other Professional Elective course in the subsequent semesters.

## 8. REQUIREMENTS FOR APPEARING FOR THE END SEMESTER EXAMINATION OF A COURSE

A student who has fulfilled the following conditions (vide clause 8.1 and 8.2) shall be deemed to have satisfied the attendance requirements for appearing for End Semester Examination of a particular course.

- 8.1 Ideally every student is expected to attend all periods and earn 100% attendance. However, the student shall secure not less than 80% attendance course wise taking into account the

number of periods required for that course as specified in the curriculum.

- 8.2** If a student secures attendance between 70% and less than 80% in any course in the current semester due to medical reasons (hospitalization / accident / specific illness) or due to participation in the College / University / State / National / International level Sports events with prior permission from the Director concerned, the student shall be given exemption from the prescribed attendance requirement and the student shall be permitted to appear for the End Semester Examination of that course. In all such cases, the students should submit the required documents on joining after the absence to the Director through the Faculty Advisor.
- 8.3** A student shall normally be permitted to appear for End Semester Examination of the course if the student has satisfied the attendance requirements (vide Clause 8.1 and 8.2) and has registered for examination in those courses of that semester by paying the prescribed fee.
- 8.4** Students who do not satisfy clause 8.1 and 8.2 and who secure **less than 70%** attendance in a course will not be permitted to write the End Semester Examination of that course. The student has to register and repeat this course in a subsequent semester when it is offered next (vide clause 7.8.4).
- 8.5** A student who has already appeared for a course in a semester and passed the examination is not entitled to reappear in the same course for improvement of letter grades / marks.

## **9. FACULTY ADVISOR**

To help the students in planning their courses of study and for general advice on the academic programme, the Director of the students will attach a certain number of students to a teacher of the Department who shall function as Faculty Advisor for those students throughout their period of study. The Faculty Advisor shall advise the students in registering of courses, authorize the process, monitor their attendance and progress and counsel them periodically. If necessary, the Faculty Advisor may also discuss with or inform the parents about the progress / performance of the students concerned.

The responsibilities for the faculty advisor shall be:

- To inform the students about the various facilities and activities available to enhance the student's curricular activities.
- To guide student enrollment and registration of the courses.
- To authorize the final registration of the courses at the beginning of each semester.
- To monitor the academic and general performance of the students including attendance and to counsel them accordingly.

## **10. COURSE COMMITTEES**

### **10.1 COMMON COURSE COMMITTEE**

A theory course handled by more than one teacher shall have a "Common Course Committee" comprising of all teachers teaching that course and some students who have registered for that course. There shall be two student representatives from each batch of that course. One of the teachers shall be nominated as Course Coordinator by the Director.

The first meeting of the Common Course Committee shall be held within fifteen days from the date of commencement of the semester. The nature and weightage of the continuous assessments shall be decided in the first meeting, within the framework of the Regulations. Two or three subsequent meetings in a semester may be held at suitable intervals. During these meetings, the student members shall meaningfully interact and express their opinions and suggestions of all the students to improve the effectiveness of the teaching-learning process. It is the responsibility of the student representatives to convey the proceedings of these meetings to the whole batch.

In addition the "Common Course Committee" (without the student representatives) shall meet to ensure uniform evaluation of continuous assessments after arriving at a common scheme of evaluation for the assessments (vide clause 11).

Wherever feasible, the common course committee (without the student representatives) shall prepare a common question paper for the continuous assessment tests also. The question paper for the End Semester Examination is common and shall be set by the Course Coordinator in consultation with all the teachers.

## 10.2 MULTIPLE COURSES COMMITTEE

If a programme has in a semester, course(s) handled by a single teacher, there will be a "Multiple Courses Committee" comprising of all the above teachers and two student representatives from each course. One of the above teachers, nominated by the Director shall coordinate the activities of this committee. The function of this committee is similar to that of the common course committee, which is as follows:

The first meeting of the Multiple Courses Committee shall be held within fifteen days from the date of commencement of the semester. The nature and weightage of the continuous assessments shall be decided in the first meeting, within the framework of the Regulations. Two or three subsequent meetings in a semester may be held at suitable intervals. During these meetings, the student members shall meaningfully interact and express their opinions and suggestions of all the students to improve the effectiveness of the teaching-learning process. It is the responsibility of the student representatives to convey the proceedings of these meetings to all the students.

## 10.3 OVERALL MONITORING COMMITTEE

**10.3.1** In addition, there shall be an overall monitoring committee for each semester of a programme which comprises of (i) the Course Coordinators / Course teachers (as applicable), (ii) the Faculty-in-charge of the programme and (iii) the Head of Department. This overall monitoring committee shall meet periodically to discuss academic related matters, progress and status of the students of the semester concerned.

**10.3.2** The overall monitoring committee can invite the Faculty Advisors or students for any of the committee meetings if necessary.

## 11. ASSESSMENT PROCEDURES FOR AWARDING MARKS

MBA Programme consists of Theory Courses, Laboratory Courses and Employability Enhancement Courses. Appearance in End Semester Examination is mandatory for all courses including Theory, Laboratory and Project work.

Performance in each course of study shall be evaluated based on (i) Continuous Assessments throughout the semester and (ii) End Semester Examination at the end of the semester. For Theory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks. For Laboratory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 75 and the End Semester Examination carries 25 marks. The Continuous Assessment is 60 marks for the Project Work, and project report evaluation and viva-voce examination carries 40 marks. All other courses included under Employability Enhancement Courses are evaluated by Continuous Assessments only. Each course shall be evaluated for a maximum of 100 marks as shown below:

S.No	Category of course	Continuous Assessments	End Semester Examinations
.	Theory Courses	50 Marks	50 Marks
..	Laboratory Courses	75 Marks	25 Marks
..	Project Work	60 Marks	40 Marks
..	All other EEC Courses	100 Marks	-

Every teacher is required to maintain an 'ATTENDANCE AND ASSESSMENT RECORD' for every semester which consists of attendance marked in each theory / Laboratory/EEC class, the assessment marks and the record of class work (topics covered), separately for each course handled by the teacher. This should be submitted to the Director periodically (at least three times in a semester) for checking the syllabus coverage and the records of assessment marks and attendance. The Director will affix his/her signature and date after due verification. At the end of the semester, the record should be verified by the Director who shall keep this document in safe custody (for four years). The records of attendance and assessment of both current and previous semesters should be available for inspection.

### 11.1 ASSESSMENT FOR THEORY COURSES

For Theory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks.

Continuous Assessment comprises of three Continuous Internal Assessment (CIA) test, conducted by the course instructor / coordinator / department. The total marks obtained in the three CIA tests put together shall be reduced to 30 marks, assessment of assignments/ quiz exams shall be reduced to 10 marks and rounded to the nearest integer and seminars/case study shall be reduced to 10 marks. A minimum of two CIA tests would be conducted in a day and a CIA test would be of two hours durations each. Students will not have regular classes on the scheduled day of these tests. In case a student misses the CIA test due to medical reasons (hospitalization / accident / specific illness) or due to participation in the College / University / State / National / International level Sports events with prior permission from the Director and approval from the Dean of Academic courses, a **Reassessment** may be given at the end of the semester.

The End Semester Examination for theory courses will be of three hours duration. End Semester Examination is mandatory requirement for passing the course with End Semester Examination component in Assessment

### 11.2 ASSESSMENT FOR LABORATORY COURSES

For Laboratory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks.

Every laboratory exercise / experiment shall be evaluated based on the student performance during the laboratory class and the student's records maintained. The total marks for all the laboratory exercises shall be reduced to 25 marks. There shall be at least two viva voce tests/ any other assessment. The total marks in these assessments shall be reduced to 20 marks and the maintenance of record shall be assessed for five marks. The End Semester Examinations for Laboratory courses will be of the same duration as that of the regular lab course.

### 11.3 ASSESSMENT FOR PROJECT WORK

The Project work shall be evaluated for a maximum of 100 marks of which 50 marks will be through internal assessment. There shall be three reviews for the final semester Project work of M.B.A to be conducted separately with 50 marks for Internals and 50 marks for Externals. The marks are to be distributed as detailed below.

Continuous Assessment 50 Marks				End Semester Examination 50 Marks			
Review I (25 Marks)		Review II (25 Marks)		Report Evaluation (25 Marks)		Viva – Voce (25 Marks)	
Review Committee (excluding guide)	Gui de	Review Committee (excluding guide)	Gui de	External Examiner	Internal Examiner	External Examiner	Internal Examiner
15	10	15	10	15	10	15	10

11.4.1 If the project report is not submitted on or before the specified deadline then the student(s) is deemed to have failed in the Project Work. The failed student(s) shall register for the same in the subsequent semester and repeat the project work again.

11.4.2 There shall be two assessments (each 100 marks) during the semester by a review committee. The student shall make presentation on the progress made before the committee. The Director shall constitute the review committee consisting of supervisor, project coordinator and another faculty member from the Department for each branch of study. The total marks obtained in the three assessments shall be reduced to 50 marks and rounded to the nearest integer.

11.4.3 The Project Report prepared according to approved guidelines as given by Dean, Academic Courses and duly signed by the supervisor(s), Project Co-ordinator shall be submitted to the Director.

**11.4.4** The evaluation of the Project work and a Viva-Voce Examination shall be carried out by a team consisting of Internal Examiner and External Examiner. The panel of external examiners shall be nominated by Director.

**11.4.5** If a student fails to submit the project report on or before the specified deadline, student is deemed to have failed in the Project Work and shall re-enroll for the same in a subsequent semester.

**11.5 ASSESSMENT FOR SEMINAR / PROFESSIONAL PRACTICES / CASE STUDY**

The Seminar / Case study shall carry 100 marks and shall be evaluated through Continuous Assessment only. Every student is expected to present a minimum of 2 seminars per semester before the evaluation committee and for each seminar, marks can be equally apportioned. The three member committee appointed by Director will evaluate the seminar and at the end of the semester the marks can be consolidated and taken as the final mark. The evaluation shall be based on the seminar paper / report (40%), presentation (40%) and response to the questions asked during presentation (20%).

**11.6 ASSESSMENT FOR INDUSTRIAL / PRACTICAL TRAINING / INTERNSHIP / SUMMER PROJECT**

**11.6.1** The Industrial / Practical Training shall carry 100 marks and shall be evaluated through Continuous Assessment only. At the end of Industrial / Practical training / internship / Summer Project, the student shall submit a brief report on the training undergone and a certificate from the organization concerned. The evaluation will be made based on this report and a Viva-Voce Examination, conducted internally by a three member Departmental Committee constituted by the Director. Certificates (issued by the Organization) submitted by the student shall be attached to the mark list and sent to Controller of Examinations by the Director.

**11.7 ASSESSMENT FOR SELF STUDY COURSE**

The Faculty member approved by the Director shall be responsible for periodic monitoring and evaluation of the course. The course shall be evaluated through Continuous Assessment (as decided by the Departmental Consultative Committee) and End Semester Examination. The evaluation methodology shall be the same as that of a theory course. (vide clause 11.1) A committee consisting of the Director, the Faculty Member and another Senior Faculty member nominated by the Director shall assign the grades to the students based on their performance.

**12. PASSING REQUIREMENTS**

**12.1** The Passing requirement for a student in a course is that the student should have 50% marks in the End Semester Examination and should have 50% of the total marks by putting both the Continuous Assessment and End Semester Examination marks together.

**12.1.1** If a student fails in a professional elective, the student may be permitted to register for the same course or opt for new registration to any other professional elective in the subsequent semesters. Registering for a new course will require fulfillment of attendance vide clause 8.

**12.2** The passing requirement for the courses which are assessed only through Continuous Assessment (EEC courses except project work), shall be determined based on the marks obtained in Continuous Assessment tests.

**12.3** A student can apply for revaluation of the student's semester examination answer paper in a theory course, within two weeks from the declaration of results, on payment of a prescribed fee along with prescribed application to the Controller of Examination (CoE) through the Head of Departments. The CoE will arrange for the revaluation and the results will be intimated to the student concerned through the Director. Revaluation is not permitted for laboratory course and project work.

**13 AWARD OF LETTER GRADES**

**13.1.** The performance of a student will be reported using letter grades, each carrying certain points as detailed below:

Letter Grade	Range of Marks	Grade Points
S (Outstanding)	91 - 100	10
A (Excellent)	81 - 90	9
B (Very Good)	71 - 80	8
C (Good)	61 - 70	7
D (Above average)	50 - 60	6
U (Fail)	-	0
U* (Absent)	-	0
SA (Shortage of Attendance)	-	0

*Note: 'U' denotes fail for that particular course. U\* denotes absent for that particular course. 'SA' denotes shortage of attendance (as per Clause 8) and hence prevented from writing End Semester Examinations.*

#### 14. GPA AND CGPA CALCULATION

14.1 The CoE shall call for a meeting of the passing board after the End Semester Examinations, to pass the results and with the approval of the board will declare the results. After results are declared, Grade Sheets will be issued to each student which will contain the following details:

- the list of courses registered during the semester and the grades scored.
- the Grade Point Average (GPA) for the semester and
- the Cumulative Grade Point Average (CGPA) of all courses registered from first semester onwards.

During each semester, the list of courses registered and the grades scored in each course are used to compute the Grade Point Average (GPA). GPA is the ratio of the sum of the products of the number of credits of courses registered and the grade points corresponding to the grades scored in those courses, taken for all the courses, to the sum of the number of credits of all the courses in the semester.

$$GPA = \frac{\sum_{i=1}^n (C_i \times g_i)}{\sum C_i}$$

Where,  $C_i$  - is the  $C_i$

$g_i$  - is the grade point corresponding to the letter grade obtained for each course

$n$  - is number of all Courses successfully cleared during the particular semester in the case of GPA and during all the semesters in the case of CGPA.

CGPA will be calculated in a similar manner, considering all the courses enrolled from first semester. U, U\* and "SA" grades will be excluded for calculating GPA and CGPA.

14.2 If a student studies more number of electives (PE) than required as per the student's programme curriculum, the courses with higher grades alone will be considered for calculation of CGPA.

#### 15. ELIGIBILITY FOR THE AWARD OF DEGREE

15.1 A student shall be declared to be eligible for the award of the MBA Degree provided the student has

- Successfully gained the required number of total credits as specified in the curriculum corresponding to the student's programme within the stipulated time (vide Clause 5.2).
- Successfully completed the course requirements, appeared for the End Semest Examination and passed all the subjects prescribed in all the four semesters within a maximum period of four years reckoned from the commencement of the first semester to which the candidate was admitted.
- Successfully passed any additional courses prescribed by the Dean, Academic Court whenever readmitted under regulations other than R-2016
- No disciplinary action pending against the student.

## 15.2 CLASSIFICATION OF THE DEGREE AWARDED

### 15.2.1 FIRST CLASS WITH DISTINCTION

A student who satisfies the following conditions shall be declared to have passed the examination in First class with Distinction:

- Should have passed the examination in all the courses of all the four semesters in the student's First Appearance within **Three** years, which includes authorized break of study of one year. Withdrawal from examination (vide Clause 16) will not be considered as an appearance.
- Should have secured a CGPA of not less than 8.50
- Should NOT have been prevented from writing End Semester Examination due to lack of attendance in any of the courses.

### 15.2.2 FIRST CLASS

A student who satisfies the following conditions shall be declared to have passed the examination in **First class**:

- Should have passed the examination in all the courses of all four semesters **within Three years**, which includes one year of authorized break of study (if availed) or prevention from writing the End Semester Examination due to lack of attendance (if applicable).
- Should have secured a CGPA of not less than **7.00**

### 15.2.3 SECOND CLASS

All other students (not covered in clauses 15.2.1 and 15.2.2) who qualify for the award of the degree (vide Clause 15.1) shall be declared to have passed the examination in **Second Class**.

15.2.4. A student who is absent in End Semester Examination in a course / project work after having registered for the same shall be considered to have appeared in that examination (except approved withdrawal from End Semester Examinations as per clause 16) for the purpose of classification.

## 16. PROVISION FOR WITHDRAWAL FROM EXAMINATION

16.1 A student may, for valid reasons, (medically unfit / unexpected family situations / sports approved by DIRECTOR) be granted permission to withdraw from appearing for the End Semester Examination in any course or courses in **ANY ONE** of the semester examinations during the entire duration of the degree programme. The application shall be sent to Dean for Academic Courses through Director with required documents.

16.2 Withdrawal application shall be valid only if the student is otherwise eligible to write the examination (Clause 8) and if it is made within TEN working days before the commencement of the End Semester Examination in that course or courses and also recommended by the Director.

16.3 Notwithstanding the requirement of mandatory TEN working days notice, applications for withdrawal for special cases under extraordinary conditions will be considered on the merit of the case.

16.4 Withdrawal shall not be considered as an appearance for deciding the eligibility of a student for First Class with Distinction.

16.5 Withdrawal is permitted for the End Semester Examinations in the final semester only if the period of study of the student concerned does not exceed 3 years as per clause 15.2.1.

## 17. BREAK OF STUDY FROM A PROGRAMME


17.1 A student is permitted to go on break of study for a maximum period of one year either as two breaks of one semester each or a single break of one year.

- a. The student applies for break of study, the student shall apply to the Dean, Academic Courses in advance, in any case, not later than the last date of the first assessment period. The application duly filled by the student shall be submitted through the Director. In the case of short term employment/ training/ internship, the application for break of study shall be approved and forwarded by the Departmental Consultative Committee to the Dean for Academic Courses.

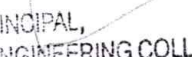
- b. The students permitted to rejoin the programme after break of study / prevention due to lack of attendance, shall be governed by the Regulations and Curriculum in force at the time of rejoining. The students rejoining in new Regulations shall apply to the Dean for Academic Courses in the prescribed format through Director at the beginning of the readmitted semester itself for prescribing additional/equivalent courses, if any, from any semester of the regulations in-force, so as to bridge the curriculum in-force and the old curriculum.
- 17.2 The total period for completion of the programme reckoned from, the commencement of the first semester to which the student was admitted shall not exceed the maximum period specified in clause 6.1 irrespective of the period of break of study in order that the student may be eligible for the award of the degree (vide clause 15).
- 17.3 In case there is any period of break of study more than the permitted duration of break of study, the student shall be permitted to continue the programme only if the approval is obtained from the Dean for Academic Courses through the concerned Director before the end of the semester in which the student has taken break of study.
- 17.4 If a student has not reported to the department for a period of two consecutive semesters without any intimation, the name of the student shall be deleted permanently from the college enrollment. Such students are not entitled to seek readmission under any circumstances.
- 17.5 If a student indulges in malpractice in any of the examinations, the student shall be liable for punitive action as prescribed by the College from time to time.

**18. REVISION OF REGULATIONS, CURRICULUM AND SYLLABI**

The College may from time to time revise, amend or change the Regulations, Curriculum, Syllabus and Scheme of examinations through the Academic Council with the approval of the Chairman of Academic council.

  
CONTROLLER OF EXAMINATIONS  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM - 637 408. NAMAKKAL DIST.



  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU.

  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU



**MUTHAYAMMAL ENGINEERING COLLEGE, RASIPURAM – 637 408**

**(Autonomous)**

**REGULATIONS 2019**

**CHOICE BASED CREDIT SYSTEM**

**MBA DEGREE PROGRAMME**

**(For the batches of candidates admitted in 2019 – 2020 and subsequently)**

**1. PRELIMINARY DEFINITIONS AND NOMENCLATURE**

In this Regulation, unless the context otherwise specifies:

AY	Academic Year
CIA	Continuous Internal Assessment
CBCS	Choice Based Credit System
FC	Foundation Courses
PE	Professional Elective
PROGRAMME	M.B.A Degree Programme
COURSE	Course is any subject of study that may be classified as Theory, Lab or Project
ESE	End Semester Examination
PC	Professional Core
EEC	Employability Enhancement Course
PG	Post Graduate
UNIVERSITY	Anna University, Chennai, India
COLLEGE	Muthayammal Engineering College, Rasipuram.

**2. PREAMBLE**

Students of today are much different from the students of the past in many ways. They want to be independent and like to make decisions on their own. Employers expect students to have the right attitude with diverse skill sets to work in a team. The present rigid, cohort system of learning doesn't allow the students in selecting the courses of their choice to become a holistic personality.

In this direction MEC is introducing the Choice Based Credit System (CBCS) into its academic curriculum. Wherein the students can register courses of their choice to enable fast, average and slow learners to plan and pace the same in a Semester as may be necessary and register for more/average/less Credits within limits from the prescribed value, based on their learning capacities as observed and alter the pace of learning within the broad framework of academic course and credit requirements. CBCS allows students in deciding their academic plan and permits students to alter it as they progress in time.

CBCS offers flexibility for students to build their own curriculum in addition to the enhancement of their skill in planning. A Faculty Adviser facilitates a student in identifying the courses based on programme requirement, course prerequisites, student's ability and interest in various academic disciplines.

**3. ADMISSION PROCEDURE**

Students for admission to the first semester of the Four semester MBA Degree Programme shall be admitted as per the regulations of Department of Technical Education, Government of Tamil Nadu and Anna University, Chennai.

**4. PROGRAMME OFFERED**

A student may be offered admission to the Post graduate programme in Business Administration approved by the University and offered at Muthayammal Engineering College, Rasipuram.

**5. STRUCTURE OF THE PROGRAMMES**

**5.1 Credit Assignment**

Each course is assigned certain number of credits based on the following:

✓  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

Contact period per week	Credits
1 Lecture Period	1
2 Tutorial Periods	1
2 Practical Periods (Laboratory / tutorial / Project Work / etc.)	1

The Contact Periods per week for Tutorials and Practical can only be in multiples of two.

### 5.2 Categorization of Courses

MBA Programme will have a curriculum with syllabi consisting of theory and practical courses that shall be categorized as follows:

- i. **Foundation Courses (FC)** may include Mathematics or other basic courses
- ii. **Professional Core (PC)** courses include the core courses relevant to the chosen specialization.
- iii. **Professional Elective (PE)** courses include the elective courses relevant to the chosen specialization.
- iv. **Employability Enhancement Courses (EEC)** include Project Work and Internship, Seminar, Professional Practices, Case Study and Industrial / Practical Training.

S. No.	Category	Range of Total Credits (%)		Suggested Breakdown of Credits ( for Total=94)
		Min	Max	
1	Foundation Courses (FC)	20	25	23
2	Professional Core (PC)	35	45	35
3	Professional Electives (PE)	20	25	21
4	Employability Enhancement Courses (EEC)	15	20	15
<b>Total Credits</b>				<b>94</b>

### 5.3 Number of Courses per Semester

Curriculum of a semester shall normally have a blend of 5 to 8 courses including Theory /Lab /project work courses. Each course may have credits assigned as per clause 5.1.

### 5.4 Industrial Training / Internship

**5.4.1** The students may undergo Industrial training for a period as specified in the curriculum during summer / winter vacation. In this case the training has to be undergone continuously for the entire period.

The students may undergo Internship at Research organization / University (after due approval from the Department Consultative Committee) for the period prescribed in the

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU.**

curriculum during summer / winter vacation, in lieu of Industrial training.

- 5.4.2** If Industrial Training / Internship is not prescribed in the curriculum, the student may undergo Industrial Training / Internship optionally and the credits earned will be indicated in the Grade Sheet. If the student earns three credits in Industrial Training / Internship, the student may drop one Professional Elective. In such cases Industrial Training / Internship needs to be undergone continuously from one organization only. However, if the number of credits earned is 1 or 2, these credits shall not be considered for classification of the degree. The student is only allowed to undergo a maximum of 6 weeks Industrial Training / Internship during the entire duration of study.

DURATION OF TRAINING / INTERNSHIP	CREDITS
2 Weeks	1
4 Weeks	2
6 Weeks	3

### **5.5 Self Study Courses**

- 5.5.1** Students may be permitted to credit a maximum of four Self Study course with the approval of Departmental Consultative Committee.

- 5.5.2** The student can opt for four Self Study course provided the student does not have current arrears and maintains a CGPA of 8.5 and above.

- 5.5.3** The student can opt for two Self Study course provided the student does not have current arrears and maintains a CGPA of 8.0 to 8.5.

The Department may offer self study courses. The purpose of the course is to permit the student to study a course / a topic of the student's choice. The students shall study on their own under the guidance of a faculty member. No formal lectures need be delivered. The syllabus of the course and mode of assessments shall be approved by the Departmental Consultative Committee and forwarded to the Dean for Academic Courses for the formal approval of the course by the academic bodies; the Director shall be responsible for the periodic monitoring and evaluation of the course before the commencement of the semester.

- 5.5.4** The self study course can be considered instead of one elective course. If a student opts for more than one self study course (vide clause 5.5.3 and 5.5.4) he/she can substitute more number of electives.

### **5.6 Medium of Instruction**

The medium of instruction is English for all courses, examination and project / thesis / dissertation reports.

## **6. DURATION OF THE PROGRAMMES**

- 6.1** A student is normally expected to complete the MBA Programme in 2 years (4 Semesters) but in any case not more than 4 years (8 Semesters).

- 6.2** Each semester shall normally consist of 90 teaching days (including examination days). The Director shall ensure that every teacher imparts instruction as per the number of periods specified in the syllabus covering the full content of the syllabus for the course being taught.

- 6.3** The total duration for completion of the programme reckoned from the commencement of the first semester to which the student was admitted shall not exceed the maximum duration specified in clause 6.1 irrespective of the period of break of study (vide clause 17) or prevention (vide clause 8.4) in order that the student may be eligible for the award of the degree (vide clause 15).

## **7. COURSE ENROLLMENT AND REGISTRATION**

- 7.1** Each student, shall be assigned to a Faculty Advisor (vide clause 9) who shall advise and counsel the student about the details of the academic programme and the choice of courses considering the student's academic background and career objectives.

- 7.2.** Depending on academic and non academic resources available to each programme, courses offered may vary. Students will get a chance to make their own plan of study by changing the

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

pace with which they study (fast/ normal/slow) and to opt for a faculty member of their choice.

- 7.3 The number of credits registered for during a semester should not be less than 20 credits and should not exceed 30 credits (Normally it is 24 credits)
- 7.4 Every student shall enroll for the course of the succeeding semester in the current semester. However, the student shall confirm the enrollment by registering for the courses within the first five working days after the commencement of the concerned semester.
- 7.5 No course shall be offered by a Department unless a minimum of 20 students register for that course.
- 7.6 After registering for a course, a student shall attend the classes, satisfy the attendance requirements, earn Continuous Assessment marks and appear for the End Semester Examinations.
- 7.6.1 Each student on admission shall register for **all the courses prescribed in the curriculum in the student's first Semester of study**. The enrollment for all the courses of the Semester II to IV will commence 10 working days prior to the last working day of the preceding semester. The student shall confirm the enrollment by registering for the courses within the first five working days after the commencement of the Semester II to IV. However, the student is allowed to register for courses for which the student has been stopped due to shortage of attendance.
- 7.6.2 The student shall enroll for the courses with the guidance of the student's Faculty Advisor. If the student wishes, the student may drop or add courses (vide clause 7.7) within **five** working days after the commencement of the concerned semester and complete the registration process duly authorized by the Faculty Advisor. The student is allowed to register for courses for which the student has not enrolled, if these are the courses in which the student has failed.
- 7.7 Flexibility to Add or Drop courses
- 7.7.1 From the II to IV semesters, the student has the option of registering for additional courses or dropping existing courses. Total number of credits of such courses cannot exceed seven. However the maximum number of credits the student can register in a particular semester cannot exceed 30 credits
- 7.7.2 A student has to earn the total number of credits specified in the curriculum of the respective Programme of study in order to be eligible to obtain the degree. However, if the student wishes, then the student is permitted to earn more than the total number of credits prescribed in the curriculum of the student's programme.
- 7.7.3 The student shall register for the project work in the III/IV semester only.
- 7.8 Reappearance Registration
- 7.8.1 If a student fails in a course, the student shall take it as an arrear. The student can retain the already earned Continuous Assessment marks for two subsequent appearances only and thereafter he/she will solely be assessed by the End Semester Examination of that Course.
- 7.8.2 If the theory course, in which the student has failed, is a professional elective, the student may register for the same or any other professional elective course respectively in the subsequent semesters.
- 7.8.3 The student who fails in any Laboratory Course shall also take it as arrear.
- 7.8.4 If a student is prevented from writing End Semester Examination of a course due to lack of attendance, the student has to register for that course again, when offered next, attend the classes and fulfill the attendance requirements as per clause 8. If the course, in which the student has lack of attendance, is a Professional Elective, the student may register for the same or any other Professional Elective course in the subsequent semesters.

## 8. REQUIREMENTS FOR APPEARING FOR THE END SEMESTER EXAMINATION OF A COURSE

A student who has fulfilled the following conditions (vide clause 8.1 and 8.2) shall be deemed to have satisfied the attendance requirements for appearing for End Semester Examination of a particular course.

- 8.1 Ideally every student is expected to attend all periods and earn 100% attendance. However, the student shall secure not less than 80% attendance course wise taking into account the

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
PASIIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

number of periods required for that course as specified in the curriculum.

- 8.2** If a student secures attendance between 70% and less than 80% in any course in the current semester due to medical reasons (hospitalization / accident / specific illness) or due to participation in the College / University / State / National / International level Sports events with prior permission from the Director concerned, the student shall be given exemption from the prescribed attendance requirement and the student shall be permitted to appear for the End Semester Examination of that course. In all such cases, the students should submit the required documents on joining after the absence to the Director through the Faculty Advisor.
- 8.3** A student shall normally be permitted to appear for End Semester Examination of the course if the student has satisfied the attendance requirements (vide Clause 8.1 and 8.2) and has registered for examination in those courses of that semester by paying the prescribed fee.
- 8.4** Students who do not satisfy clause 8.1 and 8.2 and who secure **less than 70%** attendance in a course will not be permitted to write the End Semester Examination of that course. The student has to register and repeat this course in a subsequent semester when it is offered next (vide clause 7.8.4).
- 8.5** A student who has already appeared for a course in a semester and passed the examination is not entitled to reappear in the same course for improvement of letter grades / marks.

## **9. FACULTY ADVISOR**

To help the students in planning their courses of study and for general advice on the academic programme, the Director of the students will attach a certain number of students to a teacher of the Department who shall function as Faculty Advisor for those students throughout their period of study. The Faculty Advisor shall advise the students in registering of courses, authorize the process, monitor their attendance and progress and counsel them periodically. If necessary, the Faculty Advisor may also discuss with or inform the parents about the progress / performance of the students concerned.

The responsibilities for the faculty advisor shall be:

- To inform the students about the various facilities and activities available to enhance the student's curricular activities.
- To guide student enrollment and registration of the courses.
- To authorize the final registration of the courses at the beginning of each semester.
- To monitor the academic and general performance of the students including attendance and to counsel them accordingly.

## **10. COURSE COMMITTEES**

### **10.1 COMMON COURSE COMMITTEE**

A theory course handled by more than one teacher shall have a "Common Course Committee" comprising of all teachers teaching that course and some students who have registered for that course. There shall be two student representatives from each batch of that course. One of the teachers shall be nominated as Course Coordinator by the Director.

The first meeting of the Common Course Committee shall be held within fifteen days from the date of commencement of the semester. The nature and weightage of the continuous assessments shall be decided in the first meeting, within the framework of the Regulations. Two or three subsequent meetings in a semester may be held at suitable intervals. During these meetings, the student members shall meaningfully interact and express their opinions and suggestions of all the students to improve the effectiveness of the teaching-learning process. It is the responsibility of the student representatives to convey the proceedings of these meetings to the whole batch.

In addition the "Common Course Committee" (without the student representatives) shall meet to ensure uniform evaluation of continuous assessments after arriving at a common scheme of evaluation for the assessments (vide clause 11).

Wherever feasible, the common course committee (without the student representatives) shall prepare a common question paper for the continuous assessment tests also. The question paper for the End Semester Examination is common and shall be set by the Course Coordinator in consultation with all the teachers.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
PASIPURAM-637 408, NAMAkkAL Dist.  
TAMILNADU

## 10.2 MULTIPLE COURSES COMMITTEE

If a programme has in a semester, course(s) handled by a single teacher, there will be a "Multiple Courses Committee" comprising of all the above teachers and two student representatives from each course. One of the above teachers, nominated by the Director shall coordinate the activities of this committee. The function of this committee is similar to that of the common course committee, which is as follows:

The first meeting of the Multiple Courses Committee shall be held within fifteen days from the date of commencement of the semester. The nature and weightage of the continuous assessments shall be decided in the first meeting, within the framework of the Regulations. Two or three subsequent meetings in a semester may be held at suitable intervals. During these meetings, the student members shall meaningfully interact and express their opinions and suggestions of all the students to improve the effectiveness of the teaching-learning process. It is the responsibility of the student representatives to convey the proceedings of these meetings to all the students.

## 10.3 OVERALL MONITORING COMMITTEE

**10.3.1** In addition, there shall be an overall monitoring committee for each semester of a programme which comprises of (i) the Course Coordinators / Course teachers (as applicable), (ii) the Faculty-in-charge of the programme and (iii) the Head of Department. This overall monitoring committee shall meet periodically to discuss academic related matters, progress and status of the students of the semester concerned.

**10.3.2** The overall monitoring committee can invite the Faculty Advisors or students for any of the committee meetings if necessary.

## 11. ASSESSMENT PROCEDURES FOR AWARDING MARKS

MBA Programme consists of Theory Courses, Laboratory Courses and Employability Enhancement Courses. Appearance in End Semester Examination is mandatory for all courses including Theory, Laboratory and Project work.

Performance in each course of study shall be evaluated based on (i) Continuous Assessments throughout the semester and (ii) End Semester Examination at the end of the semester. For Theory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks. For Laboratory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 75 and the End Semester Examination carries 25 marks. The Continuous Assessment is 60 marks for the Project Work, and project report evaluation and viva-voce examination carries 40 marks. All other courses included under Employability Enhancement Courses are evaluated by Continuous Assessments only. Each course shall be evaluated for a maximum of 100 marks as shown below:

S.No	Category of course	Continuous Assessments	End Semester Examinations
.	Theory Courses	50 Marks	50 Marks
..	Laboratory Courses	75 Marks	25 Marks
..	Project Work	60 Marks	40 Marks
..	All other EEC Courses	100 Marks	-

Every teacher is required to maintain an 'ATTENDANCE AND ASSESSMENT RECORD' for every semester which consists of attendance marked in each theory / Laboratory/EEC class, the assessment marks and the record of class work (topics covered), separately for each course handled by the teacher. This should be submitted to the Director periodically (at least three times in a semester) for checking the syllabus coverage and the records of assessment marks and attendance. The Director will affix his/her signature and date after due verification. At the end of the semester, the record should be verified by the Director who shall keep this document in safe custody (for four years). The records of attendance and assessment of both current and previous semesters should be available for inspection.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

### 11.1 ASSESSMENT FOR THEORY COURSES

For Theory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks.

Continuous Assessment comprises of three Continuous Internal Assessment (CIA) test, conducted by the course instructor / coordinator / department. The total marks obtained in the three CIA tests put together shall be reduced to 30 marks, assessment of assignments/quiz exams shall be reduced to 10 marks and rounded to the nearest integer and seminars/case study shall be reduced to 10 marks. A minimum of two CIA tests would be conducted in a day and a CIA test would be of two hours durations each. Students will not have regular classes on the scheduled day of these tests. In case a student misses the CIA test due to medical reasons (hospitalization / accident / specific illness) or due to participation in the College / University / State / National / International level Sports events with prior permission from the Director and approval from the Dean of Academic courses, a **Reassessment** may be given at the end of the semester.

The End Semester Examination for theory courses will be of three hours duration. End Semester Examination is mandatory requirement for passing the course with End Semester Examination component in Assessment

### 11.2 ASSESSMENT FOR LABORATORY COURSES

For Laboratory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks.

Every laboratory exercise / experiment shall be evaluated based on the student performance during the laboratory class and the student's records maintained. The total marks for all the laboratory exercises shall be reduced to 25 marks. There shall be at least two viva voce tests/ any other assessment. The total marks in these assessments shall be reduced to 20 marks and the maintenance of record shall be assessed for five marks. The End Semester Examinations for Laboratory courses will be of the same duration as that of the regular lab course.

### 11.3 ASSESSMENT FOR PROJECT WORK

The Project work shall be evaluated for a maximum of 100 marks of which 50 marks will be through internal assessment. There shall be three reviews for the final semester Project work of M.B.A to be conducted separately with 50 marks for Internals and 50 marks for Externals. The marks are to be distributed as detailed below.

Continuous Assessment 50 Marks				End Semester Examination 50 Marks			
Review I (25 Marks)		Review II (25 Marks)		Report Evaluation (25 Marks)		Viva – Voce (25 Marks)	
Review Committee (excluding guide)	Gui de	Review Committee (excluding guide)	Gui de	External Examiner	Internal Examiner	External Examiner	Internal Examiner
15	10	15	10	15	10	15	10

11.4.1 If the project report is not submitted on or before the specified deadline then the student(s) is deemed to have failed in the Project Work. The failed student(s) shall register for the same in the subsequent semester and repeat the project work again.

11.4.2 There shall be two assessments (each 100 marks) during the semester by a review committee. The student shall make presentation on the progress made before the committee. The Director shall constitute the review committee consisting of supervisor, project coordinator and another faculty member from the Department for each branch of study. The total marks obtained in the three assessments shall be reduced to 50 marks and rounded to the nearest integer.

11.4.3 The Project Report prepared according to approved guidelines as given by Dean, Academic Courses and duly signed by the supervisor(s), Project Co-ordinator shall be submitted to the Director.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
ASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU

**11.4.4** The evaluation of the Project work and a Viva-Voce Examination shall be carried out by a team consisting of Internal Examiner and External Examiner. The panel of external examiners shall be nominated by Director.

**11.4.5** If a student fails to submit the project report on or before the specified deadline, student is deemed to have failed in the Project Work and shall re-enroll for the same in a subsequent semester.

**11.5 ASSESSMENT FOR SEMINAR / PROFESSIONAL PRACTICES / CASE STUDY**

The Seminar / Case study shall carry 100 marks and shall be evaluated through Continuous Assessment only. Every student is expected to present a minimum of 2 seminars per semester before the evaluation committee and for each seminar, marks can be equally apportioned. The three member committee appointed by Director will evaluate the seminar and at the end of the semester the marks can be consolidated and taken as the final mark. The evaluation shall be based on the seminar paper / report (40%), presentation (40%) and response to the questions asked during presentation (20%).

**11.6 ASSESSMENT FOR INDUSTRIAL / PRACTICAL TRAINING / INTERNSHIP / SUMMER PROJECT**

**11.6.1** The Industrial / Practical Training shall carry 100 marks and shall be evaluated through Continuous Assessment only. At the end of Industrial / Practical training / internship / Summer Project, the student shall submit a brief report on the training undergone and a certificate from the organization concerned. The evaluation will be made based on this report and a Viva-Voce Examination, conducted internally by a three member Departmental Committee constituted by the Director. Certificates (issued by the Organization) submitted by the student shall be attached to the mark list and sent to Controller of Examinations by the Director.

**11.7 ASSESSMENT FOR SELF STUDY COURSE**

The Faculty member approved by the Director shall be responsible for periodic monitoring and evaluation of the course. The course shall be evaluated through Continuous Assessment (as decided by the Departmental Consultative Committee) and End Semester Examination. The evaluation methodology shall be the same as that of a theory course. (vide clause 11.1) A committee consisting of the Director, the Faculty Member and another Senior Faculty member nominated by the Director shall assign the grades to the students based on their performance.

**12. PASSING REQUIREMENTS**

**12.1** The Passing requirement for a student in a course is that the student should have 50% marks in the End Semester Examination and should have 50% of the total marks by putting both the Continuous Assessment and End Semester Examination marks together.

**12.1.1** If a student fails in a professional elective, the student may be permitted to register for the same course or opt for new registration to any other professional elective in the subsequent semesters. Registering for a new course will require fulfillment of attendance vide clause 8.

**12.2** The passing requirement for the courses which are assessed only through Continuous Assessment (EEC courses except project work), shall be determined based on the marks obtained in Continuous Assessment tests.

**12.3** A student can apply for revaluation of the student's semester examination answer paper in a theory course, within two weeks from the declaration of results, on payment of a prescribed fee along with prescribed application to the Controller of Examination (CoE) through the Head of Departments. The CoE will arrange for the revaluation and the results will be intimated to the student concerned through the Director. Revaluation is not permitted for laboratory course and project work.

**13 AWARD OF LETTER GRADES**

**13.1.** The performance of a student will be reported using letter grades, each carrying certain points as detailed below:

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU

Letter Grade	Range of Marks	Grade Points
O (Outstanding)	100 - 91	10
A+ (Excellent)	90 - 81	9
A (Very Good)	80 - 71	8
B+ (Good)	70 - 61	7
B (Above average)	60 - 50	6
U (Fail)	-	0
U* (Absent)	-	0
SA (Shortage of Attendance)	-	0

*Note: 'U' denotes fail for that particular course. U\* denotes absent for that particular course. 'SA' denotes shortage of attendance (as per Clause 8) and hence prevented from writing End Semester Examinations.*

#### 14. GPA AND CGPA CALCULATION

14.1 The CoE shall call for a meeting of the passing board after the End Semester Examinations, to pass the results and with the approval of the board will declare the results. After results are declared, Grade Sheets will be issued to each student which will contain the following details:

- the list of courses registered during the semester and the grades scored.
- the Grade Point Average (GPA) for the semester and
- the Cumulative Grade Point Average (CGPA) of all courses registered from first semester onwards.

During each semester, the list of courses registered and the grades scored in each course are used to compute the Grade Point Average (GPA). GPA is the ratio of the sum of the products of the number of credits of courses registered and the grade points corresponding to the grades scored in those courses, taken for all the courses, to the sum of the number of credits of all the courses in the semester.

$$GPA = \frac{\sum_{i=1}^n (C_i \times g_i)}{\sum C_i}$$

Where,  $C_i$  - is the  $C_i$

$g_i$  - is the grade point corresponding to the letter grade obtained for each course

$n$  - is number of all Courses successfully cleared during the particular semester in the case of GPA and during all the semesters in the case of CGPA.

CGPA will be calculated in a similar manner, considering all the courses enrolled from first semester. U, U\* and "SA" grades will be excluded for calculating GPA and CGPA.

14.2 If a student studies more number of electives (PE) than required as per the student's programme curriculum, the courses with higher grades alone will be considered for calculation of CGPA.

#### 15. ELIGIBILITY FOR THE AWARD OF DEGREE

15.1 A student shall be declared to be eligible for the award of the MBA Degree provided the student has

- Successfully gained the required number of total credits as specified in the curricular corresponding to the student's programme within the stipulated time (vide Clause 5.2).
- Successfully completed the course requirements, appeared for the End Semest Examination and passed all the subjects prescribed in all the four semesters within a maximum period of four years reckoned from the commencement of the first semester to which the candidate was admitted.
- Successfully passed any additional courses prescribed by the Dean, Academic Cour: whenever readmitted under regulations other than R-2019
- No disciplinary action pending against the student.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist  
TAMILNADU

## **15.2 CLASSIFICATION OF THE DEGREE AWARDED**

### **15.2.1 FIRST CLASS WITH DISTINCTION**

A student who satisfies the following conditions shall be declared to have passed the examination in First class with Distinction:

- Should have passed the examination in all the courses of all the four semesters in the student's First Appearance within **Three** years, which includes authorized break of study of one year. Withdrawal from examination (vide Clause 16) will not be considered as an appearance.
- Should have secured a CGPA of not less than 8.50
- Should NOT have been prevented from writing End Semester Examination due to lack of attendance in any of the courses.

### **15.2.2 FIRST CLASS**

A student who satisfies the following conditions shall be declared to have passed the examination in **First class**:

- Should have passed the examination in all the courses of all four semesters **within Three years**, which includes one year of authorized break of study (if availed) or prevention from writing the End Semester Examination due to lack of attendance (if applicable).
- Should have secured a CGPA of not less than **7.00**

### **15.2.3 SECOND CLASS**

All other students (not covered in clauses 15.2.1 and 15.2.2) who qualify for the award of the degree (vide Clause 15.1) shall be declared to have passed the examination in **Second Class**.

**15.2.4.** A student who is absent in End Semester Examination in a course / project work after having registered for the same shall be considered to have appeared in that examination (except approved withdrawal from End Semester Examinations as per clause 16) for the purpose of classification.

## **16. PROVISION FOR WITHDRAWAL FROM EXAMINATION**

**16.1** A student may, for valid reasons, (medically unfit / unexpected family situations / sports approved by DIRECTOR) be granted permission to withdraw from appearing for the End Semester Examination in any course or courses in **ANY ONE** of the semester examinations during the entire duration of the degree programme. The application shall be sent to Dean for Academic Courses through Director with required documents.

**16.2** Withdrawal application shall be valid only if the student is otherwise eligible to write the examination (Clause 8) and if it is made within TEN working days before the commencement of the End Semester Examination in that course or courses and also recommended by the Director.

**16.3** Notwithstanding the requirement of mandatory TEN working days notice, applications for withdrawal for special cases under extraordinary conditions will be considered on the merit of the case.

**16.4** Withdrawal shall not be considered as an appearance for deciding the eligibility of a student for First Class with Distinction.

**16.5** Withdrawal is permitted for the End Semester Examinations in the final semester only if the period of study of the student concerned does not exceed 3 years as per clause 15.2.1.

## **17. BREAK OF STUDY FROM A PROGRAMME**

**17.1** A student is permitted to go on break of study for a maximum period of one year either as two breaks of one semester each or a single break of one year.


- a. The student applies for break of study, the student shall apply to the Dean, Academic Courses in advance, in any case, not later than the last date of the first assessment period. The application duly filled by the student shall be submitted through the Director. In the case of short term employment/ training/ internship, the application for break of study shall be approved and forwarded by the Departmental Consultative Committee to the Dean for Academic Courses.

  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
TASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU


- b. The students permitted to rejoin the programme after break of study / prevention due to lack of attendance, shall be governed by the Regulations and Curriculum in force at the time of rejoining. The students rejoining in new Regulations shall apply to the Dean for Academic Courses in the prescribed format through Director at the beginning of the readmitted semester itself for prescribing additional/equivalent courses, if any, from any semester of the regulations in-force, so as to bridge the curriculum in-force and the old curriculum.
- 17.2 The total period for completion of the programme reckoned from, the commencement of the first semester to which the student was admitted shall not exceed the maximum period specified in clause 6.1 irrespective of the period of break of study in order that the student may be eligible for the award of the degree (vide clause 15).
- 17.3 In case there is any period of break of study more than the permitted duration of break of study, the student shall be permitted to continue the programme only if the approval is obtained from the Dean for Academic Courses through the concerned Director before the end of the semester in which the student has taken break of study.
- 17.4 If a student has not reported to the department for a period of two consecutive semesters without any intimation, the name of the student shall be deleted permanently from the college enrollment. Such students are not entitled to seek readmission under any circumstances.
- 17.5 If a student indulges in malpractice in any of the examinations, the student shall be liable for punitive action as prescribed by the College from time to time.

18. **REVISION OF REGULATIONS, CURRICULUM AND SYLLABI**

The College may from time to time revise, amend or change the Regulations, Curriculum, Syllabus and Scheme of examinations through the Academic Council with the approval of the Chairman of Academic council.

  
**CONTROLLER OF EXAMINATIONS**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM - 637 408. NAMAKKAL DIST.**



  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408. NAMAKKAL Dist.**  
**TAMILNADU.**

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408. NAMAKKAL Dist.**  
**TAMILNADU.**



**MUTHAYAMMAL ENGINEERING COLLEGE, RASIPURAM – 637 408**  
**(Autonomous)**  
**REGULATIONS 2019**  
**CHOICE BASED CREDIT SYSTEM**  
**MCA DEGREE PROGRAMME**

**(For the batches of candidates admitted in 2020 – 2021 and subsequently)**

**1. PRELIMINARY DEFINITIONS AND NOMENCLATURE**

In this Regulation, unless the context otherwise specifies:

AY	Academic Year
CIA	Continuous Internal Assessment
CBCS	Choice Based Credit System
FC	Foundation Courses
PE	Professional Elective
PROGRAMME	M.B.A Degree Programme
COURSE	Course is any subject of study that may be classified as Theory, Lab or Project
ESE	End Semester Examination
PC	Professional Core
EEC	Employability Enhancement Course
PG	Post Graduate
UNIVERSITY	Anna University, Chennai, India
COLLEGE	Muthayammal Engineering College, Rasipuram.

**2. PREAMBLE**

Students of today are much different from the students of the past in many ways. They want to be independent and like to make decisions on their own. Employers expect students to have the right attitude with diverse skill sets to work in a team. The present rigid, cohort system of learning doesn't allow the students in selecting the courses of their choice to become a holistic personality.

In this direction MEC is introducing the Choice Based Credit System (CBCS) into its academic curriculum. Wherein the students can register courses of their choice to enable fast, average and slow learners to plan and pace the same in a Semester as may be necessary and register for more/average/less Credits within limits from the prescribed value, based on their learning capacities as observed and alter the pace of learning within the broad framework of academic course and credit requirements. CBCS allows students in deciding their academic plan and permits students to alter it as they progress in time.

CBCS offers flexibility for students to build their own curriculum in addition to the enhancement of their skill in planning. A Faculty Adviser facilitates a student in identifying the courses based on programme requirement, course prerequisites, student's ability and interest in various academic disciplines.

**3. ADMISSION PROCEDURE**

Students for admission to the first semester of the Four semester MCA Degree Programme shall be admitted as per the regulations of Department of Technical Education, Government of Tamil Nadu and Anna University, Chennai.

**4. PROGRAMME OFFERED**

A student may be offered admission to the Post graduate programme in Business Administration approved by the University and offered at Muthayammal Engineering College, Rasipuram.

**5. STRUCTURE OF THE PROGRAMMES**

**5.1 Credit Assignment**

Each course is assigned certain number of credits based on the following:

**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU.**

Contact period per week	Credits
1 Lecture Period	1
2 Tutorial Periods	1
2 Practical Periods (Laboratory / tutorial / Project Work / etc.)	1

The Contact Periods per week for Tutorials and Practical can only be in multiples of two.

### 5.2 Categorization of Courses

MCA Programme will have a curriculum with syllabi consisting of theory and practical courses that shall be categorized as follows:

- i. **Foundation Courses (FC)** may include Mathematics or other basic courses
- ii. **Professional Core (PC)** courses include the core courses relevant to the chosen specialization.
- iii. **Professional Elective (PE)** courses include the elective courses relevant to 1 chosen specialization.
- iv. **Employability Enhancement Courses (EEC)** include Project Work and Internship, Seminar, Professional Practices, Case Study and Industrial / Practical Training.

S. No.	Category	Range of Total Credits (%)		Suggested Breakdown of Credits (for Total=94)
		Min	Max	
1	Foundation Courses (FC)	20	25	23
2	Professional Core (PC)	35	45	35
3	Professional Electives (PE)	20	25	21
4	Employability Enhancement Courses (EEC)	15	20	15
<b>Total Credits</b>				<b>94</b>


### 5.3 Number of Courses per Semester

Curriculum of a semester shall normally have a blend of 5 to 8 courses including Theory /Lab /project work courses. Each course may have credits assigned as per clause 5.1.

### 5.4 Industrial Training / Internship

**5.4.1** The students may undergo Industrial training for a period as specified in the curriculum during summer / winter vacation. In this case the training has to be undergone continuously for the entire period.

The students may undergo Internship at Research organization / University (after due approval from the Department Consultative Committee) for the period prescribed in the

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU**

curriculum during summer / winter vacation, in lieu of Industrial training.

- 5.4.2 If Industrial Training / Internship is not prescribed in the curriculum, the student may undergo Industrial Training / Internship optionally and the credits earned will be indicated in the Grade Sheet. If the student earns three credits in Industrial Training / Internship, the student may drop one Professional Elective. In such cases Industrial Training / Internship needs to be undergone continuously from one organization only. However, if the number of credits earned is 1 or 2, these credits shall not be considered for classification of the degree. The student is only allowed to undergo a maximum of 6 weeks Industrial Training / Internship during the entire duration of study.

DURATION OF TRAINING / INTERNSHIP	CREDITS
2 Weeks	1
4 Weeks	2
6 Weeks	3

### 5.5 Self Study Courses

- 5.5.1 Students may be permitted to credit a maximum of four Self Study course with the approval of Departmental Consultative Committee.
- 5.5.2 The student can opt for four Self Study course provided the student does not have current arrears and maintains a CGPA of 8.5 and above.
- 5.5.3 The student can opt for two Self Study course provided the student does not have current arrears and maintains a CGPA of 8.0 to 8.5.
- The Department may offer self study courses. The purpose of the course is to permit the student to study a course / a topic of the student's choice. The students shall study on their own under the guidance of a faculty member. No formal lectures need be delivered. The syllabus of the course and mode of assessments shall be approved by the Departmental Consultative Committee and forwarded to the Dean for Academic Courses for the formal approval of the course by the academic bodies; the Director shall be responsible for the periodic monitoring and evaluation of the course before the commencement of the semester.

- 5.5.4 The self study course can be considered instead of one elective course. If a student opts for more than one self study course (vide clause 5.5.3 and 5.5.4) he/she can substitute more number of electives.

### 5.6 Medium of Instruction

The medium of instruction is English for all courses, examination and project / thesis / dissertation reports.

## 6. DURATION OF THE PROGRAMMES

- 6.1 A student is normally expected to complete the MCA Programme in 2 years (4 Semesters) but in any case not more than 4 years (8 Semesters).
- 6.2 Each semester shall normally consist of 90 teaching days (including examination days). The Director shall ensure that every teacher imparts instruction as per the number of periods specified in the syllabus covering the full content of the syllabus for the course being taught.
- 6.3 The total duration for completion of the programme reckoned from the commencement of the first semester to which the student was admitted shall not exceed the maximum duration specified in clause 6.1 irrespective of the period of break of study (vide clause 17) or prevention (vide clause 8.4) in order that the student may be eligible for the award of the degree (vide clause 15).

## 7. COURSE ENROLLMENT AND REGISTRATION

- 7.1 Each student, shall be assigned to a Faculty Advisor (vide clause 9) who shall advise and counsel the student about the details of the academic programme and the choice of courses considering the student's academic background and career objectives.
- 7.2 Depending on academic and non academic resources available to each programme, courses offered may vary. Students will get a chance to make their own plan of study by changing the

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU

- pace with which they study (fast/ normal/slow) and to opt for a faculty member of their choice.
- 7.3 The number of credits registered for during a semester should not be less than 20 credits and should not exceed 30 credits (Normally it is 24 credits)
- 7.4 Every student shall enroll for the course of the succeeding semester in the current semester. However, the student shall confirm the enrollment by registering for the courses within the first five working days after the commencement of the concerned semester.
- 7.5 No course shall be offered by a Department unless a minimum of 20 students register for that course.
- 7.6 After registering for a course, a student shall attend the classes, satisfy the attendance requirements, earn Continuous Assessment marks and appear for the End Semester Examinations.
- 7.6.1 Each student on admission shall register for **all the courses prescribed in the curriculum in the student's first Semester of study**. The enrollment for all the courses of the Semester II to IV will commence 10 working days prior to the last working day of the preceding semester. The student shall confirm the enrollment by registering for the courses within the first five working days after the commencement of the Semester II to IV. However, the student is allowed to register for courses for which the student has been stopped due to shortage of attendance.
- 7.6.2 The student shall enroll for the courses with the guidance of the student's Faculty Advisor. If the student wishes, the student may drop or add courses (vide clause 7.7) within **five** working days after the commencement of the concerned semester and complete the registration process duly authorized by the Faculty Advisor. The student is allowed to register for courses for which the student has not enrolled, if these are the courses in which the student has failed.
- 7.7 Flexibility to Add or Drop courses
- 7.7.1 From the II to IV semesters, the student has the option of registering for additional courses or dropping existing courses. Total number of credits of such courses cannot exceed seven. However the maximum number of credits the student can register in a particular semester cannot exceed 30 credits
- 7.7.2 A student has to earn the total number of credits specified in the curriculum of the respective Programme of study in order to be eligible to obtain the degree. However, if the student wishes, then the student is permitted to earn more than the total number of credits prescribed in the curriculum of the student's programme.
- 7.7.3 The student shall register for the project work in the III/IV semester only.
- 7.8 Reappearance Registration
- 7.8.1 If a student fails in a course, the student shall take it as an arrear. The student can retain the already earned Continuous Assessment marks for two subsequent appearances only and thereafter he/she will solely be assessed by the End Semester Examination of that Course.
- 7.8.2 If the theory course, in which the student has failed, is a professional elective, the student may register for the same or any other professional elective course respectively in the subsequent semesters.
- 7.8.3 The student who fails in any Laboratory Course shall also take it as arrear.
- 7.8.4 If a student is prevented from writing End Semester Examination of a course due to lack of attendance, the student has to register for that course again, when offered next, attend the classes and fulfill the attendance requirements as per clause 8. If the course, in which the student has lack of attendance, is a Professional Elective, the student may register for the same or any other Professional Elective course in the subsequent semesters.

## **8. REQUIREMENTS FOR APPEARING FOR THE END SEMESTER EXAMINATION OF A COURSE**

A student who has fulfilled the following conditions (vide clause 8.1 and 8.2) shall be deemed to have satisfied the attendance requirements for appearing for End Semester Examination of a particular course.

- 8.1 Ideally every student is expected to attend all periods and earn 100% attendance. However, the student shall secure not less than 80% attendance course wise taking into account the

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
VASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

number of periods required for that course as specified in the curriculum.

- 8.2** If a student secures attendance between 70% and less than 80% in any course in the current semester due to medical reasons (hospitalization / accident / specific illness) or due to participation in the College / University / State / National / International level Sports events with prior permission from the Director concerned, the student shall be given exemption from the prescribed attendance requirement and the student shall be permitted to appear for the End Semester Examination of that course. In all such cases, the students should submit the required documents on joining after the absence to the Director through the Faculty Advisor.
- 8.3** A student shall normally be permitted to appear for End Semester Examination of the course if the student has satisfied the attendance requirements (vide Clause 8.1 and 8.2) and has registered for examination in those courses of that semester by paying the prescribed fee.
- 8.4** Students who do not satisfy clause 8.1 and 8.2 and who secure **less than 70%** attendance in a course will not be permitted to write the End Semester Examination of that course. The student has to register and repeat this course in a subsequent semester when it is offered next (vide clause 7.8.4).
- 8.5** A student who has already appeared for a course in a semester and passed the examination is not entitled to reappear in the same course for improvement of letter grades / marks.

**9. FACULTY ADVISOR**

To help the students in planning their courses of study and for general advice on the academic programme, the Director of the students will attach a certain number of students to a teacher of the Department who shall function as Faculty Advisor for those students throughout their period of study. The Faculty Advisor shall advise the students in registering of courses, authorize the process, monitor their attendance and progress and counsel them periodically. If necessary, the Faculty Advisor may also discuss with or inform the parents about the progress / performance of the students concerned.

The responsibilities for the faculty advisor shall be:

- To inform the students about the various facilities and activities available to enhance the student's curricular activities.
- To guide student enrollment and registration of the courses.
- To authorize the final registration of the courses at the beginning of each semester.
- To monitor the academic and general performance of the students including attendance and to counsel them accordingly.

**10. COURSE COMMITTEES**

**10.1 COMMON COURSE COMMITTEE**

A theory course handled by more than one teacher shall have a "Common Course Committee" comprising of all teachers teaching that course and some students who have registered for that course. There shall be two student representatives from each batch of that course. One of the teachers shall be nominated as Course Coordinator by the Director.

The first meeting of the Common Course Committee shall be held within fifteen days from the date of commencement of the semester. The nature and weightage of the continuous assessments shall be decided in the first meeting, within the framework of the Regulations. Two or three subsequent meetings in a semester may be held at suitable intervals. During these meetings, the student members shall meaningfully interact and express their opinions and suggestions of all the students to improve the effectiveness of the teaching-learning process. It is the responsibility of the student representatives to convey the proceedings of these meetings to the whole batch.

In addition the "Common Course Committee" (without the student representatives) shall meet to ensure uniform evaluation of continuous assessments after arriving at a common scheme of evaluation for the assessments (vide clause 11).

Wherever feasible, the common course committee (without the student representatives) shall prepare a common question paper for the continuous assessment tests also. The question paper for the End Semester Examination is common and shall be set by the Course Coordinator in consultation with all the teachers.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU.

## 10.2 MULTIPLE COURSES COMMITTEE

If a programme has in a semester, course(s) handled by a single teacher, there will be a "Multiple Courses Committee" comprising of all the above teachers and two student representatives from each course. One of the above teachers, nominated by the Director shall coordinate the activities of this committee. The function of this committee is similar to that of the common course committee, which is as follows:

The first meeting of the Multiple Courses Committee shall be held within fifteen days from the date of commencement of the semester. The nature and weightage of the continuous assessments shall be decided in the first meeting, within the framework of the Regulations. Two or three subsequent meetings in a semester may be held at suitable intervals. During these meetings, the student members shall meaningfully interact and express their opinions and suggestions of all the students to improve the effectiveness of the teaching-learning process. It is the responsibility of the student representatives to convey the proceedings of these meetings to all the students.

## 10.3 OVERALL MONITORING COMMITTEE

**10.3.1** In addition, there shall be an overall monitoring committee for each semester of a programme which comprises of (i) the Course Coordinators / Course teachers (as applicable), (ii) the Faculty-in-charge of the programme and (iii) the Head of Department. This overall monitoring committee shall meet periodically to discuss academic related matters, progress and status of the students of the semester concerned.

**10.3.2** The overall monitoring committee can invite the Faculty Advisors or students for any of the committee meetings if necessary.

## 11. ASSESSMENT PROCEDURES FOR AWARDING MARKS

MCA Programme consists of Theory Courses, Laboratory Courses and Employability Enhancement Courses. Appearance in End Semester Examination is mandatory for all courses including Theory, Laboratory and Project work.

Performance in each course of study shall be evaluated based on (i) Continuous Assessments throughout the semester and (ii) End Semester Examination at the end of the semester. For Theory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks. For Laboratory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 75 and the End Semester Examination carries 25 marks. The Continuous Assessment is 60 marks for the Project Work, and project report evaluation and viva-voce examination carries 40 marks. All other courses included under Employability Enhancement Courses are evaluated by Continuous Assessments only. Each course shall be evaluated for a maximum of 100 marks as shown below:

S.No	Category of course	Continuous Assessments	End Semester Examinations
.	Theory Courses	50 Marks	50 Marks
.	Laboratory Courses	75 Marks	25 Marks
.	Project Work	60 Marks	40 Marks
.	All other EEC Courses	100 Marks	-

Every teacher is required to maintain an 'ATTENDANCE AND ASSESSMENT RECORD' for every semester which consists of attendance marked in each theory / Laboratory/EEC class, the assessment marks and the record of class work (topics covered), separately for each course handled by the teacher. This should be submitted to the Director periodically (at least three times in a semester) for checking the syllabus coverage and the records of assessment marks and attendance. The Director will affix his/her signature and date after due verification. At the end of the semester, the record should be verified by the Director who shall keep this document in safe custody (for four years). The records of attendance and assessment of both current and previous semesters should be available for inspection.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

### 11.1 ASSESSMENT FOR THEORY COURSES

For Theory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks.

Continuous Assessment comprises of three Continuous Internal Assessment (CIA) test, conducted by the course instructor / coordinator / department. The total marks obtained in the three CIA tests put together shall be reduced to 30 marks, assessment of assignments/quiz exams shall be reduced to 10 marks and rounded to the nearest integer and seminars/case study shall be reduced to 10 marks. A minimum of two CIA tests would be conducted in a day and a CIA test would be of two hours durations each. Students will not have regular classes on the scheduled day of these tests. In case a student misses the CIA test due to medical reasons (hospitalization / accident / specific illness) or due to participation in the College / University / State / National / International level Sports events with prior permission from the Director and approval from the Dean of Academic courses, a **Reassessment** may be given at the end of the semester.

The End Semester Examination for theory courses will be of three hours duration. End Semester Examination is mandatory requirement for passing the course with End Semester Examination component in Assessment

### 11.2 ASSESSMENT FOR LABORATORY COURSES

For Laboratory Courses out of 100 marks, the maximum marks for Continuous Assessment is fixed as 50 and the End Semester Examination carries 50 marks.

Every laboratory exercise / experiment shall be evaluated based on the student performance during the laboratory class and the student's records maintained. The total marks for all the laboratory exercises shall be reduced to 25 marks. There shall be at least two viva voce tests/ any other assessment. The total marks in these assessments shall be reduced to 20 marks and the maintenance of record shall be assessed for five marks. The End Semester Examinations for Laboratory courses will be of the same duration as that of the regular lab course.

### 11.3 ASSESSMENT FOR PROJECT WORK

The Project work shall be evaluated for a maximum of 100 marks of which 50 marks will be through internal assessment. There shall be three reviews for the final semester Project work of M.B.A to be conducted separately with 50 marks for Internals and 50 marks for Externals. The marks are to be distributed as detailed below.

Continuous Assessment 50 Marks				End Semester Examination 50 Marks			
Review I (25 Marks)		Review II (25 Marks)		Report Evaluation (25 Marks)		Viva – Voce (25 Marks)	
Review Committee (excluding guide)	Gui de	Review Committee (excluding guide)	Gui de	External Examiner	Internal Examiner	External Examiner	Internal Examiner
15	10	15	10	15	10	15	10

11.4.1 If the project report is not submitted on or before the specified deadline then the student(s) is deemed to have failed in the Project Work. The failed student(s) shall register for the same in the subsequent semester and repeat the project work again.

11.4.2 There shall be two assessments (each 100 marks) during the semester by a review committee. The student shall make presentation on the progress made before the committee. The Director shall constitute the review committee consisting of supervisor, project coordinator and another faculty member from the Department for each branch of study. The total marks obtained in the three assessments shall be reduced to 50 marks and rounded to the nearest integer.

11.4.3 The Project Report prepared according to approved guidelines as given by Dean, Academic Courses and duly signed by the supervisor(s), Project Co-ordinator shall be submitted to the Director.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

**11.4.4** The evaluation of the Project work and a Viva-Voce Examination shall be carried out by a team consisting of Internal Examiner and External Examiner. The panel of external examiners shall be nominated by Director.

**11.4.5** If a student fails to submit the project report on or before the specified deadline, student is deemed to have failed in the Project Work and shall re-enroll for the same in a subsequent semester.

**11.5 ASSESSMENT FOR SEMINAR / PROFESSIONAL PRACTICES / CASE STUDY**

The Seminar / Case study shall carry 100 marks and shall be evaluated through Continuous Assessment only. Every student is expected to present a minimum of 2 seminars per semester before the evaluation committee and for each seminar, marks can be equally apportioned. The three member committee appointed by Director will evaluate the seminar and at the end of the semester the marks can be consolidated and taken as the final mark. The evaluation shall be based on the seminar paper / report (40%), presentation (40%) and response to the questions asked during presentation (20%).

**11.6 ASSESSMENT FOR INDUSTRIAL / PRACTICAL TRAINING / INTERNSHIP / SUMMER PROJECT**

**11.6.1** The Industrial / Practical Training shall carry 100 marks and shall be evaluated through Continuous Assessment only. At the end of Industrial / Practical training / internship / Summer Project, the student shall submit a brief report on the training undergone and a certificate from the organization concerned. The evaluation will be made based on this report and a Viva-Voce Examination, conducted internally by a three member Departmental Committee constituted by the Director. Certificates (issued by the Organization) submitted by the student shall be attached to the mark list and sent to Controller of Examinations by the Director.

**11.7 ASSESSMENT FOR SELF STUDY COURSE**

The Faculty member approved by the Director shall be responsible for periodic monitoring and evaluation of the course. The course shall be evaluated through Continuous Assessment (as decided by the Departmental Consultative Committee) and End Semester Examination. The evaluation methodology shall be the same as that of a theory course. (vide clause 11.1) A committee consisting of the Director, the Faculty Member and another Senior Faculty member nominated by the Director shall assign the grades to the students based on their performance.

**12. PASSING REQUIREMENTS**

**12.1** The Passing requirement for a student in a course is that the student should have 50% marks in the End Semester Examination and should have 50% of the total marks by putting both the Continuous Assessment and End Semester Examination marks together.

**12.1.1** If a student fails in a professional elective, the student may be permitted to register for the same course or opt for new registration to any other professional elective in the subsequent semesters. Registering for a new course will require fulfillment of attendance vide clause 8.

**12.2** The passing requirement for the courses which are assessed only through Continuous Assessment (EEC courses except project work), shall be determined based on the marks obtained in Continuous Assessment tests.

**12.3** A student can apply for revaluation of the student's semester examination answer paper in a theory course, within two weeks from the declaration of results, on payment of a prescribed fee along with prescribed application to the Controller of Examination (CoE) through the Head of Departments. The CoE will arrange for the revaluation and the results will be intimated to the student concerned through the Director. Revaluation is not permitted for laboratory course and project work.

**13 AWARD OF LETTER GRADES**

**13.1.** The performance of a student will be reported using letter grades, each carrying certain points as detailed below:

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

Letter Grade	Range of Marks	Grade Points
O (Outstanding)	100 - 91	10
A+ (Excellent)	90 - 81	9
A (Very Good)	80 - 71	8
B+ (Good)	70 - 61	7
B (Above average)	60 - 50	6
U (Fail)	-	0
U* (Absent)	-	0
SA (Shortage of Attendance)	-	0

*Note: 'U' denotes fail for that particular course. U\* denotes absent for that particular course. 'SA' denotes shortage of attendance (as per Clause 8) and hence prevented from writing End Semester Examinations.*

#### 14. GPA AND CGPA CALCULATION

14.1 The CoE shall call for a meeting of the passing board after the End Semester Examinations, to pass the results and with the approval of the board will declare the results. After results are declared, Grade Sheets will be issued to each student which will contain the following details:

- the list of courses registered during the semester and the grades scored.
- the Grade Point Average (GPA) for the semester and
- the Cumulative Grade Point Average (CGPA) of all courses registered from first semester onwards.

During each semester, the list of courses registered and the grades scored in each course are used to compute the Grade Point Average (GPA). GPA is the ratio of the sum of the products of the number of credits of courses registered and the grade points corresponding to the grades scored in those courses, taken for all the courses, to the sum of the number of credits of all the courses in the semester.

$$GPA = \frac{\sum_{i=1}^n (C_i \times g_i)}{\sum C_i}$$

Where,  $C_i$  - is the  $C_i$

$g_i$  - is the grade point corresponding to the letter grade obtained for each course

$n$  - is number of all Courses successfully cleared during the particular semester in the case of GPA and during all the semesters in the case of CGPA.

CGPA will be calculated in a similar manner, considering all the courses enrolled from first semester. U, U\* and "SA" grades will be excluded for calculating GPA and CGPA.

14.2 If a student studies more number of electives (PE) than required as per the student's programme curriculum, the courses with higher grades alone will be considered for calculation of CGPA.

#### 15. ELIGIBILITY FOR THE AWARD OF DEGREE

15.1 A student shall be declared to be eligible for the award of the MCA Degree provided the student has

- Successfully gained the required number of total credits as specified in the curricular corresponding to the student's programme within the stipulated time (vide Clause 5.2).
- Successfully completed the course requirements, appeared for the End Semest Examination and passed all the subjects prescribed in all the four semesters within a maximum period of four years reckoned from the commencement of the first semester to which the candidate was admitted.
- Successfully passed any additional courses prescribed by the Dean, Academic Cour: whenever readmitted under regulations other than R-2019
- No disciplinary action pending against the student.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

## 15.2 CLASSIFICATION OF THE DEGREE AWARDED

### 15.2.1 FIRST CLASS WITH DISTINCTION

A student who satisfies the following conditions shall be declared to have passed the examination in First class with Distinction:

- Should have passed the examination in all the courses of all the four semesters in the student's First Appearance within **Three** years, which includes authorized break of study of one year. Withdrawal from examination (vide Clause 16) will not be considered as an appearance.
- Should have secured a CGPA of not less than 8.50
- Should NOT have been prevented from writing End Semester Examination due to lack of attendance in any of the courses.

### 15.2.2 FIRST CLASS

A student who satisfies the following conditions shall be declared to have passed the examination in **First class**:

- Should have passed the examination in all the courses of all four semesters **within Three years**, which includes one year of authorized break of study (if availed) or prevention from writing the End Semester Examination due to lack of attendance (if applicable).
- Should have secured a CGPA of not less than **7.00**

### 15.2.3 SECOND CLASS

All other students (not covered in clauses 15.2.1 and 15.2.2) who qualify for the award of the degree (vide Clause 15.1) shall be declared to have passed the examination in **Second Class**.

15.2.4. A student who is absent in End Semester Examination in a course / project work after having registered for the same shall be considered to have appeared in that examination (except approved withdrawal from End Semester Examinations as per clause 16) for the purpose of classification.

## 16. PROVISION FOR WITHDRAWAL FROM EXAMINATION

16.1 A student may, for valid reasons, (medically unfit / unexpected family situations / sports approved by DIRECTOR) be granted permission to withdraw from appearing for the End Semester Examination in any course or courses in **ANY ONE** of the semester examinations during the entire duration of the degree programme. The application shall be sent to Dean for Academic Courses through Director with required documents.

16.2 Withdrawal application shall be valid only if the student is otherwise eligible to write the examination (Clause 8) and if it is made within TEN working days before the commencement of the End Semester Examination in that course or courses and also recommended by the Director.

16.3 Notwithstanding the requirement of mandatory TEN working days notice, applications for withdrawal for special cases under extraordinary conditions will be considered on the merit of the case.

16.4 Withdrawal shall not be considered as an appearance for deciding the eligibility of a student for First Class with Distinction.

16.5 Withdrawal is permitted for the End Semester Examinations in the final semester only if the period of study of the student concerned does not exceed 3 years as per clause 15.2.1.

## 17. BREAK OF STUDY FROM A PROGRAMME

17.1 A student is permitted to go on break of study for a maximum period of one year either as two breaks of one semester each or a single break of one year.


- a. The student applies for break of study, the student shall apply to the Dean, Academic Courses in advance, in any case, not later than the last date of the first assessment period. The application duly filled by the student shall be submitted through the Director. In the case of short term employment/ training/ internship, the application for break of study shall be approved and forwarded by the Departmental Consultative Committee to the Dean for Academic Courses.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
BASIPURAM-637 408. NAMAKKAL Dist.  
TAMIL NADU

- b. The students permitted to rejoin the programme after break of study / prevention due to lack of attendance, shall be governed by the Regulations and Curriculum in force at the time of rejoining. The students rejoining in new Regulations shall apply to the Dean for Academic Courses in the prescribed format through Director at the beginning of the readmitted semester itself for prescribing additional/equivalent courses, if any, from any semester of the regulations in-force, so as to bridge the curriculum in-force and the old curriculum.
- 17.2 The total period for completion of the programme reckoned from, the commencement of the first semester to which the student was admitted shall not exceed the maximum period specified in clause 6.1 irrespective of the period of break of study in order that the student may be eligible for the award of the degree (vide clause 15).
- 17.3 In case there is any period of break of study more than the permitted duration of break of study, the student shall be permitted to continue the programme only if the approval is obtained from the Dean for Academic Courses through the concerned Director before the end of the semester in which the student has taken break of study.
- 17.4 If a student has not reported to the department for a period of two consecutive semesters without any intimation, the name of the student shall be deleted permanently from the college enrollment. Such students are not entitled to seek readmission under any circumstances.
- 17.5 If a student indulges in malpractice in any of the examinations, the student shall be liable for punitive action as prescribed by the College from time to time.

18. **REVISION OF REGULATIONS, CURRICULUM AND SYLLABI**

The College may from time to time revise, amend or change the Regulations, Curriculum, Syllabus and Scheme of examinations through the Academic Council with the approval of the Chairman of Academic council.

  
CONTROLLER OF EXAMINATIONS  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM - 637 408. NAMAKKAL DIST.



PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU



# MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC, NBA & Affiliated to Anna University) Rasipuram - 637 408, Namakkal Dist., Tamil Nadu.

## B.E.-CIVILENGINEERING GROUPING OF COURSES

### 1. Humanities and Social Sciences (HS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	16SHA01	Technical English	HS	5	3	2	0	4
2	16SHA02	Communicative English	HS	7	3	0	4	5
3	16SHA03	Business English	HS	5	3	2	0	4
4	16SHA04	Basics of Japanese	HS	5	3	2	0	4
5	16SHA05	Functional Japanese	HS	5	3	2	0	4
6	16SHA06	Basics of German	HS	5	3	2	0	4
7	16SHA07	Functional German	HS	5	3	2	0	4
8	16SHA08	Principles of Management and Engineering Ethics	HS	3	3	0	0	3

### 2. Basic Sciences (BS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	16SHB01	Matrix, Calculus and Ordinary Differential Equations	BS	5	3	2	0	4
2	16SHB02	Complex Variables, Laplace Transforms and Vector Calculus	BS	5	3	2	0	4
3	16SHB03	Transforms Partial and Differential Equations	BS	5	3	2	0	4
4	16SHB04	Random Processes	BS	5	3	2	0	4
5	16SHB05	Probability and Queuing Theory	BS	5	3	2	0	4
6	16SHB06	Numerical Methods	BS	5	3	2	0	4
7	16SHB07	Statistics and Numerical Methods	BS	5	3	2	0	4
8	16SHB08	Discrete Mathematics	BS	5	3	2	0	4
9	16SHB09	Operations Research	BS	5	3	2	0	4
10	16SHB21	Engineering Physics	BS	6	2	0	4	4
11	16SHB22	Material Science	BS	3	3	0	0	3
12	16SHB23	Physics for Electrical Engineering	BS	3	3	0	0	3
13	16SHB24	Physics for Mechanical Engineering	BS	3	3	0	0	3
14	16SHB31	Engineering Chemistry	BS	6	2	0	4	4
15	16SHB32	Environmental Science and Engineering	BS	3	3	0	0	3

**Dr. V. RAJENDRAN, M.E., Ph.D.,**  
CHAIRMAN,  
BOARD OF STUDIES,

DEPARTMENT OF CIVIL ENGINEERING,  
MUTHAYAMMAL ENGINEERING COLLEGE,  
RASIPURAM - 637 408

PRINCIPAL,

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMIL NADU

3. Engineering Sciences (ES)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	16CEC01	Fundamentals of Computing and Programming	ES	6	2	0	4	4
2	16CEC02	Advanced C Programming	ES	6	2	0	4	4
3	16CEC03	Basics of Civil and Mechanical Engineering	ES	4	4	0	0	4
4	16CEC04	Basics of Electrical and Electronics Engineering	ES	3	3	0	0	3
5	16CEC05	Engineering Drawing	ES	5	1	0	4	3
6	16CEC06	Engineering Practices for Mechanical Sciences	ES	4	0	0	4	2
7	16CEC07	Engineering Geology	ES	3	3	0	0	3
8	16CEC08	Engineering Mechanics	ES	5	3	2	0	4
9	16CEC09	Construction Materials	ES	3	3	0	0	3
10	16CEC10	Object Oriented Programming	ES	6	2	0	4	4
11	16CEC11	Bio Mechanics	ES	3	3	0	0	3
12	16CEC12	Measurements and Instrumentation	ES	3	3	0	0	3
13	16CEC13	Renewable energy resources	ES	3	3	0	0	3
14	16CEC14	Fundamentals of Nanotechnology	ES	3	3	0	0	3
15	16CEC15	Remote Sensing and GIS	ES	3	3	0	0	3

4. Professional Core (PC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	16CED01	Mechanics of Solids	PC	5	3	2	0	4
2	16CED02	Strength of Materials	PC	5	3	0	2	4
3	16CED03	Structural Analysis I	PC	5	3	2	0	4
4	16CED04	Structural Analysis II	PC	5	3	2	0	4
5	16CED05	Design of Steel Structures	PC	5	3	2	0	4
6	16CED06	Estimation and Quantity Surveying	PC	5	3	2	0	4
7	16CED07	Mechanics of Fluids	PC	3	3	0	0	3
8	16CED08	Surveying I	PC	5	3	0	2	4
9	16CED09	Surveying II	PC	3	3	0	0	3
10	16CED10	Concrete Technology	PC	3	3	0	0	3
11	16CED11	Soil Mechanics	PC	5	3	0	2	4
12	16CED12	Applied Hydraulic Engineering	PC	5	3	0	2	4
13	16CED13	Design of Reinforced Concrete Elements	PC	5	3	0	2	4

Dr. V. RAJENDRAN, M.E., Ph.D.,  
 CHAIRMAN,  
 BOARD OF STUDIES,  
 DEPARTMENT OF CIVIL ENGINEERING,  
 MUTHAYAMMAL ENGINEERING COLLEGE,  
 RASIPURAM - 637 408.

PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

14	16CED14	Water Supply Engineering	PC	3	3	0	0	3
15	16CED15	Foundation Engineering	PC	3	3	0	0	3
16	16CED16	Highway Engineering	PC	5	3	0	2	4
17	16CED17	Design of Reinforced Concrete Structures	PC	5	3	0	2	4
18	16CED18	Waste Water Engineering	PC	5	3	0	2	4
19	16CED19	Public Health and Irrigation Engineering Drawing	PC	3	3	0	0	3
20	16CED20	Prestressed Concrete Structures	PC	3	3	0	0	3
21	16CED21	Seismic design of Structures	PC	3	3	0	0	3
22	16CED22	Irrigation Engineering	PC	3	3	0	0	3
23	16CED23	Computer Aided Building Drawing	PC	3	1	0	2	2
24	16CED24	Survey Camp	PC	-	-	-	-	1
25	16CED25	Prefabricated Structures	PC	3	3	0	0	3

5. Professional Electives (PE)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			
					L	T	P	C
1	16CEE01	Hydrology	PE	3	3	0	0	3
2	16CEE02	Pavement Engineering	PE	3	3	0	0	3
3	16CEE03	Construction Planning and Management	PE	3	3	0	0	3
4	16CEE04	Traffic Engineering and Safety Transport	PE	3	3	0	0	3
5	16CEE05	Housing Planning and Management	PE	3	3	0	0	3
6	16CEE06	Environmental Impact Assessment in Civil Engineering Project	PE	3	3	0	0	3
7	16CEE07	Municipal Solid Waste Management	PE	3	3	0	0	3
8	16CEE08	Water Resources Engineering	PE	3	3	0	0	3
9	16CEE09	Industrial Waste Management	PE	3	3	0	0	3
10	16CEE10	Air Pollution and Management	PE	3	3	0	0	3
11	16CEE11	Industrial Structures	PE	5	3	0	0	3
12	16CEE12	Health Monitoring of Structures	PE	3	3	0	0	3
13	16CEE13	Engineering Economics and Cost Analysis	PE	3	3	0	0	3
14	16CEE14	Ground Improvement Techniques	PE	3	3	0	0	3
15	16CEE15	Building Services	PE	3	3	0	0	3

**Dr. V. RAJENDRAN, M.E., Ph.D.,**  
**CHAIRMAN,**  
**BOARD OF STUDIES,**  
**DEPARTMENT OF CIVIL ENGINEERING,**  
**MUTHAYAMMAL ENGINEERING COLLEGE,**  
**RASIPURAM, TAMIL NADU**

**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMIL NADU**

16	16CEE16	Smart Materials and Smart Structures	PE	3	3	0	0	3
17	16CEE17	Ground Water Engineering	PE	3	3	0	0	3
18	16CEE18	Construction Technology	PE	3	3	0	0	3
19	16CEE19	Railways, Airports and Harbour Engineering	PE	3	3	0	0	3

**6. Employability Enhancement Courses (EEC)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			
					L	T	P	C
1	16CEF01	Project work Phase -I	EEC	6	0	0	6	3
2	16CEF02	Project work Phase -II	EEC	30	0	0	3 0	15
3	16CEF03	Comprehensive Skill	EEC	4	0	0	4	2
4	16CEF04	Design Project	EEC	4	0	0	4	2





**Dr. V. RAJENDRAN, M.E., Ph.D.,**  
**CHAIRMAN,**  
**BOARD OF STUDIES,**  
**DEPARTMENT OF CIVIL ENGINEERING**  
**MUTHAYAMMAL ENGINEERING COLLEGE,**  
**RASIPURAM - 637 408.**



**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU**

Programme Code & Name: CE & B.E-Civil Engineering

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM - 637 408					<b>CURRICULUM UG R - 2016</b>	
Department			Civil					
Programme			B.E					
<b>SEMESTER - I</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	16SHA01	Technical English	3	2	0	4	5	
2.	16SHB01	Matrix, Calculus and Ordinary Differential Equations	3	2	0	4	5	
3.	16SHB22	Material Science	3	0	0	3	3	
4.	16SHB31	Engineering Chemistry	2	0	4	4	6	
5.	16CEC01	Fundamentals of Computing and Programming	2	0	4	4	6	
6.	16CEC04	Basics of Electrical and Electronics Engineering	4	0	0	3	3	
7.	16CEC06	Engineering Practices for Mechanical Sciences	0	0	4	2	4	
<b>Total Credits</b>						<b>24</b>		

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM - 637 408					<b>CURRICULUM UG R - 2016</b>	
Department			Civil					
Programme			B.E					
<b>SEMESTER - II</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	16SHA02	Communicative English	3	0	4	5	7	
2.	16SHB02	Complex Variables, Laplace Transforms and Vector Calculus	3	2	0	4	5	
3.	16SHB21	Engineering Physics	2	0	4	4	6	
4.	16SHB32	Environmental Science and Engineering	3	0	0	3	3	
5.	16CEC02	Advanced C Programming	2	0	4	4	6	
6.	16CEC05	Engineering Drawing	1	0	4	3	5	




**Dr. V. RAJENDRAN, M.E., Ph.D.,**  
**CHAIRMAN,**  
**BOARD OF STUDIES,**  
**DEPARTMENT OF CIVIL ENGINEERING,**  
**MUTHAYAMMAL ENGINEERING COLLEGE,**  
**RASIPURAM - 637**

**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU.**

Programme Code & Name: CE & B.E-Civil Engineering

7.	16CEC08	Engineering Mechanics	3	2	0	4	5
<b>Total Credits</b>						27	

	<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM - 637 408	<b>CURRICULUM</b> UG R - 2016
---	---	-------------------------------------

Department	Civil
Programme	B.E

**SEMESTER - III**

Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P	C	

**THEORY**


1.	16SHB03	Transforms and Partial Differential Equations	3	2	0	4	5
2.	16CEC07	Engineering Geology	3	0	0	3	3
3.	16CEC09	Construction Materials	3	0	0	3	3
4.	16CED01	Mechanics of Solids	3	2	0	4	5
5.	16CED07	Mechanics of Fluids	3	0	0	3	3
6.	16CED08	Surveying I	3	0	2	4	5
7.	16CED23	Computer Aided Building Drawing	1	0	2	2	3
<b>Total Credits</b>						23	




**Dr. V. RAJENDRAN, M.E., Ph.D.,**  
CHAIRMAN,  
BOARD OF STUDIES,  
DEPARTMENT OF CIVIL ENGINEERING,  
MUTHAYAMMAL ENGINEERING COLLEGE,  
RASIPURAM - 637 408.



PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Autonomous) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				CURRICULUM UG R - 2016	
Department		Civil					
Programme		B.E					
<b>SEMESTER - IV</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16SHB07	Statistics and Numerical Methods	3	2	0	4	5
2.	16CED02	Strength of Materials	3	0	2	4	5
3.	16CED09	Surveying II	3	0	0	3	3
4.	16CED10	Concrete Technology	3	0	0	3	3
5.	16CED11	Soil Mechanics	3	0	2	4	5
6.	16CED12	Applied Hydraulic Engineering	3	0	2	4	5
7.	16CEE**	Elective - I	3	0	0	3	3
<b>Total Credits</b>						<b>25</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Autonomous) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				CURRICULUM UG R - 2016	
Department		Civil					
Programme		B.E					
<b>SEMESTER - V</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16CED03	Structural Analysis I	3	2	0	4	5
2.	16CED13	Design of Reinforced Concrete Elements	3	0	2	4	5
3.	16CED14	Water Supply Engineering	3	0	0	3	3
4.	16CED15	Foundation Engineering	3	0	0	3	3
5.	16CED16	Highway Engineering	3	0	2	4	5
6.	16CE***	Elective - II	3	0	0	3	3

  
**Dr. V. RAJENDRAN, M.E., Ph.D.,**  
 CHAIRMAN,  
 BOARD OF STUDIES,  
 DEPARTMENT OF CIVIL ENGINEERING,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 RASIPURAM


  
**PRINCIPAL,**  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU


7.	16CED24	Survey Camp	-	-	-	1	-
<b>Total Credits</b>						<b>22</b>	


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>(Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> <b>UG</b> <b>R - 2016</b>	
Department			Civil					
Programme			B.E					
<b>SEMESTER - VI</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	16CED04	Structural Analysis II	3	2	0	4	5	
2.	16CED05	Design of Steel Structures	3	2	0	4	5	
3.	16CED17	Design of Reinforced Concrete Structures	3	0	2	4	5	
4.	16CED18	Waste Water Engineering	3	0	2	4	5	
5.	16CE***	Elective - III	3	0	0	3	3	
6.	16CE***	Elective - IV	3	0	0	3	3	
7.	16CEF04	Design Project	0	0	4	2	4	
<b>Total Credits</b>						<b>24</b>		

  
**Dr. V. RAJENDRAN, M.E., Ph.D.,**  
CHAIRMAN,  
BOARD OF STUDIES,  
DEPARTMENT OF CIVIL ENGINEERING,  
MUTHAYAMMAL ENGINEERING COLLEGE,  
RASIPURAM - 637 408

  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Autonomous) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				CURRICULUM UG R - 2016	
Department		Civil					
Programme		B.E					
<b>SEMESTER - VII</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16CED06	Estimation and Quantity Surveying	3	0	0	3	3
2.	16CEE07	Municipal Solid Waste Management	3	2	0	4	5
3.	16CEE12	Health Monitoring of Structures	3	0	0	3	5
4.	16CEE03	Construction Planning and Management	3	0	0	3	3
5.	16MEE13	Composite Materials ( Elective – V)	3	0	0	3	3
6.	16MEE20	Power Plant Engineering (Elective – VI)	3	0	0	3	3
7.	16CEF01	Project- Phase I	0	0	4	2	4
<b>Total Credits</b>						<b>21</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Autonomous) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				CURRICULUM UG R - 2016	
Department		Civil					
Programme		B.E					
<b>SEMESTER - VIII</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16CEF02	Project Phase II	0	0	30	15	30
<b>Total Credits</b>						<b>15</b>	

  
**Dr. V. RAJENDRAN, M.E., Ph.D.,**  
 CHAIRMAN,  
 BOARD OF STUDIES,  
 DEPARTMENT OF CIVIL ENGINEERING,  
 MUTHAYAMMAL ENGINEERING COLLEGE,  
 RASIPURAM.

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

**COURSE COMPONENTS SUMMARY**

S.No.	Subject Area	Credits Per Semester								Credits total	Percentage credits
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	4	5	-	-	-	-	3	-	12	6.25
2.	BS	11	11	4	4	-	-	-	-	30	16.66
3.	ES	10	10	8	4	4	-	-	-	36	20.83
4.	PC	-	-	11	12	16	8	3	-	50	27.08
5.	PE	-	-	-	3	6	9	6	-	24	16.66
6.	OE	-	-	-	-	-	4	3	-	7	4.16
7.	EEC	-	-	-	-	-	2	5	15	22	8.33
<b>TOTAL</b>		<b>25</b>	<b>26</b>	<b>23</b>	<b>23</b>	<b>26</b>	<b>23</b>	<b>20</b>	<b>15</b>	<b>181</b>	

**Total Credits: 181**

  
**Dr. V. RAJENDRAN, M.E., Ph.D.,**  
 CHAIRMAN,  
 BOARD OF STUDIES,  
 DEPARTMENT OF CIVIL ENGINEERING,  
 MUTHAYAMMAL ENGINEERING COLLEGE,  
 RASIPURAM - 637 408.

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

Programme Code & Name: CS & B.E-Computer Science and Engineering



## MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

**B.E. – COMPUTER SCIENCE AND ENGINEERING**

**REGULATION - 2016**

### HUMANITIES AND SOCIAL SCIENCES (HS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	16SHA01	Technical English	HS	5	3	2	0	4
2.	16SHA02	Communicative English	HS	7	3	0	4	5
3.	16SHA03	Business English	HS	5	3	2	0	4
4.	16SHA04	Basics of Japanese	HS	5	3	2	0	4
5.	16SHA05	Functional Japanese	HS	5	3	2	0	4
6.	16SHA06	Basics of German	HS	5	3	2	0	4
7.	16SHA07	Functional German	HS	5	3	2	0	4
8.	16SHA08	Principles of Management and Engineering Ethics	HS	3	3	0	0	3

### BASIC SCIENCES (BS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	16SHB01	Matrices, Calculus and Ordinary Differential Equations	BS	5	3	2	0	4
2.	16SHB02	Complex variables, Laplace Transforms and Vector Calculus	BS	5	3	2	0	4
3.	16SHB03	Transforms and Partial Differential Equations	BS	5	3	2	0	4
4.	16SHB04	Probability and Random Processes	BS	5	3	2	0	4
5.	16SHB05	Probability and Queuing Theory	BS	5	3	2	0	4
6.	16SHB06	Numerical Methods	BS	5	3	2	0	4
7.	16SHB07	Statistics and Numerical Methods	BS	5	3	2	0	4
8.	16SHB08	Discrete Mathematics	BS	5	3	2	0	4
9.	16SHB09	Operations Research	BS	5	3	2	0	4
10.	16SHB21	Engineering Physics	BS	6	2	0	4	4
11.	16SHB22	Material Science	BS	3	3	0	0	3
12.	16SHB23	Physics for Electrical Engineering	BS	3	3	0	0	3
13.	16SHB24	Physics for Mechanical Engineering	BS	3	3	0	0	3
14.	16SHB31	Engineering Chemistry	BS	6	2	0	4	4
15.	16SHB32	Environmental Science and Engineering	BS	3	3	0	0	3

**Chairman**  
**Board of Studies**

Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Programme Code & Name: CS & B.E-Computer Science and Engineering

ENGINEERING SCIENCES (ES)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	16CSC01	Fundamentals of Computing and Programming	ES	6	2	0	4	4
2.	16CSC02	Advanced C Programming	ES	6	2	0	4	4
3.	16CSC03	Basics of Civil and Mechanical Engineering	ES	4	4	0	0	4
4.	16CSC04	Basics of Electrical and Electronics Engineering	ES	3	3	0	0	3
5.	16CSC05	Engineering Graphics	ES	4	0	0	4	2
6.	16CSC06	Engineering Practices for Computer Sciences	ES	4	0	0	4	2
7.	16CSC07	Electrical Drives and Control	ES	5	3	0	2	4
8.	16CSC08	Engineering Mechanics	ES	5	3	2	0	4
9.	16CSC09	Microprocessor and Microcontrollers	ES	5	3	0	2	4
10.	16CSC10	Object Oriented Programming	ES	6	2	0	4	4
11.	16CSC11	Data Structures	ES	6	2	0	4	4
12.	16CSC12	Electron Devices	ES	6	2	0	4	4
13.	16CSC13	Circuit Theory	ES	6	2	0	4	4
14.	16CSC14	Digital Principles and System Design	ES	6	2	0	4	4
15.	16CSC15	Fundamentals of Nanoscience	ES	6	2	0	4	4

PROFESSIONAL CORE (PC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	16CSD01	Advanced Java Programming	PC	5	3	0	2	4
2.	16CSD02	Design and Analysis of Algorithms	PC	3	3	0	0	3
3.	16CSD03	Database Management Systems	PC	5	3	0	2	4
4.	16CSD04	Object Oriented Software Engineering	PC	3	3	0	0	3
5.	16CSD05	Operating Systems	PC	5	3	0	2	4
6.	16CSD06	Object Oriented Analysis and Design	PC	5	3	0	2	4
7.	16CSD07	Computer Networks	PC	5	3	0	2	4
8.	16CSD08	Principles of Compiler Design	PC	5	3	0	2	4
9.	16CSD09	Cryptography and Network Security	PC	5	3	2	0	4
10.	16CSD10	System Software	PC	5	3	2	0	4
11.	16CSD11	Theory of Computation	PC	5	3	2	0	4
12.	16CSD12	Computer Architecture	PC	5	3	2	0	4
13.	16CSD13	Computer Graphics	PC	5	3	0	2	4
14.	16CSD15	Advanced Data Structure	PC	3	3	0	0	3

  
Chairman  
Board of Studies

Department of Computer Science and Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

  
PRINCIPAL,

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Programme Code & Name: CS & B.E-Computer Science and Engineering

15.	16CSD16	Internet Programming	PC	5	3	0	2	4
16.	16CSD17	Python Programming	PC	5	3	0	2	4

PROFESSIONAL ELECTIVES (PE)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	16CSE01	C# and .Net Framework	PE	5	3	2	0	4
2.	16CSE02	Software Project Management	PE	3	3	0	0	3
3.	16CSE03	Software Testing	PE	5	3	2	0	4
4.	16CSE04	Artificial Intelligence	PE	3	3	0	0	3
5.	16CSE05	Ethical Hacking and Cyber Security	PE	3	3	0	0	3
6.	16CSE06	Soft computing	PE	4	4	0	0	4
7.	16CSE07	Real Time Systems	PE	3	3	0	0	3
8.	16CSE08	Information Storage Management	PE	3	3	0	0	3
9.	16CSE09	Advanced Computer Architecture	PE	3	3	0	0	3
10.	16CSE10	High Speed Networks	PE	3	3	0	0	3
11.	16CSE11	Graph Theory	PE	3	3	0	0	3
12.	16CSE12	Advanced Database Technology	PE	5	3	0	2	4
13.	16CSE13	Digital Image Processing	PE	3	3	0	0	3
14.	16CSE14	Machine Learning Techniques	PE	3	3	0	0	3
15.	16CSE15	4G Technologies	PE	3	3	0	0	3
16.	16CSE16	Total Quality Management	PE	3	3	0	0	3
17.	16CSE17	Cloud Computing	PE	3	3	0	0	3
18.	16CSE18	Mobile Computing	PE	3	3	0	0	3
19.	16CSE19	Salesforce CRM and Platform	PE	5	3	0	2	4
20.	16CSE20	Introduction to Internet of Things	PE	3	3	0	0	3
21.	16CSE21	Programming in JAVA	PE	3	3	0	0	3

  
Chairman

Board of Studies

Department of Computer Science and Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

  
PRINCIPAL  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

Programme Code & Name: CS & B.E-Computer Science and Engineering

EMPLOYABILITY ENHANCEMENT COURSES (EEC)


S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	16CSF01	Project work-Phase I	EEC	6	0	0	6	3
2.	16CSF02	Project work -Phase II	EEC	30	0	0	30	15
3.	16CSF03	Comprehension	EEC	4	0	0	4	2
4.	16CSF04	Design Project	EEC	4	0	0	4	2
5.	16CSF05	Technical Seminar	EEC	4	0	4	0	2
6.	16CSF06	Entrepreneurship Development	EEC	3	3	0	0	3
7.	16CSF07	Soft Skills	EEC	4	2	2	0	3
8.	16CSF08	Professional Practices	EEC	6	0	0	6	3




**Chairman**  
**Board of Studies**  
 Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL  
 TAMILNADU.

**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

Programme Code & Name: CS & B.E-Computer Science and Engineering


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University) RASIPURAM – 637 408					<b>CURRICULUM</b> UG R - 2016	
Department		CSE						
Programme		B.E.						
<b>SEMESTER - I</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	16SHA02	Communicative English	3	0	4	5	7	
2.	16SHB01	Matrices, Calculus and Ordinary Differential Equations	3	2	0	4	5	
3.	16SHB21	Engineering Physics	2	0	4	4	6	
4.	16SHB32	Environmental Science and Engineering	3	0	0	3	3	
5.	16CSC01	Fundamentals of Computing and Programming	2	0	4	4	6	
6.	16CSC04	Basics of Electrical and Electronics Engineering	3	0	0	3	3	
7.	16CSC06	Engineering Practices for Computer Sciences	0	0	4	2	4	
<b>Total Credits</b>						<b>25</b>		


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University) RASIPURAM – 637 408					<b>CURRICULUM</b> UG R - 2016	
Department		CSE						
Programme		B.E.						
<b>SEMESTER – II</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	16SHA01	Technical English	3	2	0	4	5	
2.	16SHB02	Complex Variables, Laplace Transforms & Vector Calculus and Vector Calculus	3	2	0	4	5	
3.	16SHB22	Material Science	3	0	0	3	3	
4.	16SHB31	Engineering Chemistry	2	0	4	4	6	
5.	16CSC05	Engineering Graphics	0	0	4	2	4	
6.	16CSC02	Advanced C Programming	2	0	4	4	6	
7.	16CSC14	Digital Principles and System Design	2	0	4	4	6	
<b>Total Credits</b>						<b>25</b>		


  
**Chairman**  
Board of Studies  
Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

Programme Code & Name: CS & B.E-Computer Science and Engineering


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University) RASIPURAM – 637 408					<b>CURRICULUM</b> UG R – 2016	
Department		CSE						
Programme		B.E.						
<b>SEMESTER – III</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	16SHB03	Transforms and Partial Differential Equations	3	2	0	4	5	
2.	16CSD05	Operating Systems	3	0	2	4	5	
3.	16CSD12	Computer Architecture	3	2	0	4	5	
4.	16CSC10	Object Oriented Programming	2	0	4	4	6	
5.	16CSC11	Data Structures	2	0	4	4	6	
6.	16CSD02	Design and Analysis of Algorithms	3	0	0	3	3	
<b>Total Credits</b>						<b>23</b>		


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University) RASIPURAM – 637 408					<b>CURRICULUM</b> UG R – 2016	
Department		CSE						
Programme		B.E.						
<b>SEMESTER – IV</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	16SHB05	Probability and Queuing Theory	3	2	0	4	5	
2.	16CSD03	Database Management Systems	3	0	2	4	5	
3.	16CSC09	Microprocessor and Microcontrollers	3	0	2	4	5	
4.	16CSD04	Object Oriented Software Engineering	3	0	0	3	3	
5.	16CSD07	Computer Networks	3	0	2	4	5	
6.	16CSD11	Theory of Computation	3	2	0	4	5	
<b>Total Credits</b>						<b>23</b>		

  
**Chairman**  
Board of Studies  
Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

  
PRINCIPAL  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Programme Code & Name: CS & B.E-Computer Science and Engineering


 MUTHAYAMMAL ENGINEERING COLLEGE (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University) RASIPURAM - 637 408		CURRICULUM UG R - 2016					
Department	CSE						
Programme	B.E						
<b>SEMESTER - V</b>							
Sl. No.	Course Code	Course Name	Hours/Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16SHB08	Discrete Mathematics	3	2	0	4	5
2.	16CSD06	Object Oriented Analysis and Design	3	0	2	4	5
3.	16CSD17	Python Programming	3	0	2	4	5
4.	16CSD08	Principles of Compiler Design	3	0	2	4	5
5.	16CSD09	Cryptography and Network Security	3	2	0	4	5
6.	PE	Professional Elective - I	3	0	0	3	3
7.	PE	Professional Elective - II	3	0	0	3	3
<b>Total Credits</b>						<b>26</b>	


 MUTHAYAMMAL ENGINEERING COLLEGE (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University) RASIPURAM - 637 408		CURRICULUM UG R - 2016					
Department	CSE						
Programme	B.E.						
<b>SEMESTER - VI</b>							
Sl. No.	Course Code	Course Name	Hours/Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16CSD10	Open Source Software	3	0	2	4	5
2.	16CSD13	Computer Graphics	3	0	2	4	5
3.	16CSD15	Advanced Data Structures	3	0	0	3	3
4.	16SHA08	Principles of Management and Engineering Ethics	3	0	0	3	3
5.	PE	Professional Elective - III	3	0	0	3	3
6.	PE	Professional Elective - IV	3	0	0	3	3
7.	PE	Professional Elective - V	3	0	0	3	3
8.	16CSF04	Design Project	0	0	4	2	4
<b>Total Credits</b>						<b>25</b>	

  
**Chairman**  
 Board of Studies  
 Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

Programme Code & Name: CS & B.E-Computer Science and Engineering

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University) RASIPURAM – 637 408					<b>CURRICULUM</b> UG R - 2016	
Department		CSE						
Programme		B.E.						
<b>SEMESTER – VII</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	16CSD16	Internet Programming	3	0	2	4	5	
2.	OE	Open Elective – I	3	2	0	4	5	
3.	PE	Professional Elective – VI	3	0	0	3	3	
4.	OE	Open Elective – II	3	0	0	3	3	
5.	OE	Open Elective –III	3	0	0	3	3	
6.	16CSF01	Project work – Phase I	0	0	6	3	6	
<b>Total Credits</b>						<b>20</b>		

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University) RASIPURAM – 637 408					<b>CURRICULUM</b> UG R - 2016	
Department		CSE						
Programme		B.E.						
<b>SEMESTER – VIII</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P			
<b>PRACTICAL</b>								
1.	16CSF02	Project work – Phase II	0	0	30	15	30	
<b>Total Credits</b>						<b>15</b>		

**Total Credits to be earned for the award of the degree 180**

  
**Chairman**  
**Board of Studies**  
Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU



## MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

### B.E.- ELECTRICAL AND ELECTRONICS ENGINEERING

#### GROUPING OF COURSES

##### 1. Humanities and Social Sciences (HS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	16SHA01	Technical English	HS	5	3	2	0	4
2.	16SHA02	Communicative English	HS	7	3	0	4	5
3.	16SHA03	Business English	HS	5	3	2	0	4
4.	16SHA04	Basics of Japanese	HS	5	3	2	0	4
5.	16SHA05	Functional Japanese	HS	5	3	2	0	4
6.	16SHA06	Basics of German	HS	5	3	2	0	4
7.	16SHA07	Functional German	HS	5	3	2	0	4
8.	16SHA08	Principles of Management and Engineering Ethics	HS	3	3	0	0	3

##### 2. Basic Sciences (BS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	16SHB01	Matrices, Calculus and Differential Equations	BS	5	3	2	0	4
2.	16SHB02	Complex Variables, Laplace Transforms and Vector Calculus	BS	5	3	2	0	4
3.	16SHB03	Transforms and Partial Differential Equations	BS	5	3	2	0	4
4.	16SHB04	Probability and Random Processes	BS	5	3	2	0	4
5.	16SHB05	Probability and Queuing Theory	BS	5	3	2	0	4
6.	16SHB06	Numerical Methods	BS	5	3	2	0	4
7.	16SHB07	Statistics and Numerical Methods	BS	5	3	2	0	4
8.	16SHB08	Discrete Mathematics	BS	5	3	2	0	4
9.	16SHB09	Operations Research	BS	5	3	2	0	4

*The Chairman*  
Board of Studies,  
Department of Electrical and Electronics Engineering

Muthayammal Engineering College (Autonomous)  
Rasipuram-637 408

PRINCIPAL

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

10.	16SHB21	Engineering Physics	BS	6	2	0	4	4
11.	16SHB22	Material Science	BS	3	3	0	0	3
12.	16SHB23	Physics for Electrical Engineering	BS	3	3	0	0	3
13.	16SHB24	Physics for Mechanical Engineering	BS	3	3	0	0	3
14.	16SHB31	Engineering Chemistry	BS	5	3	0	2	4
15.	16SHB32	Environmental Science and Engineering	BS	3	3	0	0	3

### 3. Engineering Science (ES)

Sl. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1.	16EEC01	Fundamentals of Computing and Programming	ES	5	3	0	2	4
2.	16EEC02	Advanced C Programming	ES	5	3	0	2	4
3.	16EEC03	Basic of Civil and Mechanical Engineering	ES	4	4	0	0	4
4.	16EEC04	Basics of Electrical and Electronics Engineering	ES	3	3	0	0	3
5.	16EEC05	Engineering Graphics	ES	4	0	0	4	2
6.	16EEC06	Engineering Practices for Electrical Sciences	ES	4	0	0	4	2
7.	16EEC07	Electrical Drives and Controls	ES	5	3	0	2	4
8.	16EEC08	Engineering Mechanics	ES	5	3	0	2	4
9.	16EEC09	Microprocessors and Microcontrollers	ES	5	3	0	2	4
10.	16EEC10	Object Oriented Programming	ES	5	3	0	2	4
11.	16EEC11	Data Structures	ES	5	3	0	2	4
12.	16EEC12	Electronic Devices and Circuits	ES	5	3	0	2	4
13.	16EEC13	Circuit Theory	ES	5	3	0	2	4
14.	16EEC14	Digital Principles and System Design	ES	5	3	0	2	4
15.	16EEC15	Fundamental of Nano-science and Technology	ES	3	3	0	0	3

### 4. Professional Core (PC)

Sl. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1.	16EED01	Measurement and Instrumentation	PC	3	3	0	0	3
2.	16EED02	Network Analysis and Synthesis	PC	5	3	2	0	4

  
The Chairman  
Board of Studies,

Department of Electrical and Electronics Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram-637 408, Namakkal Dist.

  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Programme Code & Name: EE & B.E-Electrical and Electronics Engineering

3.	16EED03	Electromagnetic Theory	PC	5	3	2	0	4
4.	16EED04	DC machines and Transformers	PC	5	3	0	2	4
5.	16EED05	AC Machines	PC	5	3	1	2	4
6.	16EED06	Control systems	PC	7	3	2	2	5
7.	16EED07	Power Electronics	PC	5	3	0	2	4
8.	16EED08	Linear Integrated Circuits And Its Applications	PC	5	3	0	2	4
9.	16EED09	Design of Electrical Apparatus	PC	5	3	2	0	4
10.	16EED10	Transmission and Distribution	PC	3	3	0	0	3
11.	16EED11	Power System Analysis	PC	5	3	2	0	4
12.	16EED12	Solid State Drives	PC	5	3	0	2	4
13.	16EED13	Power System Operation and Control	PC	5	3	0	2	4
14.	16EED14	High Voltage Engineering	PC	3	3	0	0	3
15.	16EED15	Power System Protection and Switchgear	PC	3	3	0	0	3
16.	16EED16	Energy Conservation and Energy Auditing	PC	3	3	0	0	3

### 5. Professional Elective (PE)

Sl. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1.	16EEE01	Advanced Control Theory	PE	5	3	2	0	4
2.	16EEE02	Electrical System Design and Estimation	PE	5	3	2	0	4
3.	16EEE03	Power Semiconductor Devices	PE	3	3	0	0	3
4.	16EEE04	Computer Aided Analysis and Design of Electrical Apparatus	PE	5	3	2	0	4
5.	16EEE05	Smart Grid	PE	3	3	0	0	3
6.	16EEE06	Power system Stability	PE	3	3	0	0	3
7.	16EEE07	High Voltage Direct Current Transmission	PE	3	3	0	0	3
8.	16EEE08	Soft Computing Technique	PE	3	3	0	0	3
9.	16EEE09	Flexible AC Transmission Systems	PE	3	3	0	0	3
10.	16EEE10	Power Quality	PE	3	3	0	0	3
11.	16EEE11	Special Electrical Machines	PE	3	3	0	0	3
12.	16EEE12	Power System Transients	PE	3	3	0	0	3

  
The Chairman  
Board of Studies,

Department of Electrical and Electronics Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram-637 408, Namakkal, Dt.

  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

13.	16EEE13	Power Electronics for Renewable Energy Systems	PE	3	3	0	0	3
14.	16EEE14	Switched Mode Power Conversion	PE	3	3	0	0	3
15.	16EEE15	VLSI Design	PE	3	3	0	0	3
16.	16EEE16	Robotics	PE	3	3	0	0	3
17.	16EEE17	PLC and Automation	PE	3	3	0	0	3
18.	16EEE18	Virtual Instrumentation	PE	3	3	0	0	3
19.	16EEE19	Communication Engineering	PE	3	3	0	0	3
20.	16EEE20	Total Quality Management	PE	3	3	0	0	3
21.	16EEE21	Power Plant Engineering	PE	3	3	0	0	3
22.	16EEE22	Embedded Systems	PE	3	3	0	0	3
23.	16EEE23	Control of electric drives with PLC-SCADA controllers	PE	3	3	0	0	3
24.	16EEE24	Control of electric drives with digital controllers	PE	3	3	0	0	3


#### 6. Employability Enhancement Courses (EEC)


Sl. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1.	16EEF01	Project work – Phase-I	EEC	6	0	0	6	3
2.	16EEF02	Project work – Phase-II	EEC	30	0	0	30	15
3.	16EEF03	Comprehension	EEC	4	0	0	4	2
4.	16EEF04	Design Project	EEC	4	0	0	4	2
5.	16EEF05	Presentation Skill and Technical Seminar	EEC	2	0	0	2	1


*R. De*  
**The Chairman**  
 Board of Studies,  
 Department of Electrical and Electronics Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram-637 408, Namakkal Dt.

*R. De*  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU


Programme Code & Name: EE & B.E-Electrical and Electronics Engineering


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> UG R - 2016	
Department		Electrical and Electronics Engineering						
Programme		B.E. – Electrical and Electronics Engineering						
<b>SEMESTER – I</b>								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs
				L	T	P		
1.	16SHA01	Technical English	HS	3	2	0	4	5
2.	16SHB01	Matrices, Calculus and Differential Equations	BS	3	2	0	4	5
3.	16SHB22	Material Science	BS	3	0	0	3	3
4.	16SHB31	Engineering Chemistry	BS	3	0	2	4	5
5.	16EEC01	Fundamentals of Computing and Programming	ES	2	0	4	4	6
6.	16EEC03	Basic of Civil and Mechanical Engineering	ES	4	0	0	4	4
7.	16EEC06	Engineering Practices for Electrical Sciences	ES	0	0	4	2	4
<b>Total Credits</b>							<b>25</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> UG R - 2016	
Department		Electrical and Electronics Engineering						
Programme		B.E. – Electrical and Electronics Engineering						
<b>SEMESTER – II</b>								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs
				L	T	P		
1.	16SHA02	Communicative English	HS	3	0	4	5	7
2.	16SHB02	Complex Variables, Laplace Transforms and Vector Calculus	BS	3	2	0	4	5
3.	16SHB21	Engineering Physics	BS	2	0	4	4	6
4.	16SHB32	Environmental Science and Engineering	BS	3	0	0	3	3
5.	16EEC02	Advanced C Programming	ES	2	0	4	4	6
6.	16EEC05	Engineering Graphics	ES	0	0	4	2	4
7.	16EEC13	Circuit Theory	HS	3	0	4	5	7
<b>Total Credits</b>							<b>26</b>	

  
**The Chairman**  
Board of Studies,  
Department of Electrical and Electronics Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram-637 408, Namakkal


  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU


 <b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		CURRICULUM UG R - 2016						
Department		Electrical and Electronics Engineering						
Programme		B.E. – Electrical and Electronics Engineering						
SEMESTER – III								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs
				L	T	P		
1.	16SHB03	Transforms and Partial Differential Equations	BS	3	2	0	4	5
2.	16EEC10	Object Oriented Programming	ES	2	0	4	4	6
3.	16EEC12	Electronic Devices and Circuits	ES	2	0	4	4	6
4.	16EED01	Measurement and Instrumentation	PC	3	0	0	3	3
5.	16EED03	Electromagnetic Theory	PC	3	2	0	4	5
6.	16EED04	DC machines and Transformers	PC	3	0	2	4	5
<b>Total Credits</b>							<b>23</b>	


 <b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		CURRICULUM UG R - 2016						
Department		Electrical and Electronics Engineering						
Programme		B.E. – Electrical and Electronics Engineering						
SEMESTER – IV								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs
				L	T	P		
1.	16SHB06	Numerical Methods	BS	3	2	0	4	5
2.	16EEC14	Digital Principles and System Design	ES	2	0	4	4	6
3.	16EED02	Network analysis and synthesis	PC	3	2	0	4	5
4.	16EED05	AC Machines	PC	3	0	2	4	5
5.	16EED08	Linear Integrated Circuits and its Applications	PC	3	0	2	4	5
6.	16EEE21	Power Plant Engineering	PE	3	0	0	3	3
<b>Total Credits</b>							<b>23</b>	

  
**The Chairman**  
 Board of Studies,  
 Department of Electrical and Electronics Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram-637 408, Namakkal Dt.


  
**PRINCIPAL**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU


 <b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		CURRICULUM UG R - 2016						
Department		Electrical and Electronics Engineering						
Programme		B.E. – Electrical and Electronics Engineering						
SEMESTER – V								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs
				L	T	P		
1.	16EEC09	Microprocessors and Microcontrollers	ES	3	0	2	4	5
2.	16EED06	Control systems	PC	3	2	2	5	7
3.	16EED07	Power Electronics	PC	3	0	2	4	5
4.	16EED09	Design of Electrical Apparatus	PC	3	2	0	4	5
5.	16EED10	Transmission and Distribution	PC	3	0	0	3	3
6.	16EEE19	Communication Engineering	PE	3	0	0	3	3
7.	16EEE20	Total Quality Management	PE	3	0	0	3	3
<b>Total Credits</b>							<b>26</b>	

 <b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		CURRICULUM UG R - 2016						
Department		Electrical and Electronics Engineering						
Programme		B.E. – Electrical and Electronics Engineering						
SEMESTER – VI								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs
				L	T	P		
1.	16EED11	Power System Analysis	PC	3	2	0	4	5
2.	16EED12	Solid State Drives	PC	3	0	2	4	5
3.	16EED22	Embedded Systems	PE	3	0	0	3	3
4.	16EEE09	Flexible AC Transmission Systems	PE	3	0	0	3	3
5.	16EEE10	Power Quality	PE	3	0	0	3	3
6.	16ECE23	Digital Signal Processing	OE	3	2	0	4	5
7.	16EEF04	Design Project	EEC	0	0	4	2	4
<b>Total Credits</b>							<b>23</b>	

  
**The Chairman**  
 Board of Studies,  
 Department of Electrical and Electronics Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram-637 408, Namakkal Dist.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> UG R - 2016	
Department		Electrical and Electronics Engineering						
Programme		B.E. – Electrical and Electronics Engineering						
<b>SEMESTER – VII</b>								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs
				L	T	P		
1.	16SHA08	Principles of Management and Engineering Ethics	HS	3	0	0	3	3
2.	16EED15	Power System Protection and Switchgear	PC	3	0	0	3	3
4.	16EEE11	Special Electrical Machines	PE	3	0	0	3	3
5.	16EEE13	Power Electronics for Renewable Energy Systems	PE	3	0	0	3	3
6.	16ECE04	Biomedical Engineering	OE	3	0	0	3	3
7.	16EEF01	Project work Phase – I	EEC	0	0	6	3	6
8.	16EEF03	Comprehension	EEC	0	0	4	2	4
<b>Total Credits</b>							<b>20</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> UG R - 2016	
Department		Electrical and Electronics Engineering						
Programme		B.E. – Electrical and Electronics Engineering						
<b>SEMESTER – VIII</b>								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs
				L	T	P		
1.	16EEF02	Project work Phase - II	EEC	0	0	30	15	30
<b>Total Credits</b>							<b>15</b>	

  
**The Chairman**  
Board of Studies,  
Department of Electrical and Electronics Engineering  
Muthayammal Engineering College (Autonomous)

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU.**

**COURSE COMPONENT SUMMARY**

S.No.	Subject Area	Credits Per Semester								Credits total	Percentage credits
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	4	5	-	-	-	-	3	-	12	6.25
2.	BS	11	11	4	4	-	-	-	-	30	16.66
3.	ES	10	10	8	4	4	-	-	-	36	20.83
4.	PC	-	-	11	12	16	8	3	-	50	27.08
5.	PE	-	-	-	3	6	9	6	-	24	16.66
6.	OE	-	-	-	-	-	4	3	-	7	4.16
7.	EEC	-	-	-	-	-	2	5	15	22	8.33
<b>TOTAL</b>		<b>25</b>	<b>26</b>	<b>23</b>	<b>23</b>	<b>26</b>	<b>23</b>	<b>20</b>	<b>15</b>	<b>181</b>	

**Total Credits: 181**

*L. De*  
**The Chairman**  
 Board of Studies,  
 Department of Electrical and Electronics Engineering  
 Muthayammal Engineering College (Autonomous),  
 Rasipuram-637 408, Namakkal Dist.

*L. De*  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU.**



**MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
DEPARTMENT OF MECHANICAL ENGINEERING  
GROUPING OF COURSES**

**1. Humanities and Social Sciences (HS)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	16SHA01	Technical English	HS	5	3	2	0	4
2	16SHA02	Communicative English	HS	7	3	0	4	5
3	16SHA03	Business English	HS	5	3	2	0	4
4	16SHA04	Basics of Japanese	HS	5	3	2	0	4
5	16SHA05	Functional Japanese	HS	5	3	2	0	4
6	16SHA06	Basics of German	HS	5	3	2	0	4
7	16SHA07	Functional German	HS	5	3	2	0	4
8	16SHA08	Principles of Management and Engineering Ethics	HS	3	3	0	0	3

**2. Basic Sciences (BS)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	16SHB01	Matrices, Calculus and Ordinary Differential Equations	BS	5	3	2	0	4
2	16SHB02	Complex Variables, Laplace Transforms and Vector Calculus	BS	5	3	2	0	4
3	16SHB03	Transforms and Partial Differential Equations	BS	5	3	2	0	4
4	16SHB04	Random Processes	BS	5	3	2	0	4
5	16SHB05	Probability and Queuing Theory	BS	5	3	2	0	4
6	16SHB06	Numerical Methods	BS	5	3	2	0	4
7	16SHB07	Statistics and Numerical Methods	BS	5	3	2	0	4
8	16SHB08	Discrete Mathematics	BS	5	3	2	0	4
9	16SHB09	Operations Research	BS	5	3	2	0	4
10	16SHB21	Engineering Physics	BS	5	3	0	2	4
11	16SHB22	Material Science	BS	3	3	0	0	3
12	16SHB23	Physics for Electrical Engineering	BS	3	3	0	0	3
13	16SHB24	Physics for Mechanical Engineering	BS	3	3	0	0	3
14	16SHB31	Engineering Chemistry	BS	5	3	0	2	4
15	16SHB32	Environmental Science and Engineering	BS	3	3	0	0	3

*nr*  
Chairman-Board of Studies  
Department of Mechanical Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.

*Principal*  
PRINCIPAL  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Programme Code & Name: ME & B.E-Mechanical Engineering

3. Engineering Sciences (ES)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	16MEC01	Fundamentals of Computing and Programming	ES	5	3	0	2	4
2	16MEC02	Advanced C Programming	ES	5	3	0	2	4
3	16MEC03	Basics of Civil and Mechanical Engineering	ES	4	4	0	0	4
4	16MEC04	Basics of Electrical and Electronics Engineering	ES	4	4	0	0	4
5	16MEC05	Engineering Drawing	ES	4	2	0	2	3
6	16MEC06	Engineering Practices for Mechanical Sciences	ES	4	0	0	4	2
7	16EEC07	Electrical Drives and Controls	ES	5	3	0	2	4
8	16MEC08	Engineering Mechanics	ES	5	3	2	0	4
9	16MEC09	Microprocessor and Microcontrollers	ES	5	3	0	2	4
10	16MEC10	Object Oriented Programming	ES	6	2	0	4	4
11	16MEC11	Biomechanics	ES	3	3	0	0	3
12	16MEC12	Measurements and Instruments	ES	3	3	0	0	3
13	16MEC13	Renewable Energy Sources	ES	3	3	0	0	3
14	16MEC14	Fundamentals of Nanoscience	ES	3	3	0	0	3
15	16MEC15	Production Processes	ES	5	3	0	2	4

4. Professional Core (PC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	16MED01	Computer Aided Drafting and Modeling Laboratory	PC	4	0	0	4	2
2	16MED02	Machine Drawing	PC	4	0	0	4	2
3	16MED03	Engineering Materials and Metallurgy	PC	3	3	0	0	3
4	16MED04	Engineering Thermodynamics	PC	5	3	2	0	4
5	16MED05	Fluid Mechanics and Machinery	PC	5	3	0	2	4
6	16MED06	Mechatronics	PC	5	3	0	2	4
7	16MED07	Strength of Materials	PC	5	3	0	2	4
8	16MED08	Kinematics of Machinery	PC	3	3	0	0	3
9	16MED09	Manufacturing Technology	PC	5	3	0	2	4
10	16MED10	Applied Hydraulics and Pneumatics	PC	3	3	0	0	3
11	16MED11	Thermal Engineering	PC	5	3	0	2	4
12	16MED12	Automobile Engineering	PC	3	3	0	0	3
13	16MED13	Heat and Mass Transfer	PC	5	3	0	2	4
14	16MED14	Design of Machine Elements	PC	5	3	2	0	4
15	16MED15	Gas Dynamics and Jet Propulsion	PC	3	3	0	0	3
16	16MED16	Dynamics of Machines	PC	5	3	0	2	4
17	16MED17	Design of Transmission Systems	PC	3	3	0	0	3
18	16MED18	Computer Aided Design	PC	5	3	0	2	4

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Chairman-Board of Studies  
Department of Mechanical Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
AUTONOMOUS  
RASIPURAM-637 408, NAMAKKAL Dist.

Programme Code & Name: ME & B.E-Mechanical Engineering

19	16MED19	Metrology and Measurements	PC	5	3	0	2	4
20	16MEE20	Power Plant Engineering	PC	3	3	0	0	3
21	16MED21	Finite Element Analysis	PC	5	3	0	2	4
22	16MED22	Engineering Economics and Cost analysis	PC	3	3	0	0	3
23	16MED23	Total Quality Management	PC	3	3	0	0	3
24	16MED24	Principles of Management	PC	3	3	0	0	3
25	16MED25	Computer Integrated Manufacturing systems	PC	3	3	0	0	3

5. Professional Electives (PE)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	16MEE01	Design of jigs, fixtures and Press Tools	PE	5	3	2	0	4
2	16MEE02	Refrigeration and Air conditioning	PE	5	3	2	0	4
3	16MEE03	Advanced IC Engines	PE	5	3	2	0	4
4	16MEE04	Computational Fluid Dynamics	PE	5	3	2	0	4
5	16MEE05	Thermal Turbo Machines	PE	5	3	2	0	4
6	16MEE06	Vibration and Noise Control	PE	5	3	2	0	4
7	16MEE07	Design of Pressure Vessel and Piping	PE	5	3	2	0	4
8	16MEE08	Quality Control and Reliability Engineering	PE	5	3	2	0	4
9	16MEE09	Unconventional Machining Processes	PE	3	3	0	0	3
10	16MEE10	Maintenance Engineering	PE	3	3	0	0	3
11	16MEE11	Process Planning and Cost Estimation	PE	3	3	0	0	3
12	16MEE12	Flexible Manufacturing Systems	PE	3	3	0	0	3
13	16MEE13	Composite Materials	PE	3	3	0	0	3
14	16MEE14	Industrial robotics	PE	3	3	0	0	3
15	16MEE15	Micro Electro Mechanical Systems	PE	3	3	0	0	3
16	16MEE16	Advanced Manufacturing Systems	PE	3	3	0	0	3
17	16MEE17	Additive Manufacturing Techniques	PE	3	3	0	0	3
18	16MEE18	Lean Manufacturing	PE	3	3	0	0	3

6. Open Elective (OE)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	16ECE04	Bio Medical Engineering	OE	3	3	0	0	3
2	16ITD21	IOT and application	OE	3	3	0	0	3
3	16CEE09	Industrial Waste Management	OE	3	3	0	0	3

PRINCIPAL,

M. HAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Chairman-Board of Studies  
Department of Mechanical Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.



Programme Code & Name: ME & B.E-Mechanical Engineering

7. Employability Enhancement Courses (EEC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	16MEF07	Project work Phase -I	EEC	6	0	0	6	3
2	16MEF02	Project work Phase -II	EEC	30	0	0	30	15
3	16MEF03	Comprehension	EEC	2	0	0	2	1
4	16MEF04	Design and Fabrication Project	EEC	4	0	0	4	2

  
Chairman-Board of Studies  
Department of Mechanical Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.



  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Autonomous) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R - 2016</b>	
Department		Mechanical Engineering					
Programme		B.E					
<b>SEMESTER - I</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16SHA01	Technical English	3	2	0	4	5
2.	16SHB01	Matrix, Calculus and Ordinary Differential Equations	3	2	0	4	5
3.	16SHB22	Material Science	3	0	0	3	3
4.	16SHB31	Engineering Chemistry	2	0	4	4	6
5.	16MEC01	Fundamentals of Computing and Programming	2	0	4	4	6
6.	16MEC04	Basics of Electrical and Electronics Engineering	4	0	0	4	4
7.	16MEC06	Engineering Practices for Mechanical Sciences	0	0	4	2	4
<b>Total Credits</b>						<b>25</b>	
		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Autonomous) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R - 2016</b>	
Department		Mechanical Engineering					
Programme		B.E					
<b>SEMESTER - II</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16SHA02	Communicative English	3	0	4	5	7
2.	16SHB02	Complex Variables, Laplace Transforms and Vector Calculus	3	2	0	4	5
3.	16SHB21	Engineering Physics	2	0	4	4	6
4.	16SHB32	Environmental Science and Engineering	3	0	0	3	3
5.	16MEC05	Engineering Drawing	1	0	4	3	5
6.	16MEC08	Engineering Mechanics	3	2	0	4	5
7.	16MEC02	Advanced C Programming	2	0	4	4	6
<b>Total Credits</b>						<b>27</b>	

PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU



Chairman-Board of Studies  
 Department of Mechanical Engineering  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.

Programme Code & Name: ME & B.E-Mechanical Engineering

 <b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Autonomous) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		CURRICULUM UG R - 2016					
Department		Mechanical Engineering					
Programme		B.E					
<b>SEMESTER - III</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16SHB03	Transforms and Partial Differential Equations	3	2	0	4	5
2.	16MED03	Engineering Materials and Metallurgy	3	0	0	3	3
3.	16MED04	Engineering Thermodynamics	3	2	0	4	5
4.	16MED05	Fluid Mechanics and Machinery	3	0	2	4	5
5.	16MEC15	Production Processes	3	0	2	4	5
6.	16EEC07	Electrical Drives and Controls	3	0	2	4	5
<b>Total Credits</b>						<b>23</b>	
 <b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Autonomous) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		CURRICULUM UG R - 2016					
Department		Mechanical Engineering					
Programme		B.E					
<b>SEMESTER - IV</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16SHB07	Statistics and Numerical Methods	3	2	0	4	5
2.	16MED07	Strength of Materials	3	0	2	4	5
3.	16MED08	Kinematics of Machinery	3	0	0	3	3
4.	16MED09	Manufacturing Technology	3	0	2	4	5
5.	16MED10	Applied Hydraulics and Pneumatics	3	0	0	3	3
6.	16MED11	Thermal Engineering	3	0	2	4	5
<b>Total Credits</b>						<b>22</b>	



  
 Chairman-Board of Studies  
 Department of Mechanical Engineering  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

 <b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Autonomous) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		<b>CURRICULUM</b> <b>UG</b> <b>R - 2016</b>					
Department		Mechanical Engineering					
Programme		B.E					
<b>SEMESTER - V</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16MED12	Automobile Engineering	3	0	0	3	3
2.	16MED13	Heat and Mass Transfer	3	0	2	4	5
3.	16MED14	Design of Machine Elements	3	2	0	4	5
4.	16MED15	Gas Dynamics and Jet Propulsion	3	0	0	3	3
5.	16MED16	Dynamics of Machines	3	0	2	4	5
6.	16MED24	Principles of Management	3	0	0	3	3
<b>Total Credits</b>						<b>21</b>	
 <b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Autonomous) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		<b>CURRICULUM</b> <b>UG</b> <b>R - 2016</b>					
Department		Mechanical Engineering					
Programme		B.E					
<b>SEMESTER - VI</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
	16MED17	Design of Transmission Systems	3	0	0	3	3
	16MED22	Engineering Economics and Cost analysis	3	0	0	3	3
	16MED18	Computer Aided Design	3	0	2	4	5
4.	16MED06	Mechatronics	3	0	2	4	5
5.	16MED19	Metrology and Measurements	3	0	2	4	5
6.	16MEE20	Power Plant Engineering	3	0	0	3	3
7.	16MEE**	Professional Elective – I	3	2	0	4	5
<b>Total Credits</b>						<b>25</b>	

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU**

Chairman-Board of Studies  
 Department of Mechanical Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**


 <b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Autonomous) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		CURRICULUM UG R - 2016					
Department		Mechanical Engineering					
Programme		B.E					
<b>SEMESTER - VII</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16MED21	Finite Element Analysis	3	0	2	4	5
2.	16MED25	Computer Integrated Manufacturing Systems	3	0	0	3	3
3.	16MEE**	Professional Elective – II	3	0	0	3	3
4.	16*****	Open Elective – I	3	0	0	3	3
5.	16*****	Open Elective – II	3	0	0	3	3
6.	16*****	Open Elective – III	3	0	0	3	3
7.	16MEF07	Project work Phase I	0	0	6	3	6
<b>Total Credits</b>						<b>22</b>	
 <b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Autonomous) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		CURRICULUM UG R - 2016					
Department		Mechanical Engineering					
Programme		B.E					
<b>SEMESTER - VIII</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>PRACTICAL</b>							
1.	16MEF02	Project work Phase II	0	0	30	15	30
<b>Total Credits</b>						<b>15</b>	

  
 Chairman-Board of Studies  
 Department of Mechanical Engineering  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

**Course Component Summary**

Subject Area	Credits per Semester								Total	Percentage %
	I	II	III	IV	V	VI	VII	VIII		
HS	4	5	-	-	-	-	-	-	9	5
BS	11	11	4	4	-	-	-	-	30	17
ES	10	11	8	-	-	-	-	-	29	16
PC	-	-	11	18	21	21	7	-	78	43
PE	-	-	-	-	-	4	3	-	7	4
OE	-	-	-	-	-	-	9	-	9	5
EEC	-	-	-	-	-	-	3	15	18	10
MC	-	-	-	-	-	-	-	-	-	0
<b>Total</b>	25	27	23	22	21	25	22	15	180	100

  
 Chairman-Board of Studies  
 Department of Mechanical Engineering  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.

  
 PRINCIPAL  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

# MUTHAYAMMAL ENGINEERING COLLEGE

(AUTONOMOUS)

B.Tech. –INFORMATION TECHNOLOGY

## GROUPING OF COURSES

### 1. Humanities and Social Sciences(HS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	16SHA01	Technical English	HS	5	3	2	0	4
2.	16SHA02	Communicative English	HS	7	3	0	4	5
3.	16SHA03	Business English	HS	5	3	2	0	4
4.	16SHA04	Basics of Japanese	HS	5	3	2	0	4
5.	16SHA05	Functional Japanese	HS	5	3	2	0	4
6.	16SHA06	Basics of German	HS	5	3	2	0	4
7.	16SHA07	Functional German	HS	5	3	2	0	4
8.	16SHA08	Principles of Management and Engineering Ethics	HS	3	3	0	0	3

### 2. Basic Sciences(BS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	16SHB01	Matrices, Calculus and Ordinary Differential Equations	BS	5	3	2	0	4
2.	16SHB02	Complex variables, Laplace Transforms and Vector Calculus	BS	5	3	2	0	4
3.	16SHB03	Transforms and Partial Differential Equations	BS	5	3	2	0	4
4.	16SHB04	Random Processes	BS	5	3	2	0	4
5.	16SHB05	Probability and Queuing Theory	BS	5	3	2	0	4
6.	16SHB06	Numerical Methods	BS	5	3	2	0	4
7.	16SHB07	Statistics and Numerical Methods	BS	5	3	2	0	4
8.	16SHB08	Discrete Mathematics	BS	5	3	2	0	4
9.	16SHB09	Operations Research	BS	5	3	2	0	4
10.	16SHB21	Engineering Physics	BS	6	2	0	4	4
11.	16SHB22	Material Science	BS	3	3	0	0	3
12.	16SHB23	Physics for Electrical Engineering	BS	3	3	0	0	3
13.	16SHB24	Physics for Mechanical Engineering	BS	3	3	0	0	3
14.	16SHB31	Engineering Chemistry	BS	6	2	0	4	4
15.	16SHB32	Environmental Science and Engineering	BS	3	3	0	0	3

2

  
Chairman

Board of Studies

Department of Information Technology  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.


  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU

### 3. Engineering Sciences(ES)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	16ITC01	Fundamentals of Computing and Programming	ES	6	2	0	4	4
2	16ITC02	Advanced C Programming	ES	6	2	0	4	4
3	16ITC03	Basics of Civil and Mechanical Engineering	ES	4	4	0	0	4
4	16ITC04	Basics of Electrical and Electronics Engineering	ES	3	3	0	0	3
5	16ITC05	Engineering Graphics	ES	4	0	0	4	2
6	16ITC06	Engineering Practices for Computer Sciences	ES	4	0	0	4	2
7	16ITC07	Electrical Drives and Control	ES	5	3	0	2	4
8	16ITC08	Engineering Mechanics	ES	5	3	2	0	4
9	16ITC09	Microprocessor and Microcontrollers	ES	5	3	0	2	4
10	16ITC10	Object Oriented Programming	ES	6	2	0	4	4
11	16ITC11	Data Structures	ES	6	2	0	4	4
12	16ITC12	Electron Devices	ES	6	2	0	4	4
13	16ITC13	Circuit Theory	ES	6	2	0	4	4
14	16ITC14	Digital Principles and System Design	ES	6	2	0	4	4
15	16ITC15	Fundamentals of Nano Technology	ES	6	2	0	4	4

### 4. Professional Core(PC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	16ITD01	Advanced Java Programming	PC	5	3	0	2	4
2	16ITD02	Design and Analysis of Algorithms	PC	3	3	0	0	3
3	16ITD03	Database Management Systems	PC	5	3	0	2	4
4	16ITD04	Object Oriented Software Engineering	PC	3	3	0	0	3
5	16ITD05	Operating Systems	PC	5	3	0	2	4
6	16ITD06	Object Oriented Analysis and Design	PC	5	3	0	2	4
7	16ITD07	Computer Networks	PC	5	3	0	2	4
8	16ITD08	Principles of Compiler Design	PC	5	3	0	2	4
9	16ITD09	Cryptography and Network Security	PC	5	3	2	0	4
10	16ITD10	Computer Organization	PC	5	3	2	0	4
11	16ITD11	Computer Graphics and Multimedia	PC	5	3	0	2	4
12	16ITD12	Analog and Digital Communication	PC	3	3	0	0	3

  
**Chairman**  
 Board of Studies  
 Department of Information Technology  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408.

PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

13	16ITD13	Mobile and Pervasive Computing	PC	5	3	0	2	4
14	16ITD14	Cloud Computing	PC	3	3	0	0	3
15	16ITD15	Web Technology	PC	5	3	0	2	4
16	16ITD16	Wireless Communication	PC	3	3	0	0	3
17	16ITD17	Embedded Programming	PC	3	3	0	0	3
18	16ITD18	Software Architecture	PC	3	3	0	0	3
19	16ITD19	Distributed Systems	PC	5	3	2	0	4
20	16ITD20	High Speed Networks	PC	3	3	0	0	3
21	16ITD21	IOT And Applications	PC	3	3	0	0	3

#### 5. Professional Electives(PE)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	16ITE01	C# and .Net Framework	PE	5	3	2	0	4
2	16ITE02	Software Project Management	PE	3	3	0	0	3
3	16ITE03	Software Testing	PE	5	3	2	0	4
4	16 ITE04	Artificial Intelligence	PE	3	3	0	0	3
5	16 ITE05	Ethical Hacking and Cyber Security	PE	3	3	0	0	3
6	16 ITE06	Soft Computing	PE	4	4	0	0	4
7	16 ITE07	Real Time Systems	PE	3	3	0	0	3
8	16 ITE08	Wireless Sensor Networks	PE	4	4	0	0	4
9	16 ITE09	Network Programming and Management	PE	3	3	0	0	3
10	16 ITE10	Information Security	PE	3	3	0	0	3
11	16 ITE11	Python Programming	PE	5	3	2	0	4
12	16 ITE12	Social Networks	PE	3	3	0	0	3
13	16 ITE13	Business Intelligence	PE	3	3	0	0	3
14	16 ITE14	Data Warehousing and Data Mining	PE	5	3	2	0	4
15	16 ITE15	Information Retrieval Techniques	PE	3	3	0	0	3
16	16 ITE16	Agile Technology	PE	5	3	2	0	4
17	16 ITE17	Parallel Algorithm	PE	5	3	2	0	4
18	16 ITE18	Service Oriented Architecture	PE	3	3	0	0	3
19	16ITE19	Salesforce CRM and Platform	PE	5	3	0	2	4
20	16ITE20	Natural Language Processing	PE	3	3	0	0	3
21	16ITE21	Data Analytics	PE	3	3	0	0	3
22	16ITE22	Big Data Technology	PE	3	3	0	0	3
23	16ITE23	Advanced Data Mining and Visualization	PE	3	3	0	0	3

4

**Chairman**

Board of Studies

Department of Information Technology  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist  
TAMILNADU

6. Employability Enhancement Courses(EEC)


S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	16ITF01	Project work-Phase I	EEC	6	0	0	6	3
2	16ITF02	Project work -Phase II	EEC	30	0	0	30	15
3	16ITF03	Comprehension	EEC	4	0	0	4	2
4	16ITF04	Design Project	EEC	4	0	0	4	2
5	16ITF05	Technical Seminar	EEC	4	0	4	0	2
6	16ITF06	Entrepreneurship Development	EEC	3	3	0	0	3
7	16ITF07	Soft Skills	EEC	4	2	2	0	3
8	16ITF08	Professional Practices	EEC	6	0	0	6	3


7. Open Electives(OE)


S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	16MEE14	Industrial Robotics	OE	3	3	0	0	3
2	16MEE20	Power Plant Engineering	OE	3	3	0	0	3
3	16MED23	Total Quality Management	OE	3	3	0	0	3
4	16ECE06	Telecommunication Switching Systems	OE	3	3	0	0	3
5	16ECE15	Mobile Ad-Hoc Networks	OE	3	3	0	0	3
6	16CED14	Water Supply Engineering	OE	3	3	0	0	3
7	16CEE15	Building Services	OE	3	3	0	0	3


  
**Chairman**  
 Board of Studies  
 Department of Information Technology  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist. 637 408.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU**

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM UG R – 2016</b>	
Department		IT						
Programme		B.Tech.						
<b>SEMESTER – I</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	16SHA02	Communicative English	3	0	4	5	7	
2.	16SHB01	Matrices, Calculus and Ordinary Differential Equations	3	2	0	4	5	
3.	16SHB21	Engineering Physics	2	0	4	4	6	
4.	16SHB32	Environmental Science and Engineering	3	0	0	3	3	
5.	16ITC01	Fundamentals of Computing and Programming	2	0	4	4	6	
6.	16ITC04	Basics of Electrical and Electronics Engineering	3	0	0	3	3	
7.	16ITC06	Engineering Practices for Computer Sciences	0	0	4	2	4	
<b>Total Credits</b>						<b>25</b>		

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM UG R – 2016</b>	
Department		IT						
Programme		B.Tech.						
<b>SEMESTER – II</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	16SHA01	Technical English	3	2	0	4	5	
2.	16SHB02	Complex variables, Laplace Transforms and Vector Calculus	3	2	0	4	5	
3.	16SHB22	Material Science	3	0	0	3	3	
4.	16SHB31	Engineering Chemistry	2	0	4	4	6	
5.	16ITC05	Engineering Graphics	0	0	4	2	4	
6.	16ITC02	Advanced C Programming	2	0	4	4	6	
7.	16ITC14	Digital Principles and System Design	2	0	4	4	6	
<b>Total Credits</b>						<b>25</b>		

 <b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		<b>CURRICULUM</b> <b>UG</b> <b>R – 2016</b>					
Department	Information Technology						
Programme	B.Tech. – Information Technology						
<b>SEMESTER – III</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16SHB03	Transforms and Partial Differential Equations	3	2	0	4	5
2.	16ITD05	Operating Systems	3	0	2	4	5
3.	16ITD10	Computer Organization	3	2	0	4	5
4.	16ITC10	Object Oriented Programming	2	0	4	4	6
5.	16ITC11	Data Structures	2	0	4	4	6
6.	16ITD12	Analog and Digital Communication	3	0	0	3	3
<b>Total Credits</b>						<b>23</b>	


 <b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		<b>CURRICULUM</b> <b>UG</b> <b>R – 2016</b>					
Department	Information Technology						
Programme	B.Tech. – Information Technology						
<b>SEMESTER – IV</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16SHB05	Probability and Queuing Theory	3	2	0	4	5
2.	16ITD03	Database Management Systems	3	0	2	4	5
3.	16ITC09	Microprocessor and Microcontrollers	3	0	2	4	5
4.	16ITD04	Object Oriented Software Engineering	3	0	0	3	3
5.	16ITD07	Computer Networks	3	0	2	4	5
6.	16ITD02	Design and Analysis of Algorithms	3	0	0	3	3
<b>Total Credits</b>						<b>22</b>	


**Chairman**


Board of Studies

Department of Information Technology  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist. 637 408.


**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU


 <b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		<b>CURRICULUM</b> <b>UG</b> <b>R – 2016</b>					
Department		Information Technology					
Programme		B.Tech. – Information Technology					
<b>SEMESTER – V</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16ITD06	Object Oriented Analysis and Design	3	0	2	4	5
2.	16ITD01	Advanced Java Programming	3	0	2	4	5
3.	16ITD08	Principles of Compiler Design	3	0	2	4	5
4.	16ITD09	Cryptography and Network Security	3	2	0	4	5
5.	16SHA08	Principles of Management And Engineering Ethics	3	0	0	3	3
6.	PE	Elective I	3	0	0	3	3
7.	PE	Elective II	3	0	0	3	3
<b>Total Credits</b>						<b>25</b>	

 <b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		<b>CURRICULUM</b> <b>UG</b> <b>R – 2016</b>					
Department		Information Technology					
Programme		B.Tech. – Information Technology					
<b>SEMESTER – VI</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16ITD13	Mobile and Pervasive Computing	3	0	2	4	5
2.	16ITD11	Computer Graphics and Multimedia	3	0	2	4	5
3.	16ITD16	Wireless Communication	3	0	0	3	3
4.	16ITD19	Distributed Systems	3	2	0	4	5
5.	PE	Elective III	4	0	0	4	4
6.	PE	Elective IV	3	0	0	3	3
7.	PE	Elective V	3	0	0	3	3
8.	16ITF04	Design Project	0	0	4	2	4
<b>Total Credits</b>						<b>27</b>	

  
**Chairman**  
 Board of Studies  
 Department of Information Technology  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist. 637 408.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU**

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> <b>UG</b> <b>R – 2016</b>	
Department		Information Technology						
Programme		B.Tech. – Information Technology						
<b>SEMESTER – VII</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	PE	Elective – VI	4	0	0	4	4	
2.	OE	Open Elective – I	3	0	0	3	3	
3.	OE	Open Elective – II	3	0	0	3	3	
4.	OE	Open Elective – III	3	0	0	3	3	
5.	16ITF01	Project work – Phase I	0	0	6	3	6	
6.	16ITF03	Comprehension	0	0	4	2	4	
<b>Total Credits</b>						<b>18</b>		

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> <b>UG</b> <b>R – 2016</b>	
Department		Information Technology						
Programme		B.Tech. – Information Technology						
<b>SEMESTER – VIII</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	16ITF02	Project work – Phase II	0	0	30	15	3 0	
<b>Total Credits</b>						<b>15</b>		

**Total Credits to be earned for the award of the degree 180**

  
**Chairman**  
Board of Studies  
Department of Information Technology  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist. 637 408.

  
**PRINCIPAL**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
RASIPURAM-637 408, NAMAKKAL Dist.



## MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

B.E. - BIOMEDICAL ENGINEERING

GROUPING OF COURSES

FOUNDATION COURSE [FC]

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	16SHA01	Technical English	HS	5	3	2	0	4
2.	16SHA02	Communicative English	HS	7	3	0	4	5
8.	16SHA08	Principles of Management and Engineering Ethics	HS	3	3	0	0	3
9.	16SHB01	Matrices, Calculus & Ordinary Differential Equations	BS	5	3	2	0	4
10.	16SHB02	Complex Variables ,Laplace Transforms & Vector Calculus	BS	5	3	2	0	4
11.	16SHB03	Transforms & Partial Differential Equations	BS	5	3	2	0	4
12.	16SHB04	Probability & Random Processes	BS	5	3	2	0	4
13.	16SHB21	Engineering Physics	BS	6	2	0	4	4
14.	16SHB22	Material Science	BS	3	3	0	0	3
15.	16SHB31	Engineering Chemistry	BS	6	2	0	4	4
16.	16SHB32	Environmental Science and Engineering	BS	3	3	0	0	3
17.	16BMC01	Fundamentals of Computing and Programming	ES	6	2	0	4	4
18.	16BMC02	Advanced C Programming	ES	6	2	0	4	4
19.	16BMC04	Basics Electrical and Electronics Engineering	ES	3	3	0	0	3
20.	16BMC09	Microprocessor and Microcontrollers	ES	5	3	0	2	4
21.	16BMC11	Data Structures	ES	6	2	0	4	4
22.	16BMC12	Electron Devices	ES	6	2	0	4	4
23.	16BMC16	Fundamentals of Biochemistry	ES	6	2	0	4	4
24.	16BMC17	Bio Mechanics	ES	3	3	0	0	3
25.	16BMC18	Medical Informatics	ES	5	3	2	0	4

**Chairman**  
Board of Studies

Department of Biomedical Engineering,  
Muthayammal Engineering College (Autonomous),  
Rasipuram, Namakkal Dist - 637 408.

**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

**PROFESSIONAL CORE [PC]**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	16BMD01	Anatomy and Human Physiology	PC	3	3	0	0	3
2.	16BMD03	Bio Medical Instrumentation and Measurements	PC	3	3	0	2	5
3.	16BMD04	Digital Electronics	PC	5	3	0	2	4
4.	16BMD05	Signals and Systems	PC	5	3	2	0	4
5.	16BMD06	Therapeutic Equipments	PC	5	3	2	0	5
6.	16BMD07	Bio Control System	PC	5	3	2	0	4
7.	16BMD08	Analog Electronics	PC	5	3	0	2	4
8.	16BMD09	Linear Integrated Circuits	PC	5	3	0	2	4
9.	16BMD10	Human Assist Devices	PC	3	3	0	2	4
10.	16BMD11	Pathology and Microbiology	PC	5	3	0	2	4
11.	16BMD12	Hospital Management	PC	3	3	0	0	3
12.	16BMD14	Digital Signal Processing	PC	5	3	0	2	4
13.	16BMD15	Embedded System	PC	5	3	0	2	4
14.	16BMD17	Digital Image Processing	PC	3	3	0	0	3
15.	16BMD18	Medical Imaging Techniques	PC	3	3	0	0	3
16.	16BMD19	Electrical Safety and Quality Assurance	PC	3	3	0	0	3

**PROFESSIONAL ELECTIVES [PE]**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	16BME01	Advanced Bio Analytical And Therapeutic Techniques	PE	3	3	0	0	3
2.	16BME02	Bio Signal Processing	PE	3	3	0	0	3
3.	16BME03	Biomaterials and Artificial Organs	PE	3	3	0	0	3
4.	16BME04	Biomedical Engineering	PE	3	3	0	0	3
5.	16BME05	Biomaterials and Characterization	PE	3	3	0	0	3
6.	16BME06	Body Area Networks	PE	3	3	0	0	3
7.	16BME07	Brain Computer Interface and Applications	PE	3	3	0	0	3
8.	16BME08	Medical Optics	PE	3	3	0	0	3
9.	16BME09	Soft Computing	PE	3	3	0	0	3

**Chairman**

**Board of Studies**

**Department of Biomedical Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408.**

**PRINCIPAL**

**MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU**

Programme Code & Name: BME & B.E-Biomedical Engineering

10.	16BME10	Neural Engineering	PE	3	3	0	0	3
11.	16BME11	Physiological Modeling	PE	3	3	0	0	3
12.	16BME12	Multimedia Compression and Networks	PE	3	3	0	0	3
13.	16BME13	Rehabilitation Engineering	PE	3	3	0	0	3
14.	16BME14	Virtual Reality	PE	3	3	0	0	3
15.	16BME15	Wearable Systems	PE	3	3	0	0	3
16.	16BME16	Internet and JAVA Programming	PE	3	3	0	0	3
17.	16BME17	Cryptography and Network Security	PE	3	3	0	0	3
18.	16BME18	Hospital Waste Management	PE	3	3	0	0	3
19.	16BME19	Medical Physics	PE	3	3	0	0	3
20.	16BME20	Computer Architecture and organization	PE	3	3	0	0	3

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	16BMF01	Project Work Phase - I	EEC	6	0	0	6	3
2	16BMF02	Project Work Phase -II	EEC	30	0	0	30	15
3	16BMF05	Hospital Training	EEC	4	0	0	4	2


  
**Chairman**


Board of Studies

Department of Biomedical Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408,

  
PRINCIPAL

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU


		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R – 2016	
Department		Biomedical Engineering					
Programme		B.E.					
<b>SEMESTER – I</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16SHA02	Communicative English	3	0	4	5	7
2.	16SHB01	Matrices, Calculus & Ordinary Differential Equations	3	2	0	4	5
3.	16SHB21	Engineering Physics	2	0	4	4	6
4.	16SHB32	Environmental Science and Engineering	3	0	0	3	3
5.	16BMC01	Fundamentals of Computing and Programming	2	0	4	4	6
6.	16BMC04	Basics Electrical and Electronics Engineering	3	0	0	3	3
7.	16BMC06	Engineering Practices for Electrical Sciences	0	0	4	2	4
<b>Total Credits</b>						<b>25</b>	


		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R – 2016	
Department		Biomedical Engineering					
Programme		B.E.					
<b>SEMESTER – II</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16SHA01	Technical English	3	2	0	4	5
2.	16SHB02	Complex Variables, Laplace Transforms & Vector Calculus	3	2	0	4	5
3.	16SHB22	Material Science	3	0	0	3	3
4.	16SHB31	Engineering Chemistry	2	0	4	4	6
5.	16BMC02	Advanced C Programming	2	0	4	4	6
6.	16BMC12	Electron Devices	2	0	4	4	6
7.	16BMC05	Engineering Graphics	0	0	4	2	4
<b>Total Credits</b>						<b>25</b>	

**Chairman**  
Board of Studies

Department of Biomedical Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408.


PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.


		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R – 2016</b>	
Department		Biomedical Engineering					
Programme		B.E.					
<b>SEMESTER – III</b>							
Sl. No.	Course Code	Course Name	Hours/Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16SHB03	Transforms & Partial Differential Equations	3	2	0	4	5
2.	16BMD05	Signals and Systems	3	2	0	4	5
3.	16BMD08	Analog Electronics	3	0	2	4	5
4.	16BMD04	Digital Electronics	3	0	2	4	5
5.	16BMD01	Anatomy and Human Physiology	3	0	0	3	3
6.	16BMC16	Fundamentals of Bio Chemistry	3	0	2	4	5
<b>Total Credits</b>						<b>23</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R – 2016</b>	
Department		Biomedical Engineering					
Programme		B.E.					
<b>SEMESTER – IV</b>							
Sl. No.	Course Code	Course Name	Hours/week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16SHB04	Probability & Random Processes	3	2	0	4	5
2.	16BMC09	Microprocessor and Microcontrollers	3	0	2	4	5
3.	16BMD09	Linear Integrated Circuits	3	0	2	4	5
4.	16BMC11	Data Structures	2	0	2	4	6
5.	16BMD11	Pathology and Microbiology	3	0	2	4	5
6.	16BMC17	Bio Mechanics	3	0	0	3	3
<b>Total Credits</b>						<b>23</b>	

  
**Chairman**  
 Board of Studies  
 Department of Biomedical Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist 637 408.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU.**

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>M</b> <b>UG</b> <b>R – 2016</b>	
Department		Biomedical Engineering					
Programme		B.E.					
<b>SEMESTER – V</b>							
Sl. No.	Course Code	Course Name	Hours/Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16BMD12	Hospital Management	3	0	0	3	3
2.	16BMD14	Digital Signal Processing	3	0	2	4	5
3.	16SHA08	Principles of Management and Engineering Ethics	3	0	0	3	3
4.	16BMD03	Bio medical Instrumentation and Measurements	3	0	2	4	5
5.	16BMD07	Bio Control System	3	2	0	4	5
6.		Professional Elective -I	3	0	0	3	3
7.		Professional Elective -II	3	0	0	3	3
<b>Total Credits</b>						<b>24</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R – 2016</b>	
Department		Biomedical Engineering					
Programme		B.E.					
<b>SEMESTER – VI</b>							
Sl. No.	Course Code	Course Name	Hours/Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16BMD10	Human Assist Devices	3	0	2	4	5
2.	16BMD15	Embedded System	3	0	2	4	5
3.	16BMD06	Therapeutic Equipments	3	2	0	4	5
4.	16MDD18	Medical Imaging Techniques	3	0	0	3	3
5.		Professional Elective -III	3	0	0	3	3
6.		Professional Elective -IV	3	0	0	3	3
7.		Open Elective -I	3	0	0	3	3
<b>Total Credits</b>						<b>24</b>	


  
**Chairman**


Board of Studies

Department of Biomedical Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408.

  
**PRINCIPAL,**

**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU**

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R – 2016</b>	
Department		Biomedical Engineering					
Programme		B.E.					
<b>SEMESTER – VII</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16BMD19	Electrical Safety and Quality Assurance	3	0	0	3	3
2.	16BMF01	Project Work Phase -I	0	0	6	3	6
3.	16BMF04	Hospital Training	0	0	4	2	4
4.	16BMC18	Medical Informatics	3	2	0	4	5
5.		Professional Elective - V	3	0	0	3	3
6.		Professional Elective - VI	3	0	0	3	3
7.		Open Elective -II	3	0	0	3	3
8.		Open Elective -III				3	
<b>Total Credits</b>						<b>24</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R – 2016</b>	
Department		Biomedical Engineering					
Programme		B.E.					
<b>SEMESTER – VIII</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>PRACTICAL</b>							
1.	16BMF02	Project Work Phase -II	0	0	30	15	30
<b>Total Credits</b>						<b>15</b>	

**Total Credits to Be Earned For the Award of Degree: 183**  
**COURSE COMPONENT SUMMARY**

S. No.	Subject Area	Credits Per Semester								Credits Total	AICTE Credits
		I	II	III	IV	V	VI	VII	VIII		
1	FC	25	25	8	15	3		4		80	74
2	PC			15	8	15	15	3		56	50
3	PE					6	6	6		18	20
4	OE						3	6		09	12
5	EEC							5	15	20	20
<b>TOTAL</b>		<b>25</b>	<b>25</b>	<b>23</b>	<b>23</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>15</b>	<b>183</b>	<b>176</b>

Total Credits: 183

**Chairman**  
**Board of Studies**

Department of Biomedical Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU



## MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

B.E. MEDICAL ELECTRONICS

GROUPING OF COURSES

FOUNDATION COURSE [FC]

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	16SHA01	Technical English	HS	5	3	2	0	4
2.	16SHA02	Communicative English	HS	7	3	0	4	5
8.	16SHA08	Principles of Management and Engineering Ethics	HS	3	3	0	0	3
9.	16SHB01	Matrices, Calculus & Ordinary Differential Equations	BS	5	3	2	0	4
10.	16SHB02	Complex Variables ,Laplace Transforms & Vector Calculus	BS	5	3	2	0	4
11.	16SHB03	Transforms & Partial Differential Equations	BS	5	3	2	0	4
12.	16SHB04	Probability & Random Processes	BS	5	3	2	0	4
13.	16SHB21	Engineering Physics	BS	6	2	0	4	4
14.	16SHB22	Material Science	BS	3	3	0	0	3
15.	16SHB31	Engineering Chemistry	BS	6	2	0	4	4
16.	16SHB32	Environmental Science and Engineering	BS	3	3	0	0	3
17.	16BMC01	Fundamentals of Computing and Programming	ES	6	2	0	4	4
18.	16BMC02	Advanced C Programming	ES	6	2	0	4	4
19.	16BMC04	Basics Electrical and Electronics Engineering	ES	3	3	0	0	3
20.	16BMC09	Microprocessor and Microcontrollers	ES	5	3	0	2	4
21.	16BMC11	Data Structures	ES	6	2	0	4	4
22.	16BMC12	Electron Devices	ES	6	2	0	4	4
23.	16BMC16	Fundamentals of Biochemistry	ES	6	2	0	4	4
24.	16BMC17	Bio Mechanics	ES	3	3	0	0	3
25.	16BMC18	Medical Informatics	ES	5	3	2	0	4

**Chairman**  
**Board of Studies**  
 Department of Medical Electronics  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408.

**PRINCIPAL,**  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

**PROFESSIONAL CORE [PC]**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	16MDD01	Anatomy and Human Physiology	PC	3	3	0	0	3
3.	16MDD02	Sensors and Measurements	PC	5	3	2	0	4
4.	16MDD03	Bio Medical Instrumentation and Measurements	PC	3	3	0	2	5
5.	16MDD04	Digital Electronics	PC	5	3	0	2	4
6.	16MDD05	Signals and Systems	PC	5	3	2	0	4
7.	16MDD06	Therapeutic Equipments	PC	5	3	2	0	4
8.	16MDD07	Bio Control System	PC	5	3	2	0	4
9.	16MDD08	Analog Electronics	PC	5	3	0	2	4
10.	16MDD09	Linear Integrated Circuits	PC	5	3	0	2	4
11.	16MDD10	Human Assist Devices	PC	3	3	0	2	4
12.	16MDD11	Pathology and Microbiology	PC	5	3	0	2	4
13.	16MDD12	Hospital Management	PC	3	3	0	0	3
14.	16MDD13	Bio MEMS	PC	3	3	0	0	3
15.	16MDD14	Digital Signal Processing	PC	5	3	0	2	4
16.	16MDD15	Embedded System	PC	5	3	0	2	4
17.	16MDD17	Digital Image Processing	PC	3	3	0	0	3
18.	16MDD18	Medical Imaging Techniques	PC	3	3	0	0	3

**PROFESSIONAL ELECTIVES [PE]**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	16MDE01	Advanced Bio Analytical And Therapeutic Techniques	PE	3	3	0	0	3
2.	16MDE02	Bio Signal Processing	PE	3	3	0	0	3
3.	16MDE03	Biomaterials and Artificial Organs	PE	3	3	0	0	3
4.	16MDE04	Biomedical Engineering	PE	3	3	0	0	3
5.	16MDE05	Biomaterials and Characterization	PE	3	3	0	0	3
6.	16MDE06	Physiological Modeling	PE	3	3	0	0	3
7.	16MDE07	Brain Computer Interface and Applications	PE	3	3	0	0	3

**Chairman**  
**Board of Studies**

**Department of Medical Electronics**  
**Muthayammal Engineering College (Autonomous)**  
Rasipuram, Namakkal Dist - 637 408.

**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU

Programme Code & Name: MDE & B.E.-Medical Electronics

8.	16MDE08	Medical Optics	PE	3	3	0	0	3
9.	16MDE09	Soft Computing	PE	3	3	0	0	3
10.	16MDE10	Intellectual Property Rights	PE	3	3	0	0	3
11.	16MDE11	Physiological Modeling	PE	3	3	0	0	3
12.	16MDE12	Skills in Integrated Product Development	PE	3	3	0	0	3
13.	16MDE13	Rehabilitation Engineering	PE	3	3	0	0	3
14.	16MDE14	Virtual Reality	PE	3	3	0	0	3
15.	16MDE15	Wearable Systems	PE	3	3	0	0	3
16.	16MDE16	Internet of Things	PE	3	3	0	0	3
17.	16MDE17	Medical Expert System	PE	3	3	0	0	3
18.	16MDE18	Hospital Waste Management	PE	3	3	0	0	3
19.	16MDE19	Tele health Technology	PE	3	3	0	0	3
20.	16MDE20	Fiber optics and Lasers in Medicine	PE	3	3	0	0	3

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	16MDF01	Project Work Phase - I	EEC	6	0	0	6	3
2	16MDF02	Project Work Phase -II	EEC	30	0	0	30	15
3	16MDF04	Hospital Training	EEC	4	0	0	4	2


COURSE COMPONENT SUMMARY


S. No.	Subject Area	Credits Per Semester								Credits Total	AICTE Credits
		I	II	III	IV	V	VI	VII	VIII		
1	FC	25	25	4	15			4		73	74
2	PC			18	8	18	15	4		63	50
3	PE					6	6	6		18	20
4	OE						3	6		09	12
5	EEC							5	15	20	20
<b>TOTAL</b>		<b>25</b>	<b>25</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>24</b>	<b>25</b>	<b>15</b>	<b>183</b>	<b>176</b>

Total Credits: 183

  
**Chairman**  
 Board of Studies  
 Department of Medical Electronics  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408.


  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU**


		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R – 2016	
Department		Medical Electronics					
Programme		B.E.					
<b>SEMESTER – I</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16SHA02	Communicative English	3	0	4	5	7
2.	16SHB01	Matrices,Calculus & Ordinary Differential Equations	3	2	0	4	5
3.	16SHB21	Engineering Physics	2	0	4	4	6
4.	16SHB32	Environmental Science and Engineering	3	0	0	3	3
5.	16MDC01	Fundamentals of Computing and Programming	2	0	4	4	6
6.	16MDC04	Basics Electrical and Electronics Engineering	3	0	0	3	3
7.	16MDC06	Engineering Practices for Electrical Sciences	0	0	4	2	4
<b>Total Credits</b>						<b>25</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R – 2016	
Department		Medical Electronics					
Programme		B.E.					
<b>SEMESTER – II</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16SHA01	Technical English	3	2	0	4	5
2.	16SHB02	Complex Variables ,Laplace Transforms & Vector Calculus	3	2	0	4	5
3.	16SHB22	Material Science	3	0	0	3	3
4.	16SHB31	Engineering Chemistry	2	0	4	4	6
5.	16MDC02	Advanced C Programming	2	0	4	4	6
6.	16MDC12	Electron Devices	2	0	4	4	6
7.	16MDC05	Engineering Graphics	0	0	4	2	4
<b>Total Credits</b>						<b>25</b>	

  
**Chairman**  
**Board of Studies**  
Department of Medical Electronics  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU


		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R – 2016</b>	
Department		Medical Electronics					
Programme		B.E.					
<b>SEMESTER – III</b>							
Sl. No.	Course Code	Course Name	Hours/Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16SHB03	Transforms & Partial Differential Equations	3	2	0	4	5
2.	16MDD05	Signals and Systems	3	2	0	4	5
3.	16MDD08	Analog Electronics	3	0	2	4	6
4.	16MDD04	Digital Electronics	3	0	2	4	5
5.	16MDD01	Anatomy and Human Physiology	3	0	0	3	3
6.	16MDD02	Sensors and Measurements	3	0	0	3	3
<b>Total Credits</b>						<b>22</b>	


		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R – 2016</b>	
Department		Medical Electronics					
Programme		B.E.					
<b>SEMESTER – IV</b>							
Sl. No.	Course Code	Course Name	Hours/week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16SHB04	Probability & Random Processes	3	2	0	4	5
2.	16MDC09	Microprocessor and Microcontrollers	3	0	2	4	5
3.	16MDC17	Bio Mechanics	3	0	0	3	3
4.	16MDD09	Linear Integrated Circuits	3	0	2	4	5
5.	16MDC11	Data Structures	2	0	4	4	6
6.	16MDD11	Pathology and Microbiology	3	0	2	4	5
<b>Total Credits</b>						<b>23</b>	


**Chairman**  
Board of Studies

Department of Medical Electronics  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.


**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMIL NADU


		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>M</b> <b>UG</b> <b>R – 2016</b>	
Department		Medical Electronics					
Programme		B.E.					
<b>SEMESTER – V</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16MDD12	Hospital Management	3	0	0	3	3
2.	16MDD14	Digital Signal Processing	3	0	2	4	5
3.	16MDD07	Bio Control System	3	2	0	4	5
4.	16SHA08	Principles of Management and Engineering Ethics	3	0	0	3	3
5.	16MDD03	Bio medical Instrumentation and Measurements	3	0	2	4	5
6.		Professional Elective -I	3	0	0	3	3
7.		Professional Elective -II	3	0	0	3	3
<b>Total Credits</b>						<b>24</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R – 2016</b>	
Department		Medical Electronics					
Programme		B.E.					
<b>SEMESTER – VI</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16MDD10	Human Assist Devices	3	0	2	4	5
2.	16MDD15	Embedded System	3	0	2	4	5
3.	16MDD06	Therapeutic Equipments	3	2	0	4	3
4.	16MDD18	Medical Imaging Techniques	3	0	0	3	3
5.		Professional Elective -III	3	0	0	3	3
6.		Professional Elective -IV	3	0	0	3	3
7.		Open Elective - I	3	0	0	3	3
<b>Total Credits</b>						<b>24</b>	

  
**Chairman**  
**Board of Studies**  
**Department of Medical Electronics**  
**Muthayammal Engineering College (Autonomous)**  
**Rasipuram, Namakkal Dist - 637 408.**

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU**

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R – 2016	
Department		Medical Electronics					
Programme		B.E.					
<b>SEMESTER – VII</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16MDC18	Medical Informatics	3	2	0	4	5
2.	16MDF01	Project Work Phase -I	0	0	6	3	6
3.	16MDF04	Hospital Training	0	0	4	2	4
4.	16MDD20	MEMS and its Biomedical Applications	3	2	0	4	5
5.		Professional Elective - V	3	0	0	3	3
6.		Professional Elective - VI	3	0	0	3	3
7.		Open Elective -II	3	0	0	3	3
8.		Open Elective -III	3	0	0	3	3
<b>Total Credits</b>						<b>25</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R – 2016	
Department		Medical Electronics					
Programme		B.E.					
<b>SEMESTER – VIII</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>PRACTICAL</b>							
1.	16MDF02	Project Work Phase -II	0	0	30	15	30
<b>Total Credits</b>						<b>15</b>	

**Total Credits to Be Earned For the Award of Degree: 183**

**Chairman**  
Board of Studies  
Department of Medical Electronics  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

**PRINCIPAL,**  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMIL NADU



## MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram- 637408, Namakkal Dist., Tamil Nadu

**B.Tech.-Biotechnology**

### GROUPING OF COURSES

#### 1. Humanities and Social Sciences (HS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instructions Hours/Week			C
					L	T	P	
1	16SHA01	Technical English	HS	5	3	2	0	4
2	16SHA02	Communicative English	HS	7	3	0	4	5
3	16SHA03	Business English	HS	5	3	2	0	4
4	16SHA04	Basics of Japanese	HS	5	3	2	0	4
5	16SHA05	Functional Japanese	HS	5	3	2	0	4
6	16SHA06	Basics of German	HS	5	3	2	0	4
7	16SHA07	Functional German	HS	5	3	2	0	4
8	16SHA08	Principles of Management and Engineering Ethics	HS	3	3	0	0	3

#### 2. Basic Sciences (BS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instructions Hours/Week			C
					L	T	P	
1	16SHB01	Matrix, Calculus and Ordinary Differential Equation	BS	5	3	2	0	4
2	16SHB02	Complex Variables, Laplace Transforms and Vector Calculus	BS	5	3	2	0	4
3	16SHB03	Transforms Partial and Differential Equations	BS	5	3	2	0	4
4	16SHB04	Random Processes	BS	5	3	2	0	4
5	16SHB05	Probability and Queuing Theory	BS	5	3	2	0	4
6	16SHB06	Numerical Methods	BS	5	3	2	0	4
7	16SHB07	Statistics and Numerical Methods	BS	5	3	2	0	4
8	16SHB08	Discrete Mathematics	BS	5	3	2	0	4
9	16SHB09	Operations Research	BS	5	3	2	0	4
10	16SHB21	Engineering Physics	BS	6	2	0	4	4

*N. Dhanu*  
Chairman

Board of Studies  
Department of Biotechnology  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist  
TAMILNADU

S. No.	Course Code	Course Title	Category	Contact Hours	Instructions Hours/Week			C
					L	T	P	
11	16SHB22	Material Science	BS	3	3	0	0	3
12	16SHB23	Physics for Electrical Engineering	BS	3	3	0	0	3
13	16SHB24	Physics for Mechanical Engineering	BS	3	3	0	0	3
14	16SHB31	Engineering Chemistry	BS	6	2	0	4	4
15	16SHB32	Environmental Science and Engineering	BS	3	3	0	0	3

### 3. Engineering Science (ES)

S. No.	Course Code	Course Title	Category	Contact Hours	Instructions Hours/Week			C
					L	T	P	
1	16BTC01	Fundamental of Computing and Programming	ES	6	2	0	4	4
2	16BTC02	Advanced C Programming	ES	6	2	0	4	4
3	16BTC03	Basics of Civil and Mechanical Engineering	ES	4	4	0	0	4
4	16BTC04	Basics of Electrical and Electronics Engineering	ES	3	3	0	0	3
5	16BTC05	Engineering Graphics	ES	5	1	0	4	3
6	16BTC06	Engineering Practices for Mechanical Sciences	ES	4	0	0	4	2
7	16BTC07	Engineering Geology	ES	3	3	0	0	3
8	16BTC08	Engineering Mechanics	ES	5	3	0	0	4
9	16BTC09	Construction Materials	ES	3	3	0	0	3
10	16BTC10	Object Oriented Programming	ES	6	2	0	4	4
11	16BTC11	Bio Mechanics	ES	3	3	0	0	3
12	16BTC12	Measurements and Instrumentation	ES	3	3	0	0	3
13	16BTC13	Renewable energy resources	ES	3	3	0	0	3
14	16BTC14	Fundamentals of Nanotechnology	ES	3	3	0	0	3
15	16BTC15	Remote Sensing and GIS	ES	3	3	0	0	3

### 4. Professional Core(PC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instructions Hours/Week			C
					L	T	P	
1	16BTD01	Biochemistry	PC	6	3	0	4	5
2	16BTD02	Biorganic Chemistry	PC	6	3	0	4	5
3	16BTD03	Basic Industrial Biotechnology	PC	3	3	0	0	3
4	16BTD04	Cell & Microbiology	PC	3	3	0	0	3
5	16BTD05	Immunology	PC	7	4	0	4	5

**Chairman**  
Board of Studies

Department of Biotechnology  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

S. No.	Course Code	Course Title	Category	Contact Hours	Instructions Hours/Week			C
					L	T	P	
6	16BTD06	Bioprocess Principles	PC	3	3	0	0	3
7	16BTD07	Fundamentals of Unit Operation	PC	4	3	1	0	4
8	16BTD08	Instrumental methods of analysis	PC	6	3	0	4	5
9	16BTD09	Bioprocess Engineering	PC	6	3	0	4	5
10	16BTD10	Protein Engineering	PC	3	3	0	0	3
11	16BTD11	Molecular Biology	PC	6	3	0	4	5
12	16BTD12	Mass Transfer Operations	PC	4	4	0	0	4
13	16BTD13	Genetic Engineering	PC	6	3	0	4	5
14	16BTD14	Bioinformatics	PC	3	2	1	0	3
15	16BTD15	Applied Chemical Reaction Engineering	PC	6	3	0	4	5
16	16BTD16	Biopharmaceutical Technology	PC	3	3	0	0	3
17	16BTD17	Downstream Processing	PC	6	3	0	4	5
18	16BTD18	Cancer Biology	PC	3	3	0	0	3
19	16BTD19	Disaster Management	PC	3	3	0	0	3

### 5. Professional Elective (PE)

S. No.	Course Code	Course Title	Category	Contact Hours	Instructions Hours/Week			C
					L	T	P	
1	16BTE01	Food technology	PE	3	3	0	0	3
2	16BTE02	Animal Biotechnology	PE	3	3	0	0	3
3	16BTE03	Chemistry of Medicines	PE	3	3	0	0	3
4	16BTE04	Life Style Diseases	PE	3	3	0	0	3
5	16BTE05	Intellectual Property Rights	PE	3	3	0	0	3
6	16BTE06	Biofuel	PE	3	3	0	0	3
7	16BTE07	Fundamentals of Nanoscience	PE	3	3	0	0	3
8	16BTE08	Plant Biotechnology	PE	3	3	0	0	3
9	16BTE09	Process Equipments and Plant Design	PE	3	3	0	0	3
10	16BTE10	Neurobiology and Cognitive sciences	PE	3	3	0	0	3
11	16BTE11	Tissue Engineering	PE	3	3	0	0	3
12	16BTE12	Biosafety and Hazard Management	PE	3	3	0	0	3
13	16BTE13	Stem cell Technology	PE	3	3	0	0	3
14	16BTE14	Biophysics	PE	3	3	0	0	3
15	16BTE15	Biological Spectroscopy	PE	3	3	0	0	3
16	16BTE16	Bioentrepreneurship	PE	3	3	0	0	3
17	16BTE17	Professional Ethics in Engineering	PE	3	3	0	0	3
18	16BTE18	Marine Biotechnology	PE	3	3	0	0	3
19	16BTE19	Metabolic Engineering	PE	3	3	0	0	3
20	16BTE20	Human Rights	PE	3	3	0	0	3

**Chairman**  
Board of Studies  
Department of Biotechnology  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU


### 6. Employability Enhancement Courses (EEC)


S. No.	Course Code	Course Title	Category	Contact Hours	Instructions Hours/Week			C
					L	T	P	
1	16BTF01	Interpersonal Skills / Listening and Speaking	EEC	2	0	0	2	1
2	16BTF02	Advanced Reading and Writing	EEC	2	0	0	2	1
3	16BTF03	Professional Communication	EEC	2	0	0	2	1
4	16BTF04	Mini Project	EEC	2	0	0	4	2
5	16BTF05	Project Work	EEC	20	0	0	20	10

  
**Chairman**

**Board of Studies**  
**Department of Biotechnology**  
**Muthayammal Engineering College (Autonomous)**  
**Rasipuram, Namakkal Dist - 637 408.**

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU**

		<b>MUTHAYAMMALENGINEERINGCOLLEGE</b> (ApprovedbyAICTE& AffiliatedtoAnnaUniversity),RASIPURAM-637408					<b>CURRICULUM</b> <b>UGR-2016</b>	
Department		Biotechnology						
Programme		B.Tech.- Biotechnology						
<b>SEMESTER-I</b>								
Sl. No.	Course Code	CourseName	Category	Hours/Week			Credit C	ContactHrs
				L	T	P		
1.	16SHA01	Technical English	HS	3	2	0	4	5
2.	16SHB01	Matrices, Calculus and Differential Equations	BS	3	2	0	4	5
3.	16SHB22	Material Science	BS	3	0	0	3	3
4.	16BTC03	Basic of Civil and Mechanical Engineering	ES	4	0	0	4	4
5.	16BTC15	Fundamentals of Computing and Programming	ES	2	0	4	4	6
6.	16BTC05	Engineering Graphics	ES	0	0	4	2	4
7.	16SHB31	Engineering Chemistry	BS	3	0	2	4	5
<b>Total Credits</b>							<b>25</b>	

		<b>MUTHAYAMMALENGINEERINGCOLLEGE</b> (ApprovedbyAICTE &Affiliatedto AnnaUniversity),RASIPURAM-637408					<b>CURRICULUM</b> <b>UGR-2016</b>	
Department		Biotechnology						
Programme		B.Tech.- Biotechnology						
<b>SEMESTER-II</b>								
Sl. No.	Course Code	CourseName	Category	Hours/Week			Credit C	ContactHrs
				L	T	P		
1.	16SHA02	Communicative English	HS	3	0	4	5	7
2.	16SHB02	Laplace Transforms and Vector Calculus	BS	3	2	0	4	5
3.	16SHB21	Engineering Physics	BS	2	0	4	4	6
4.	16SHB32	Environmental Science and Engineering	BS	3	0	0	3	3
5.	16SHA08	Principles of Management and Engineering Ethics	HS	3	0	0	3	3
6.	16BTC02	Advanced C Programming	ES	2	0	4	4	6
7.	16BTC06	Engineering Practices For Electrical Sciences	ES	0	0	4	2	4
<b>Total Credits</b>							<b>25</b>	


  
**Chairman**


Board of Studies

Department of Biotechnology  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

  
**PRINCIPAL**

**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU

		<b>MUTHAYAMMALENGINEERINGCOLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM-637408					<b>CURRICULUM</b> UGR-2016	
Department		Biotechnology						
Programme		B.Tech.- Biotechnology						
<b>SEMESTER-III</b>								
Sl. No.	Course Code	CourseName	Category	Hours/Week			Credit C	ContactHrs
				L	T	P		
1.	16SHB03	Transforms and Partial Differential Equations	BS	3	2	0	4	5
2.	16BTD01	Biochemistry	PC	3	0	4	5	6
3.	16BTD02	Bioorganic Chemistry	PC	3	0	4	5	6
4.	16BTD03	Basic Industrial Biotechnology	PC	3	0	0	3	3
5.	16BTD04	Cell & Microbiology	PC	3	0	0	3	3
6.	16BTC10	Object Oriented Programming	ES	2	0	4	4	6
<b>Total Credits</b>							<b>24</b>	


		<b>MUTHAYAMMALENGINEERINGCOLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM-637408					<b>CURRICULUM</b> UGR-2016	
Department		Biotechnology						
Programme		B.Tech.- Biotechnology						
<b>SEMESTER-IV</b>								
Sl. No.	Course Code	CourseName	Category	Hours/Week			Credit C	ContactHrs
				L	T	P		
1.	16SHB06	Numerical Methods	BS	3	2	0	4	5
2.	16BTD05	Immunology	PC	3	0	2	4	5
3.	16BTD06	Bioprocess Principles	PC	3	0	0	3	3
4.	16BTD07	Fundamentals of Unit Operation	PC	3	2	0	4	5
5.	16BTD08	Analytical Methods and Instrumentation	PC	3	0	2	4	5
6.	16BTC08	Engineering Mechanics	ES	3	0	0	4	5
7.	16BTF01	Interpersonal Skills / Listening and Speaking	EEC	0	0	2	1	2
<b>Total Credits</b>							<b>24</b>	


  
Chairman


Board of Studies


Department of Biotechnology  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.


  
Principal,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU


		<b>MUTHAYAMMALENGINEERINGCOLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM-637408					<b>CURRICULUM</b> UGR-2016	
Department		Biotechnology						
Programme		B.Tech. – Biotechnology						
<b>SEMESTER-V</b>								
Sl. No.	Course Code	CourseName	Category	Hours/Week			Credit C	ContactHrs
				L	T	P		
1	16BTD09	Bioprocess Engineering	PC	3	0	2	4	5
2	16BTD10	Protein Engineering	PC	3	0	0	3	3
3	16BTD11	Molecular Biology	PC	3	0	2	4	5
4	16BTD12	Mass Transfer Operations	PC	3	0	0	3	3
5		Professional Electives - I	PE	3	0	0	3	3
6		Professional Electives - II	PE	3	0	0	3	3
7		Open Electives - I	OE	3	0	0	3	3
<b>Total Credits</b>							<b>23</b>	


		<b>MUTHAYAMMALENGINEERINGCOLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM-637408					<b>CURRICULUM</b> UGR-2016	
Department		Biotechnology						
Programme		B.Tech. – Biotechnology						
<b>SEMESTER-VI</b>								
Sl. No.	Course Code	CourseName	Category	Hours/Week			Credit C	ContactHrs
				L	T	P		
1.	16BTD13	Genetic Engineering	PC	3	0	2	4	5
2.	16BTD14	Bioinformatics	PC	2	2	0	3	4
3.	16BTD15	Applied Chemical Reaction Engineering	PC	3	0	2	4	5
4.	16BTD16	Biopharmaceutical Technology	PC	3	0	0	3	3
5.		Professional Electives - III	PE	3	0	0	3	3
6.		Professional Electives – IV	PE	3	0	0	3	3
7.		Open Electives-II	OE	3	0	0	3	3
<b>Total Credits</b>							<b>23</b>	

  
**Chairman**  
 Board of Studies  
 Department of Biotechnology  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408.

  
**PRINCIPAL,**  
**MUTHAYAMMALENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
 RASIPURAM 637 408, NAMAKKAL Dist.  
 TAMILNADU

		<b>MUTHAYAMMALENGINEERINGCOLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM-637408					<b>CURRICULUM</b> <b>UGR-2016</b>	
Department		Biotechnology						
Programme		B.Tech. – Biotechnology						
<b>SEMESTER-VII</b>								
Sl. No.	Course Code	CourseName	Category	Hours/Week			Credit C	ContactHrs
				L	T	P		
1.	16BTD17	Downstream Processing	PC	3	0	2	4	5
2.	16BTD18	Cancer Biology	PC	3	0	0	3	3
3.	16BTC13	Renewable energy resources	ES	3	0	0	3	3
4.		Professional Electives - V	PE	3	0	0	3	3
5.		Professional Electives - VI	PE	3	0	0	3	3
6.		Open Electives-III	OE	3	0	0	3	3
7.	16BTF04	Mini project	EEC	0	0	12	6	12
<b>Total Credits</b>							<b>25</b>	

		<b>MUTHAYAMMALENGINEERINGCOLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM-637408					<b>CURRICULUM</b> <b>UGR-2016</b>	
Department		Biotechnology						
Programme		B.Tech. – Biotechnology						
<b>SEMESTER-VIII</b>								
Sl. No.	Course Code	CourseName	Category	Hours/Week			Credit C	ContactHrs
				L	T	P		
1.	16BTF05	Project work	EEC	0	0	24	12	24
<b>Total Credits</b>							<b>12</b>	


  
**Chairman**  
 Board of Studies  
 Department of Biotechnology  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408.

  
 PRINCIPAL,  
 MUTHAYAMMALENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

**COURSE COMPONENT SUMMARY**

S.No.	Subject Area	CreditsPerSemester								Credits total	Percentage credits
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	4	8	-	-	-	-	-	-	12	6.25
2.	BS	11	11	4	4	-	-	-	-	30	16.66
3.	ES	10	6	4	4	-	-	3	-	27	20.83
4.	PC	-	-	16	15	14	14	7	-	66	27.08
5.	PE	-	-	-	-	6	6	6	-	18	16.66
6.	OE	-	-	-	-	3	3	3	-	9	4.16
7.	EEC	-	-	-	1	-	-	6	12	19	8.33
<b>TOTAL</b>		<b>25</b>	<b>25</b>	<b>25</b>	<b>23</b>	<b>25</b>	<b>23</b>	<b>25</b>	<b>12</b>	<b>181</b>	

**TotalCredits:181**

  
**Chairman**  
Board of Studies  
Department of Biotechnology  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU



# MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

**B.Tech. – Chemical Engineering**

## GROUPING OF COURSES

**Humanities and Social Sciences [HS]**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	16SHA01	Technical English	HS	5	3	2	0	4
2.	16SHA02	Communicative English	HS	7	3	0	4	5
3.	16SHA03	Business English	HS	5	3	2	0	4
4.	16SHA04	Basics of Japanese	HS	5	3	2	0	4
5.	16SHA05	Functional Japanese	HS	5	3	2	0	4
6.	16SHA06	Basics of German	HS	5	3	2	0	4
7.	16SHA07	Functional German	HS	5	3	2	0	4
8.	16SHA08	Principles of Management and Engineering Ethics	HS	3	3	0	0	3

## Basic Sciences [BS]

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	16SHB01	Matrices, Calculus and Differential Equations	BS	5	3	2	0	4
2.	16SHB02	Complex Variables, Laplace Transforms and Vector Calculus	BS	5	3	2	0	4
3.	16SHB03	Transforms and Partial Differential Equations	BS	5	3	2	0	4
4.	16SHB04	Random Processes	BS	5	3	2	0	4
5.	16SHB05	Probability and Queuing Theory	BS	5	3	2	0	4
6.	16SHB06	Numerical Methods	BS	5	3	2	0	4
7.	16SHB07	Statistics and Numerical Methods	BS	5	3	2	0	4
8.	16SHB08	Discrete Mathematics	BS	5	3	2	0	4
9.	16SHB09	Operations Research	BS	5	3	2	0	4
10.	16SHB21	Engineering Physics	BS	6	2	0	4	4
11.	16SHB22	Material Science	BS	3	3	0	0	3
12.	16SHB23	Physics for Electrical Engineering	BS	3	3	0	0	3

*N. Chinnai*  
Chairman

Board of Studies

Department of Chemical Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

13.	16SHB24	Physics for Mechanical Engineering	BS	3	3	0	0	3
14.	16SHB31	Engineering Chemistry	BS	5	3	0	2	4
15.	16SHB32	Environmental Science and Engineering	BS	3	3	0	0	3

### Engineering Science [ES]

Sl. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1.	16CHC01	Fundamentals of Computing and Programming	ES	6	2	0	4	4
2.	16CHC02	Advanced C Programming	ES	6	2	0	4	4
3.	16CHC03	Basic of Civil and Mechanical Engineering	ES	4	4	0	0	4
4.	16CHC04	Basics of Electrical and Electronics Engineering	ES	3	3	0	0	3
5.	16CHC05	Engineering Graphics	ES	4	0	0	4	2
6.	16CHC06	Engineering Practices for Mechanical Sciences	ES	4	0	0	4	2
7.	16CHC07	Electrical Drives and Controls	ES	5	3	2	0	4
8.	16CHC08	Engineering Mechanics	ES	5	3	0	2	4
9.	16CHC09	Microprocessors and Microcontrollers	ES	5	3	0	2	4
10.	16CHC10	Object Oriented Programming	ES	5	3	0	2	4
11.	16CHC11	Biomechanics	ES	6	2	0	4	4
12.	16CHC12	Measurements and instruments	ES	3	3	0	0	3
13.	16CHC13	Renewable Energy sources	ES	3	3	0	0	3
14.	16CHC14	Fundamentals of Nano science	ES	3	3	0	0	3
15.	16CHC15	Production Processes	ES	3	3	0	0	3
16.	16CHC16	Organic Chemistry	ES	5	3	0	2	4
17.	16CHC17	Physical chemistry	ES	5	3	0	2	4

### Professional Core [PC]

Sl. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1.	16CHD01	Mechanics of Solids	PC	5	3	2	0	4
2.	16CHD02	Fluid Mechanics	PC	5	3	0	2	4
3.	16CHD03	Chemical Engineering Thermodynamics I	PC	5	3	2	0	4
4.	16CHD04	Chemical Engineering Thermodynamics II	PC	5	3	2	0	4
5.	16CHD05	Chemical Process Calculations	PC	5	3	0	2	4
6.	16CHD06	Instrumental Methods of Analysis	PC	5	3	0	2	4
7.	16CHD07	Mechanical Operations	PC	5	3	0	2	4

*N. Jany*  
**Chairman**

Board of Studies

Department of Chemical Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408


PRINCIPAL

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

8.	16CHD08	Heat transfer	PC	5	3	0	0	3
9.	16CHD09	Chemical Reaction Engineering I	PC	5	3	0	2	4
10.	16CHD10	Mass Transfer – I	PC	5	3	0	2	4
11.	16CHD11	Material Technology for Process Industries	PC	5	3	2	0	4
12.	16CHD12	Process Dynamics and Control	PC	5	3	2	0	4
13.	16CHD13	Mass Transfer – II	PC	5	3	0	0	3
14.	16CHD15	Process Modeling and Simulation	PC	5	3	0	3	4
15.	16CHD16	Total Quality Management	PC	5	3	0	0	3
16.	16CHD17	Transport Phenomena	PC	5	3	2	0	3
17.	16CHD18	Chemical Process Plant Safety	PC	5	3	0	0	3
18.	16CHD19	Process Equipment Design Laboratory	PC	3	0	0	2	1

**Professional Elective [PE]**

Sl. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1.	16CHE01	Enzyme Engineering	PE	3	3	0	0	3
2.	16CHE02	Petroleum Refining and Petrochemicals	PE	3	3	0	0	3
3.	16CHE03	Food Technology	PE	3	3	0	0	3
4.	16CHE04	Polymer Technology	PE	3	3	0	0	3
5.	16CHE05	Disaster Management	PE	3	3	0	0	3
6.	16CHE06	Air Pollution and Control	PE	3	3	0	0	3
7.	16CHE07	Waste Water Treatment	PE	3	3	0	0	3
8.	16CHE08	Electrochemical Engineering	PE	3	3	0	0	3
9.	16CHE09	Modern Separation Techniques	PE	3	3	0	0	3
10.	16CHE10	Optimization of Chemical Processes	PE	3	3	0	0	3
11.	16CHE11	Environmental Engineering	PE	3	3	0	0	3
12.	16CHE12	Process Plant Utilities	PE	3	3	0	0	3
13.	16CHE13	Fermentation Engineering	PE	3	3	0	0	3
14.	16CHE14	Pulp and Paper Technology	PE	3	3	0	0	3
15.	16CHE15	Energy Technology	PE	3	3	0	0	3
16.	16CHE16	Drugs and Pharmaceutical Technology	PE	3	3	0	0	3

  
**Chairman**  
 Board of Studies  
 Department of Chemical Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist 637 408

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.

**Employability Enhancement Courses [EEC]**

Sl. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1.	16CHF01	Project work – Phase-I	EEC	6	0	0	6	3
2.	16CHF02	Project work – Phase-II	EEC	30	0	0	30	15
3.	16CHF03	Comprehension	EEC	4	0	0	4	2
4.	16CHF04	Design Project	EEC	4	0	0	4	2
5.	16CHF05	Interpersonal Skills / Listening and Speaking	EEC	2	0	0	2	1




**Chairman**


Board of Studies

Department of Chemical Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408



PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE, accredited by NAAC, NBA & Affiliated to Anna University), RASIPURAM - 637 408						<b>CURRICULUM</b> UG R - 2016	
Department		Chemical Engineering							
Programme		B.Tech. - Chemical Engineering							
<b>SEMESTER - I</b>									
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs	
				L	T	P			
1.	16SHA01	Technical English	HS	3	2	0	4	5	
2.	16SHB01	Matrices, Calculus and Differential Equations	BS	3	2	0	4	5	
3.	16SHB22	Material Science	BS	3	0	0	3	3	
4.	16CHC03	Basic of Civil and Mechanical Engineering	ES	4	0	0	4	4	
5.	16SHB31	Engineering Chemistry	ES	3	0	0	4	3	
6.	16CHC01	Fundamentals of Computing and Programming	ES	0	0	4	4	6	
7.	16CHC05	Engineering Graphics	ES	4	0	0	2	2	
<b>Total Credits</b>							<b>25</b>		


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE, accredited by NAAC, NBA & Affiliated to Anna University), RASIPURAM - 637 408						<b>CURRICULUM</b> UG R - 2016	
Department		Chemical Engineering							
Programme		B.Tech. - Chemical Engineering							
<b>SEMESTER - II</b>									
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs	
				L	T	P			
1.	16SHA08	Principles of Management and Engineering Ethics	HS	3	0	0	3	3	
2.	16SHB02	Complex Variables, Laplace Transforms and Vector Calculus	BS	3	2	0	4	5	
3.	16SHB32	Environmental Science and Engineering	BS	3	0	0	3	3	
4.	16CHC02	Advanced C Programming	ES	2	0	4	4	6	
5.	16SHB21	Engineering Physics	BS	2	0	4	4	6	
6.	16SHA02	Communicative English	HS	3	0	4	5	7	
7.	16CHC06	Engineering Practices For Electrical Sciences	ES	0	0	4	2	4	
<b>Total Credits</b>							<b>25</b>		


*N. Chinn*  
**Chairman**


Board of Studies

Department of Chemical Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408

*N. Chinn*  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

 <b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE, accredited by NAAC, NBA & Affiliated to Anna University), RASIPURAM - 637 408		CURRICULUM UG R - 2016						
Department		Chemical Engineering						
Programme		B.Tech. - Chemical Engineering						
SEMESTER - III								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs
				L	T	P		
1.	16SHB03	Transforms and Partial Differential Equations	BS	3	2	0	4	5
2.	16CHC16	Organic Chemistry	ES	3	0	2	4	5
3.	16CHD01	Mechanics of Solids	PC	3	2	0	4	5
4.	16CHD02	Fluid Mechanics	PC	3	0	2	4	5
5.	16CHD03	Chemical Engineering Thermodynamics - I	PC	3	2	0	4	5
6.	16CHC07	Electrical Drives and Controls	ES	3	2	0	4	5
<b>Total Credits</b>							<b>24</b>	

 <b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE, accredited by NAAC, NBA & Affiliated to Anna University), RASIPURAM - 637 408		CURRICULUM UG R - 2016						
Department		Chemical Engineering						
Programme		B.Tech. - Chemical Engineering						
SEMESTER - IV								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs
				L	T	P		
1.	16SHB06	Numerical Methods	BS	3	2	0	4	5
2.	16CHC17	Physical Chemistry	ES	3	0	2	4	5
3.	16CHD04	Chemical Engineering Thermodynamics - II	PC	3	2	0	4	5
4.	16CHD05	Chemical Process Calculations	PC	3	2	0	4	5
5.	16CHD06	Instrumental Methods of Analysis	PC	3	0	2	4	5
6.		Open Elective - I	OE	3	0	0	3	3
<b>Total Credits</b>							<b>23</b>	

  
**Chairman**  
 Board of Studies  
 Department of Chemical Engineering  
 Muthayammal Engineering College (Autonom.)  
 Rasipuram, Namakkal Dist 637 408

PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU



**MUTHAYAMMAL ENGINEERING COLLEGE**  
(Approved by AICTE, accredited by NAAC, NBA & Affiliated to Anna University), RASIPURAM  
- 637 408

CURRICULUM  
UG R - 2016

Department		Chemical Engineering						
Programme		B.Tech. - Chemical Engineering						
SEMESTER - V								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs
				L	T	P		
1.	16CHD08	Heat Transfer	PC	3	0	2	4	5
2.	16CHD09	Chemical Reaction Engineering - I	PC	3	2	0	4	5
3.	16CHD10	Mass Transfer - I	PC	3	2	0	4	5
4.	16CHD11	Material Technology for Process Industries	PC	3	2	0	4	5
5.	16CHD07	Mechanical Operations	PC	3	0	2	4	5
6.		Elective - I	PE	3	0	0	3	3
7.		Elective - II	PE	3	0	0	3	3
<b>Total Credits</b>							<b>26</b>	




**MUTHAYAMMAL ENGINEERING COLLEGE**  
(Approved by AICTE, accredited by NAAC, NBA & Affiliated to Anna University), RASIPURAM  
- 637 408


CURRICULUM  
UG R - 2016

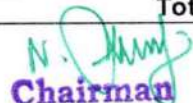
Department		Chemical Engineering						
Programme		B.Tech. - Chemical Engineering						
SEMESTER - VI								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs
				L	T	P		
1.	16CHD18	Chemical Process Plant Safety	PC	4	0	0	3	4
2.	16CHD16	Total Quality Management	PC	3	0	2	4	5
3.	16CHD13	Mass Transfer - II	PC	3	0	0	3	3
4.		Elective - III	PE	3	0	0	3	3
5.		Elective - IV	PE	3	0	0	3	3
6.		Open Elective - II	OE	3	0	0	3	3
7.	16CHF05	Interpersonal Skills / Listening and Speaking	EEC	0	0	2	1	2
8.	16CHD19	Process Equipment Design Laboratory	PC	3	0	0	1	2
<b>Total Credits</b>							<b>21</b>	

*N. S. Srinivasan*  
**Chairman**  
Board of Studies  
Department of Chemical Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408

*[Signature]*  
**PRINCIPAL,**  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE, accredited by NAAC, NBA & Affiliated to Anna University), RASIPURAM - 637 408					CURRICULUM UG R - 2016	
Department		Chemical Engineering						
Programme		B.Tech. - Chemical Engineering						
<b>SEMESTER - VII</b>								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs
				L	T	P		
1.	16CHD12	Process Control	PC	3	0	2	4	5
2.	16CHD15	Process Modelling and Simulation	PC	3	2	0	4	5
3.	16CHD17	Transport Phenomena	PC	3	2	0	4	5
4.		Elective - V	PE	3	0	0	3	3
5.		Elective - VI	PE	3	0	0	3	3
6.		Open Elective - III	OE	3	0	0	3	3
		<b>PRACTICAL</b>						
7.	16CHF01	Project work Phase I	EEC	0	0	6	3	6
<b>Total Credits</b>							<b>26</b>	


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE, accredited by NAAC, NBA & Affiliated to Anna University), RASIPURAM - 637 408					CURRICULUM UG R - 2016	
Department		Chemical Engineering						
Programme		B.Tech. - Chemical Engineering						
<b>SEMESTER - VIII</b>								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs
				L	T	P		
1.	16CHF02	Project work Phase II	EEC	0	0	24	12	24
<b>Total Credits</b>							<b>12</b>	

  
**Chairman**  
Board of Studies  
Department of Chemical Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408

  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Total Credits: 182

Semester	I	II	III	IV	V	VI	VII	VIII	Total	%
<b>Total</b>	<b>25</b>	<b>25</b>	<b>24</b>	<b>23</b>	<b>26</b>	<b>21</b>	<b>26</b>	<b>12</b>	<b>182</b>	<b>100</b>
HS	4	8							12	7
BS	11	11	4	4					30	16
ES	10	6	8	4					28	15
PC			12	12	20	11	12		67	37
PE					6	6	6		18	10
EEC						1	5	12	18	10
OE				3		3	3		9	5

  
**Chairman**  
 Board of Studies  
 Department of Chemical Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist 637 408

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU



## MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)  
Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

M.E. - COMPUTER SCIENCE AND ENGINEERING

### GROUPING OF COURSES

#### FOUNDATION COURSE [FC]

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	16MCA01	Advanced Numerical Methods	FC	5	3	2	0	4
2.	16MCA02	Applied Mathematics	FC	5	3	2	0	4
3.	16MCA03	Applied Probability And Statistics	FC	5	3	2	0	4

#### PROFESSIONAL CORE [PC]

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	16MCB01	Advanced Data structures and algorithms	PC	5	3	0	2	4
2.	16MCB02	Advanced operating systems	PC	5	3	0	2	4
3.	16MCB03	Multi core architectures	PC	3	3	0	0	3
4.	16MCB04	Data mining and Data Warehousing	PC	3	3	0	0	3
5.	16MCB05	Advanced Data base Technology	PC	5	3	0	2	4
6.	16MCB06	Advances in Computer Networks	PC	3	3	0	0	3
7.	16MCB07	Machine learning techniques	PC	3	3	0	0	3
8.	16MCB08	Cloud computing technologies	PC	5	3	0	2	4
9.	16MCB09	Advanced software Engineering	PC	3	3	0	0	3
10.	16MCB10	Multimedia Communications	PC	3	3	0	0	3
11.	16MCB11	Network security techniques	PC	3	3	0	0	3
12.	16MCB12	Parallel Algorithms	PC	3	3	0	0	3

Chairman  
Board of Studies  
Department of Computer Science and Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

**PROFESSIONAL ELECTIVES [PE]**


S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	16MCC01	Digital image processing	PE	3	3	0	0	3
2.	16MCC02	Computer vision and applications	PE	3	3	0	0	3
3.	16MCC03	Artificial Intelligence	PE	3	3	0	0	3
4.	16MCC04	Natural language processing	PE	3	3	0	0	3
5.	16MCC05	Distributed computing	PE	3	3	0	0	3
6.	16MCC06	Service oriented architecture	PE	3	3	0	0	3
7.	16MCC07	Mobile application development	PE	3	3	0	0	3
8.	16MCC08	Internet of things	PE	3	3	0	0	3
9.	16MCC09	Big data analytics	PE	3	3	0	0	3
10.	16MCC10	Information Retrieval Techniques	PE	3	3	0	0	3
11.	16MCC11	Ad Hoc and Wireless Sensor Networks	PE	3	3	0	0	3
12.	16MCC12	Pattern classification and Analysis	PE	3	3	0	0	3


**EMPLOYABILITY ENHANCEMENT COURSES (EEC)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	16MCD01	Project work - Phase I	EEC	12	0	0	12	6
2	16MCD02	Project work - Phase II	EEC	24	0	0	24	12

  
**Chairman**  
**Board of Studies**  
 Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.


  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> PG R – 2016	
Department		Computer Science and Engineering					
Programme		M.E					
<b>SEMESTER – I</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16MCA02	Applied Mathematics	3	2	0	4	5
2.	16MCB01	Advanced data structures and algorithms	3	0	2	4	3
3.	16MCB02	Advanced Operating systems	3	0	2	4	3
4.	16MCB04	Data Mining and Data warehousing	3	0	0	3	3
5.	16MCB06	Advances in Computer networks	3	0	0	3	3
6.	16MCB07	Machine Learning Techniques	3	0	0	3	3
<b>Total Credits</b>						<b>21</b>	


		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> PG R – 2016	
Department		Computer Science and Engineering					
Programme		M.E					
<b>SEMESTER – II</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16MCB03	Multi-core Architectures	3	0	0	3	3
2.	16MCB05	Advanced Data base Technology	3	0	2	4	5
3.	16MCB08	Cloud Computing Technologies	3	0	2	4	5
4.	PE	Professional Elective – I	3	0	0	3	3
5.	PE	Professional Elective – II	3	0	0	3	3
6.	PE	Professional Elective – III	3	0	0	3	3
<b>Total Credits</b>						<b>20</b>	

  
**Chairman**  
 Board of Studies  
 Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.


		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> PG R – 2016	
Department		Computer Science and Engineering						
Programme		M.E						
<b>SEMESTER – III</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P	C		
<b>THEORY</b>								
1.	PE	Professional Elective - IV	3	0	0	3	3	
2.	PE	Professional Elective - V	3	0	0	3	3	
3.	PE	Professional Elective - VI	3	0	0	3	3	
4.	16MCD01	Project Work – Phase I	0	0	12	6	12	
<b>Total Credits</b>						<b>15</b>		

\*Students going for Industrial Project/Thesis will complete these courses through MOOCs

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> PG R – 2016	
Department		Computer Science and Engineering						
Programme		M.E						
<b>SEMESTER – IV</b>								
Sl. No.	Course Code	Course Name	Hours/week			Credit	Contact Hours	
			L	T	P	C		
<b>PRACTICAL</b>								
1.	16MCD02	Project Work – Phase II	0	0	24	12	24	
<b>Total Credits</b>						<b>12</b>		


  
**Chairman**  
Board of Studies  
Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist,  
TAMILNADU.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

	<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>(Autonomous)</b> <b>(Approved by AICTE &amp; Affiliated to Anna University),</b> <b>RASIPURAM – 637 408</b>	<b>CURRICULUM</b> <b>PG</b> <b>R - 2016</b>
	<b>Department</b> Electrical and Electronics Engineering	
<b>Programme</b> M.E- Power Electronics and Drives		

Sl. No.	Course Code	Course Name	Category	Contact Hrs.	Hours/ Week			Credit
					L	T	P	
1.	16PEA01	Advanced Numerical Methods	FC	5	3	2	0	4
2.	16PEA02	Applied Mathematics	FC	5	3	2	0	4
3.	16PEA03	Applied Probability and Statistics	FC	5	3	2	0	4


Sl. No.	Course Code	Course Name	Category	Contact Hrs.	Hours/ Week			Credit
					L	T	P	
1.	16PEB01	Advanced Power Semiconductor Devices	PC	3	3	0	0	3
2.	16PEB02	Design and Analysis of Power Converters	PC	5	3	0	2	4
3.	16PEB03	Design and Analysis of Inverters	PC	3	3	0	0	3
4.	16PEB04	Modeling and Analysis of Electrical Machines	PC	5	3	2	0	4
5.	16PEB05	Solid State DC Drives	PC	3	3	0	0	3
6.	16PEB06	Solid State AC Drives	PC	3	3	0	0	3
7.	16PEB07	Special Electrical Machines and Controllers	PC	5	3	0	2	4
8.	16PEB08	Solar and Energy Storage Systems	PC	3	3	0	0	3
9.	16PEB09	Microcontroller Based System Design	PC	3	3	0	0	3
10.	16PEB10	Emerging Trends in Power Conversion Technology	PC	3	3	0	0	3
11.	16PEB11	SMPS and UPS	PC	3	3	0	0	3
12.	16PEB12	Computer Aided Design of Power Electronic Circuits	PC	3	3	0	0	3

  
**The Chairman**  
 Board of Studies,  
 Department of Electrical and Electronics Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram-637 408, Namakkal Dist.


PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

Sl. No.	Course Code	Course Name	Category	Contact Hrs.	Hours/ Week			Credit
					L	T	P	
1.	16PEC01	Linear and Non Linear Systems Theory	PE	3	3	0	0	3
2.	16PEC02	Advanced Digital Signal Processing	PE	3	3	0	0	3
3.	16PEC03	Electromagnetic Field Computation and Modeling	PE	3	3	0	0	3
4.	16PEC04	Flexible AC Transmission Systems	PE	3	3	0	0	3
5.	16PEC05	VLSI Architecture and Design Methodologies	PE	3	3	0	0	3
6.	16PEC06	Energy Management and Auditing	PE	3	3	0	0	3
7.	16PEC07	High Voltage Direct Current Transmission	PE	3	3	0	0	3
8.	16PEC08	Application of MEMS Technology	PE	3	3	0	0	3
9.	16PEC09	Power Quality	PE	3	3	0	0	3
10.	16PEC10	Wind Energy Conversion Systems	PE	3	3	0	0	3
11.	16PEC11	Non Linear Dynamics for Power Electronics Circuits	PE	3	3	0	0	3
12.	16PEC12	Smart Grid	PE	3	3	0	0	3
13.	16PEC13	Power Electronics for Renewable Energy Systems	PE	3	3	0	0	3
14.	16PEC14	Real Time Operating System	PE	3	3	0	0	3
15.	16PEC15	Soft Computing Techniques	PE	3	3	0	0	3

Sl. No.	Course Code	Course Name	Category	Contact Hrs.	Hours/ Week			Credit
					L	T	P	
1.	16PED01	Project Work-Phase I	EEC	12	0	0	12	6
2.	16PED02	Project Work-Phase II	EEC	24	0	0	24	12

  
**The Chairman**  
 Board of Studies,  
 Department of Electrical and Electronics Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram-637 408, Namakkal Dist.

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

	<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Autonomous) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408	<b>CURRICULUM</b> <b>M</b> <b>PG R - 2016</b>


Department	Electrical and Electronics Engineering
Programme	M.E – Power Electronics and drives

**SEMESTER – I**

Sl. No.	Course Code	Course Name	Category	Contact Hrs.	Hours/ Week			Credit	Maximum Mark		
					L	T	P		C	CA	ES
1.	16PEA02	Applied Mathematics	FC	5	3	2	0	4	50	50	100
2.	16PEB01	Advanced Power Semiconductor Devices	PC	3	3	0	0	3	50	50	100
3.	16PEB02	Design and Analysis of Power Converters	PC	5	3	0	2	4	100	100	200
4.	16PEB03	Design and Analysis of Inverters	PC	3	3	0	0	3	50	50	100
5.	16PEB04	Modeling and Analysis of Electrical Machines	PC	5	3	2	0	4	50	50	100
6.	16PEB09	Microcontroller Based System Design	PC	3	3	0	0	3	50	50	100
<b>Total Credits</b>								<b>21</b>	<b>700</b>		

**SEMESTER – II**

Sl. No.	Course Code	Course Name	Category	Contact Hrs.	Hours/ Week			Credit	Maximum Mark		
					L	T	P		C	CA	ES
1.	16PEB05	Solid State DC Drives	PC	3	3	0	0	3	50	50	100
2.	16PEB06	Solid State AC Drives	PC	3	3	0	0	3	50	50	100
3.	16PEB07	Special Electrical Machines and controllers	PC	5	3	0	2	4	100	100	200
4.		Elective-I	PE	3	3	0	0	3	50	50	100
5.		Elective-II	PE	3	3	0	0	3	50	50	100
6.		Elective-III	PE	3	3	0	0	3	50	50	100
<b>Total Credits</b>								<b>19</b>	<b>700</b>		

  
**The Chairman**  
 Board of Studies,  
 Department of Electrical and Electronics Engineering  
 Muthayammal Engineering College (Autonomous),  
 Rasipuram-637 408, Namakkal.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU**



**MUTHAYAMMAL ENGINEERING COLLEGE**  
(Autonomous)  
(Approved by AICTE & Affiliated to Anna University),  
**RASIPURAM – 637 408**

**CURRICULUM**  
**M**  
**PG**  
**R – 2016**

Department Electrical and Electronics Engineering

Programme M.E – Power Electronics and drives

**SEMESTER – III**

Sl. No.	Course Code	Course Name	Category	Contact Hrs.	Hours/ Week			Credit	Maximum Mark		
					L	T	P		C	CA	ES
1.		Elective -IV	PE	3	3	0	0	3	50	50	100
2.		Elective-V	PE	3	3	0	0	3	50	50	100
3.		Elective-VI	PE	3	3	0	0	3	50	50	100
4.	16PED01	Project Work - Phase I	EEC	12	0	0	12	6	50	50	100
<b>Total Credits</b>								<b>15</b>	<b>400</b>		


**SEMESTER – IV**

Sl. No.	Course Code	Course Name	Category	Contact Hrs.	Hours/ Week			Credit	Maximum Mark		
					L	T	P		C	CA	ES
1	16PED02	Project Work - Phase II	EEC	24	0	0	24	12	50	50	100
<b>Total Credits</b>								<b>12</b>	<b>100</b>		

**TOTAL CREDITS -67**


*(Signature)*  
**The Chairman**  
Board of Studies,  
Department of Electrical and Electronics Engineering  
Muthayammal Engineering College (Autonomous)  
RASIPURAM - 637 408

*(Signature)*  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

	<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Autonomous) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408	<b>CURRICULUM</b> <b>PG</b> <b>R - 2016</b>
	<b>Department</b>	Electrical and Electronics Engineering
<b>Programme</b>	M.E – Power Systems Engineering	

Sl. No.	Course Code	Course Name	Category	Contact Hrs	Hours/ Week			Credit
					L	T	P	
1.	16PSA01	Advanced Numerical Methods	FC	5	3	2	0	4
2.	16PSA02	Applied Mathematics	FC	5	3	2	0	4
3.	16PSA03	Applied Probability and Statistics	FC	5	3	2	0	4


Sl. No.	Course Code	Course Name	Category	Contact Hrs	Hours/ Week			Credit
					L	T	P	
1.	16PSB01	Linear and Non-Linear Systems Theory	PC	3	3	0	0	3
2.	16PSB02	Electrical Transients in Power Systems	PC	3	3	0	0	3
3.	16PSB03	Advanced Power System Analysis	PC	5	3	2	0	4
4.	16PSB04	Advanced Power System Operation and Control	PC	5	3	0	2	4
5.	16PSB05	Advanced Power System Dynamics	PC	3	3	0	0	3
6.	16PSB06	Substation Equipment & Design	PC	3	3	0	0	3
7.	16PSB07	Advanced Power System Protection	PC	3	3	0	0	3
8.	16PSB08	Restructured Power System	PC	5	3	0	2	4
9.	16PSB09	Solar and Energy Storage Systems	PC	3	3	0	0	3
10.	16PSB10	Power System Security	PC	3	3	0	0	3
11.	16PSB11	Industrial Power System Analysis and Design	PC	3	3	0	0	3
12.	16PSB12	Power System Planning and Reliability	PC	3	3	0	0	3

  
**The Chairman**  
Board of Studies,  
Department of Electrical and Electronics Engineering  
Muthayammal Engineering College (Autonomous)  
RASIPURAM - 637 408

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU**

Sl. No.	Course Code	Course Name	Category	Contact Hrs	Hours/ Week			Credit
					L	T	P	
1.	16PSC01	Flexible AC Transmission Systems	PE	3	3	0	0	3
2.	16PSC02	Microcontroller Based System Design	PE	3	3	0	0	3
3.	16PSC03	Design and Analysis of Inverters	PE	3	3	0	0	3
4.	16PSC04	Power Quality	PE	3	3	0	0	3
5.	16PSC05	Advanced Digital Signal Processing	PE	3	3	0	0	3
6.	16PSC06	Energy Management and Auditing	PE	3	3	0	0	3
7.	16PSC07	High Voltage Direct Current Transmission	PE	3	3	0	0	3
8.	16PSC08	Application of MEMS Technology	PE	3	3	0	0	3
9.	16PSC09	Distributed Generation and Micro Grid	PE	3	3	0	0	3
10.	16PSC10	Wind Energy Conversion Systems	PE	3	3	0	0	3
11.	16PSC11	Power Plant Instrumentation and Control	PE	3	3	0	0	3
12.	16PSC12	Smart Grid	PE	3	3	0	0	3
13.	16PSC13	Power Electronics for Renewable Energy Systems	PE	3	3	0	0	3
14.	16PSC14	Real time operating systems	PE	3	3	0	0	3
15.	16PSC15	Soft Computing Techniques	PE	3	3	0	0	3

Sl. No.	Course Code	Course Name	Category	Contact Hrs	Hours/ Week			Credit
					L	T	P	
1.	16PSD01	Project Work-Phase I	EEC	12	0	0	12	6
2.	16PSD02	Project Work-Phase II	EEC	24	0	0	24	12

  
**The Chairman**  
 Board of Studies,  
 Department of Electrical and Electronics Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram-637 408, Namakkal Dist.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU



**MUTHAYAMMAL ENGINEERING COLLEGE**  
(Autonomous)  
(Approved by AICTE & Affiliated to Anna University),  
RASIPURAM – 637 408

**CURRICULUM**  
**M**  
**PG R - 2016**

Department	Electrical and Electronics Engineering
Programme	M.E – Power Systems Engineering

**SEMESTER – I**

Sl. No.	Course Code	Course Name	Category	Contact Hrs	Hours/ Week			Credit	Maximum Mark		
					L	T	P		C	CA	ES
1.	16PSA02	Applied Mathematics	FC	5	3	2	0	4	50	50	100
2.	16PSB01	Linear and Non Linear Systems Theory	PC	3	3	0	0	3	50	50	100
3.	16PSB02	Electrical Transients in Power Systems	PC	3	3	0	0	3	50	50	100
4.	16PSB03	Advanced Power System Analysis	PC	5	3	2	0	4	50	50	100
5.	16PSB04	Advanced Power System Operation and Control	PC	5	3	0	2	4	100	100	200
6.	16PSB09	Solar and Energy Storage Systems	PC	3	3	0	0	3	50	50	100
<b>Total Credits</b>								<b>21</b>	<b>700</b>		

**SEMESTER – II**

Sl. No.	Course Code	Course Name	Category	Contact Hrs	Hours/ Week			Credit	Maximum Mark		
					L	T	P		C	CA	ES
1.	16PSB05	Advanced Power System Dynamics	PC	3	3	0	0	3	50	50	100
2.	16PSB07	Advanced Power System Protection	PC	3	3	0	0	3	50	50	100
3.	16PSB08	Restructured Power System	PC	5	3	0	2	4	100	100	200
4.		Elective-I	PE	3	3	0	0	3	50	50	100
5.		Elective-II	PE	3	3	0	0	3	50	50	100
6.		Elective-III	PE	3	3	0	0	3	50	50	100
<b>Total Credits</b>								<b>19</b>	<b>700</b>		

*The Chairman*  
**The Chairman**  
Board of Studies,  
Department of Electrical and Electronics Engineering  
Muthayammal Engineering College (Autonomous),  
Rasipuram-637 408, Namakkal, TN.

**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU



**MUTHAYAMMAL ENGINEERING COLLEGE**  
(Autonomous)  
(Approved by AICTE & Affiliated to Anna University),  
RASIPURAM – 637 408

**CURRICULUM**  
**M**  
**PG R - 2016**

Department	Electrical and Electronics Engineering
Programme	M.E. – Power Systems Engineering


**SEMESTER – III**

Sl. No.	Course Code	Course Name	Category	Contact Hrs	Hours/ Week			Credit	Maximum Mark		
					L	T	P		C	CA	ES
1.		Elective- IV	PE	3	3	0	0	3	50	50	100
2.		Elective-V	PE	3	3	0	0	3	50	50	100
3.		Elective-VI	PE	3	3	0	0	3	50	50	100
4.	16PSD01	Project Work - Phase I	EEC	12	0	0	12	6	50	50	100
<b>Total Credits</b>								<b>15</b>	<b>400</b>		

**SEMESTER – IV**

Sl. No.	Course Code	Course Name	Category	Contact Hrs	Hours/ Week			Credit	Maximum Mark		
					L	T	P		C	CA	ES
1	16PSD02	Project Work - Phase II	EEC	24	0	0	24	12	50	50	100
<b>Total Credits</b>								<b>12</b>	<b>100</b>		

**TOTAL CREDITS -67**

  
**The Chairman**  
Board of Studies,  
Department of Electrical and Electronics Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram - 637 408, Namakkal

  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

**MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)**  
Rasipuram – 637408.

<b>Department</b>	<b>Department of Management Studies</b>
<b>Programme</b>	<b>Master of Business Administration</b>

**Grouping of Courses**

**I - Foundation Course**

Sl. No.	Course Code	Course Name	Hours/ Week			Credit
			L	T	P	
1	16MBA01	Essentials of Management	3	0	0	3
2	16MBA02	Business Statistics	3	2	0	4
3	16MBA03	Managerial Economics	4	0	0	4
4	16MBA04	Organizational Behaviour	3	0	0	3
5	16MBA05	Accounting for Management	3	2	0	4
6	16MBA06	Business Law	3	0	0	3
7	16MBA07	Business Environment	3	0	0	3
8	16MBA08	Indian Ethos for Management	3	0	0	3
9	16MBA09	Business Communication	0	0	4	2
10	16SHA08	Principles of Management and Engineering Ethics	3	0	0	3

**II - Professional Core**

Sl. No.	Course Code	Course Name	Hours/ Week			Credit
			L	T	P	
1	16MBB01	Marketing Management	3	0	0	3
2	16MBB02	Financial Management	3	2	0	4
3	16MBB03	Operations Management	3	2	0	4
4	16MBB04	Human Resource Management	3	0	0	3
5	16MBB05	Quantitative Methods and Techniques	3	2	0	4
6	16MBB06	Information System for Management	4	0	0	4
7	16MBB07	Research Methods	3	0	0	3
8	16MBB08	Strategic Management	4	0	0	4
9	16MBB09	International Business Management	4	0	0	4
10	16MBB10	Business Application Modules	0	0	4	2

**III - Professional Electives**

<b>1. Marketing</b>						
Sl. No.	Course Code	Course Name	Hours/ Week			Credit
			L	T	P	
1	16MBC01	Advertising and Promotion Management	4	0	0	4
2	16MBC02	Brand Management	3	0	0	3
3	16MBC03	Consumer Behaviour	3	0	0	3

  
**Chairman**

Board of Studies  
Department of MBA

Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

4	16MBC04	Retail Management	3	0	0	3
5	16MBC05	Rural Marketing	4	0	0	4
6	16MBC06	Services Marketing	3	0	0	3

## 2. Finance

Sl. No.	Course Code	Course Name	Hours/ Week			Credit
			L	T	P	C
1	16MBC11	Financial Derivatives	3	0	0	3
2	16MBC12	Merchant Banking and Financial Services	4	0	0	4
3	16MBC13	Security Analysis and Portfolio Management	4	0	0	4
4	16MBC14	Banking and Indian Financial System	3	0	0	3
5	16MBC15	Risk Management and Insurance	3	0	0	3
6	16MBC16	Corporate Finance	4	0	0	4

## 3. Human Resource

1	16MBC21	Training and Development	4	0	0	4
2	16MBC22	Industrial Relations and Labour Laws	4	0	0	4
3	16MBC23	Managerial Behavior and Effectiveness	3	0	0	3
4	16MBC24	Competency Mapping and Development	3	0	0	3
5	16MBC25	Performance Management	3	0	0	3
6	16MBC26	Cross Culture Management	3	0	0	3

## 4. Operations Management

1	16MBC31	Project Management	4	0	0	4
2	16MBC32	Lean Manufacturing	3	0	0	3
3	16MBC33	Service Operations Management	3	0	0	3
4	16MBC34	Supply Chain and Logistics Management	3	0	0	3
5	16MBC35	Total Quality Management	4	0	0	4

## 5. Systems

1	16MBC41	E-Commerce	4	0	0	4
2	16MBC42	Business Intelligence	3	0	0	3
3	16MBC43	Knowledge Management	3	0	0	3
4	16MBC44	Relational Database Management System	4	0	0	4

## 6. General Management

1	16MBC51	Disaster Management	3	0	0	3
---	---------	---------------------	---	---	---	---

  
Chairman

Board of Studies  
Department of MBA

Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

2	16MBC52	Environmental Management	4	0	0	4
3	16MBC53	Business Ethics	3	0	0	3
4	16MBC54	Entrepreneurship Development	4	0	0	4

**IV - Employability Enhancement Courses**

Sl. No.	Course Code	Course Name	Hours/ Week			Credit
			L	T	P	C
1	16MBD01	Summer Internship	0	0	2	1
2	16MBD02	Field Survey	0	0	4	2
3	16MBD03	Project Work	0	0	30	15



**Chairman**  
Board of Studies  
Department of MBA  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

PRINCIPAL  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous) Rasipuram-637408 (Approved by AICTE, New Delhi & Affiliated to Anna University) MBA Model Curriculum - Regulation 2016						Curriculum PG R - 2016
Department		Department of Management Studies				
Programme		Master of Business Administration				
SEMESTER - I						
Sl. No.	Course Code	Course Name	Hours/ Week			Credit
			L	T	P	C
<b>THEORY</b>						
1	16MBA01	Essentials of Management	3	0	0	3
2	16MBA02	Business Statistics	3	2	0	4
3	16MBA03	Managerial Economics	4	0	0	4
4	16MBA04	Organizational Behaviour	3	0	0	3
5	16MBA05	Accounting for Management	3	2	0	4
6	16MBA06	Business Law	3	0	0	3
<b>PRACTICAL</b>						
7	16MBA09	Business Communication	0	0	4	2
<b>Total Credits</b>						<b>23</b>
SEMESTER - II						
Sl. No.	Course Code	Course Name	Hours/ Week			Credit
			L	T	P	C
<b>THEORY</b>						
1	16MBB01	Marketing Management	3	0	0	3
2	16MBB02	Financial Management	3	2	0	4
3	16MBB03	Operations Management	3	2	0	4
4	16MBB04	Human Resource Management	3	0	0	3
5	16MBB05	Quantitative Methods and Techniques	3	2	0	4
6	16MBB06	Information System for Management	4	0	0	4
7	16MBB07	Research Methods	3	0	0	3
<b>PRACTICAL</b>						
8	16MBB10	Business Application Modules	0	0	4	2
<b>Total Credits</b>						<b>27</b>

### Summer Internship [Course Code - 16MBD01]

Summer Internship opting student has to undergo for an Industrial Training in an organization for the period of 2 weeks. The training report with the company certificate around 40 pages about the summer internship should be submitted before a review committee constituted by the HOD will be evaluated based on their presentation of the reports and Viva-Voce examination. Evaluation report should be sent to the Controller of Examinations through the Principal.

  
Chairman


Board of Studies  
Department of MBA

Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

SEMESTER – III						
Sl. No.	Course Code	Course Name	Hours/ Week			Credit
			L	T	P	C
<b>THEORY</b>						
1	16MBB08	Strategic Management	4	0	0	4
2	16MBB09	International Business Management	4	0	0	4
<b>Electives (3+3=6 Subjects)</b>						
3	16MBC01	Advertising and Promotion Management	4	0	0	4
4	16MBC03	Consumer Behaviour	3	0	0	3
5	16MBC06	Services Marketing	3	0	0	3
6	16MBC13	Security Analysis and Portfolio Management	4	0	0	4
7	16MBC14	Banking and Indian Financial System	3	0	0	3
8	16MBC15	Risk Management and Insurance	3	0	0	3
9	16MBD01	Summer Internship	0	0	2	1
<b>Total Credits</b>						<b>29</b>
<b>SEMESTER – IV</b>						
Sl. No.	Course Code	Course Name	Hours/ Week			Credit
			L	T	P	C
<b>PRACTICAL</b>						
1	16MBD03	Project Work	0	0	30	15
<b>Total Credits</b>						<b>15</b>

**TOTAL No. of CREDITS = 94**

  
**Chairman**  
 Board of Studies  
 Department of MBA  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU.**

**MUTHAYAMMAL ENGINEERING COLLEGE (AUTONOMOUS)**

**RASIPURAM-637408.**

**GROUPING OF COURSES**

**B.E. –ELECTRONICS AND COMMUNICATION ENGINEERING**

**Regulation-2016**

**1. Humanities and Social Sciences (HS)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			Credit
					L	T	P	
1.	16SHA01	Technical English	HS	5	3	2	0	4
2.	16SHA02	Communicative English	HS	7	3	0	4	5
3.	16SHA03	Business English	HS	5	3	2	0	4
4.	16SHA04	Basics of Japanese	HS	5	3	2	0	4
5.	16SHA05	Functional Japanese	HS	5	3	2	0	4
6.	16SHA06	Basics of German	HS	5	3	2	0	4
7.	16SHA07	Functional German	HS	5	3	2	0	4
8.	16SHA08	Principles of Management and Engineering Ethics	HS	3	3	0	0	3

**2. Basic Sciences (BS)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			Credit
					L	T	P	
1.	16SHB01	Matrices, Calculus& Ordinary Differential Equations	BS	5	3	2	0	4
2.	16SHB02	Complex Variables ,Laplace Transforms & Vector Calculus	BS	5	3	2	0	4
3.	16SHB03	Transforms & Partial Differential Equations	BS	5	3	2	0	4
4.	16SHB04	Probability & Random Processes	BS	5	3	2	0	4
5.	16SHB05	Probability and Queuing Theory	BS	5	3	2	0	4
6.	16SHB06	Numerical Methods	BS	5	3	2	0	4
7.	16SHB07	Statistics and Numerical Methods	BS	5	3	2	0	4
8.	16SHB08	Discrete Mathematics	BS	5	3	2	0	4
9.	16SHB09	Operations Research	BS	5	3	2	0	4
10.	16SHB21	Engineering Physics	BS	6	2	0	4	4

CHAIRMAN  
Board of Studies  
Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist., Tamil Nadu.

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

Programme Code & Name: EC & B.E. - Electronics and Communication Engineering

11.	16SHB22	Material Science	BS	3	3	0	0	3
12.	16SHB23	Physics for Electrical Engineering	BS	3	3	0	0	3
13.	16SHB24	Physics for Mechanical Engineering	BS	3	3	0	0	3
14.	16SHB31	Engineering Chemistry	BS	6	2	0	4	4
15.	16SHB32	Environmental Science and Engineering	BS	3	3	0	0	3

3. Engineering Sciences (ES)

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	16ECC01	Fundamentals of Computing and Programming	ES	6	2	0	4	4
2.	16ECC02	Advanced C Programming	ES	6	2	0	4	4
3.	16ECC03	Basics of Civil and Mechanical Engineering	ES	4	4	0	0	4
4.	16ECC04	Basics Electrical and Electronics Engineering	ES	3	3	0	0	3
5.	16ECC05	Engineering Graphics	ES	4	0	0	4	2
6.	16ECC06	Engineering Practices for Electrical Sciences	ES	4	0	0	4	2
7.	16ECC07	Electrical Drives and Control	ES	5	3	0	2	4
8.	16ECC08	Engineering Mechanics	ES	5	3	2	0	4
9.	16ECC09	Microprocessor and Microcontrollers	ES	5	3	0	2	4
10.	16ECC10	Object Oriented Programming	ES	6	2	0	4	4
11.	16ECC11	Data Structures	ES	6	2	0	4	4
12.	16ECC12	Electron Devices	ES	6	2	0	4	4
13.	16ECC13	Circuit Theory	ES	6	2	0	4	4
14.	16ECC14	Digital Principles and System Design	ES	6	2	0	4	4
15.	16ECC15	Fundamentals of Nano Technology	ES	3	3	0	0	3

4. Professional Core (PC)

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1	16ECD01	Signals and Systems	PC	5	3	2	0	4
2	16ECD02	Digital Electronics	PC	5	3	0	2	4
3	16ECD03	Electromagnetic Fields	PC	3	3	0	0	3

CHAIRMAN  
Board of Studies  
Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 401.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU


Programme Code & Name: EC & B.E. - Electronics and Communication Engineering

4	16ECD04	Analog Electronics - I	PC	5	3	0	2	4
5	16ECD05	Analog Electronics -II	PC	5	3	0	2	4
6	16ECD06	Linear Integrated Circuits	PC	5	3	0	2	4
7	16ECD07	Communication Theory	PC	3	3	0	0	3
8	16ECD08	Transmission Line and Waveguides	PC	5	3	2	0	4
9	16ECD09	Digital Signal Processing	PC	5	3	0	2	4
10	16ECD10	Digital Communication	PC	5	3	0	2	4
11	16ECD11	Computer Architecture and organization	PC	3	3	0	0	3
12	16ECD12	Embedded System	PC	5	3	0	2	4
13	16ECD13	Antennas and Wave Propagation	PC	3	3	0	0	3
14	16ECD14	VLSI Design	PC	5	3	0	2	4
15	16ECD15	Computer Networks	PC	3	3	0	2	4
16	16ECD16	Digital Image Processing	PC	3	3	0	0	3
17	16ECD17	RF and Microwave Engineering	PC	5	3	0	2	4
18	16ECD18	Optical Fiber Communication	PC	5	3	0	2	4
19	16ECD19	Electromagnetic Interference And Compatibility	PE	3	3	0	0	3
20	16ECD20	Cellular Mobile Communication	PC	3	3	0	0	3
21	16ECD21	Control Systems	PC	5	3	0	2	4

5. Professional Electives (PE)

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	16ECE01	Radar and Navigational Aids	PE	3	3	0	0	3
2.	16ECE02	High Speed Networks	PE	3	3	0	0	3
3.	16ECE03	Wireless Sensor Networks	PE	3	3	0	0	3
4.	16ECE04	Biomedical Engineering	PE	3	3	0	0	3
5.	16ECE05	Bio Signal and Image Processing	PE	3	3	0	0	3
6.	16ECE06	Telecommunication Switching Systems	PE	3	3	0	0	3
7.	16ECE07	Cognitive Radio Networks	PE	3	3	0	0	3
8.	16ECE08	RF MEMS	PE	3	3	0	0	3

  
 CHAIRMAN  
 Board of Studies  
 Department of Electronics and Communication Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal - 637 408.

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.

Programme Code & Name: EC & B.E. - Electronics and Communication Engineering

9.	16ECE09	Soft Computing	PE	3	3	0	0	3
10.	16ECE10	Nano Electronics	PE	3	3	0	0	3
11.	16ECE11	Wireless Communication	PE	3	3	0	0	3
12.	16ECE12	Satellite Communication	PE	3	3	0	0	3
13.	16ECE13	Television and Video Engineering	PE	3	3	0	0	3
14.	16ECE14	Optoelectronic Devices	PE	3	3	0	0	3
15.	16ECE15	Mobile Ad-Hoc Networks	PE	3	3	0	0	3
16.	16ECE16	Internet and JAVA Programming	PE	3	3	0	0	3
17.	16ECE17	Architecture and Programming	PE	3	3	0	0	3
18.	16ECE18	Pattern Recognition and AI Techniques	PE	3	3	0	0	3
19.	16ECE19	Biometrics	PE	3	3	0	0	3
20.	16ECE20	Embedded Solutions Engineering	PE	3	3	0	0	3

6. Employability Enhancement Courses (EEC)

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit C
					L	T	P	
1.	16ECF01	Project Work Phase - I	EEC	6	0	0	6	3
2.	16ECF02	Project Work Phase -II	EEC	30	0	0	30	15
3.	16ECF03	Comprehension	EEC	4	0	0	4	2
4.	16ECF04	Design Project	EEC	4	0	0	4	2
5.	16ECF05	Technical Seminar	EEC	4	0	4	0	2



CHAIRMAN  
Board of Studies  
Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 6

  
PRINCIPAL

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.



**MUTHAYAMMAL ENGINEERING COLLEGE  
(Autonomous)**

(Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408

**CURRICULUM  
UG  
R - 2016**

Department		ECE					
Programme		BE					
<b>SEMESTER – I</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16SHA02	Communicative English	3	0	4	5	7
2.	16SHB01	Matrices, Calculus & Ordinary Differential Equations	3	2	0	4	5
3.	16SHB21	Engineering Physics	2	0	4	4	6
4.	16SHB32	Environmental Science and Engineering	3	0	0	3	3
5.	16ECC01	Fundamentals of Computing and Programming	2	0	4	4	6
6.	16ECC13	Circuit Theory	2	0	4	4	6
7.	16ECC06	Engineering Practices for Electrical Sciences	0	0	4	2	4
<b>TOTAL Credits</b>						<b>26</b>	



**MUTHAYAMMAL ENGINEERING COLLEGE  
(Autonomous)**

(Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408

**CURRICULUM  
UG  
R - 2016**


Department		ECE					
Programme		B.E					
<b>SEMESTER –II</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16SHA01	Technical English	3	2	0	4	5
2.	16SHB02	Complex Variables , Laplace Transforms & Vector Calculus	3	2	0	4	5
3.	16SHB22	Material Science	3	0	0	3	3
4.	16SHB31	Engineering Chemistry	2	0	4	4	6
5.	16ECC02	Advanced C Programming	2	0	4	4	6
6.	16ECC12	Electron Devices	2	0	4	4	6
7.	16ECC05	Engineering Graphics	0	0	4	2	4
<b>TOTAL Credits</b>						<b>25</b>	


*(Signature)*  
**CHAIRMAN**  
Board of Studies

Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 408.

*(Signature)*  
**PRINCIPAL,**

**MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.**

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>(Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R – 2016</b>	
Department		ECE					
Programme		BE					
<b>SEMESTER – III</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16SHB03	Transforms & Partial Differential Equations	3	2	0	4	5
2.	16ECD01	Signals and Systems	3	2	0	4	5
3.	16ECC11	Data Structure	2	0	4	4	6
4.	16ECD02	Digital Electronics	3	0	2	4	5
5.	16ECD03	Electromagnetic Fields	3	0	0	3	3
6.	16ECD04	Analog Electronics – I	3	0	2	4	5
<b>TOTAL Credits</b>						<b>23</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>(Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R – 2016</b>	
Department		ECE					
Programme		BE					
<b>SEMESTER - IV</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16SHB04	Probability & Random Processes	3	2	0	4	5
2.	16ECD05	Analog Electronics –II	3	0	2	4	5
3.	16ECC09	Microprocessor and Microcontrollers	3	0	2	4	5
4.	16ECD06	Linear Integrated Circuits	3	0	2	4	5
5.	16ECD07	Communication Theory	3	0	0	3	3
6.	16ECD21	Control Systems	3	0	2	4	5
<b>TOTAL Credits</b>						<b>23</b>	

  
**CHAIRMAN**  
Board of Studies  
Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 406.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU.**



**MUTHAYAMMAL ENGINEERING COLLEGE  
(Autonomous)**

(Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408

**CURRICULUM  
UG  
R - 2016**

Department		ECE					
Programme		BE					
SEMESTER - V							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
THEORY							
1.	16ECD08	Transmission Line and Waveguides	3	1	0	4	5
2.	16ECD09	Digital Signal Processing	3	0	2	4	5
3.	16ECD10	Digital Communication	3	0	2	4	5
4.	16ECD11	Computer Architecture and organization	3	0	0	3	3
5.	16SHA08	Principles of Management and Engineering Ethics	3	0	0	3	3
6.	16ECE16	Elective –I ( Internet and JAVA programming)	3	0	0	3	3
7.	16ECE04	Elective –II ( Biomedical Engineering)	3	0	0	3	3
<b>TOTAL Credits</b>						<b>24</b>	



**MUTHAYAMMAL ENGINEERING COLLEGE  
(Autonomous)**


(Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408


**CURRICULUM  
UG  
R – 2016**

Department		ECE					
Programme		BE					
SEMESTER –VI							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
THEORY							
1.	16ECD12	Embedded Systems	3	0	2	4	5
2.	16ECD13	Antennas and Wave Propagation	3	0	0	3	3
3.	16ECD14	VLSI Design	3	0	2	4	5
4.	16ECD15	Computer Networks	3	0	2	4	5
5.	16ECE12	PE –III (Satellite Communication )	3	0	0	3	3
6.	16 ECE14	PE-IV (Opto Electronic Devices)	3	0	0	3	3
<b>TOTAL Credits</b>						<b>21</b>	

*CHAIRMAN*  
Board of Studies  
Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 408.

*PRINCIPAL*  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist,  
TAMILNADU.

 <b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>(Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		CURRICULUM UG R – 2016					
Department		ECE					
Programme		BE					
<b>SEMESTER – VII</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P	C	
<b>THEORY</b>							
1.	16ECD17	RF and Microwave Engineering	3	0	2	4	5
2.	16ECD18	Optical Fiber Communication	3	0	2	4	5
3.	16ECE02	Elective V ( High speed Networks)	3	0	0	3	3
4.	16ECE11	Elective VI (Wireless Communication)	3	0	0	3	3
5.	16CSE09	Open Elective I (Advanced Computer Architecture )	3	0	0	3	3
6.	16EED01	Open Elective II (Measurement and Instrumentation)	3	0	0	3	3
7.	16MEE023	Open Elective III ( TOTAL Quality Management)	3	0	0	3	3
8.	16ECF01	Project Work-I	0	0	6	3	6
<b>TOTAL Credits</b>						<b>26</b>	

 <b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>(Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		CURRICULUM UG R – 2016					
Department		ECE					
Programme		BE					
<b>SEMESTER – VIII</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P	C	
<b>THEORY</b>							
3.		Project Work Phase -II	0	0	30	15	30
<b>TOTAL Credits</b>						<b>15</b>	

**TOTAL Credits to be earned for the Award of Degree: 183**

  
**CHAIRMAN**  
 Board of Studies  
 Department of Electronics and Communication Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal - 637 408

  
**PRINCIPAL**  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.



## MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

### M.E. – VLSI DESIGN

### GROUPING OF COURSES

#### FOUNDATION COURSES (FC):

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	16VLA01	Advanced Numerical Methods	FC	5	3	2	0	4
2.	16VLA02	Applied Mathematics	FC	5	3	2	0	4
3.	16VLA03	Applied Probability and Statistics	FC	5	3	2	0	4

#### Professional Core (PC):

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	16VLB01	VLSI Signal Processing	PC	5	3	2	0	4
2.	16VLB02	VLSI Design Techniques	PC	3	3	0	0	3
3.	16VLB03	Analog VLSI Circuit Design	PC	3	3	0	0	3
4.	16VLB04	Solid State Device Modeling and Simulation	PC	3	3	0	0	3
5.	16VLB05	ASIC Design		3	3	0	0	3
6.	16VLB07	Digital CMOS VLSI Design	PC	5	3	0	0	3
7.	16VLB08	CAD for VLSI Circuits	PC	5	3	2	0	4
8.	16VLB09	Low Power VLSI Design	PC	3	3	0	0	3
9.	16VLB11	Testing of VLSI Circuits	PC	3	3	0	0	3

  
CHAIRMAN

Board of Studies  
Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 408.


  
PRINCIPAL  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

Programme Code & Name: VL & VLSI Design

10.	16VLB06	VLSI Design Techniques Laboratory	PC	2	0	0	2	1
11.	16VLB10	Digital CMOS VLSI Design Laboratory	PC	2	0	0	2	1

**Professional Electives (PE):**

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	16VLC01	Signal Integrity for High Speed Devices	PE	3	3	0	0	3
2.	16VLC02	Advanced Digital System Design	PE	3	3	0	0	3
3.	16VLC03	Submicron VLSI Design	PE	3	3	0	0	3
4.	16VLC04	VLSI Technology	PE	3	3	0	0	3
5.	16VLC05	DSP Integrated Circuits	PE	3	3	0	0	3
6.	16VLC06	ARM Processor and Applications	PE	3	3	0	0	3
7.	16VLC07	Hardware Design Verification Techniques	PE	3	3	0	0	3
8.	16VLC08	Design and Analysis of Algorithms	PE	3	3	0	0	3
9.	16VLC09	MEMS and NEMS	PE	3	3	0	0	3
10.	16VLC10	Soft Computing	PE	3	3	0	0	3
11.	16VLC11	VLSI for Wireless Communication	PE	3	3	0	0	3
12.	16VLC12	Reconfigurable Architectures	PE	3	3	0	0	3
13.	16VLC13	Research Methodology	PE	3	3	0	0	3
14.	16VLC14	RF Integrated Circuit Design	PE	3	3	0	0	3

  
CHAIRMAN  
Board of Studies

Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 408.

  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU

15.	16VLC15	Electromagnetic Interference and Compatibility	PE	3	3	0	0	3
-----	---------	--	----	---	---	---	---	---

**Employability Enhancement Courses (EEC):**

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	C
1.	16VLD01	Project Work Phase -I	EEC	12	0	0	12	6
2.	16VLD02	Project Work Phase -II	EEC	24	0	0	24	12


**Audit Courses (AC) :**


S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	C
1.	16VLE01	English for Research Paper Writing	AC	2	2	0	0	0
2.	16VLE02	Disaster Management	AC	2	2	0	0	0
3.	16VLE03	Sanskrit for Technical Knowledge	AC	2	2	0	0	0
4.	16VLE04	Value Education	AC	2	2	0	0	0
5.	16VLE05	Constitution of India	AC	2	2	0	0	0
6.	16VLE06	Pedagogy Studies	AC	2	2	0	0	0
7.	16VLE07	Stress Management by Yoga	AC	2	2	0	0	0
8.	16VLE08	Personality Development through Life Enlightenment Skills.	AC	2	2	0	0	0

  
 CHAIRMAN  
 Board of Studies

Department of Electronics and Communication Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal - 637 408.


  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>(Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> <b>PG</b> <b>R - 2016</b>	
Department			Electronics and Communication Engineering					
Programme			M.E. – VLSI Design					
<b>SEMESTER - I</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P			C
<b>THEORY</b>								
1.	16VLA02	Applied Mathematics	3	2	0	4	5	
2.	16VLB01	VLSI Signal Processing	3	0	0	3	3	
3.	16VLB02	VLSI Design Techniques	3	0	2	4	5	
4.	16VLB03	Analog VLSI Circuit Design	3	0	0	3	3	
5.	16VLB04	Solid State Device Modeling and Simulation	3	0	0	3	3	
6.	16VLB05	ASIC Design	3	0	0	3	3	
<b>TotalCredits</b>						<b>20</b>		

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>(Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> <b>PG</b> <b>R - 2016</b>	
Department			Electronics and Communication Engineering					
Programme			M.E. – VLSI Design					
<b>SEMESTER - II</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P			C
<b>THEORY</b>								
1.	16VLB06	Digital CMOS VLSI Design	3	0	2	4	5	
2.	16VLB07	CAD for VLSI Circuits	3	2	0	4	5	
3.	16VLB08	Low Power VLSI Design	3	0	0	3	3	
4.	16VLC02	Advanced Digital System Design <b>(Elective I)</b>	3	0	0	3	3	
5.	16VLC04	VLSI Technology <b>(Elective II)</b>	3	0	0	3	3	
6.	16VLC05	DSP Integrated Circuits <b>(Elective III)</b>	3	0	0	3	3	
<b>TotalCredits</b>						<b>20</b>		

CHAIRMAN  
Board of Studies  
Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 40

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>(Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>PG</b> <b>R - 2016</b>	
Department		Electronics and Communication Engineering					
Programme		M.E. – VLSI Design					
<b>SEMESTER - III</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16VLC09	MEMS and NEMS(Elective IV)	3	0	0	3	3
2.	16VLC10	Soft Computing(Elective V)	3	0	0	3	3
3.	16VLC11	VLSI for Wireless Communication (Elective VI)	3	0	0	3	3
<b>PRACTICAL</b>							
4.	16VLD01	Project Work Phase-I	0	0	12	6	12
<b>TotalCredits</b>						<b>15</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>(Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>PG</b> <b>R - 2016</b>	
Department		Electronics and Communication Engineering					
Programme		M.E. – VLSI Design					
<b>SEMESTER - IV</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>PRACTICAL</b>							
1.	16VLD02	Project Work Phase-II	0	0	24	12	24
<b>TotalCredits</b>						<b>12</b>	

  
 CHAIRMAN  
 Board of Studies

Department of Electronics and Communication Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal - 637 408.

  
 PRINCIPAL  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU



## MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

### M.E. – COMMUNICATION SYSTEMS

#### GROUPING OF COURSES

#### Foundation Courses (FC) :

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	16MSA01	Advanced Numerical Methods	FC	5	3	2	0	4
2.	16MSA02	Applied Mathematics	FC	5	3	2	0	4
3.	16MSA03	Applied Probability and Statistics	FC	5	3	2	0	4

#### Professional Core (PC) :

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	16MSB01	Radiation Systems	PC	5	3	2	0	4
2.	16MSB02	Information Theory and Coding	PC	3	3	0	0	3
3.	16MSB03	Statistical Signal Processing	PC	3	3	0	0	3
4.	16MSB04	Optical Communication Networks	PC	3	3	0	0	3
5.	16MSB05	Mobile Communication Networks	PC	3	3	0	0	3
6.	16MSB06	Modern Digital Communication Techniques	PC	5	3	2	0	4
7.	16MSB07	RF System Design	PC	3	3	0	0	3
8.	16MSB08	Electromagnetic Interference and Compatibility	PC	3	3	0	0	3
9.	16MSB09	Microwave Integrated Circuits	PC	3	3	0	0	3
10.	16MSB10	Communication Network Design	PC	3	3	0	0	3
11.	16MSB11	Wireless Networks	PC	3	3	0	0	3
12.	16MSB12	DSP Processor Architecture and Programming	PC	3	3	0	0	3

CHAIRMAN

Board of Studies

Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 408.

PRINCIPAL

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Programme Code & Name: CO & Communication Systems

13.	16MSB13	Statistical Signal Processing Laboratory	PC	2	0	0	2	1
14.	16MSB14	RF System Design Laboratory	PC	2	0	0	2	1

**Professional Electives (PE):**

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	16MSC01	Multimedia and Compression Techniques	PE	3	3	0	0	3
2.	16MSC02	Routing Algorithms	PE	3	3	0	0	3
3.	16MSC03	Adaptive Beam Forming	PE	3	3	0	0	3
4.	16MSC04	Biological Effects of Microwaves	PE	3	3	0	0	3
5.	16MSC05	Soft Computing	PE	3	3	0	0	3
6.	16MSC06	Wireless Security System	PE	3	3	0	0	3
7.	16MSC07	RTOS and its Applications	PE	3	3	0	0	3
8.	16MSC08	Optical Signal Processing in Communication	PE	3	3	0	0	3
9.	16MSC09	High Speed Switching Architecture	PE	3	3	0	0	3
10.	16MSC10	Mobile Adhoc Networks	PE	3	3	0	0	3
11.	16MSC11	RF MEMS	PE	3	3	0	0	3
12.	16MSC12	Satellite Remote Sensing	PE	3	3	0	0	3

**Employability Enhancement Courses (EEC):**

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	16MSD01	Project Work Phase -I	EEC	12	0	0	12	6
2.	16MSD02	Project Work Phase -II	EEC	24	0	0	24	12

**Audit Courses (AC) :**

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	16MSE01	English for Research Paper Writing	AC	2	2	0	0	0
2.	16MSE02	Disaster Management	AC	2	2	0	0	0
3.	16MSE03	Sanskrit for Technical Knowledge	AC	2	2	0	0	0

CHAIRMAN

Board of Studies

Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)

rasipuram

637

PRINCIPAL,

MUTHAYAMMAL ENGINEERING COLLEGE

(AUTONOMOUS)

RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

Programme Code & Name: CO & Communication Systems

4.	16MSE04	Value Education	AC	2	2	0	0	0
5.	16MSE05	Constitution of India	AC	2	2	0	0	0
6.	16MSE06	Pedagogy Studies	AC	2	2	0	0	0
7.	16MSE07	Stress Management by Yoga	AC	2	2	0	0	0
8.	16MSE08	Personality Development through Life Enlightenment Skills.	AC	2	2	0	0	0



CHAIRMAN


Board of Studies


Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 408.




PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)


RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>(Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				CURRICULUM PG R - 2016	
Department		Electronics and Communication Engineering					
Programme		M.E. – Communication Systems					
<b>SEMESTER - I</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16MSA02	Applied Mathematics	3	2	0	4	5
2.	16MSB01	Radiation Systems	3	0	0	3	3
3.	16MSB02	Information Theory and Coding	3	0	0	3	3
4.	16MSB03	Statistical signal processing	3	0	2	4	5
5.	16MSB04	Optical Communication Networks	3	0	0	3	3
6.	16MSB05	Mobile Communication Networks	3	0	0	3	3
<b>TotalCredits</b>						<b>20</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>(Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				CURRICULUM PG R - 2016	
Department		Electronics and Communication Engineering					
Programme		M.E. – Communication Systems					
<b>SEMESTER - II</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16MSB06	Modern Digital Communication Techniques	3	2	0	4	5
2.	16MSB07	RF System Design	3	0	2	4	5
3.	16MSB08	Electromagnetic Interference and Compatibility	3	0	0	3	3
4.	16MSC01	Multimedia and Compression Techniques( <b>Elective I</b> )	3	0	0	3	3
5.	16MSC08	Optical Signal Processing in Communication ( <b>Elective II</b> )	3	0	0	3	3
6.	16MSC06	Wireless Security System( <b>Elective III</b> )	3	0	0	3	3
<b>TotalCredits</b>						<b>20</b>	


  
**CHAIRMAN**  
Board of Studies  
Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 408.

  
**PRINCIPAL**  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM - 637 408, NAMAKKAL Dist.

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>(Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				CURRICULUM PG R - 2016	
Department		Electronics and Communication Engineering					
Programme		M.E. – Communication Systems					
<b>SEMESTER - III</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	16MSC09	High Speed Switching Architecture <b>(Elective IV)</b>	3	0	0	3	3
2.	16MSC10	Mobile Adhoc Networks <b>(Elective V)</b>	3	0	0	3	3
3.	16MSC12	Satellite Remote Sensing <b>(Elective VI)</b>	3	0	0	3	3
<b>Practical</b>							
4.	16MSD01	Project Work Phase -I	0	0	12	6	12
<b>TotalCredits</b>						<b>15</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>(Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				CURRICULUM PG R - 2016	
Department		Electronics and Communication Engineering					
Programme		M.E. – Communication Systems					
<b>SEMESTER - IV</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>Practical</b>							
1.	16MSD02	Project Work Phase -II	0	0	24	12	24
<b>TotalCredits</b>						<b>12</b>	

  
**CHAIRMAN**  
 Board of Studies  
 Department of Electronics and Communication Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal - 637 408.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
 RASIPURAM-637 408 NAMAKKAL Dist.  
 TAMIL NADU



# MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC, NBA & Affiliated to Anna University)  
Rasipuram - 637 408, Namakkal Dist., Tamil Nadu.

## B.E.-CIVILENGINEERING

### GROUPING OF COURSES

TOTAL NO. OF CREDITS TO BE EARNED FOR THE AWARD OF DEGREE = 161

#### 1. Humanities and Social Sciences (HS)

S.No	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19HSS01	Business English	HS	2	2	0	0	2
2	19HSS02	English Communicative Skills Laboratory	HS	2	0	0	2	1
3	19HSS03	Life Skills and Workplace Psychology	HS	2	2	0	0	2
4	19HSS04	Technical English for Engineers	HS	2	2	0	0	2
5	19HSS05	Communicative English for Engineers	HS	2	2	0	0	2
6	19HSS06	Basics of Japanese Language	HS	2	2	0	0	2
7	19HSS07	Basics of French Language	HS	2	2	0	0	2

#### 2. Basic Sciences (BS)

S. No	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19BSS01	Engineering Physics	BS	3	3	0	0	3
2	19BSS02	Physics and Chemistry Laboratory	BS	2	0	0	2	1
3	19BSS03	Bio and Nanomaterials Sciences	BS	3	3	0	0	3
4	19BSS04	Material Sciences	BS	3	3	0	0	3
5	19BSS05	Physics for Mechanical Engineers	BS	3	3	0	0	3
6	19BSS11	Engineering Chemistry	BS	3	3	0	0	3
7	19BSS12	Environmental Science and Engineering	BS	3	3	0	0	3
8	19BSS13	Organic Chemistry	BS	3	3	0	0	3
9	19BSS14	Physical Chemistry	BS	3	3	0	0	3
10	19BSS15	Applied Chemistry	BS	3	3	0	0	3
11	19BSS16	Organic Chemistry Laboratory	BS	3	0	0	3	1

Dr. V. RAJENDRAN, M.E., Ph.D.,  
CHAIRMAN,

BOARD OF STUDIES,  
DEPARTMENT OF CIVIL ENGINEERING  
MUTHAYAMMAL ENGINEERING COLLEGE,  
RASIPURAM - 637 408.

PRINCIPAL,

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMIL NADU

12	19BSS17	Physical Chemistry Laboratory	BS	3	0	0	3	1
13	19BSS21	Algebra and Calculus	BS	4	3	1	0	4
14	19BSS22	Differential Equations and Vector Analysis	BS	4	3	1	0	4
15	19BSS23	Transform and Partial Differential Equations	BS	4	3	1	0	4
16	19BSS24	Discrete Mathematics	BS	4	3	1	0	4
17	19BSS25	Statistical and Queuing Model	BS	4	3	1	0	4
18	19BSS26	Numerical Methods	BS	4	3	1	0	4
19	19BSS27	Probability and Random Processes	BS	4	3	1	0	4
20	19BSS28	Statistics and Numerical Methods	BS	4	3	1	0	4

### 3. General Engineering Science Courses (GES)

S.No	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19GES01	Programming for Problem Solving Using C	GES	3	3	0	0	3
2	19GES02	Programming for Problem Solving Technique	GES	3	3	0	0	3
3	19GES03	Programming in C Laboratory	GES	2	0	0	2	1
4	19GES04	Programming in C and Python Laboratory	GES	2	0	0	2	1
5	19GES05	Electrical and Electronic Sciences	GES	3	3	0	0	3
6	19GES06	Mechanical and Building Sciences	GES	3	3	0	0	3
7	19GES07	Computer Aided Drafting Laboratory	GES	2	0	0	2	1
8	19GES08	Python Programming	GES	3	3	0	0	3
9	19GES09	Programming in Python Laboratory	GES	2	0	0	2	1
10	19GES10	Soft Skills Laboratory	GES	2	0	0	2	1
11	19GES11	Electronic Devices	GES	3	3	0	0	3
12	19GES12	Electronic Simulation Laboratory	GES	2	0	0	2	1
13	19GES13	Electric Circuits	GES	3	2	1	0	3
14	19GES14	Electric Circuits Laboratory	GES	2	0	0	2	1
15	19GES15	Manufacturing Processes	GES	3	3	0	0	3
16	19GES16	Manufacturing Processes Laboratory	GES	2	0	0	2	1

**D. V. RAJENDRAN, M.E., Ph.D.,**  
 CHAIRMAN,  
 BOARD OF STUDIES,  
 DEPARTMENT OF CIVIL ENGINEERING,  
 MUTHAYAMMAL ENGINEERING COLLEGE,  
 RASIPURAM - 637

**PRINCIPAL,**  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

17	19GES17	Mechanical and Building Sciences Laboratory	GES	2	0	0	2	1
18	19GES18	Construction Materials	GES	3	3	0	0	3
19	19GES19	Concepts in Product Design	GES	3	3	0	0	3
20	19GES20	Renewable Energy Resources	GES	3	3	0	0	3
21	19GES21	Electrical Drives and Control	GES	3	3	0	0	3
22	19GES22	Electrical Drives and Control Laboratory	GES	2	0	0	2	1
23	19GES23	Analog and digital communication	GES	3	3	0	0	3
24	19GES24	Digital Principles and System Design	GES	3	3	0	0	3
25	19GES25	Digital Principles and System Design Laboratory	GES	2	0	0	2	1
26	19GES26	Engineering Drawing	GES	5	1	0	4	3
27	19GES27	Engineering Geology	GES	3	3	0	0	3
28	19GES28	Engineering Mechanics	GES	4	3	1	0	4
29	19GES29	Wireless Communication	GES	4	3	1	0	4
30	19GES30	Electronics and Microprocessor	GES	3	3	0	0	3
31	19GES31	Electronics and Microprocessor Laboratory	GES	2	0	0	2	1
32	19GES32	Data Structures using Python	GES	3	3	0	0	3
33	19GES33	Electronic Devices and Circuits	GES	3	3	0	0	3
34	19GES34	Electronic Devices and Circuits Lab	GES	2	0	0	2	1
35	19GES35	Remote Sensing and GIS	GES	3	3	0	0	3

**4. Professional Core (PC)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19CEC01	Mechanics of Solids	PC	3	3	0	0	3
2	19CEC02	Strength of Materials	PC	3	3	0	0	3

Dr. V. RAJENDRAN, M.E., Ph.D.,

CHAIRMAN,

BOARD OF STUDIES,  
DEPARTMENT OF CIVIL ENGINEERING,  
MUTHAYAMMAL ENGINEERING COLLEGE  
RASIPURAM - 637 408.

PRINCIPAL,

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.

3	19CEC03	Structural Analysis	PC	5	3	1	0	4
4	19CEC04	Design of Steel Structures	PC	5	3	1	0	4
5	19CEC05	Estimation and Quantity Surveying	PC	3	3	0	0	3
6	19CEC06	Mechanics of Fluids	PC	3	3	0	0	3
7	19CEC07	Surveying	PC	5	3	1	0	4
8	19CEC08	Geotechnical Engineering	PC	3	3	0	0	3
9	19CEC09	Design of Reinforced Concrete Elements	PC	5	3	1	0	4
10	19CEC10	Water Supply Engineering	PC	3	3	0	0	3
11	19CEC11	Highway Engineering	PC	3	3	0	0	3
12	19CEC12	Computer Aided Building Drawing Laboratory	PC	2	0	0	2	1
13	19CEC13	Surveying Laboratory	PC	2	0	0	2	1
14	19CEC14	Strength of Materials Laboratory	PC	2	0	0	2	1
15	19CEC15	Hydraulic Engineering Laboratory	PC	2	0	0	2	1
16	19CEC16	Geotechnical Engineering Laboratory	PC	2	0	0	2	1
17	19CEC17	Concrete and Highway Engineering Laboratory	PC	2	0	0	2	1
18	19CEC18	Survey Camp	PC	2	0	0	2	1
19	19CEC19	Computer Aided Design and Drafting Laboratory	PC	0	0	0	0	1
20	19CEC20	Environmental Engineering Laboratory	PC	2	0	0	2	1

**5. Professional Electives (PE)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			
					L	T	P	C
1	19CEE01	Advanced Structural Analysis	PE	3	3	0	0	3
2	19CEE02	Design of Reinforced Concrete Structures	PE	3	3	0	0	3
3	19CEE03	Construction Technology	PE	3	3	0	0	3
4	19CEE04	Industrial Structures	PE	3	3	0	0	3
5	19CEE05	Health Monitoring of Structures	PE	3	3	0	0	3
6	19CEE06	Building Services	PE	3	3	0	0	3
7	19CEE07	Smart Materials and Smart Structures	PE	3	3	0	0	3

**Dr. V. RAJENDRAN, M.E., Ph.D.,**  
CHAIRMAN

PRINCIPAL,

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
TASIPURAM-637 408, NAMAKKAL Dist.  
TAMIL NADU

BOARD OF STUDIES,  
DEPARTMENT OF CIVIL ENGINEERING,  
MUTHAYAMMAL ENGINEERING COLLEGE,  
TASIPURAM - 637 408

8	19CEE08	Concrete Technology	PE	3	3	0	0	3
9	19CEE09	Seismic Design of Structures	PE	3	3	0	0	3
10	19CEE10	Prefabricated Structures	PE	3	3	0	0	3
11	19CEE11	Prestressed Concrete Structures	PE	3	3	0	0	3
12	19CEE12	Foundation Engineering	PE	3	3	0	0	3
13	19CEE13	Ground Improvement Techniques	PE	3	3	0	0	3
14	19CEE14	Environmental Impact Assessment in Civil Engineering Project	PE	3	3	0	0	3
15	19CEE15	Waste Water Engineering	PE	3	3	0	0	3
16	19CEE16	Municipal Solid Waste Management	PE	3	3	0	0	3
17	19CEE17	Industrial Waste Management	PE	3	3	0	0	3
18	19CEE18	Air Pollution and Management	PE	3	3	0	0	3
19	19CEE19	Public Health and Irrigation Engineering Drawing	PE	3	3	0	0	3
20	19CEE20	Hydrology	PE	3	3	0	0	3
21	19CEE21	Water Resources Engineering	PE	3	3	0	0	3
22	19CEE22	Ground Water Engineering	PE	3	3	0	0	3
23	19CEE23	Irrigation Engineering	PE	3	3	0	0	3
24	19CEE24	Applied Hydraulic Engineering	PE	3	3	0	0	3
25	19CEE25	Pavement Engineering	PE	3	3	0	0	3
26	19CEE26	Traffic Engineering and Safety Transport	PE	3	3	0	0	3
27	19CEE27	Railways ,Airports and Harbour Engineering	PE	3	3	0	0	3
28	19CEE28	Construction Planning and Management	PE	3	3	0	0	3
29	19CEE29	Housing Planning and Management	PE	3	3	0	0	3
30	19CEE30	Engineering Economics And Cost Analysis	PE	3	3	0	0	3

6. Open Electives (OE)

S. No.	Course Code	Course Title	Department	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19EEE09	Total Quality Management	EE	3	3	0	0	3
2	19EEE15	Wind and Solar Energy Systems	EE	3	0	0	0	3

Dr. V. RAJENDRAN, M.E. Ph.D.  
 CHAIRMAN,  
 BOARD OF STUDIES,  
 DEPARTMENT OF CIVIL ENGINEERING,  
 MUTHAYAMMAL ENGINEERING COLLEGE,  
 RASIPURAM - 637 408.

PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist  
 TAMIL NADU

3	19MEE18	Power Plant Engineering	ME	3	3	0	0	3
4	19MEE10	Composite Materials	ME	3	3	0	0	3
5	19MEE02	Principles of Management	ME	3	3	0	0	3
6	19MEF10	Maintenance Engineering	ME	3	3	0	0	3
7	19MEE12	Energy Conservation in Industry	ME	3	3	0	0	3
8	19CHE05	Disaster Management	CH	3	3	0	0	3
9	19ECE25	Internet of Things	EC	3	3	0	0	3
10	19CSE18	Soft Computing Techniques	CS	3	3	0	0	3


ME-Mechanical Engineering, EC-Electronics Engineering, EE-Electrical and Electronics Engineering CS-Computer Science and Engineering, CH-Chemical Engineering

### 7. Employability Enhancement Courses (EEC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19CEG01	Design Project	EEC	4	0	0	4	2
2	19CEG02	Project work	EEC	18	0	0	18	9
3	19CEG03	Value Added Course	EEC	2	0	0	2	1
4	19CEG04	Inplant Training (Four Weeks In VI Sem Summer)	EEC	0	0	0	0	1
5	19CEG05	Comprehension	EEC	2	0	0	2	1
6	19CEG06	Technical Seminar	EEC	2	0	0	2	1

### 8. Mandatory Course (MC)

S. No	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19CEH01	Organizational Behaviour	MC	3	3	0	0	0
2	19CEH02	India Constitution (Common to All Branches)	MC	3	3	0	0	0
3	19CEH03	Essence of Indian Traditional Knowledge	MC	3	3	0	0	0

  
**Dr. V. RAJENDRAN, M.E., Ph.D.,**  
 CHAIRMAN,  
 BOARD OF STUDIES,  
 DEPARTMENT OF CIVIL ENGINEERING,  
 MUTHAYAMMAL ENGINEERING COLLEGE,  
 RASIPURAM - 637 408.

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

**9. NPTEL On line course Electives**

S.No	Subject	Total No of weeks	Credit
1	Advanced Topics in the Science and Technology of Concrete	4	1
2	Electronic Waste Management Issues and Challenges	4	1
3	Introduction to Remote Sensing	4	1
4	Subsurface Exploration Importance and Techniques involved	8	2
5	Digital Land Surveying and Mapping (DLS&M)	8	2
6	Earth Sciences for Civil Engineering Part I and II	8	2
7	Hydration, Porosity & Strength of Cementitious Materials	8	2
8	Natural Hazard Part I	8	2
9	Plastic Waste Management	8	2
10	Applied Environmental Microbiology	12	3
11	Energy Efficiency, Acoustics and day lighting in Building	12	3
12	Environmental Remediation of Contaminated sites	12	3
13	Geosynthetics and Reinforced Soil Structures	12	3
14	Geotechnical Engineering II Foundation Engineering	12	3
15	Soil Mechanics/ Geotechnical Engineering I	12	3
16	Infrastructure Planning and Management	12	3

**10. Value Added Courses**

S.No	Course Name	Contact Hours	Offered by Internal / External
1	Foundation Course On Civil Engineering and Vasthu	40	Internal / External
2	Analysis Software (Any one)	30	Internal / External
3	GRE / GATE	30	Internal / External
4	Reinforcement Detailing	30	Internal / External
5	Estimation and Valuation	20	Internal / External
6	Total Station	20	Internal / External
7	Drafting Software (Any one)	15	Internal / External
8	Modeling Software (Any one)	15	Internal / External

**Dr. V. RAJENDRAN, M.E., Ph.D.,**  
CHAIRMAN,


BOARD OF STUDIES,  
DEPARTMENT OF CIVIL ENGINEERING,  
MUTHAYAMMAL ENGINEERING COLLEGE,  
RASIPURAM - 637 408.

PRINCIPAL,

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
SICHUPAM-637 408, NAMARKKAI Dist.  
MILNAMBI

**CREDITS**

S.No	Subject Area	CREDITS AS PER SEMESTER								Total Credit	UGC Recommended
		I	II	III	IV	V	VI	VII	VIII		
1	HS	3	3					3		9	12
2	BS	10	8	4	4					26	26
3	ES	8	6	3	3	3		3		26	29
4	PC		5	12	14	9	6	3		49	47
5	PE					6	9	6	6	27	23
6	OE					3	6	3		12	11
7	EEC						1	2	9	12	12
8	MC		0			0		0		0	0
<b>TOTAL</b>		<b>21</b>	<b>22</b>	<b>19</b>	<b>21</b>	<b>21</b>	<b>22</b>	<b>20</b>	<b>15</b>	<b>161</b>	<b>160</b>

  
**Dr. V. RAJENDRAN, M.E., Ph.D.,**  
 CHAIRMAN,  
 BOARD OF STUDIES,  
 DEPARTMENT OF CIVIL ENGINEERING,  
 MUTHAYAMMAL ENGINEERING COLLEGE,  
 RASIPURAM - 637 408

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 ASIPURAM-637 408, NAMAKKAL Dist.  
 TAMIL NADU



## MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)  
Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

**B.E. - COMPUTER SCIENCE AND ENGINEERING**

**REGULATION - 2019**

**GROUPING OF COURSES**

**HUMANITIES AND SOCIAL SCIENCES COURSES (HS)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19HSS01	Business English	HS	2	2	0	0	2
2.	19HSS02	English Communicative Skills Laboratory	HS	2	0	0	2	1
3.	19HSS03	Life Skills and Workplace Psychology	HS	2	2	0	0	2
4.	19HSS04	Technical English For Engineers	HS	2	2	0	0	2
5.	19HSS05	Communicative English for Engineers	HS	2	2	0	0	2
6.	19HSS06	Basics of Japanese Language	HS	2	2	0	0	2
7.	19HSS07	Basics of French Language	HS	2	2	0	0	2

**BASIC SCIENCES COURSES (BS)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19BSS01	Engineering Physics	BS	3	3	0	0	3
2.	19BSS02	Physics and Chemistry Laboratory	BS	2	0	0	2	1
3.	19BSS03	Bio and Nanomaterials Sciences	BS	3	3	0	0	3
4.	19BSS04	Material Sciences	BS	3	3	0	0	3
5.	19BSS05	Physics for Mechanical Engineers	BS	3	3	0	0	3
6.	19BSS11	Engineering Chemistry	BS	3	3	0	0	3
7.	19BSS12	Environmental Science and Engineering	BS	3	3	0	0	3
8.	19BSS13	Organic Chemistry	BS	3	3	0	0	3
9.	19BSS14	Physical Chemistry	BS	3	3	0	0	3
10.	19BSS15	Applied Chemistry	BS	3	3	0	0	3
11.	19BSS16	Organic Chemistry Laboratory	BS	3	0	0	3	1
12.	19BSS17	Physical Chemistry Laboratory	BS	3	0	0	3	1
13.	19BSS21	Algebra and Calculus	BS	4	3	1	0	4

**Chairman**  
Board of Studies  
Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL DIST.  
TAMILNADU.

**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL DIST.  
TAMILNADU.

Programme Code & Name: CS & B.E-Computer Science and Engineering

14.	19BSS22	Differential Equations and Vector Analysis	BS	4	3	1	0	4
15.	19BSS23	Transforms and Partial Differential Equations	BS	4	3	1	0	4
16.	19BSS24	Discrete Mathematics	BS	4	3	1	0	4
17.	19BSS25	Statistical and Queuing Model	BS	4	3	1	0	4
18.	19BSS26	Numerical Methods	BS	4	3	2	0	4
19.	19BSS27	Probability and Random Processes	BS	4	3	2	0	4
20.	19BSS28	Statistic and Numerical Methods	BS	4	3	2	0	4

GENERAL ENGINEERING SCIENCE COURSES (GES)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19GES01	Programming for Problem Solving Using C	GES	3	3	0	0	3
2	19GES02	Programming for Problem Solving Technique	GES	3	3	0	0	3
3	19GES03	Programming in C Laboratory	GES	2	0	0	2	1
4	19GES04	Programming in C and Python Laboratory	GES	2	0	0	2	1
5	19GES05	Electrical and Electronic Sciences	GES	3	3	0	0	3
6	19GES06	Mechanical and Building Sciences	GES	3	3	0	0	3
7	19GES07	Computer Aided Drafting Laboratory	GES	2	0	0	2	1
8	19GES08	Python Programming	GES	3	3	0	0	3
9	19GES09	Programming in Python Laboratory	GES	2	0	0	2	1
10	19GES10	Soft Skills Laboratory	GES	2	0	0	2	1
11	19GES11	Electronic Devices	GES	3	3	0	0	3
12	19GES12	Electronic Simulation Laboratory	GES	2	0	0	2	1
13	19GES13	Electric Circuits	GES	3	2	1	0	3
14	19GES14	Electric Circuits Laboratory	GES	2	0	0	2	1
15	19GES15	Manufacturing Process	GES	3	3	0	0	3
16	19GES16	Manufacturing Process Laboratory	GES	2	0	0	2	1
17	19GES17	Mechanical and Building Sciences Laboratory	GES	2	0	0	2	1
18	19GES18	Construction Materials	GES	3	3	0	0	3
19	19GES19	Concepts in Product Design	GES	3	3	0	0	3
20	19GES20	Renewable Energy Sources	GES	3	3	0	0	3
21	19GES21	Electrical Drives and Control	GES	3	3	0	0	3
22	19GES22	Electrical Drives and Control Laboratory	GES	2	0	0	2	1
23	19GES23	Analog and digital communication	GES	3	3	0	0	3
24	19GES24	Digital Principles and System Design	GES	3	3	0	0	3
25	19GES25	Digital Principles and System Design Laboratory	GES	2	0	0	2	1

**Chairman**  
Board of Studies  
Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Programme Code & Name: CS & B.E-Computer Science and Engineering

26	19GES26	Engineering Drawing	GES	5	1	0	4	3
27	19GES27	Engineering Geology	GES	3	3	0	0	3
28	19GES28	Engineering Mechanics	GES	4	3	1	0	4
29	19GES29	Wireless Communication	GES	4	3	1	0	4
30	19GES30	Electronics and Microprocessor	GES	3	3	0	0	3
31	19GES31	Electronics and Microprocessor Laboratory	GES	2	0	0	2	1
32	19GES32	Data Structures using Python	GES	3	3	0	0	3

PROFESSIONAL CORE COURSES (PC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19CSC01	Data Structures and Algorithms	PC	3	3	0	0	3
2	19CSC02	Data Structures Lab Using C++ Lab	PC	2	0	0	2	1
3	19CSC03	Database Management Systems	PC	3	3	0	0	3
4	19CSC04	Database Management Systems Lab	PC	2	0	0	2	1
5	19CSC05	Computer Organization and Architecture	PC	3	3	0	0	3
6	19CSC06	Object Oriented Programming	PC	3	3	0	0	3
7	19CSC07	Computer Networks	PC	3	3	0	0	3
8	19CSC08	Computer Networks Lab	PC	2	0	0	2	1
9	19CSC09	Operating Systems'	PC	3	3	0	0	3
10	19CSC10	Operating Systems Lab	PC	2	0	0	2	1
11	19CSC11	Design and Analysis of Algorithms	PC	3	3	0	0	3
12	19CSC12	Software Engineering	PC	3	3	0	0	3
13	19CSC13	Service Oriented Architecture	PC	3	3	0	0	3
14	19CSC14	Mobile Communication	PC	3	3	0	0	3
15	19CSC15	Mobile Application Lab	PC	2	0	0	2	1
16	19CSC16	Data Analytics using R and Python	PC	3	3	0	0	3
17	19CSC17	Theory of Computation	PC	3	3	0	0	3
18	19CSC18	Cloud Computing	PC	3	3	0	0	3
19	19CSC19	Cloud Computing Lab	PC	2	0	0	2	1
20	19CSC20	Compiler Design	PC	3	3	0	0	3
21	19CSC21	Compiler Design Lab	PC	2	0	0	2	1

PRINCIPAL

Chairman  
Board of Studies  
Department of Computer Science and Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

Programme Code & Name: CS & B.E-Computer Science and Engineering

22	19CSC22	Artificial Intelligence for Industry 4.0	PC	3	3	0	0	3
23	19CSC23	Object Oriented Analysis and Design	PC	3	3	0	0	3
24	19CSC24	Case Tools Lab	PC	2	0	0	2	1
25	19CSC25	Cryptography and Network Security	PC	3	3	0	0	3
26	19CSC26	Cryptography and Network Security Lab	PC	2	0	0	2	1
27	19CSC27	Big Data Analytics	PC	3	3	0	0	3
28	19CSC28	Animation: Theory and Practice	PC	3	3	0	0	3
29	19CSC29	Machine Learning Techniques	PC	3	3	0	0	3
30	19SC30	Data Analytics and Modeling Techniques	PC	3	3	0	0	3
31	19CSC31	Machine Learning	PC	3	3	0	0	3

PROFESSIONAL ELECTIVE COURSES (PE)

S. No	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19CSE01	Internet of Things	PE	3	3	0	0	3
2	19CSE02	Internet of Things Lab	PE	2	0	0	2	1
3	19CSE03	Salesforce CRM and Platform	PE	3	3	0	0	3
4	19CSE04	Salesforce CRM and Platform Lab	PE	2	0	0	2	1
5	19CSE05	AWS Academy Cloud Developing	PE	3	3	0	0	3
6	19CSE06	AWS Academy Cloud Developing Lab	PE	2	0	0	2	1
7	19CSE07	AWS Academy Cloud Architecting	PE	3	3	0	0	3
8	19CSE08	AWS Academy Cloud Architecting Lab	PE	2	0	0	2	1
9	19CSE09	Internet Programming	PE	3	3	0	0	3
10	19CSE10	Current Practices in Software Engineering	PE	3	3	0	0	3
11	19CSE11	Computer Graphics	PE	3	3	0	0	3
12	19CSE12	Distributed Programming	PE	3	3	0	0	3
13	19CSE13	Enterprise Project Development using FOSS	PE	3	3	0	0	3
14	19CSE14	Parallel Computing	PE	3	3	0	0	3
15	19CSE15	Kernel Programming	PE	3	3	0	0	3
16	19CSE16	Soft Computing Techniques	PE	3	3	0	0	3
17	19CSE17	Virtual Reality	PE	3	3	0	0	3

Board of Studies  
Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

PRINCIPAL,  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

Programme Code & Name: CS & B.E-Computer Science and Engineering

18	19CSE18	Storage infrastructure Management	PE	3	3	0	0	3
19	19CSE19	Total Quality Management	PE	3	3	0	0	3
20	19CSE20	Cloud infrastructure services	PE	3	3	0	0	3
21	19CSE21	Graphics and multimedia	PE	3	3	0	0	3
22	19CSE22	Graphics and multimedia laboratory	PE	3	0	0	2	1
23	19CSE23	Data warehousing and data mining	PE	3	3	0	0	3
24	19CSE24	Software quality assurance	PE	3	3	0	0	3
25	19CSE25	Network and routing protocols	PE	3	3	0	0	3
26	19CSE26	Scaling and connecting networks	PE	3	3	0	0	3
27	19CSE27	Open stack essentials	PE	3	3	0	0	3
28	19CSE28	Software Defined Networks	PE	3	3	0	0	3
29	19CSE29	Docker and Kubernetes	PE	3	3	0	0	3
30	19CSE30	Blockchain	PE	3	3	0	0	3
31	19CSE31	User Centric Design	PE	3	3	0	0	3
32	19CSE32	Node.js and React.js	PE	3	3	0	0	3
33	19CSE33	C# and .NET Core	PE	3	3	0	0	3
34	19CSE34	Agile Methodology	PE	3	3	0	0	3
35	19CSE35	Text Mining	PE	3	3	0	0	3
36	19CSE36	Angular JS	PE	3	3	0	0	3
37	19CSE37	Deep Learning	PE	3	3	0	0	3
38	16CSE38	Ubiquitous Computing	PE	3	3	0	0	3

EMPLOYABILITY ENHANCEMENT COURSES (EE)

S. No	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19CSP01	Project work-Phase I	EC	6	0	0	6	3
2	19CSP02	Project work-Phase II	EC	15	0	0	15	12
3	19CSP03	Comprehension	EC	4	0	0	4	2
4	19CSP04	Technical Seminar	EC	4	0	4	0	2
5	19CSP05	Entrepreneurship Development	EC	3	3	0	0	3
6	19CSP06	Professional Practices	EC	6	0	0	6	3
7	19CSP07	NPTEL- Introduction to Industry 4.0 and Industrial Internet of Things	EC	-	-	-	-	-
8	19CSP8	NPTEL- Introduction to Machine Learning	EC	-	-	-	-	-
9	19CSP9	NPTEL- The Joy of Computing using Python	EC	-	-	-	-	-

**Chairman**  
Board of Studies

Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

PRINCIPAL

**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Programme Code & Name: CS & B.E-Computer Science and Engineering

10	19CSP10	NPTEL-Data Analytics with Python	EC	-	-	-	-	-
11	19CSP11	Indian Constitution	EC	-	-	-	-	-
12	19CSP12	Value Education	EC	-	-	-	-	-
13	19CSP13	Disaster Management	EC	-	-	-	-	-
14	19CSP14	Pedagogy Studies	EC	-	-	-	-	-
15	19CSP15	Stress Management by Yoga	EC	-	-	-	-	-


  
**Chairman**


**Board of Studies**  
Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

  
**PRINCIPAL,**

**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Programme Code & Name: CS & B.E-Computer Science and Engineering

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R - 2019	
Department		Computer Science & Engineering					
Programme		B.E					
<b>SEMESTER – I</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19HSS01	Business English	2	0	0	2	2
2.	19BSS21	Algebra and Calculus	3	1	0	4	4
3.	19BSS01	Engineering Physics	3	0	0	3	3
4.	19BSS11	Engineering Chemistry	3	0	0	3	3
5.	19GES01	Programming for Problem Solving Using C	3	0	0	3	3
6.	19GES06	Mechanical and Building Sciences	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19BSS02	Physics and Chemistry Lab	0	0	2	1	2
8.	19GES03	Programming in C Lab	0	0	2	1	2
9.	19HSS02	English Communicative Skills Lab	0	0	2	1	2
<b>Total Credits</b>						<b>21</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R - 2019	
Department		Computer Science & Engineering					
Programme		B.E					
<b>SEMESTER – II</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19HSS03	Life Skills and Workplace Psychology	2	0	0	2	2
2.	19BSS22	Differential Equations and Vector Analysis	3	1	0	4	4
3.	19BSS03	Bio and Nanomaterials Sciences	3	0	0	3	3
4.	19BSS12	Environmental Science and Engineering	3	0	0	3	3
5.	19GES19	Concepts in Product Design	3	0	0	3	3
6.	19GES08	Python Programming	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19GES10	Soft Skills Lab	0	0	2	1	2
8.	19GES09	Programming in Python Lab	0	0	2	1	2
<b>Total Credits</b>						<b>20</b>	


  
**Chairman**  
Board of Studies


Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

  
PRINCIPAL

**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Programme Code & Name: CS & B.E-Computer Science and Engineering


		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R - 2019	
Department		Computer Science & Engineering					
Programme		B.E					
<b>SEMESTER – III</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19CSC06	Object Oriented Programming	3	0	0	3	3
2.	19CSC01	Data Structures and Algorithms	3	0	0	3	3
3.	19GES24	Digital Principles and System Design	3	0	0	3	3
4.	19BSS23	Transforms and Partial Differential Equations	3	1	0	4	4
5.	19CSC03	Database Management Systems	3	0	0	3	3
6.	19CSC05	Computer Organization and Architecture	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19CSC04	Database Management Systems Lab	0	0	2	1	2
8.	19CSC02	Data Structures using C++ Lab	0	0	2	1	2
9.	19GES25	Digital Principles and System Design Lab	0	0	2	1	2
<b>Total Credits</b>						<b>22</b>	


		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R - 2019	
Department		Computer Science & Engineering					
Programme		B.E					
<b>SEMESTER – IV</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19CSC07	Computer Networks	3	0	0	3	3
2.	19CSC09	Operating Systems	3	0	0	3	3
3.	19CSC11	Design and Analysis of Algorithms	3	0	0	3	3
4.	19CSC12	Software Engineering	3	0	0	3	3
5.	19CSC13	Service Oriented Architecture	3	0	0	3	3
6.	19CSE01	Professional Elective - I Internet of Things	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19CSC08	Computer Network Lab	0	0	2	1	2
8.	19CSC10	Operating Systems Lab	0	0	2	1	2
9.	19CSE02	Professional Elective I - Lab Internet of Things	0	0	2	1	2
<b>Total Credits</b>						<b>21</b>	

  
**Chairman**  
 Board of Studies  
 Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.

  
**PRINCIPAL**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.

Programme Code & Name: CS & B.E-Computer Science and Engineering


		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>	
Department		Computer Science & Engineering					
Programme		B.E					
<b>SEMESTER – V</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19CSC14	Mobile Communication	3	0	0	3	3
2.	19CSC17	Theory of Computation	3	0	0	3	3
3.	19CSC18	Cloud Computing	3	0	0	3	3
4.	19BSS24	Discrete Mathematics	3	1	0	4	5
5.	PE	Professional Elective - II	3	0	0	3	3
6.	PE	Open Elective – I	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19CSC15	Mobile Application Lab	0	0	2	1	2
8.	19CSC19	Cloud Computing Lab	0	0	2	1	2
9.	PE	Professional Elective II - Lab	0	0	2	1	2
<b>Total Credits</b>						<b>22</b>	


		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>	
Department		Computer Science & Engineering					
Programme		B.E					
<b>SEMESTER – VI</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19CSC31	Machine Learning	3	0	0	3	3
2.	19CSC20	Compiler Design	3	0	0	3	3
3.	19CSC22	Artificial Intelligence for Industry 4.0	3	0	0	3	3
4.	19CSC23	Object Oriented Analysis and Design	3	0	0	3	3
5.	PE	Professional Elective – III	3	0	0	3	3
6.	OE	Open Elective – II	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19CSC21	Compiler Design Lab	0	0	2	1	2
8.	19CSC24	Case Tools Lab	0	0	2	1	2
9.	PE	Professional Elective III - Lab	0	0	2	1	2
<b>Total Credits</b>						<b>21</b>	

  
**Chairman**  
**Board of Studies**  
 Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.

Programme Code & Name: CS & B.E-Computer Science and Engineering

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R - 2019	
Department		Computer Science & Engineering					
Programme		B.E					
<b>SEMESTER – VII</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1	19CSC27	Big Data Analytics	3	0	0	3	3
2.	19CSC30	Data Analytics and Modeling Techniques	3	0	0	3	3
3.	PE	Professional Elective - IV	3	0	0	3	3
4.	PE	Professional Elective - V	3	0	0	3	3
5.	PE	Professional Elective - VI	3	0	0	3	3
6.	OE	Open Elective- III	3	0	0	3	3
<b>PRACTICAL</b>							
7.	19CSP01	Project Work I	0	0	6	3	6
<b>Total Credits</b>						<b>21</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R - 2019	
Department		Computer Science & Engineering					
Programme		B.E					
<b>SEMESTER – VIII</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.		Mandatory Course(NPTEL)	-	-	-	-	-
<b>PRACTICAL</b>							
2.	19CSP02	Project Work II	0	0	15	12	15
<b>Total Credits</b>						<b>12</b>	

Total credits to be earned for the award of the degree 160

  
**Chairman**  
Board of Studies  
Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMÁKKAL Dist.  
TAMILNADU.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMÁKKAL Dist.  
TAMILNADU.



## MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

### B.E. - ELECTRICAL AND ELECTRONICS ENGINEERING

#### GROUPING OF COURSES

##### 1. Humanities and Social Sciences Courses (HS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19HSS01	Business English	HS	3	2	0	0	2
2.	19HSS02	English Communicative Skills Laboratory	HS	2	0	0	2	1
3.	19HSS03	Life Skills and Workplace Psychology	HS	3	2	0	0	2
4.	19HSS04	Technical English For Engineers	HS	3	2	0	0	2
5.	19HSS05	Communicative English for Engineers	HS	3	2	0	0	2
6.	19HSS06	Basics of Japanese Language	HS	3	2	0	0	2
7.	19HSS07	Basics of French Language	HS	3	2	0	0	2

##### 2. Basic Sciences (BS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19BSS01	Engineering Physics	BS	4	3	0	0	3
2.	19BSS02	Physics and Chemistry Laboratory	BS	2	0	0	2	1
3.	19BSS03	Bio and Nanomaterials Sciences	BS	4	3	0	0	3
4.	19BSS04	Material Sciences	BS	4	3	0	0	3
5.	19BSS05	Physics for Mechanical Engineers	BS	4	3	0	0	3
6.	19BSS11	Engineering Chemistry	BS	4	3	0	0	3
7.	19BSS12	Environmental Science and Engineering	BS	4	3	0	0	3
8.	19BSS13	Organic Chemistry	BS	4	3	0	0	3
9.	19BSS14	Physical Chemistry	BS	4	3	0	0	3
10.	19BSS15	Applied Chemistry	BS	4	3	0	0	3

*[Signature]*  
**The Chairman**  
 Board of Studies,  
 Department of Electrical and Electronics Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram-637 408, Namakkal, DL

*[Signature]*  
**PRINCIPAL,**  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

Programme Code & Name: EE & B.E-Electrical and Electronics Engineering

11.	19BSS16	Organic Chemistry Laboratory	BS	2	0	0	3	1
12.	19BSS17	Physical Chemistry Laboratory	BS	2	0	0	3	1
13.	19BSS21	Algebra and Calculus	BS	4	3	1	0	4
14.	19BSS22	Differential Equations and Vector Analysis	BS	4	3	1	0	4
15.	19BSS23	Transform and Partial Differential Equations	BS	4	3	1	0	4
16.	19BSS24	Discrete Mathematics	BS	4	3	1	0	4
17.	19BSS25	Statistical and Queuing Model	BS	4	3	1	0	4
18.	19BSS26	Numerical Methods	BS	4	3	1	0	4
19.	19BSS27	Probability and Random Processes	BS	4	3	1	0	4
20.	19BSS28	Statistic and Numerical Methods	BS	4	3	1	0	4

**3. General Engineering Science (GES)**

Sl. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1.	19GES01	Programming for Problem Solving Using C	GES	3	3	0	0	3
2.	19GES02	Programming for Problem Solving Technique	GES	3	3	0	0	3
3.	19GES03	Programming in C Laboratory	GES	2	0	0	2	1
4.	19GES04	Programming in C and Python Laboratory	GES	2	0	0	2	1
5.	19GES05	Electrical and Electronic Sciences	GES	3	3	0	0	3
6.	19GES06	Mechanical and Building Sciences	GES	3	3	0	0	3
7.	19GES07	Computer Aided Drafting Laboratory	GES	2	0	0	2	1
8.	19GES08	Python Programming	GES	3	3	0	0	3
9.	19GES09	Programming in Python Laboratory	GES	2	0	0	2	1
10.	19GES10	Soft Skills Laboratory	GES	2	0	0	2	1
11.	19GES11	Electronic Devices	GES	3	0	0	3	3
12.	19GES12	Electronic Simulation Laboratory	GES	2	0	0	2	1
13.	19GES13	Electric Circuits	GES	3	2	1	0	3
14.	19GES14	Electric Circuits Laboratory	GES	2	0	0	2	1
15.	19GES15	Manufacturing Process	GES	3	3	0	0	3
16.	19GES16	Manufacturing Process Laboratory	GES	2	0	0	2	1
17.	19GES17	Mechanical and Building Sciences Laboratory	GES	2	0	0	2	1
18.	19GES18	Construction Materials	GES	3	3	0	0	3
19.	19GES19	Concepts in Product Design	GES	3	3	0	0	3
20.	19GES20	Renewable Energy Sources	GES	3	3	0	0	3
21.	19GES21	Electrical Drives and Control	GES	3	3	0	0	3
22.	19GES22	Electrical Drives and Control Laboratory	GES	2	0	0	2	1
23.	19GES23	Analog and digital communication	GES	3	3	0	0	3
24.	19GES24	Digital Principles and System Design	GES	3	3	0	0	3

  
The Chairman  
Board of Studies,

Department of Electrical and Electronics Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram-637 408, Namakkal Dt.

  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Programme Code & Name: EE & B.E-Electrical and Electronics Engineering

25.	19GES25	Digital Principles and System Design Laboratory	GES	2	0	0	2	1
26.	19GES26	Engineering Drawing	GES	3	1	0	4	3
27.	19GES27	Engineering Geology	GES	3	3	0	0	3
28.	19GES28	Engineering Mechanics	GES	3	3	1	0	4
29.	19GES29	Wireless Communication	GES	4	3	0	0	3
30.	19GES30	Electronics and Microprocessor	GES	3	3	0	0	3
31.	19GES31	Electronics and Microprocessor Laboratory	GES	2	0	0	2	1
32.	19GES32	Data Structures using Python	GES	3	3	0	0	3
33.	19GES33	Electronic Devices and Circuits	GES	3	3	0	0	3
34.	19GES34	Electronic Devices and Circuits Laboratory	GES	2	0	0	2	1

**4. Professional Core (PC)**

Sl. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
<b>THEORY</b>								
1.	19EEEC01	Electromagnetic Fields	PC	3	2	1	0	3
2.	19EEEC02	Measuring Instruments	PC	3	3	0	0	3
3.	19EEEC03	Linear Integrated Circuits	PC	3	3	0	0	3
4.	19EEEC04	DC machines and Transformers	PC	3	2	1	0	3
5.	19EEEC05	AC Machines	PC	3	2	1	0	3
6.	19EEEC06	Control Systems	PC	3	2	1	0	3
7.	19EEEC07	Power Electronics	PC	3	3	0	0	3
8.	19EEEC08	Electrical Drives	PC	3	3	0	0	3
9.	19EEEC09	Micro-computing based system design	PC	3	3	0	0	3
10.	19EEEC10	Power System Analysis	PC	3	2	1	0	3
11.	19EEEC11	Operation and Control of Electrical Power Systems	PC	3	3	0	0	3
12.	19EEEC12	Transmission and Distribution	PC	3	3	0	0	3
13.	19EEEC13	Protection and switchgear	PC	3	3	0	0	3
14.	19EEEC14	High Voltage Engineering	PC	3	3	0	0	3
15.	19EEEC15	Network Analysis and Synthesis	PC	3	2	1	0	3
16.	19EEEC16	Smart Grid	PC	3	3	0	0	3
17.	19EEEC17	PLC and Automation	PC	3	3	0	0	3
18.	19EEEC18	Power System Transients	PC	3	3	0	0	3

  
The Chairman  
Board of Studies.

Department of Electrical and Electronics Engineering  
Muthayammal Engineering College (Autonomous)  
Resipuram-637 408, Namakkal Dt.

  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dt.  
TAMILNADU

PRACTICAL								
19.	19EEEC19	Linear Integrated Circuits	PC	2	0	0	2	1
20.	19EEEC20	DC machines and Transformers Laboratory	PC	2	0	0	2	1
21.	19EEEC21	AC Machines Laboratory	PC	2	0	0	2	1
22.	19EEEC22	Control Systems Laboratory	PC	2	0	0	2	1
23.	19EEEC23	Power Electronics Laboratory	PC	2	0	0	2	1
24.	19EEEC24	Power System Simulation Laboratory	PC	2	0	0	2	1
25.	19EEEC25	Micro-computing based system design Laboratory	PC	2	0	0	2	1

### 5. Professional Elective (PE)

Sl. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1.	19EEEE01	Intellectual Property Rights	PE	3	3	0	0	3
2.	19EEEE02	Power System Stability	PE	3	3	0	0	3
3.	19EEEE03	Communication Engineering	PE	3	3	0	0	3
4.	19EEEE04	Special Electrical Machines	PE	3	3	0	0	3
5.	19EEEE05	Design of Electrical Apparatus	PE	3	2	1	0	3
6.	19EEEE06	Flexible AC Transmission Systems	PE	3	3	0	0	3
7.	19EEEE07	HVDC Transmission Systems	PE	3	3	0	0	3
8.	19EEEE08	Power Plant Engineering	PE	3	3	0	0	3
9.	19EEEE09	Total Quality Management	PE	3	3	0	0	3
10.	19EEEE10	VLSI Design	PE	3	3	0	0	3
11.	19EEEE11	Power Quality	PE	3	3	0	0	3
12.	19EEEE12	Emerging Intelligent Techniques	PE	3	3	0	0	3
13.	19EEEE13	Electric Energy Utilization and Conservation	PE	3	3	0	0	3
14.	19EEEE14	DC micro Grid	PE	3	3	0	0	3
15.	19EEEE15	Wind and Solar Energy Systems	PE	3	3	0	0	3
16.	19EEEE16	Robotics	PE	3	3	0	0	3
17.	19EEEE17	Fiber Optics	PE	3	3	0	0	3
18.	19EEEE18	Human Computer Interaction	PE	3	3	0	0	3
19.	19EEEE19	Electrical Hybrid Vehicles	PE	3	3	0	0	3


### 6. Employability Enhancement Courses (EEC)

Sl. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1.	19EES01	Project work - I	EEC	6	0	0	6	5
2.	19EES02	Project Work II & Dissertation	EEC	15	0	0	15	9
3.	19EES03	Comprehension	EEC	2	0	0	2	1
4.	19EEF04	Presentation Skill and Technical Seminar	EEC	2	0	0	2	1

*L. S. D.*  
**The Chairman**  
 Board of Studies,  
 Department of Electrical and Electronics Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram-637 408, Namakkal Dt.

*[Signature]*  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.

Programme Code & Name: EE & B.E-Electrical and Electronics Engineering


	<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>An Autonomous Institution</b> (Approved by AICTE, Affiliated to Anna University) Rasipuram-637408, Namakkal Dist.	<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>
---	--	---

Department Electrical and Electronics Engineering

Programme B.E. - Electrical and Electronics Engineering

**SEMESTER – I**

Sl. No.	Course Code	Course Name	Category	Hours /Week			Contact Hours	Credits
				L	T	P		
<b>THEORY</b>								
1.	19HSS01	Business English	HS	2	0	0	2	2
2.	19BSS21	Algebra and Calculus	BS	3	1	0	4	4
3.	19BSS01	Engineering Physics	BS	3	0	0	3	3
4.	19BSS11	Engineering Chemistry	BS	3	0	0	3	3
5.	19GES02	Programming for Problem Solving Technique	GES	3	0	0	3	3
6.	19GES06	Mechanical and Building Sciences	GES	3	0	0	3	3
<b>PRACTICAL</b>								
7.	19HSS02	English Communicative Skills Laboratory	HS	0	0	2	2	1
8.	19BSS02	Physics and Chemistry Laboratory	BS	0	0	2	2	1
9.	19GES03	Programming in C Laboratory	GES	0	0	2	2	1
<b>TOTAL</b>							<b>21</b>	

	<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>An Autonomous Institution</b> (Approved by AICTE, Affiliated to Anna University) Rasipuram-637408, Namakkal Dist.	<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>
---	--	---

Department Electrical and Electronics Engineering

Programme B.E. - Electrical and Electronics Engineering

**SEMESTER – II**


Sl. No.	Course Code	Course Name	Category	Hours /Week			Contact Hours	Credits
				L	T	P		
<b>THEORY</b>								
1.	19HSS03	Life Skills and Workplace Psychology	HS	2	0	0	2	2
2.	19BSS22	Differential Equations and Vector Analysis	BS	3	1	0	4	4
3.	19BSS03	Bio and Nanomaterial Sciences	BS	3	0	0	3	3
4.	19BSS12	Environmental Science and Engineering	BS	3	0	0	3	3
5.	19GES19	Concepts in Product Design	GES	3	0	0	3	3
6.	19GES13	Electric Circuits	GES	2	1	0	3	3
<b>PRACTICAL</b>								
7	19GES09	Programming in Python Laboratory	GES	0	0	2	2	1
8	19GES14	Electric Circuits Laboratory	GES	0	0	2	2	1
<b>TOTAL</b>							<b>20</b>	


*The Chairman*  
Board of Studies,


Department of Electrical and Electronics Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram-637 408, Namakkal Dt.

PRINCIPAL,


MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> An Autonomous Institution (Approved by AICTE & Affiliated to Anna University) Rasipuram-637408, Namakkal Dist.					<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>	
Department		Electrical and Electronics Engineering						
Programme		B.E. - Electrical and Electronics Engineering						
<b>SEMESTER – III</b>								
Sl. No.	Course Code	Course Name	Category	Hours /Week			Contact Hours	Credits
				L	T	P		
<b>THEORY</b>								
1.	19BSS23	Transforms and Partial Differential Equations	BS	3	1	0	4	4
2.	19GES33	Electron Devices and Circuits	GES	3	0	0	3	3
3.	19EEC01	Electromagnetic Fields	PC	2	1	0	3	3
4.	19EEC02	Measuring Instruments	PC	3	0	0	3	3
5.	19EEC03	Linear Integrated Circuits	PC	3	0	0	3	3
6.	19EEC04	DC machines and Transformers	PC	2	1	0	3	3
<b>PRACTICAL</b>								
7.	19GES34	Electron Devices and Circuits Laboratory	GES	0	0	2	2	1
8.	19EEC19	Linear Integrated Circuits Laboratory	PC	0	0	2	2	1
9.	19EEC20	DC machines and Transformers Laboratory	PC	0	0	2	2	1
<b>TOTAL</b>							<b>22</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> An Autonomous Institution (Approved by AICTE & Affiliated to Anna University) Rasipuram-637408, Namakkal Dist.					<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>	
Department		Electrical and Electronics Engineering						
Programme		B.E. - Electrical and Electronics Engineering						
<b>SEMESTER – IV</b>								
Sl. No.	Course Code	Course Name	Category	Hours /Week			Contact Hours	Credits
				L	T	P		
<b>THEORY</b>								
1.	19BSS26	Numerical Methods	BS	3	1	0	4	4
2.	19EEC05	AC Machines	PC	2	1	0	3	3
3.	19EEC06	Control Systems	PC	2	1	0	3	3
4.	19EEC15	Network Analysis and Synthesis	PC	2	1	0	3	3
5.	19EEC12	Transmission and Distribution	PC	3	0	0	3	3
6.		Open elective 1* (Digital System Design)	OE	3	0	0	3	3
<b>PRACTICAL</b>								
7.	19EEC21	AC Machines Laboratory	PC	0	0	2	2	1
8.	19EEC22	Control Systems Laboratory	PC	0	0	2	2	1
<b>TOTAL</b>							<b>21</b>	

  
**The Chairman**  
Board of Studies,  
Department of Electrical and Electronics Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram-637 408, Namakkal Dt.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU**


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> An Autonomous Institution (Approved by AICTE, & Affiliated to Anna University) Rasipuram-637408, Namakkal Dist.					<b>CURRICULUM</b> UG R - 2019	
Department		Electrical and Electronics Engineering						
Programme		B.E. - Electrical and Electronics Engineering						
<b>SEMESTER – V</b>								
Sl. No.	Course Code	Course Name	Category	Hours /Week			Contact Hours	Credits
				L	T	P		
<b>THEORY</b>								
1.	19GES20	Renewable Energy Sources	GES	3	0	0	3	3
2.	19EEC07	Power Electronics	PC	3	0	0	3	3
3.	19EEC10	Power System Analysis	PC	2	1	0	3	3
4.	19EEC11	Operation and Control of Electrical Power Systems	PC	3	0	0	3	3
5.		Profession Elective I	PE	3	0	0	3	3
6.		Open elective 2* (Object Oriented Programming)	OE	3	0	0	3	3
<b>PRACTICAL</b>								
7.	19EEC23	Power Electronics Laboratory	PC	0	0	2	2	1
8.	19EEC24	Power System Simulation Laboratory	PC	0	0	2	2	1
<b>TOTAL</b>								<b>20</b>


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> An Autonomous Institution (Approved by AICTE, New Delhi, & Affiliated to Anna University) Rasipuram-637408, Namakkal Dist.					<b>CURRICULUM</b> UG R - 2019	
Department		Electrical and Electronics Engineering						
Programme		B.E. - Electrical and Electronics Engineering						
<b>SEMESTER – VI</b>								
Sl. No.	Course Code	Course Name	Category	Hours /Week			Contact Hours	Credits
				L	T	P		
<b>THEORY</b>								
1.	19HSS04	Technical English For Engineers	HS	2	0	0	2	2
2.	19EEC08	Electrical Drives	PC	3	0	0	3	3
3.	19EEC09	Micro-computing based system design	PC	3	0	0	3	3
4.	19EEC17	PLC and Automation	PC	3	0	0	3	3
5.		Open elective III*	OE	3	0	0	3	3
6.		Profession Elective II	PE	3	0	0	3	3
<b>PRACTICAL</b>								
7.		Open elective IV*	OE	0	0	2	2	1
8.	19EEC25	Micro-computing based system design Laboratory	PC	0	0	2	2	1
<b>TOTAL</b>								<b>19</b>


*[Signature]*  
The Chairman  
Board of Studies,

Department of Electrical and Electronics Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram-637 408, Namakkal Dt.

*[Signature]*  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>An Autonomous Institution</b> (Approved by AICTE, New Delhi, & Affiliated to Anna University) Rasipuram-637408, Namakkal Dist.					<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>		
Department		Electrical and Electronics Engineering							
Programme		B.E. - Electrical and Electronics Engineering							
<b>SEMESTER – VII</b>									
Sl. No.	Course Code	Course Name	Category	Hours /Week			Contact Hours	Credits	
				L	T	P			
<b>THEORY</b>									
1.	19EEC13	Protection and switchgear	PC	3	0	0	3	3	
2.	19EEC14	High Voltage Engineering	PC	3	0	0	3	3	
3.	19EEC18	Power System Transients	PC	3	0	0	3	3	
4.		Profession Elective III	PE	3	0	0	3	3	
5.		Profession Elective IV	PE	3	0	0	3	3	
<b>PRACTICAL</b>									
6.	19GES10	Soft Skills Laboratory	GES	0	0	2	2	1	
7.	19EES01	Project work - I	EEC	0	0	6	6	3	
8.	19EES03	Comprehension	EEC	0	0	2	2	1	
<b>TOTAL</b>							<b>20</b>		

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>An Autonomous Institution</b> (Approved by AICTE, New Delhi & Affiliated to Anna University) Rasipuram-637408, Namakkal Dist.					<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>		
Department		Electrical and Electronics Engineering							
Programme		B.E. - Electrical and Electronics Engineering							
<b>SEMESTER – VIII</b>									
Sl. No.	Course Code	Course Name	Category	Hours /Week			Contact Hours	Credits	
				L	T	P			
<b>THEORY</b>									
1.	19EEC16	Smart Grid	PC	3	0	0	3	3	
2.		Elective V	PE	3	0	0	3	3	
3..		Elective VI	PE	3	0	0	3	3	
<b>PRACTICAL</b>									
3..	19EES02	Project Work II & Dissertation	EEC	0	0	15	15	8	
<b>TOTAL</b>							<b>17</b>		

  
**The Chairman**  
Board of Studies,  
Department of Electrical and Electronics Engineering  
Muthayammal Engineering College (Autonomous),  
Rasipuram-637 408, Namakkal Dt.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU**

**COURSE COMPONENT SUMMARY**

S.No.	Subject Area	Credits Per Semester								Credits Total	Percentage credits
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	3	2				2			7	4.29
2.	BS	11	10	4	4					29	17.79
3.	GES	7	8	4		3		1		23	14.11
4.	PC			14	14	11	10	9	3	61	37.42
5.	PE					3	3	6	6	18	11.04
6.	OE				3	3	4			10	6.13
7.	EEC							6	9	15	9.02
<b>TOTAL</b>		<b>21</b>	<b>20</b>	<b>22</b>	<b>21</b>	<b>20</b>	<b>19</b>	<b>22</b>	<b>18</b>	<b>163</b>	

**Total Credits: 163**

  
**The Chairman**  
 Board of Studies,  
 Department of Electrical and Electronics Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram-637 408, Namakkal Dt.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU



**MUTHAYAMMAL ENGINEERING COLLEGE, RASIPURAM**  
(An Autonomous Institution)  
**DEPARTMENT OF SCIENCE AND HUMANITIES**  
**GROUPING OF COURSES**

**1. Humanities and Social Sciences Courses (HS)**

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19HSS01	Business English	HS	2	2	0	0	2
2	19HSS02	English Communicative Skills Laboratory	HS	3	0	0	3	1
3	19HSS03	Life Skills and Workplace Psychology	HS	2	2	0	0	2
4	19HSS04	Technical English For Engineers	HS	2	2	0	0	2
5	19HSS05	Communicative English for Engineers	HS	2	2	0	0	2
6	19HSS06	Basics of Japanese Language	HS	2	2	0	0	2
7	19HSS07	Basics of French Language	HS	2	2	0	0	2

**2. Basic Science Courses (BS)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19BSS01	Engineering Physics	BS	3	3	0	0	3
2.	19BSS02	Physics and Chemistry Laboratory	BS	2	0	0	2	1
3.	19BSS03	Bio and Nanomaterials Sciences	BS	3	3	0	0	3
4.	19BSS04	Material Sciences	BS	3	3	0	0	3
5.	19BSS05	Physics for Mechanical Engineers	BS	3	3	0	0	3
6.	19BSS11	Engineering Chemistry	BS	3	3	0	0	3
7.	19BSS12	Environmental Science and Engineering	BS	3	3	0	0	3
8.	19BSS13	Organic Chemistry	BS	3	3	0	0	3
9.	19BSS14	Physical Chemistry	BS	3	3	0	0	3
10.	19BSS15	Applied Chemistry	BS	3	3	0	0	3
11.	19BSS16	Organic Chemistry Laboratory	BS	3	0	0	3	1
12.	19BSS17	Physical Chemistry Laboratory	BS	3	0	0	3	1
13.	19BSS21	Algebra and Calculus	BS	4	3	1	0	4
14.	19BSS22	Differential Equations and Vector Analysis	BS	4	3	1	0	4
15.	19BSS23	Transform and Partial Differential Equations	BS	4	3	1	0	4
16.	19BSS24	Discrete Mathematics	BS	4	3	1	0	4
17.	19BSS25	Statistical and Queuing Model	BS	4	3	1	0	4
18.	19BSS26	Numerical Methods	BS	4	3	1	0	4
19.	19BSS27	Probability and Random Processes	BS	4	3	1	0	4
20.	19BSS28	Statistic and Numerical Methods	BS	4	3	1	0	4

*Chairman-Board of Studies*  
Department of Mechanical Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.

**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

**3. General Engineering Science Courses (GES)**


S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19GES01	Programming for Problem Solving Using C	GES	3	3	0	0	3
2.	19GES02	Programming for Problem Solving Technique	GES	3	3	0	0	3
3.	19GES03	Programming in C Laboratory	GES	3	0	0	3	1
4.	19GES04	Programming in C and Python Laboratory	GES	3	0	0	3	1
5.	19GES05	Electrical and Electronic Sciences	GES	3	3	0	0	3
6.	19GES06	Mechanical and Building Sciences	GES	3	3	0	0	3
7.	19GES07	Computer Aided Drafting Laboratory	GES	3	0	0	3	1
8.	19GES08	Python Programming	GES	3	3	0	0	3
9.	19GES09	Programming in Python Laboratory	GES	3	0	0	3	1
10.	19GES10	Soft Skills Laboratory	GES	3	0	0	3	1
11.	19GES11	Electronic Devices	GES	3	3	0	0	3
12.	19GES12	Electronic Simulation Laboratory	GES	3	0	0	3	1
13.	19GES13	Electric Circuits	GES	3	2	1	0	3
14.	19GES14	Electric Circuits Laboratory	GES	3	0	0	3	1
15.	19GES15	Manufacturing Process	GES	3	3	0	0	3
16.	19GES16	Manufacturing Process Laboratory	GES	3	0	0	3	1
17.	19GES17	Mechanical and Building Sciences Laboratory	GES	3	0	0	3	1
18.	19GES18	Construction Materials	GES	3	3	0	0	3
19.	19GES19	Concepts in Product Design	GES	3	3	0	0	3
20.	19GES20	Renewable Energy Sources	GES	3	3	0	0	3
21.	19GES21	Electrical Drives and Control	GES	3	3	0	0	3
22.	19GES22	Electrical Drives and Control Laboratory	GES	3	0	0	3	1
23.	19GES23	Analog and digital communication	GES	3	3	0	0	3
24.	19GES24	Digital Principles and System Design	GES	3	3	0	0	3
25.	19GES25	Digital Principles and System Design Laboratory	GES	3	0	0	3	1
26.	19GES26	Engineering Drawing	GES	4	1	0	3	3
27.	19GES27	Engineering Geology	GES	3	3	0	0	3
28.	19GES28	Engineering Mechanics	GES	4	3	1	0	4
29.	19GES29	Wireless Communication	GES	4	3	1	0	4
30.	19GES30	Electronics and Microprocessors	GES	3	3	0	0	3
31.	19GES31	Microprocessor Laboratory	GES	3	0	0	3	1
32.	19GES32	Data Structures using Python	GES	3	3	0	0	3
33.	19GES33	Electronic Devices and Circuits	GES	3	3	0	0	3
34.	19GES34	Electronic Devices and Circuits Lab	GES	3	0	0	3	1

Chairman-Board  
Department of Mechanical Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist  
TAMILNADU

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist  
TAMILNADU

**4. Professional Core (PC)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19MEC01	Engineering Materials and Metallurgy	PC	3	3	0	0	3
2.	19MEC02	Engineering Thermodynamics	PC	3	3	0	0	3
3.	19MEC03	Fluid Mechanics and Machinery	PC	3	3	0	0	3
4.	19MEC04	Strength of Materials	PC	3	3	0	0	3
5.	19MEC05	Kinematics of Machines	PC	3	3	0	0	3
6.	19MEC06	Manufacturing Technology	PC	3	3	0	0	3
7.	19MEC07	Thermal Engineering	PC	3	3	0	0	3
8.	19MEC08	Automobile Engineering	PC	3	3	0	0	3
9.	19MEC09	Heat and Mass Transfer	PC	3	3	0	0	3
10.	19MEC10	Design of Machine Elements	PC	3	3	0	0	3
11.	19MEC11	Dynamics of Machines	PC	3	3	0	0	3
12.	19MEC12	Computer Aided Design and Manufacturing	PC	3	3	0	0	3
13.	19MEC13	Metrology and Measurements	PC	3	3	0	0	3
14.	19MEC14	Applied Hydraulics and Pneumatics	PC	3	3	0	0	3
15.	19MEC15	Gas Dynamics and Jet Propulsion	PC	3	3	0	0	3
16.	19MEC16	Finite Element Analysis	PC	3	3	0	0	3
17.	19MEC17	Fluid Mechanics and Machinery Laboratory	PC	3	0	0	3	1
18.	19MEC18	Manufacturing Technology Laboratory	PC	3	0	0	3	1
19.	19MEC19	Strength of Materials Laboratory	PC	3	0	0	3	1
20.	19MEC20	Measurements Laboratory	PC	3	0	0	3	1
21.	19MEC21	Heat and Mass Transfer Laboratory	PC	3	0	0	3	1
22.	19MEC22	Assembly Drawing and Modeling Laboratory	PC	3	0	0	3	1
23.	19MEC23	Thermal Engineering Laboratory	PC	3	0	0	3	1
24.	19MEC24	Dynamics of Machines Laboratory	PC	3	0	0	3	1
25.	19MEC25	Design of Transmission Systems	PC	3	3	0	0	3
26.	19MEC26	Total Quality Management	PC	3	3	0	0	3

  
 Chairman-Board of Studies  
 Department of Mechanical Engineering  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.

**5. Professional Electives (PE)**



S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19MEE01	Advanced Machining Processes	PE	3	3	0	0	3
2.	19MEE02	Principles of Management	PE	3	3	0	0	3
3.	19MEE03	Mechatronics	PE	3	3	0	0	3
4.	19MEE04	Automotive Electronics	PE	3	3	0	0	3
5.	19MEE05	Design of Pressure Vessel and Piping	PE	3	3	0	0	3
6.	19MEE06	Advanced IC Engines	PE	3	3	0	0	3
7.	19MEE07	Industrial Automation & Robotics	PE	3	3	0	0	3
8.	19MEE08	Vibration and Noise Control	PE	3	3	0	0	3
9.	19MEE09	Refrigeration and Air conditioning	PE	3	3	0	0	3
10.	19MEE10	Composite Materials	PE	3	3	0	0	3
11.	19MEE11	Computational Fluid Dynamics	PE	3	3	0	0	3
12.	19MEE12	Energy Conservation in Industry	PE	3	3	0	0	3
13.	19MEE13	Additive Manufacturing Techniques	PE	3	3	0	0	3
14.	19MEE14	Design of jigs, fixtures and Press Tools	PE	3	3	0	0	3
15.	19MEE15	Cryogenic Engineering	PE	3	3	0	0	3
16.	19MEE16	Lean Manufacturing	PE	3	3	0	0	3
17.	19MEE17	Advanced Metrology	PE	3	3	0	0	3
18.	19MEE18	Power Plant Engineering	PE	3	3	0	0	3
19.	19MEE19	Artificial Intelligence	PE	3	3	0	0	3
20.	19MEE20	MEMS	PE	3	3	0	0	3
21.	19MEE21	Welding Technology	PE	3	3	0	0	3

**6. Employability Enhancement Courses (EEC)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19MES01	Project work Phase -I	EEC	6	0	0	6	3
2.	19MES02	Project work Phase -II	EEC	20	0	0	20	10
3.	19MES03	Value Added Course /Internship	EEC	2	0	0	2	1
4.	19MES04	Inter Disciplinary Project	EEC	3	0	0	3	1
5.	19MES05	Constitution of India and professional Ethics	EEC	3	3	0	0	0
6.	19MES06	Essence of Indian Traditional Knowledge	EEC	3	3	0	0	0



Chairman-Board of Studies  
 Department of Mechanical Engineering,  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.

PRINCIPAL,  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>	
Department		Mechanical Engg.					
Programme		B.E					
SEMESTER - I							
Sl. No.	Course Code	Course Name	Hours/Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19HSS01	Business English	2	0	0	2	2
2.	19BSS21	Algebra & Calculus	3	1	0	4	4
3.	19BSS01	Engineering Physics	3	0	0	3	3
4.	19BSS11	Engineering Chemistry	3	0	0	3	3
5.	19GES02	Programming for Problem Solving Techniques	3	0	0	3	3
6.	19GES05	Electrical and Electronics Sciences	3	0	0	3	3
<b>PRACTICAL</b>							
7	19GES07	Computer Aided Drafting Laboratory	0	0	3	1	3
8	19GES04	Programming in C & Python Laboratory	0	0	3	1	3
9	19HSS02	English Communicative Skills Laboratory	0	0	3	1	3
<b>Total Credits</b>						<b>21</b>	
		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>	
Department		Mechanical Engg.					
Programme		B.E					
SEMESTER - II							
Sl. No.	Course Code	Course Name	Hours/Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1	19HSS03	Life Skill Psychology and Ethics	2	0	0	2	2
2	19BSS22	Differential Equations and Vector Analysis	3	2	0	4	5
3	19BSS03	Bio and Nano Material Sciences	3	0	0	3	3
4	19BSS12	Environmental Science and Engineering	3	0	0	3	3
5	19GES19	Concepts in Product Design	3	0	0	3	3
6	19GES15	Manufacturing Processes	3	0	0	3	3
<b>PRACTICAL</b>							
7	19BSS02	Physics and Chemistry Laboratory	0	0	2	1	2
8	19GES16	Manufacturing Processes Laboratory	0	0	3	1	3
<b>Total Credits</b>						<b>20</b>	

Chairman-Board of Studies  
 Department of Mechanical Engineering  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.



PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> <b>UG</b> <b>R – 2019</b>	
Department		Mechanical Engg.						
Programme		B.E						
SEMESTER – III								
Sl. No.	Course Code	Course Name	Hours/Week			Credit C	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	19BSS23	Transform and Partial Differential Equations	3	1	0	4	4	
2.	19MEC02	Engineering Thermodynamics	3	0	0	3	3	
3.	19GES28	Engineering Mechanics	3	1	0	4	4	
4.	19MEC03	Fluid Mechanics and Machinery	3	0	0	3	3	
5.	19MEC06	Manufacturing Technology	3	0	0	3	3	
6.	19GES21	Electrical Drives and Controls	3	0	0	3	3	
<b>PRACTICAL</b>								
7	19MEC17	Fluid Mechanics and Machinery Laboratory	0	0	3	1	3	
8	19MEC18	Manufacturing Technology Laboratory	0	0	3	1	3	
9	19GES22	Electrical Drives and Controls laboratory	0	0	3	1	3	
<b>Total Credits</b>						<b>23</b>		
		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> <b>UG</b> <b>R – 2019</b>	
Department		Mechanical Engg.						
Programme		B.E						
SEMESTER - IV								
Sl. No.	Course Code	Course Name	Hours/Week			Credit C	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1	19BSS28	Statistics and Numerical Methods	3	1	0	4	4	
2	19MEC01	Engineering Materials and Metallurgy	3	0	0	3	3	
3	19MEC04	Strength of Materials	3	0	0	3	3	
4	19MEC07	Thermal Engineering	3	0	0	3	3	
5	19MEC14	Applied Hydraulics and Pneumatics	3	0	0	3	3	
6	19GES30	Electronics and Microprocessors	3	0	0	3	3	
<b>PRACTICAL</b>								
7	19MEC19	Strength of Materials Laboratory	0	0	3	1	3	
8	19GES31	Microprocessor Laboratory	0	0	3	1	3	
9	19MEC23	Thermal Engineering Laboratory	0	0	3	1	3	
<b>Total Credits</b>						<b>22</b>		

Chairman-Board of Studies  
 Department of Mechanical Engineering  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.



PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

Programme Code & Name: ME & B.E-Mechanical Engineering

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>	
Department		Mechanical Engg.						
Programme		B.E						
<b>SEMESTER - V</b>								
Sl. No.	Course Code	Course Name	Hours/Week			Credit	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	19MEC05	Kinematics of Machines	3	0	0	3	3	
2.	19MEC08	Automobile Engineering	3	0	0	3	3	
3.	19MEC10	Design of Machine Elements	3	0	0	3	3	
4.	19MEC12	Computer Aided Design and Manufacturing	3	0	0	3	3	
5.	19MEC13	Metrology and Measurements	3	0	0	3	3	
6.	19*****	OPEN ELECTIVE-I	3	0	0	3	3	
<b>PRACTICAL</b>								
7.	19MEC20	Measurements Laboratory	0	0	3	1	3	
8.	19MEC22	Assembly Drawing and Modeling Laboratory	0	0	3	1	3	
<b>Total Credits</b>						<b>20</b>		
		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>	
Department		Mechanical Engg.						
Programme		B.E						
<b>SEMESTER - VI</b>								
Sl. No.	Course Code	Course Name	Hours/Week			Credit	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1	19MEC09	Heat and Mass Transfer	3	0	0	3	3	
2	19MEC11	Dynamics of Machines	3	0	0	3	3	
3	19MEC25	Design of Transmission Systems	3	0	0	3	3	
4	19MEE**	Professional Elective -I	3	0	0	3	3	
5	19*****	Open Elective-II	3	0	0	3	3	
6	19*****	Open Elective-III	3	0	0	3	3	
<b>PRACTICAL</b>								
7	19MEC21	Heat and Mass Transfer Laboratory	0	0	3	1	3	
8	19MEC24	Dynamics of Machines Laboratory	0	0	3	1	3	
9	19MES04	Interdisciplinary Project	0	0	3	1	3	
<b>Total Credits</b>						<b>21</b>		

Chairman-Board of Studies  
 Department of Mechanical Engineering  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.

PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>	
Department		Mechanical Engg.					
Programme		B.E					
SEMESTER - VII							
Sl. No.	Course Code	Course Name	Hours/Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19MES06	Essence of Indian Traditional Knowledge	3	0	0	0	3
2.	19MEC26	Total Quality Management	3	0	0	3	3
3.	19MEE**	Professional Elective -II	3	0	0	3	3
4.	19MEE**	Professional Elective -III	3	0	0	3	3
5.	19MEE**	Professional Elective -IV	3	0	0	3	3
6	19*****	Open Elective-IV	3	0	0	3	3
<b>PRACTICAL</b>							
7	19MES01	Project work Phase -I	0	0	6	3	6
<b>Total Credits</b>						<b>18</b>	
		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>	
Department		Mechanical Engg.					
Programme		B.E					
SEMESTER - VIII							
Sl. No.	Course Code	Course Name	Hours/Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1	19MES05	Constitution of India and Professional Ethics	3	0	0	0	3
2	19MEE**	PROFESSIONAL ELECTIVE -V	3	0	0	3	3
3	19MEE**	PROFESSIONAL ELECTIVE -VI	3	0	0	3	3
4	19*****	OPEN ELECTIVE-V	3	0	0	3	3
<b>PRACTICAL</b>							
5	19MES02	Project work Phase -II	0	0	20	10	20
<b>Total Credits</b>						<b>19</b>	

Chairman-Board of Studies  
 Department of Mechanical Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.

PRINCIPAL,  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

**CREDITS**

Subject Area	Credits per Semester								Total	Percentage %
	I	II	III	IV	V	VI	VII	VIII		
HS	3	2	-	-	-	-	-	-	5	3
BS	10	11	4	4	-	-	-	-	29	18
ES	8	7	8	4	-	-	-	-	27	17
PC	-	-	11	14	17	11	3		56	34
PE	-	-	-	-	-	3	9	6	18	11
OE	-	-	-	-	3	6	3	3	15	9
EEC	-	-	-	-	-	1	3	10	14	8
MC	-	-	-	-	-	-	-	-	-	0
<b>Total</b>	21	20	23	22	20	21	18	19	164	100

  
 Chairman-Board of Studies  
 Department of Mechanical Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.

  
 PRINCIPAL,  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU



# MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)  
Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

## DEPARTMENT OF INFORMATION TECHNOLOGY GROUPING OF COURSES

### 1. Humanities and Social Sciences including Management Courses (HS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1	19HSS01	Business English	HS	2	2	0	0	2
2	19HSS02	English Communicative Skills Laboratory	HS	2	0	0	2	1
3	19HSS03	Life Skill and Work Place Psychology	HS	2	2	0	0	2
4	19HSS04	Technical English For Engineers	HS	2	2	0	0	2
5	19HSS05	Communicative English for Engineers	HS	2	2	0	0	2
6	19HSS06	Basics of Japanese Language	HS	2	2	0	0	2
7	19HSS07	Basics of French Language	HS	2	2	0	0	2
8	19HSS08	Professional Ethics and Human Values	HS	3	3	0	0	3

### 2. Basic Science Courses (BS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19BSS01	Engineering Physics	BS	3	3	0	0	3
2	19BSS02	Physics and Chemistry Laboratory	BS	2	0	0	2	1
3	19BSS03	Bio and Nanomaterials Sciences	BS	3	3	0	0	3
4	19BSS04	Material Sciences	BS	3	3	0	0	3
5	19BSS05	Physics for Mechanical Engineers	BS	3	3	0	0	3
6	19BSS11	Engineering Chemistry	BS	3	3	0	0	3
7	19BSS12	Environmental Science and Engineering	BS	3	3	0	0	3
8	19BSS13	Organic Chemistry	BS	3	3	0	0	3
9	19BSS14	Physical Chemistry	BS	3	3	0	0	3
10	19BSS15	Applied Chemistry	BS	3	3	0	0	3
11	19BSS16	Organic Chemistry Laboratory	BS	2	0	0	2	1
12	19BSS17	Physical Chemistry Laboratory	BS	2	0	0	2	1

**Chairman**  
Board of Studies

Department of Information Technology  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

13	19BSS21	Algebra and Calculus	BS	4	3	1	0	4
14	19BSS22	Differential Equations and Vector Analysis	BS	4	3	1	0	4
15	19BSS23	Transform and Partial Differential Equations	BS	4	3	1	0	4
16	19BSS24	Discrete Mathematics	BS	4	3	1	0	4
17	19BSS25	Statistical and Queuing Model	BS	4	3	1	0	4
18	19BSS26	Numerical Methods	BS	4	3	1	0	4
19	19BSS27	Probability and Random Processes	BS	4	3	1	0	4
20	19BSS28	Statistic and Numerical Methods	BS	4	3	1	0	4

### 3. General Engineering Science Courses (GES)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19GES01	Programming for Problem Solving Using C	GES	3	3	0	0	3
2	19GES02	Programming for Problem Solving Technique	GES	3	3	0	0	3
3	19GES03	Programming in C Laboratory	GES	2	0	0	2	1
4	19GES04	Programming in C and Python Laboratory	GES	2	0	0	2	1
5	19GES05	Electrical and Electronic Sciences	GES	3	3	0	0	3
6	19GES06	Mechanical and Building Sciences	GES	3	3	0	0	3
7	19GES07	Computer Aided Drafting Laboratory	GES	2	0	0	2	1
8	19GES08	Python Programming	GES	3	3	0	0	3
9	19GES09	Programming in Python Laboratory	GES	2	0	0	2	1
10	19GES10	Soft Skills Laboratory	GES	2	0	0	2	1
11	19GES11	Electronic Devices	GES	3	3	0	0	3
12	19GES12	Electronic Simulation Laboratory	GES	2	0	0	2	1
13	19GES13	Electric Circuits	GES	3	2	1	0	3
14	19GES14	Electric Circuits Laboratory	GES	2	0	0	2	1
15	19GES15	Manufacturing Process	GES	3	3	0	0	3
16	19GES16	Manufacturing Process Laboratory	GES	2	0	0	2	1
17	19GES17	Mechanical and Building Sciences Laboratory	GES	2	0	0	2	1
18	19GES18	Construction Materials	GES	3	3	0	0	3
19	19GES19	Concepts in Product Design	GES	3	3	0	0	3

20	19GES20	Renewable Energy Sources	GES	3	3	0	0	3
21	19GES21	Electrical Drives and Control	GES	3	3	0	0	3
22	19GES22	Electrical Drives and Control Laboratory	GES	2	0	0	2	1
23	19GES23	Analog and Digital communication	GES	3	3	0	0	3
24	19GES24	Digital Principles and System Design	GES	3	3	0	0	3
25	19GES25	Digital Principles and System Design Laboratory	GES	2	0	0	2	1
26	19GES26	Engineering Drawing	GES	5	1	0	4	3
27	19GES27	Engineering Geology	GES	3	3	0	0	3
28	19GES28	Engineering Mechanics	GES	4	3	1	0	4
29	19GES29	Wireless Communication	GES	4	3	1	0	4
30	19GES30	Electronics and Microprocessor	GES	3	3	0	0	3
31	19GES31	Electronics and Microprocessor Laboratory	GES	2	0	0	2	1
32	19GES32	Data Structures using Python	GES	3	3	0	0	3

#### 4. Professional Core Courses (PCC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1	19ITC01	Data Structures	PCC	3	3	0	0	3
2	19ITC02	Data Structures Laboratory	PCC	2	0	0	2	1
3	19ITC03	Database Management Systems	PCC	3	3	0	0	3
4	19ITC04	Database Management Systems Laboratory	PCC	2	0	0	2	1
5	19ITC05	Software Engineering	PCC	3	3	0	0	3
6	19ITC06	Computer Organization and Architecture	PCC	3	3	0	0	3
7	19ITC07	Object Oriented Programming	PCC	3	3	0	0	3
8	19ITC08	Object Oriented Programming Laboratory	PCC	2	0	0	2	1
9	19ITC09	Operating Systems	PCC	3	3	0	0	3
10	19ITC10	Operating Systems Laboratory	PCC	2	0	0	2	1
11	19ITC11	Design and Analysis of Algorithms	PCC	4	3	1	0	4
12	19ITC12	Blockchain Technology	PCC	3	3	0	0	3
13	19ITC13	Mobile Communication	PCC	3	3	0	0	3
14	19ITC14	Mobile Application Laboratory	PCC	2	0	0	2	1

15	19ITC15	Internet of Things	PCC	3	3	0	0	3
16	19ITC16	Internet of Things Laboratory	PCC	2	0	0	2	1
17	19ITC17	Artificial Intelligence	PCC	4	3	1	0	4
18	19ITC18	Principles of Compiler Design	PCC	3	3	0	0	3
19	19ITC19	Compiler Design Laboratory	PCC	2	0	0	2	1
20	19ITC20	Cloud Computing	PCC	3	3	0	0	3
21	19ITC21	Cloud Computing Laboratory	PCC	2	0	0	2	1
22	19ITC22	Data warehousing and Data Mining	PCC	3	3	0	0	3
23	19ITC23	Information security	PCC	3	3	0	0	3
24	19ITC24	Computer Networks	PCC	3	3	0	0	3

### 5. Professional Elective Courses (PEC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1	19ITE01	C# and .Net Framework	PEC	3	3	0	0	3
2	19ITE02	Software Project Management	PEC	3	3	0	0	3
3	19ITE03	Salesforce CRM and Platform	PEC	3	3	0	0	3
4	19ITE04	Salesforce CRM and Platform Laboratory	PEC	2	0	0	2	1
5	19ITE05	AWS Academy Cloud Developing	PEC	3	3	0	0	3
6	19ITE06	AWS Academy Cloud Developing Lab	PEC	2	0	0	2	1
7	19ITE07	AWS Academy Cloud Architecting	PEC	3	3	0	0	3
8	19ITE08	AWS Academy Cloud Architecting Lab	PEC	2	0	0	2	1
9	19ITE09	AWS Academy Cloud Foundation	PEC	2	0	0	2	1
10	19ITE10	AWS Academy Cloud Foundation Lab	PEC	2	0	0	2	1
11	19ITE11	Semantic Web	PEC	3	3	0	0	3
12	19ITE12	Network Programming and Management	PEC	3	3	0	0	3
13	19ITE13	Business Intelligence	PEC	3	3	0	0	3
14	19ITE14	Wireless Sensor Networks	PEC	3	3	0	0	3
15	19ITE15	Information Retrieval Techniques	PEC	3	3	0	0	3
16	19ITE16	Service Oriented Architecture	PEC	3	3	0	0	3
17	19ITE17	Agile Technology	PEC	3	3	0	0	3
18	19ITE18	Social Network Analysis	PEC	3	3	0	0	3
19	19ITE19	Game Programming	PEC	3	3	0	0	3
20	19ITE20	Natural Language Processing	PEC	3	3	0	0	3

21	19ITE21	Big data Analytics	PEC	3	3	0	0	3
22	19ITE22	Ad hoc and Sensor Networks	PEC	3	3	0	0	3
23	19ITE23	Management Information System	PEC	3	3	0	0	3
24	19ITE24	Software Quality Assurance	PEC	3	3	0	0	3
25	19ITE25	Bioinformatics	PEC	3	3	0	0	3
26	19ITE26	Docker and Kubernetes	PEC	3	3	0	0	3
27	19ITE27	Open Stack Essentials	PEC	3	3	0	0	3
28	19ITE28	User Centric Design	PEC	3	3	0	0	3
29	19ITE29	Software Testing	PEC	3	3	0	0	3
30	19ITE30	Ethical Hacking and Cyber Security	PEC	3	3	0	0	3
31	19ITE31	Soft computing	PEC	3	3	0	0	3
32	19ITE32	Real Time Systems	PEC	3	3	0	0	3
33	19ITE33	Machine Learning	PEC	3	3	0	0	3
34	19ITE34	High Speed Networks	PEC	3	3	0	0	3
35	19ITE35	Angular JS	PEC	3	3	0	0	3
36	19ITE36	Angular JS Laboratory	PEC	2	0	0	2	1

#### 6. EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1	19ITP01	Project Work Phase I	EEC	10	0	0	10	5
2	19ITP02	Project Work Phase II	EEC	20	0	0	20	10
3	19ITP03	Comprehension	EEC	2	0	0	2	1
4	19ITP04	Technical Seminar	EEC	4	0	4	0	2
5	19ITP05	Entrepreneurship Development	EEC	3	3	0	0	3
6	19ITP06	Professional Practices	EEC	6	0	0	6	3
7	19ITM01	NPTEL- Introduction to Industry 4.0 and Industrial Internet of Things	Mandatory Course	-	-	-	-	-
8	19ITM02	NPTEL- Introduction to Machine Learning	Mandatory Course	-	-	-	-	-
9	19ITM03	NPTEL- The Joy of Computing using Python	Mandatory Course	-	-	-	-	-
10	19ITM04	NPTEL-Data Analytics with Python	Mandatory Course	-	-	-	-	-
11	19ITA01	Indian Constitution	Audit Course	-	-	-	-	-
12	19ITA02	Value Education	Audit Course	-	-	-	-	-
13	19ITA03	Disaster Management	Audit Course	-	-	-	-	-
14	19ITA04	Pedagogy Studies	Audit Course	-	-	-	-	-


  
**Chairman**  
 Board of Studies  
 Department of Information Technology  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408.

PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408. NAMAKKAL Dist.  
 TAMILNADU


15	19ITA05	Stress Management by Yoga	Audit Course	-	-	-	-	-
----	---------	---------------------------	--------------	---	---	---	---	---


**7. OPEN ELECTIVE COURSES(OEC)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19MEE07	Industrial Robotics	OEC	3	3	0	0	3
2	19MEE18	Power Plant Engineering	OEC	3	3	0	0	3
3	19MEC26	Total Quality Management	OEC	3	3	0	0	3
4	19ECE06	Telecommunication Switching Networks	OEC	3	3	0	0	3
5	19ECE08	Mobile Ad-Hoc Networks	OEC	3	3	0	0	3
6	19PC-ED11	Water Supply Engineering	OEC	3	3	0	0	3
7	19PE-EE05	Health Monitoring of Structures	OEC	3	3	0	0	3

  
**Chairman**  
 Board of Studies  
 Department of Information Technology  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408.

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist  
 TAMILNADU


 <b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University) Rasipuram - 637408, Namakkal Dist., Tamil Nadu		<b>CURRICULUM UG R - 2019</b>						
<b>Department</b>		Information Technology						
<b>Programme</b>		B.Tech. – Information Technology						
<b>SEMESTER – I</b>								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hours
				L	T	P		
<b>THEORY</b>								
1.	19HSS01	Business English	HS	2	0	0	2	2
2.	19BSS21	Algebra and Calculus	BS	3	1	0	4	4
3.	19BSS01	Engineering Physics	BS	3	0	0	3	3
4.	19BSS11	Engineering Chemistry	BS	3	0	0	3	3
5.	19GES01	Programming for Problem Solving Using C	GES	3	0	0	3	3
6.	19GES06	Mechanical and Building Sciences	GES	3	0	0	3	3
<b>PRACTICALS</b>								
7.	19BSS02	Physics and Chemistry Laboratory	BS	0	0	2	1	2
8.	19GES03	Programming in C Laboratory	GES	0	0	2	1	2
9.	19HSS02	English Communicative Skills Laboratory	HS	0	0	2	1	2
<b>Total Credits</b>							<b>21</b>	


 <b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University) Rasipuram - 637408, Namakkal Dist., Tamil Nadu		<b>CURRICULUM UG R - 2019</b>						
<b>Department</b>		Information Technology						
<b>Programme</b>		B.Tech. – Information Technology						
<b>SEMESTER – II</b>								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hours
				L	T	P		
<b>THEORY</b>								
1.	19HSS03	Life Skill and Work Place Psychology	HS	2	0	0	2	2
2.	19BSS22	Differential Equations and Vector Analysis	BS	3	1	0	4	4
3.	19BSS03	Bio and Nano materials Sciences	BS	3	0	0	3	3
4.	19BSS12	Environmental Science and Engineering	BS	3	0	0	3	3
5.	19GES19	Concepts in Product Design	GES	3	0	0	3	3
6.	19GES08	Python Programming	GES	3	0	0	3	3
<b>PRACTICALS</b>								
7.	19GES10	Soft Skills Lab	GES	0	0	2	1	2
8.	19GES09	Programming in Python Lab	GES	0	0	2	1	2
<b>Total Credits</b>							<b>20</b>	


  
**Chairman**  
Board of Studies  
Department of Information Technology  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.


8


  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU


 <b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University) Rasipuram - 637408, Namakkal Dist., Tamil Nadu		<b>CURRICULUM</b> <b>M</b> <b>UG</b> <b>R - 2019</b>							
<b>Department</b>		Information Technology							
<b>Programme</b>		B.Tech. – Information Technology							
<b>SEMESTER – III</b>									
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hours	
				L	T	P			
<b>THEORY</b>									
1.	19BSS23	Transforms and Partial Differential Equations	BS	3	1	0	4	4	
2.	19GES23	Analog and Digital Communication	GES	3	0	0	3	3	
3.	19ITC01	Data Structures	PCC	3	0	0	3	3	
4.	19ITC03	Database Management Systems	PCC	3	0	0	3	3	
5.	19ITC05	Software Engineering	PCC	3	0	0	3	3	
6.	19ITC06	Computer Organization and Architecture	PCC	3	0	0	3	3	
<b>PRACTICALS</b>									
7.	19ITC02	Data Structures Laboratory	PCC	0	0	2	1	2	
8.	19ITC04	Database Management Systems Laboratory	PCC	0	0	2	1	2	
<b>TotalCredits</b>							<b>21</b>		

 <b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University) Rasipuram - 637408, Namakkal Dist., Tamil Nadu		<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>							
<b>Department</b>		Information Technology							
<b>Programme</b>		B.Tech. – Information Technology							
<b>SEMESTER – IV</b>									
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hours	
				L	T	P			
<b>THEORY</b>									
1.	19HSS08	Professional Ethics and Human Values	HS	3	0	0	3	3	
2.	19BSS24	Discrete Mathematics	BS	3	1	0	4	4	
3.	19GES24	Digital Principles and System Design	GES	3	0	0	3	3	
4.	19ITC07	Object Oriented Programming	PCC	3	0	0	3	3	
5.	19ITC09	Operating Systems	PCC	3	0	0	3	3	
6.	19ITC11	Design and Analysis of Algorithms	PCC	3	1	0	4	4	
<b>PRACTICALS</b>									
7.	19ITC08	Object Oriented Programming Laboratory	PCC	0	0	2	1	2	
8.	19ITC10	Operating Systems Laboratory	PCC	0	0	2	1	2	
9.	19GES25	Digital Principles and System Design Laboratory	GES	0	0	2	1	2	
<b>TotalCredits</b>							<b>23</b>		

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University) Rasipuram - 637408, Namakkal Dist., Tamil Nadu					<b>CURRICULUM UG R - 2019</b>	
<b>Department</b>		Information Technology						
<b>Programme</b>		B.Tech. – Information Technology						
<b>SEMESTER – V</b>								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hours
				L	T	P		
<b>THEORY</b>								
1.	19GES29	Wireless Communication	GES	3	1	0	4	4
2.	19ITC24	Computer Networks	PCC	3	0	0	3	3
3.	19ITC20	Cloud Computing	PCC	3	0	0	3	3
4.	19ITC17	Artificial Intelligence	PCC	3	1	0	4	4
5.	19ITE03	Elective I – Salesforce CRM and Platform	PEC	3	0	0	3	3
6.	19ITE35 19ITE05 19ITE07	Elective II-Angular JS/ AWS Academy Cloud Developing/ AWS Academy Cloud Architecting	PEC	3	0	0	3	3
<b>PRACTICALS</b>								
7.	-	Elective II lab	PCC	0	0	2	1	2
8.	19ITC21	Cloud Computing Laboratory	PCC	0	0	2	1	2
9.	19ITE04	Elective I– Salesforce CRM and Platform Laboratory	PEC	0	0	2	1	2
<b>TotalCredits</b>							<b>23</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University) Rasipuram - 637408, Namakkal Dist., Tamil Nadu					<b>CURRICULUM UG R - 2019</b>	
<b>Department</b>		Information Technology						
<b>Programme</b>		B.Tech. – Information Technology						
<b>SEMESTER –VI</b>								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hours
				L	T	P		
<b>THEORY</b>								
1.	19ITC13	Mobile Communication	PCC	3	0	0	3	3
2.	19ITC15	Internet of Things	PCC	3	0	0	3	3
3.	19ITC18	Principles of Compiler Design	PCC	3	0	0	3	3
4.	19ITE26	Elective III-Docker and Kubernetes	PEC	3	0	0	3	3
5.	19ITE35 19ITE05 19ITE07	Elective IV- Angular JS/AWS Academy Cloud Developing/ AWS Academy Cloud Architecting	PEC	3	0	0	3	3
6.	19MEE07	Open Elective I-Industrial Robotics	OEC	3	0	0	3	3
<b>PRACTICALS</b>								
7.	19ITC19	Compiler Design Laboratory	PCC	0	0	2	1	2
8.	19ITC16	Internet of Things Laboratory	PCC	0	0	2	1	2
9.	19ITE06 19ITE08	AWS Academy Cloud Developing Lab/ AWS Academy Cloud Architecting Lab	PEC	0	0	2	1	2
<b>TotalCredits</b>							<b>21</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University) Rasipuram - 637408, Namakkal Dist., Tamil Nadu					<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>	
<b>Department</b>		Information Technology						
<b>Programme</b>		B.Tech. – Information Technology						
SEMESTER – VII								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit	Contact Hours
				L	T	P		
<b>THEORY</b>								
1.	19ITC12	Blockchain Technology	PCC	3	0	0	3	3
2.	19ITC23	Information security	PCC	3	0	0	3	3
3.	19ITC22	Data Warehousing and Data Mining	PCC	3	0	0	3	3
4.	19ITE33	Elective V-Machine Learning	PEC	3	0	0	3	3
5.	19MEE18	Open Elective II-Power Plant Engineering	OEC	3	0	0	3	3
6.	19MEC26	Open Elective III-Total Quality Management	OEC	3	0	0	3	3
<b>PRACTICALS</b>								
7.	19ITP01	Project work – Phase I	ECC	0	0	10	5	10
<b>TotalCredits</b>							<b>23</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University) Rasipuram - 637408, Namakkal Dist., Tamil Nadu					<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>	
<b>Department</b>		Information Technology						
<b>Programme</b>		B.Tech. – Information Technology						
SEMESTER – VIII								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit	Contact Hours
				L	T	P		
<b>THEORY</b>								
1.		Non Credit Course I						
<b>PRACTICALS</b>								
2.	19ITP02	Project Work II	EEC	0	0	20	10	20
<b>TotalCredits</b>							<b>10</b>	

  
**Chairman**  
 Board of Studies  
 Department of Information Technology  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408. NAMAKKAL Dist.**  
**TAMILNADU**

**COURSE COMPONENTSUMMARY**

S. No.	Subject Area	Credits Per Semester								Credits Total	AICTE Credits
		I	II	III	IV	V	VI	VII	VIII		
1	HS	3	2	-	3	-	-	-	-	08	09
2	BS	11	10	4	4	-	-	-	-	29	24
3	GES	7	8	3	4	4	-	-	-	26	27
4	PCC	-	-	14	12	12	11	9	-	58	58
5	PEC			-	-	7	7	3	-	17	18
6	OEC			-	-	-	3	6	-	09	09
7	PROJ			-	-	-	-	5	10	15	15
<b>TOTAL</b>		<b>21</b>	<b>20</b>	<b>21</b>	<b>23</b>	<b>23</b>	<b>21</b>	<b>23</b>	<b>10</b>	<b>162</b>	<b>160</b>

TotalCredits: 162

  
**Chairman**  
Board of Studies  
Department of Information Technology  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408,

  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU



**MUTHAYAMMAL ENGINEERING COLLEGE**

**(An Autonomous Institution)**

**(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)  
Rasipuram - 637 408, Namakkal Dist., Tamil Nadu**

**B.E - BIOMEDICAL ENGINEERING**

**GROUPING OF COURSES**

**1. Foundation Courses (FC):**

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19HSS01	Business English	HS	3	2	0	0	2
2	19HSS02	English Communicative Skills Laboratory	HS	2	0	0	2	1
3	19HSS03	Life Skills and Workplace Psychology	HS	3	2	0	0	2
4	19HSS04	Technical English For Engineers	HS	3	2	0	0	2
5	19HSS05	Communicative English for Engineers	HS	3	2	0	0	2
6	19HSS06	Basics of Japanese Language	HS	3	2	0	0	2
7	19HSS07	Basics of French Language	HS	3	2	0	0	2
8	19HSS08	Professional Ethics and Human Values	HS	3	3	0	0	3
9	19BSS01	Engineering Physics	BS	4	3	0	0	3
10	19BSS02	Physics and Chemistry Laboratory	BS	2	0	0	2	1
11	19BSS03	Bio and Nanomaterials Sciences	BS	4	3	0	0	3
12	19BSS04	Material Sciences	BS	4	3	0	0	3
13	19BSS05	Physics fir Mechanical Engineers	BS	4	3	0	0	3
14	19BSS11	Engineering Chemistry	BS	4	3	0	0	3
15	19BSS12	Environmental Science and Engineering	BS	4	3	0	0	3
16	19BSS13	Organic Chemistry	BS	4	3	0	0	3
17	19BSS14	Physical Chemistry	BS	4	3	0	0	3

**Chairman**

**Board of Studies**

**Department of Biomedical Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408.**

**PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU**

Programme Code & Name: BME & B.E-Biomedical Engineering

18	19BSS15	Applied Chemistry	BS	4	3	0	0	3
19	19BSS16	Organic Chemistry Laboratory	BS	3	0	0	3	1
20	19BSS17	Physical Chemistry Laboratory	BS	3	0	0	3	1
21	19BSS21	Algebra and Calculus	BS	5	3	1	0	4
22	19BSS22	Differential Equations and Vector Analysis	BS	5	3	1	0	4
23	19BSS23	Transform and Partial Differential Equations	BS	5	3	1	0	4
24	19BSS24	Discrete Mathematics	BS	5	3	1	0	4
25	19BSS25	Statistical and Queuing Model	BS	5	3	1	0	4
26	19BSS26	Numerical Methods	BS	5	3	1	0	4
27	19BSS27	Probability and Random Processes	BS	5	3	1	0	4
28	19BSS28	Statistic and Numerical Methods	BS	5	3	1	0	4
29	19GES01	Programming for Problem Solving Using C	GES	3	3	0	0	3
30	19GES02	Programming for Problem Solving Technique	GES	3	3	0	0	3
31	19GES03	Programming in C Laboratory	GES	3	0	0	3	1
32	19GES04	Programming in C and Python Laboratory	GES	3	0	0	3	1
33	19GES05	Electrical and Electronic Sciences	GES	3	3	0	0	3
34	19GES06	Mechanical and Building Sciences	GES	3	3	0	0	3
35	19GES07	Computer Aided Drafting Laboratory	GES	3	0	0	3	1
36	19GES08	Python Programming	GES	3	3	0	0	3
37	19GES09	Programming in Python Laboratory	GES	3	0	0	3	1
38	19GES10	Soft Skills Laboratory	GES	3	0	0	3	1
39	19GES11	Electronic Devices	GES	3	3	0	0	3
40	19GES12	Electronic Simulation Laboratory	GES	3	0	0	3	1

  
Chairman  
Board of Studies

Department of Biomedical Engineering  
Murthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408, TN

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Programme Code & Name: BME & B.E-Biomedical Engineering

41	19GES13	Electric Circuits	GES	3	2	1	0	3
42	19GES14	Electric Circuits Laboratory	GES	3	0	0	3	1
43	19GES15	Manufacturing Process	GES	3	3	0	0	3
44	19GES16	Manufacturing Process Laboratory	GES	3	0	0	3	1
45	19GES17	Mechanical and Building Sciences Laboratory	GES	3	0	0	3	1
46	19GES18	Construction Materials	GES	3	3	0	0	3
47	19GES19	Concepts in Product Design	GES	3	3	0	0	3
48	19GES20	Renewable Energy Sources	GES	3	3	0	0	3
49	19GES21	Electrical Drives and Control	GES	3	3	0	0	3
50	19GES22	Electrical Drives and Control Laboratory	GES	3	0	0	3	1
51	19GES23	Analog and digital communication	GES	3	3	0	0	3
52	19GES24	Digital Principles and System Design	GES	3	3	0	0	3
53	19GES25	Digital Principles and System Design Laboratory	GES	3	0	0	3	1
54	19GES26	Engineering Drawing	GES	4	1	0	3	3
55	19GES27	Engineering Geology	GES	3	3	0	0	3
56	19GES28	Engineering Mechanics	GES	4	3	1	0	3
57	19GES29	Wireless Communication	GES	4	3	1	0	4
58	19GES30	Electronics and Microprocessor	GES	3	3	0	0	3
59	19GES31	Electronics and Microprocessor Laboratory	GES	2	0	0	2	1
60	19GES32	Data Structures using Python	GES	3	3	0	0	3

PROFESSIONAL CORE [PC]

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	



Programme Code & Name: BME & B.E-Biomedical Engineering

1	19BMC01	Anatomy and Human Physiology	PC	3	3	0	0	3
2	19BMC02	Biomedical Sensors & Instruments	PC	3	3	0	0	3
3	19BMC03	Digital Electronics	PC	3	3	0	0	3
4	19BMC04	Signals and Systems	PC	5	3	1	0	4
5	19BMC05	Biomechanics & Rehabilitation Engineering	PC	5	3	1	0	4
6	19BMC06	Bio Control System	PC	5	3	1	0	4
7	19BMC07	Analog Electronics	PC	3	3	0	0	3
8	19BMC08	Microprocessor and Microcontrollers In Medicine	PC	3	3	0	0	3
9	19BMC09	Linear Integrated Circuits	PC	3	3	0	0	3
10	19BMC10	Biochemistry	PC	3	3	0	0	3
11	19BMC11	Hospital Management	PC	3	3	0	0	3
12	19BMC12	Biomedical Instrumentation	PC	3	3	0	0	3
13	19BMC13	Medical Signal Processing	PC	5	3	1	0	4
14	19BMC14	Embedded System	PC	3	3	0	0	3
15	19BMC15	Therapeutic Equipments	PC	3	3	0	0	3
16	19BMC16	Digital Image Processing	PC	5	3	2	0	4
17	19BMC17	Medical Imaging Techniques	PC	5	3	2	0	4
18	19BMC18	Electrical Safety and Quality Assurance	PC	3	3	0	0	3
19	19BMC19	Human Assist Devices	PC	3	3	0	0	3
20	19BMC20	Bio Medical Sensors and Instruments Laboratory	PC	3	0	0	2	1
21	19BMC21	Digital Electronics Laboratory	PC	3	0	0	2	1
22	19BMC22	Analog Electronics Laboratory	PC	3	0	0	2	1
23	19BMC23	Linear Integrated Circuits Laboratory	PC	3	0	0	2	1
24	19BMC24	Medical Signal Processing Laboratory	PC	3	0	0	2	1
25	19BMC25	Pathology and Microbiology Laboratory	PC	3	0	0	2	1
26	19BMC26	Biomedical Instrumentation Laboratory	PC	3	0	0	2	1
27	19BMC27	Pathology and Microbiology	PC	3	3	0	0	3
28	19BMC28	Embedded System Laboratory	PC	3	0	0	2	1
29	19BMC29	Computer Networks	PC	3	3	0	0	3
30	19BMC30	Microprocessor and Microcontrollers Laboratory	PC	3	0	0	2	1



PRINCIPAL,

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Department of Biomedical Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408.

**PROFESSIONAL ELECTIVES [PE]**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19BME01	Advanced Bio Analytical And Therapeutic Techniques	PE	3	3	0	0	3
2.	19BME02	Bio Signal Processing	PE	3	3	0	0	3
3.	19BME03	Biomaterials and Artificial Organs	PE	3	3	0	0	3
4.	19BME04	Biomedical Engineering	PE	3	3	0	0	3
5.	19BME05	Biomaterials and Characterization	PE	3	3	0	0	3
6.	19BME06	Body Area Networks	PE	3	3	0	0	3
7.	19BME07	Brain Computer Interface and Applications	PE	3	3	0	0	3
8.	19BME08	Medical Optics	PE	3	3	0	0	3
9.	19BME09	Soft Computing	PE	3	3	0	0	3
10.	19BME10	Neural Engineering	PE	3	3	0	0	3
11.	19BME11	Physiological Modeling	PE	3	3	0	0	3
12.	19BME12	Hospital Waste Management	PE	3	3	0	0	3
13.	19BME13	Virtual Reality	PE	3	3	0	0	3
14.	19BME14	Wearable Systems	PE	3	3	0	0	3
15.	19BME15	Medical Physics	PE	3	3	0	0	3

**EMPLOYABILITY ENHANCEMENT COURSES (EEC)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19BMS01	Project Work Phase – I	EEC	10	0	0	10	3
2.	19BMS02	Project Work Phase –II	EEC	12	0	0	12	6
3.	19BMS03	Comprehension	EEC	4	3	0	4	2
4.	19BMS04	Design Project	EEC	3	0	0	3	1
5.	19BMS05	Hospital Training	EEC	4	0	0	4	2

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	

**Chairman**  
**Board of Studies**  
 Department of Biomedical Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist 637 408,

**PRINCIPAL,**  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

Programme Code & Name: BME & B.E-Biomedical Engineering

1.		Analytical Instrumentation	OE	3	3	0	0	3
2.		Power Plant Engineering	OE	3	3	0	0	3
3.		Clinical Trials	OE	3	3	0	0	3
4.		Principles of Food Preservation	OE	3	3	0	0	3
5.		Fundamentals of Nutrition	OE	3	3	0	0	3
6.		Air Pollution and Management	OE	3	3	0	0	3
7.		Industrial Waste Management	OE	3	3	0	0	3
8.		Regulatory requirements in Pharmaceutical Industries	OE	3	3	0	0	3
9.		Municipal Solid Waste Management	OE	3	3	0	0	3
10.		Internet and JAVA Programming	OE	3	3	0	0	3

**Mandatory Course(MC) :**

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	19MDH01	Organizational Behaviour	MC	3	3	0	0	0
2.	19MDH02	India Constitution (Common to All Branches)	MC	3	3	0	0	0
3.	19MDH03	Essence of Indian Traditional Knowledge	MC	3	3	0	0	0

  
**Chairman**

**Board of Studies**

**Department of Biomedical Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408.**

  
**PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU**

**COURSE COMPONENT SUMMARY**


S. No.	Subject Area	Credits Per Semester								Credits Total	AICTE Credits
		I	II	III	IV	V	VI	VII	VIII		
1	FC	21	20	7	4	-	-	-	-	52	66
2	PC	-	-	20	19	15	13	6	-	73	55
3	PE	-	-	-	-	6	6	6	-	18	12
4	OE	-	-	-	-	-	3	3	-	6	12
5	EEC	-	-	-	-	-	1	4	6	11	15
<b>TOTAL</b>		21	20	27	23	21	23	19	6	<b>160</b>	<b>160</b>

**Total Credits: 160**

  
**Chairman**  
Board of Studies

Department of Biomedical Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> UG R – 2019	
Department		Biomedical Engineering						
Programme		B.E						
<b>SEMESTER – I</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P			C
<b>THEORY</b>								
1.	19HSS01	Business English	2	0	0	2	2	
2.	19BSS21	Algebra and Calculus	3	1	0	4	4	
3.	19BSS01	Engineering Physics	3	0	0	3	3	
4.	19BSS11	Engineering Chemistry	3	0	0	3	3	
5.	19GES02	Programming for Problem Solving Technique	3	0	0	3	3	
6.	19GES06	Mechanical and Building Sciences	3	0	0	3	3	
<b>PRACTICALS</b>								
7.	19BSS02	Physics and Chemistry Laboratory	0	0	2	1	2	
8.	19GES03	Programming in C Laboratory	0	0	3	1	3	
9.	19HSS02	Communicative English Laboratory	0	0	2	1	2	
<b>Total Credits</b>						<b>21</b>		


*[Signature]*  
Chairman


Board of Studies

Department of Biomedical Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist. 637 408.

*[Signature]*  
PRINCIPAL,

MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> UG R – 2019	
Department			BIOMEDICAL ENGINEERING					
Programme			BE					
<b>SEMESTER – III</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	19BSS23	Transforms & Partial Differential Equations	3	1	0	4	5	
2.	19BMC04	Signals and Systems	3	1	0	4	5	
3.	19BMC07	Analog Electronics	3	1	0	4	5	
4.	19BMC03	Digital Electronics	3	0	0	3	3	


		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> UG R – 2019	
Department			Biomedical Engineering					
Programme			B.E					
<b>SEMESTER – II</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	19HSS03	Life Skill Psychology and Ethics	2	0	0	2	2	
2.	19BSS22	Differential Equations and Vector Analysis	3	1	0	4	4	
3.	19BSS03	Bio and Nanomaterials Sciences	3	0	0	3	3	
4.	19BSS12	Environmental Science and Engineering	3	0	0	3	3	
5.	19GES19	Concepts in Product Design	3	0	0	3	3	
6.	19GES11	Electronic Devices	3	0	0	3	3	
<b>PRACTICALS</b>								
7	19GES12	Electronic Simulation Laboratory	0	0	3	1	3	
8	19GES09	Programming in Python Laboratory	0	0	3	1	3	
<b>Total Credits</b>						<b>20</b>		

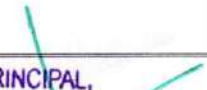
  
**Chairman**  
 Board of Studies  
 Department of Biomedical Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist 637 408.


  
**PRINCIPAL,**  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

Programme Code & Name: BME & B.E-Biomedical Engineering

5.	19BMC01	Human Anatomy & Physiology	3	0	0	3	3
6.	19HSS08	Professional Ethics and Human Values	3	0	0	3	3
7.	19BMC02	Biomedical Sensors & Instruments	3	0	0	3	3
<b>PRACTICALS</b>							
8.	19BMC22	Analog Electronics Laboratory	3	0	0	1	2
9.	19BMC21	Digital Electronics Laboratory	3	0	0	1	2
10.	19BMC20	Bio Medical Sensors and Instruments Laboratory	3	0	0	1	2
<b>Total Credits</b>						<b>27</b>	

  
**Chairman**  
 Board of Studies  
 Department of Biomedical Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist 637 408.

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408. NAMAKKAL Dist.  
 TAMILNADU.


		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> UG R – 2019	
Department			BIOMEDICAL ENGINEERING					
Programme			BE					
<b>SEMESTER – IV</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	19BSS27	Probability and Random Processes	3	1	0	4	5	
2.	19BMC08	Microprocessor and Microcontrollers in Medicine	3	0	0	3	3	
3.	19BMC05	Biomechanics & Rehabilitation Engineering	3	1	0	4	5	
4.	19BMC09	Linear Integrated Circuits	3	0	0	3	3	
5.	19BMC10	Biochemistry	3	0	0	3	3	
6.	19BMC27	Pathology and Microbiology	3	0	0	3	3	
<b>PRACTICALS</b>								
7.	19BMC23	Linear Integrated Circuits Laboratory	0	0	2	1	3	
8.	19BMC25	Pathology and Microbiology Laboratory	0	0	2	1	3	
9.	19BMC30	Microprocessor and Microcontrollers Laboratory	0	0	2	1	3	
<b>Total Credits</b>						<b>23</b>		


  
**Chairman**

**Board of Studies**

**Department of Biomedical Engineering**  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist. 637 408.


  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R – 2019</b>	
Department		BIOMEDICAL ENGINEERING					
Programme		BE					
<b>SEMESTER – V</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19BMC11	Hospital Management	3	0	0	3	3
2.	19BMC13	Medical Signal Processing	3	1	0	4	5
3.	19BMC06	Bio control system	3	0	0	3	3
4.	19BMC12	Biomedical Instrumentation	3	0	0	3	3
5.	19BMEXX	Professional Elective -I	3	0	0	3	3
6.	19BMEXX	Professional Elective -II	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19BMC24	Medical Signal Processing Laboratory	3	0	2	1	3
8.	19BMC26	Biomedical Instrumentation Laboratory	3	0	2	1	3
<b>Total Credits</b>						<b>21</b>	

  
**Chairman**  
 Board of Studies

Department of Biomedical Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist. 637 408.


  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

 <b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		<b>CURRICULUM</b>					
Department		BIOMEDICAL ENGINEERING					
Programme		BE					
<b>SEMESTER –VI</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19BMC14	Embedded System	3	0	0	3	3
2.	19BMC15	Therapeutic Equipments	3	0	0	3	3
3.	19BMC17	Medical Imaging Techniques	3	0	0	3	3
4.	19BMEXX	Professional Elective -III	3	0	0	3	3
5.	19BMEXX	Professional Elective – IV	3	0	0	3	3
6.	19XXXX	Open Elective – I	3	0	0	3	3
7.	19BMC19	Human Assist Device	3	0	0	3	3
<b>PRACTICALS</b>							
8.	19BMC28	Embedded System Laboratory	0	0	2	1	3
9.	19BMS04	Design Project	0	0	2	1	3
<b>Total Credits</b>						<b>23</b>	

**Chairman**  
**Board of Studies**

Department of Biomedical Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist


PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist  
TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R – 2019</b>	
Department		BIOMEDICAL ENGINEERING					
Programme		BE					
<b>SEMESTER – VII</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19BMC18	Electrical Safety & Quality Assurance	3	0	0	3	3
2.	19BMC29	Computer Networks	3	0	0	3	3
3.	19BMEXX	Professional Elective - V	3	0	0	3	3
4.	19XXXX	Open Elective -II	3	0	0	3	3
5.	19BMEXX	Professional Elective - VI	3	0	0	3	3
<b>PRACTICALS</b>							
6.	19BMS01	Project Work Phase -I	0	0	6	3	6
7.	19BMS05	Hospital Training	0	0	4	1	4
<b>Total Credits</b>						<b>19</b>	

**Chairman**  
**Board of Studies**

**Department of Biomedical Engineering**  
**Muthayammal Engineering College (Autonomous)**  
**Rasipuram, Namakkal Dist 637 408.**

**PRINCIPAL,**  
**MI. THAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU**

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R – 2019</b>	
Department		BIOMEDICAL ENGINEERING					
Programme		BE					
<b>SEMESTER – VIII</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P	C	
<b>THEORY</b>							
1.	19BMXXX	Open Elective –III / NPTEL Course	0	0	0	0	0
<b>PRACTICALS</b>							
2.	19BMS02	Project Work Phase -II	0	0	12	6	12
<b>Total Credits</b>						<b>6</b>	

**Chairman**  
**Board of Studies**

Department of Biomedical Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist 637 408.

PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU



## MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

B.E. MEDICAL ELECTRONICS

GROUPING OF COURSES

FOUNDATION COURSE [FC]

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19HSS01	Business English	HS	3	2	0	0	2
2.	19HSS02	English Communicative Skill Laboratory	HS	2	0	0	2	1
3.	19HSS03	Life Skills and Workplace Psychology	HS	3	2	0	0	2
4.	19HSS04	Technical English For Engineers	HS	3	2	0	0	2
5.	19HSS05	Communicative English for Engineers	HS	3	2	0	0	2
6.	19HSS08	Professional Ethics and Human Values	HS	3	3	0	0	3
7.	19BSS01	Engineering Physics	BS	4	3	0	0	3
8.	19BSS02	Physics and Chemistry Laboratory	BS	2	0	0	2	1
9.	19BSS03	Bio and Nanomaterials Sciences	BS	4	3	0	0	3
10.	19BSS11	Engineering Chemistry	BS	4	3	0	0	3
11.	19BSS12	Environmental Science and Engineering	BS	4	3	0	0	3
12.	19BSS21	Algebra and Calculus	BS	5	3	1	0	4
13.	19BSS22	Differential Equations and Vector Analysis	BS	5	3	1	0	4
14.	19BSS23	Transform and Partial Differential Equations	BS	5	3	1	0	4
15.	19BSS27	Probability and Random Processes	BS	5	3	1	0	4
16.	19GES02	Programming for Problem Solving Technique	GES	3	3	0	0	3
17.	19GES03	Programming in C Laboratory	GES	3	0	0	3	1
18.	19GES06	Mechanical and Building Sciences	GES	3	3	0	0	3
19.	19GES09	Programming in Python Laboratory	GES	3	0	0	3	1
20.	19GES10	Soft Skills Laboratory	GES	3	0	0	3	1
21.	19GES11	Electronic Devices	GES	3	3	0	0	3
22.	19GES12	Electronic Simulation	GES	3	0	0	3	1

**Chairman**  
Board of Studies  
Department of Medical Electronics  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

23.	19GES19	Concepts in Product Design	GES	3	3	0	0	3
24.	19GES20	Renewable Energy Sources	GES	3	3	0	0	3

**PROFESSIONAL CORE [PC]**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19MDC01	Human Anatomy & Physiology	PC	3	3	0	0	3
2.	19MDC02	Biomedical sensors & Measurement Devices	PC	3	3	0	0	3
3.	19MDC03	Bio Signals & Systems	PC	4	4	0	0	4
4.	19MDC04	Logic Circuits for Clinical Engineers	PC	3	3	0	0	3
5.	19MDC05	Control system for Physiology Systems	PC	3	3	0	0	3
6.	19MDC06	Biomaterials and Artificial Organs	PC	3	3	0	0	3
7.	19MDC07	Pathology and Microbiology	PC	3	3	0	0	3
8.	19MDC08	Microprocessor and Microcontroller in medicine	PC	3	3	0	0	3
9.	19MDC09	Biomechanics and Rehabilitation Engineering	PC	4	4	0	0	4
10.	19MDC10	Biomedical Instrumentation	PC	3	3	0	0	3
11.	19MDC11	Hospital Management	PC	3	3	0	0	3
12.	19MDC12	Medical Expert Systems	PC	3	3	0	0	3
13.	19MDC13	Therapeutic Equipments	PC	3	3	0	0	3
14.	19MDC14	Orthotic & Prosthetic Equipments	PC	3	3	0	0	3
15.	19MDC15	Electrical Safety and Quality Assurance	PC	3	3	0	0	3
16.	19MDC16	Principles of Radiological Equipments	PC	3	3	0	0	3
17.	19MDC17	Medical Signal Processing	PC	3	3	0	0	3
18.	19MDC18	Digital Electronics	PC	3	3	0	0	3
19.	19MDC19	Logic Circuits for Clinical Laboratory	PC	2	0	0	2	1
20.	19MDC20	Medical Signal Processing Laboratory	PC	2	0	0	2	1
21.	19MDC21	Medical Expert systems Laboratory	PC	2	0	0	2	1
22.	19MDC22	Pathology and Microbiology Laboratory	PC	2	0	0	2	1
23.	19MDC23	Biomedical sensors & Measurement Laboratory	PC	2	0	0	2	1
24.	19MDC24	Medical Image Processing Laboratory	PC	2	0	0	2	1
25.	19MDC25	Analog Electronics	PC	4	4	0	0	4
26.	19MDC26	Analog Electronics Laboratory	PC	2	0	0	2	1
27.	19MDC27	Microprocessor and Microcontroller Laboratory	PC	2	0	0	2	1



**Chairman**  
Board of Studies  
Department of Medical Electronics  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

**PRINCIPAL,**  
MI THAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU

**PROFESSIONAL ELECTIVES [PE]**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19MDE01	Advanced Bio Analytical and Therapeutic Techniques	PE	3	3	0	0	3
2.	19MDE02	Tissue Engineering	PE	3	3	0	0	3
3.	19MDE03	Medical Science	PE	3	3	0	0	3
4.	19MDE04	Biomaterials and Characterization	PE	3	3	0	0	3
5.	19MDE05	Physiological Modeling	PE	3	3	0	0	3
6.	19MDE06	Brain Computer Interface and Applications	PE	3	3	0	0	3
7.	19MDE07	Medical Optics	PE	3	3	0	0	3
8.	19MDE08	Soft Computing	PE	3	3	0	0	3
9.	19MDE09	Virtual Reality	PE	3	3	0	0	3
10.	19MDE10	Wearable Systems	PE	3	3	0	0	3
11.	19MDE11	Internet of Things	PE	3	3	0	0	3
12.	19MDE12	Hospital Waste Management	PE	3	3	0	0	3
13.	19MDE13	Tele health Technology	PE	3	3	0	0	3
14.	19MDE14	Fiber optics and Lasers in Medicine	PE	3	3	0	0	3

**OPEN ELECTIVES [OE]**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.		Analytical Instrumentation	OE	3	3	0	0	3
2.		Power Plant Engineering	OE	3	3	0	0	3
3.		Principles of Food Preservation	OE	3	3	0	0	3
4.		Fundamentals of Nutrition	OE	3	3	0	0	3
5.		Air Pollution and Management	OE	3	3	0	0	3
6.		Industrial Waste Management	OE	3	3	0	0	3
7.		Regulatory requirements in Pharmaceutical Industries	OE	3	3	0	0	3
8.		Municipal Solid Waste Management	OE	3	3	0	0	3
9.		Internet and JAVA Programming	OE	3	3	0	0	3
10.		Neural Engineering	OE	3	3	0	0	3
11.		Medical Physics	OE	3	3	0	0	3

  
 Chairman  
 Board of Studies

Department of Medical Electronics  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408,  
 TAMILNADU

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 SIPPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

**EMPLOYABILITY ENHANCEMENT COURSES (EEC)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19MDP1	Project Work Phase - I	EEC	10	0	0	10	3
2.	19MDP2	Project Work Phase -II	EEC	18	0	0	18	9
3	19MMP1	Mini Project/Electronic Design workshop	EEC	4	3	0	4	2
4	19MHT1	Hospital Training	EEC	3	0	0	3	2

**Mandatory Course (MC)**


S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	19MDH01	Organizational Behavior	MC	3	3	0	0	0
2.	19MDH02	India Constitution (Common to All Branches)	MC	3	3	0	0	0
3.	19MDH03	Essence of Indian Traditional Knowledge	MC	3	3	0	0	0


  
Chairman


Board of Studies  
Department of Medical Electronics  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

  
PRINCIPAL,


MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU


		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R – 2019	
Department		Medical Electronics					
Programme		B.E.					
<b>SEMESTER – I</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19HSS01	Business English	2	0	0	2	2
2.	19BSS21	Algebra and Calculus	3	1	0	4	4
3.	19BSS01	Engineering Physics	3	0	0	3	3
4.	19BSS11	Engineering Chemistry	3	0	0	3	3
5.	19GES02	Programming for Problem Solving Technique	3	0	0	3	3
6.	19GES06	Mechanical and Building Sciences	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19BSS02	Physics and Chemistry Laboratory	0	0	2	1	2
8.	19GES03	Programming in C Laboratory	0	0	3	1	3
9.	19HSS02	Communicative English Laboratory	0	0	2	1	2
<b>Total Credits</b>						<b>21</b>	


		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R – 2019	
Department		Medical Electronics					
Programme		B.E.					
<b>SEMESTER – II</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19HSS03	Life Skill Psychology and Ethics	2	0	0	2	2
2.	19BSS22	Differential Equations and Vector Analysis	3	1	0	4	4
3.	19BSS03	Bio and Nano-materials Sciences	3	0	0	3	3
4.	19BSS12	Environmental Science and Engineering	3	0	0	3	3
5.	19GES19	Concepts in Product Design	3	0	0	3	3
6.	19GES11	Electronic Devices	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19GES12	Electronic Simulation Laboratory	0	0	3	1	3
8.	19GES09	Programming in Python Laboratory	0	0	3	1	3
<b>Total Credits</b>						<b>20</b>	

  
**Chairman**  
Board of Studies

**Department of Medical Electronics**  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.


  
**PRINCIPAL,**  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU


		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> <b>UG</b> <b>R – 2019</b>	
Department		Medical Electronics						
Programme		B.E.						
<b>SEMESTER – III</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P			C
<b>THEORY</b>								
1.	19MDC01	Human Anatomy & Physiology	3	0	0	3	3	
2.	19MDC03	Bio Signals & Systems	3	1	0	4	4	
3.	19MDC04	Logic Circuits for Clinical Engineers	3	0	0	3	3	
4.	19BSS23	Transforms & Partial Differential Equations	3	1	0	4	4	
5.	19MDC25	Analog Electronics	3	1	0	4	4	
6.	19GES20	Renewable Energy Sources	3	0	0	3	3	
	19HSS08	Professional Ethics and Human Values	3	0	0	3	3	
<b>PRACTICALS</b>								
	19MDC19	Logic Circuits for Clinical Laboratory	0	0	2	1	2	
	19MDC26	Analog Electronics Laboratory	0	0	2	1	2	
<b>Total Credits</b>						<b>26</b>		

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> <b>UG</b> <b>R – 2019</b>	
Department		Medical Electronics						
Programme		B.E.						
<b>SEMESTER – IV</b>								
Sl. No.	Course Code	Course Name	Hours/week			Credit	Contact Hours	
			L	T	P			C
<b>THEORY</b>								
1.	19BSS27	Probability and Random Process	3	1	0	4	4	
2.	19MDC07	Pathology and Microbiology	3	0	0	3	3	
3.	19MDC08	Microprocessor and Microcontroller in Medicine	3	0	0	3	3	
4.	19MDC09	Biomechanics and Rehabilitation Engineering	3	1	0	4	4	
5.	19MDC02	Biomedical sensors & Measurement Devices	3	0	0	3	3	
6.	19MDC18	Digital Electronics	3	0	0	3	3	
<b>PRACTICALS</b>								
7.	19MDC22	Pathology and Microbiology Laboratory	0	0	2	1	2	
8.	19MDC23	Biomedical sensors & Measurement	0	0	2	1	2	

Programme Code & Name: MDE & B.E.-Medical Electronics

		Laboratory					
9.	19MDC27	Microprocessor and Microcontroller Laboratory	0	0	2	1	2
<b>Total Credits</b>						<b>23</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R – 2019	
Department		Medical Electronics					
Programme		B.E.					
<b>SEMESTER – V</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19MDEXX	Program Elective – 1	3	0	0	3	3
2.	19MDC05	Control System for Physiological Systems	3	0	0	3	3
3.	19MDC11	Hospital Management	3	0	0	3	3
4.	19MDC12	Medical Expert Systems	3	0	0	3	3
5.	19MDC17	Medical Signal Processing	3	0	0	3	3
6.		Open Elective I	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19MDC21	Medical Expert Systems Laboratory	0	0	3	1	2
8.	19MDC20	Medical Signal Processing Laboratory	0	0	3	1	2
<b>Total Credits</b>						<b>20</b>	


		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R – 2019	
Department		Medical Electronics					
Programme		B.E.					
<b>SEMESTER – VI</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19MDC06	Biomaterials and Artificial Organs	3	0	0	3	3
2.	19MDC13	Therapeutic Equipments	3	0	0	3	3
3.	19MDC14	Orthotic & Prosthetic Equipments	3	0	0	3	3
4.	19MDC10	Biomedical Instrumentation	3	0	0	3	3
5.	19MDC16	Principles of Radiological Equipments	3	0	0	3	3
6.	19MDEXX	Program Elective - II	3	0	0	3	3
<b>PRACTICALS</b>							


  
**Chairman**  
Board of Studies  
Department of Medical Electronics  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist : 637 408.

  
**PRINCIPAL,**  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL DISTRICT  
TAMIL NADU


Programme Code & Name: MDE & B.E.-Medical Electronics


19MDC24	Medical Image Processing Laboratory	0	0	2	1	2
19MMP1	Mini Project/Electronic Design workshop	0	0	2	1	2
<b>Total Credits</b>					<b>20</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R – 2019</b>	
Department		Medical Electronics					
Programme		B.E.					
<b>SEMESTER – VII</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19MDC15	Electrical Safety and Quality Assurance	3	0	0	3	3
2.	19MDEXX	Program Elective - III	3	0	0	3	3
3.	19MDEXX	Program Elective - IV	3	0	0	3	3
4.		Open Elective II	3	0	0	3	3
5.		Open Elective III	3	0	0	3	3
<b>PRACTICALS</b>							
6.	19MDS1	Project Stage-I	0	0	6	3	6
7.	19MDS4	Hospital Training	0	0	4	2	4
8.	19GES10	Soft Skills Laboratory	0	0	2	1	2
<b>Total Credits</b>					<b>21</b>		

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>UG</b> <b>R – 2019</b>	
Department		Medical Electronics					
Programme		B.E.					
<b>SEMESTER – VIII</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>PRACTICAL</b>							
1.	19MDS2	Project Work Phase II	0	0	18	9	18
<b>Total Credits</b>					<b>9</b>		

**Total Credits to Be Earned For the Award of Degree: 160**

  
**Chairman**  
Board of Studies  
Department of Medical Electronics  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

**COURSE COMPONENT SUMMARY**

S. No.	Subject Area	Credits Per Semester								Credits Total	AICTE Credits
		I	II	III	IV	V	VI	VII	VIII		
1	FC	21	20	10	4			1		56	66
2	PC			16	19	14	16	3		68	55
3	PE					3	3	6		12	12
4	OE					3		6		9	12
5	EEC						1	5	9	15	15
<b>TOTAL</b>		<b>21</b>	<b>20</b>	<b>26</b>	<b>23</b>	<b>20</b>	<b>20</b>	<b>21</b>	<b>15</b>	<b>160</b>	<b>160</b>

**Total Credits: 160**



**Chairman**  
**Board of Studies**  
**Department of Medical Electronics**  
**Muthayammal Engineering College (Autonomous)**  
**Rasipuram, Namakkal Dist. - 637 408.**



**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU**



**MUTHAYAMMAL ENGINEERING COLLEGE - RASIPURAM  
(Autonomous)**

(Approved by AICTE, Affiliated to Anna University, Rasipuram-637408)

**DEPARTMENT OF BIOTECHNOLOGY  
GROUPING OF COURSES**

**Regulations 2019**

**1. Humanities and Social Sciences including Management Courses (HS)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1	19HSS01	Business English	HS	2	2	0	0	2
2	19HSS03	Psychology and Ethics	HS	2	2	0	0	2
3	19HSS02	English Communicative Skills Laboratory	HS	2	0	0	2	1
4	19HSS04	Technical English For Engineers	HS	2	2	0	0	2
5	19HSS05	Communicative English for Engineers	HS	2	2	0	0	2
6	19HSS06	Basics of Japanese Language	HS	2	2	0	0	2
7	19HSS07	Basics of French Language	HS	2	2	0	0	2
8	19HSS08	Professional Ethics and Human Values	HS	3	3	0	0	3

**2. Basic Science Courses (BS)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19BSS01	Engineering Physics	BS	3	3	0	0	3
2	19BSS02	Physics and Chemistry Laboratory	BS	2	0	0	2	1
3	19BSS03	Bio and Nanomaterials Sciences	BS	3	3	0	0	3
4	19BSS04	Material Sciences	BS	3	3	0	0	3
5	19BSS05	Physics for Mechanical Engineers	BS	3	3	0	0	3
6	19BSS11	Engineering Chemistry	BS	3	3	0	0	3
7	19BSS12	Environmental Science and Engineering	BS	3	3	0	0	3
8	19BSS13	Organic Chemistry	BS	3	3	0	0	3
9	19BSS14	Physical Chemistry	BS	3	3	0	0	3
10	19BSS15	Applied Chemistry	BS	3	3	0	0	3

**Chairman**  
Board of Studies

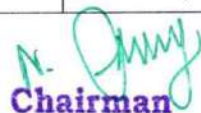
Department of Biotechnology  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

11	19BSS16	Organic Chemistry Laboratory	BS	2	0	0	2	1
12	19BSS17	Physical Chemistry Laboratory	BS	2	0	0	2	1
13	19BSS21	Algebra and Calculus	BS	4	3	2	0	4
14	19BSS22	Differential Equations and Vector Analysis	BS	4	3	2	0	4
15	19BSS23	Transform and Partial Differential Equations	BS	4	3	2	0	4
16	19BSS24	Discrete Mathematics	BS	4	3	2	0	4
17	19BSS25	Statistical and Queuing Model	BS	4	3	2	0	4
18	19BSS26	Numerical Methods	BS	4	3	2	0	4
19	19BSS27	Probability and Random Processes	BS	4	3	2	0	4
20	19BSS28	Statistic and Numerical Methods	BS	4	3	2	0	4

### 3. General Engineering Science Courses (GES)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19GES01	Programming for Problem Solving Using C	GES	3	3	0	0	3
2	19GES02	Programming for Problem Solving Technique	GES	3	3	0	0	3
3	19GES03	Programming in C Laboratory	GES	2	0	0	2	1
4	19GES04	Programming in C and Python Laboratory	GES	2	0	0	2	1
5	19GES05	Electrical and Electronic Sciences	GES	3	3	0	0	3
6	19GES06	Mechanical and Building Sciences	GES	3	3	0	0	3
7	19GES07	Computer Aided Drafting Laboratory	GES	2	0	0	2	1
8	19GES08	Python Programming	GES	3	3	0	0	3
9	19GES09	Programming in Python Laboratory	GES	2	0	0	2	1
10	19GES10	Soft Skills Laboratory	GES	2	0	0	2	1
11	19GES11	Electronic Devices	GES	3	3	0	0	3
12	19GES12	Electronic Simulation Laboratory	GES	2	0	0	2	1
13	19GES13	Electric Circuits	GES	3	2	2	0	3
14	19GES14	Electric Circuits Laboratory	GES	2	0	0	2	1
15	19GES15	Manufacturing Process	GES	3	3	0	0	3
16	19GES16	Manufacturing Process Laboratory	GES	2	0	0	2	1
17	19GES17	Mechanical and Building Sciences Laboratory	GES	2	0	0	2	1

  
Chairman

Board of Studies

Department of Biotechnology  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU.

18	19GES18	Construction Materials	GES	3	3	0	0	3
19	19GES19	Concepts in Product Design	GES	3	3	0	0	3
20	19GES20	Renewable Energy Sources	GES	3	3	0	0	3
21	19GES21	Electrical Drives and Control	GES	3	3	0	0	3
22	19GES22	Electrical Drives and Control Laboratory	GES	2	0	0	2	1
23	19GES23	Analog and digital communication	GES	3	3	0	0	3
24	19GES24	Digital Principles and System Design	GES	3	3	0	0	3
25	19GES25	Digital Principles and System Design Laboratory	GES	2	0	0	2	1
26	19GES26	Engineering Drawing	GES	5	1	0	4	3
27	19GES27	Engineering Geology	GES	3	3	0	0	3
28	19GES28	Engineering Mechanics	GES	5	3	2	0	4
29	19GES29	Wireless Communication	GES	4	3	2	0	4
30	19GES30	Electronics and Microprocessor	GES	3	3	0	0	3
31	19GES31	Electronics and Microprocessor Laboratory	GES	2	0	0	2	1
32	19GES32	Data Structures using Python	GES	3	3	0	0	3

#### 4. Professional Core Courses (PCC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1	19BTD01	Biochemistry	PCC	3	3	0	0	3
2	19BTD02	Microbiology	PCC	3	3	0	0	3
3	19BTD03	Cell Biology	PCC	3	3	0	0	3
4	19BTD04	Basic Industrial Biotechnology	PCC	3	3	0	0	3
5	19BTD05	Molecular Biology	PCC	3	3	0	0	3
6	19BTD06	Fundamentals of Bioprocess	PCC	3	3	0	0	3
7	19BTD07	Basics of Unit Operation	PCC	3	2	2	0	3
8	19BTD08	Instrumental Methods of Analysis	PCC	3	3	0	0	3
9	19BTD09	Bioprocess Engineering	PCC	3	3	0	0	3
10	19BTD10	Genetic Engineering	PCC	3	3	0	0	3
11	19BTD11	Mass Transfer Operations	PCC	3	2	2	0	3
12	19BTD12	Health and Pharmaceutical Biotechnology	PCC	3	3	0	0	3
13	19BTD13	Bioinformatics	PCC	3	3	0	0	3
14	19BTD14	Chemical Reaction Engineering	PCC	3	2	2	0	3

**Chairman**

Board of Studies

Department of Biotechnology  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

PRINCIPAL,

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU

15	19BTD15	Downstream Processing	PCC	3	3	0	0	3
16	19BTD16	Immunology	PCC	3	3	0	0	3
17	19BTD17	Disaster Management	PCC	2	2	0	0	2
18	19BTD18	Biochemistry Laboratory	PCC	3	0	0	3	1
19	19BTD19	Microbiology Laboratory	PCC	3	0	0	3	1
20	19BTD20	Instrumental Methods of Analysis Laboratory	PCC	3	0	0	3	1
21	19BTD21	Molecular biology Laboratory	PCC	3	0	0	3	1
22	19BTD22	Genetic Engineering Laboratory	PCC	3	0	0	3	1
23	19BTD23	Bioprocess Engineering Laboratory	PCC	3	0	0	3	1
24	19BTD24	Chemical Reaction Engineering Laboratory	PCC	3	0	0	3	1
25	19BTD25	Bioinformatics Laboratory	PCC	3	0	0	3	1
26	19BTD26	Downstream Processing Laboratory	PCC	3	0	0	3	1
27	19BTD27	Immunology Laboratory	PCC	3	0	0	3	1

### 5. Professional Elective Courses (PEC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1	19BTE01	Food technology	PEC	3	3	0	0	3
2	19BTE02	Animal Biotechnology	PEC	3	3	0	0	3
3	19BTE03	Chemistry of Medicines	PEC	3	3	0	0	3
4	19BTE04	Life Style Diseases	PEC	3	3	0	0	3
5	19BTE05	Intellectual Property Rights	PEC	3	3	0	0	3
6	19BTE06	Biofuel	PEC	3	3	0	0	3
7	19BTE07	Fundamentals of Nanoscience	PEC	3	3	0	0	3
8	19BTE08	Plant Biotechnology	PEC	3	3	0	0	3
9	19BTE09	Process Equipments and Plant Design	PEC	3	3	0	0	3
10	19BTE10	Neurobiology and Conginitive sciences	PEC	3	3	0	0	3
11	19BTE11	Tissue Engineering	PEC	3	3	0	0	3
12	19BTE12	Biosafety and Hazard Management	PEC	3	3	0	0	3
13	19BTE13	Stem cell Technology	PEC	3	3	0	0	3
14	19BTE14	Biophysics	PEC	3	3	0	0	3
15	19BTE15	Biological Spectroscopy	PEC	3	3	0	0	3
16	19BTE16	Bioentrepreneurship	PEC	3	3	0	0	3

**Chairman**

Board of Studies

Department of Biotechnology  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU.

17	19BTE17	Professional Ethics in Engineering	PEC	3	3	0	0	3
18	19BTE18	Marine Biotechnology	PEC	3	3	0	0	3
19	19BTE19	Metabolic Engineering	PEC	3	3	0	0	3
20	19BTE20	Human Rights	PEC	3	3	0	0	3
21	19BTE21	Protein Engineering	PEC	3	3	0	0	3
22	19BTE22	Bioethics and IPR	PEC	3	3	0	0	3

**6. EMPLOYABILITY ENHANCEMENT COURSES (EEC)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19BTF01	Project work – Phase-I	EEC	3	0	0	10	5
2	19BTF02	Project work – Phase-II	EEC	20	0	0	18	9

**7. OPEN ELECTIVE COURSES (OEC)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1		Industrial Robotics	OEC	3	3	0	0	3
2		Industrial Waste Management	OEC	3	3	0	0	3
3		Biomedical Engineering	OEC	3	3	0	0	3
4		Electronics and Microprocessor	OEC	3	3	0	0	3
5		Programming in Python	OEC	3	3	0	0	3
6		Database Management Systems	OEC	3	3	0	0	3
7		Internet of Things	OEC	3	3	0	0	3
8		Soft Computing Techniques	OEC	3	3	0	0	3
9		M-Commerce	OEC	3	3	0	0	3
10		Programming in Java	OEC	3	3	0	0	3

**8. MANDATORY COURSES (MC)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19BTM01	Organizational Behavior	MC	3	3	0	0	0
2	19BTM02	India Constitution	MC	3	3	0	0	0
3	19BTM03	Essence of Indian Traditional Knowledge	MC	3	3	0	0	0

**Chairman**

Board of Studies

Department of Biotechnology

Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU



**MUTHAYAMMAL ENGINEERING COLLEGE**  
(Approved by AICTE, Accredited by NAAC, NBA & Affiliated to Anna University),  
RASIPURAM – 637 408

**CURRICULUM  
UG R - 2019**

Department		Biotechnology						
Programme		B.Tech. – Biotechnology						
<b>SEMESTER – I</b>								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs
				L	T	P		
<b>Theory</b>								
1.	19HSS01	Business English	HS	2	0	0	2	3
2.	19BSS21	Algebra and Calculus	BS	3	2	0	4	5
3.	19BSS01	Engineering Physics	BS	3	0	0	3	4
4.	19BSS11	Engineering Chemistry	BS	3	0	0	3	4
5.	19GES02	Programming for Problem Solving Technique	GES	3	0	0	3	3
6.	19GES05	Electrical and Electronic Sciences	GES	3	0	0	3	3
<b>Practical</b>								
7.	19GES07	CAD Lab	GES	0	0	3	1	3
8.	19GES04	Programming in C and Python Laboratory	GES	0	0	3	1	3
9.	19HSS02	English Communicative skills Laboratory	HS	0	0	2	1	2
<b>Total Credits</b>							<b>21</b>	



**MUTHAYAMMAL ENGINEERING COLLEGE**  
(Approved by AICTE, Accredited by NAAC, NBA & Affiliated to Anna University),  
RASIPURAM – 637 408


**CURRICULUM  
UG R - 2019**


Department		Biotechnology						
Programme		B.Tech. – Biotechnology						
<b>SEMESTER – II</b>								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs
				L	T	P		
<b>Theory</b>								
1.	19HSS03	Life Skills and workplace Psychology	HS	2	0	0	2	3
2.	19BSS22	Differential Equations and Vector Analysis	BS	3	2	0	4	5
3.	19BSS03	Bio and Nanomaterials Sciences	BS	3	0	0	3	4
4.	19BSS12	Environmental Science and Engineering	BS	3	0	0	3	4
5.	19GES19	Concepts in Product Design	GES	3	0	0	3	3
6.	19GES06	Mechanical and Building Sciences	GES	3	0	0	3	3
<b>Practical</b>								
7.	19BSS02	Physics and Chemistry Laboratory	BS	0	0	2	1	2
8.	19GES17	Mechanical and Building Sciences Laboratory	GES	0	0	3	1	3
<b>Total Credits</b>							<b>20</b>	


*N. Arany*  
**Chairman**

Board of Studies  
Department of Biotechnology  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.


**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE, Accredited by NAAC, NBA & Affiliated to Anna University), RASIPURAM – 637 408						<b>CURRICULUM</b> <b>UG R - 2019</b>	
Department		Biotechnology							
Programme		B.Tech. – Biotechnology							
<b>SEMESTER – III</b>									
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs	
				L	T	P			
<b>Theory</b>									
1.	19BSS23	Transform and Partial Differential Equations	BS	3	2	0	4	5	
2.	19BTD01	Biochemistry	PCC	3	0	0	3	3	
3.	19BTD02	Microbiology	PCC	3	0	0	3	3	
4.	19BTD03	Cell Biology	PCC	3	0	0	3	3	
5.	19BTD04	Basic Industrial Biotechnology	PCC	3	0	0	3	3	
6.	19GES28	Engineering Mechanics	GES	3	2	0	3	5	
<b>Practical</b>									
7.	19BTD18	Biochemistry Laboratory	PCC	0	0	3	1	3	
8.	19BTD19	Microbiology Laboratory	PCC	0	0	3	1	3	
<b>Total Credits</b>							<b>21</b>		


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE, Accredited by NAAC, NBA & Affiliated to Anna University), RASIPURAM – 637 408						<b>CURRICULUM</b> <b>UG R - 2019</b>	
Department		Biotechnology							
Programme		B.Tech. – Biotechnology							
<b>SEMESTER – IV</b>									
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs	
				L	T	P			
<b>Theory</b>									
1.	19BSS26	Numerical Methods	BS	3	2	0	4	5	
2.	19BTD05	Molecular Biology	PCC	3	0	0	3	3	
3.	19BTD06	Fundamentals of Bioprocess	PCC	3	0	0	3	3	
4.	19BTD07	Basics of Unit Operation	PCC	2	2	0	3	3	
5.	19BTD08	Instrumental Methods of Analysis	PCC	3	2	0	3	3	
6.	19GES20	Renewable Energy Sources	GES	3	0	0	3	3	
<b>Practical</b>									
7.	19BTD20	Instrumental Methods of Analysis Laboratory	PCC	0	0	3	1	3	
8.	19BTD21	Molecular biology Laboratory	PCC	0	0	3	1	3	
<b>Mandatory course</b>									
9.	19BTM01	Organizational Behavior	MC	3	0	0	0	3	
<b>Total Credits</b>							<b>21</b>		

  
**Chairman**  
Board of Studies  
Department of Biotechnology  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.


  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE, Accredited by NAAC, NBA & Affiliated to Anna University), RASIPURAM – 637 408						<b>CURRICULUM</b> <b>UG R – 2019</b>	
Department		Biotechnology							
Programme		B.Tech. – Biotechnology							
SEMESTER – V									
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs	
				L	T	P			
<b>Theory</b>									
1	19HSS08	Professional Ethics and Human Values	HS	3	0	0	3	3	
2	19BTD09	Bioprocess Engineering	PCC	3	0	0	3	3	
3	19BTD10	Genetic Engineering	PCC	3	0	0	3	3	
4	19BTD11	Mass Transfer Operations	PCC	2	2	0	3	3	
5		Professional Electives - I	PEC	3	0	0	3	3	
6		Professional Electives - II	PEC	3	0	0	3	3	
7		Open Electives - I	OEC	3	0	0	3	3	
<b>Practical</b>									
8	19BTD22	Genetic Engineering Laboratory	PCC	0	0	3	1	3	
9	19BTD23	Bioprocess Engineering Laboratory	PCC	0	0	3	1	3	
<b>Mandatory course</b>									
10	19BTM02	India Constitution	MC	3	0	0	0	3	
<b>Total Credits</b>							<b>23</b>		

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE, Accredited by NAAC, NBA & Affiliated to Anna University), RASIPURAM – 637 408						<b>CURRICULUM</b> <b>UG R - 2019</b>	
Department		Biotechnology							
Programme		B.Tech. – Biotechnology							
SEMESTER – VI									
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs	
				L	T	P			
<b>Theory</b>									
1.	19BTD12	Health and Pharmaceutical Biotechnology	PCC	3	0	0	3	3	
2.	19BTD13	Bioinformatics	PCC	3	0	0	3	3	
3.	19BTD14	Chemical Reaction Engineering	PCC	2	2	0	3	3	
4.		Professional Electives - III	PEC	3	0	0	3	3	
5.		Professional Electives – IV	PEC	3	0	0	3	3	
6.		Open Electives-II	OEC	3	0	0	3	3	
<b>Practical</b>									
7	19BTD24	Chemical Reaction Engineering Laboratory	PCC	0	0	3	1	3	
8	19BTD25	Bioinformatics Laboratory	PCC	0	0	3	1	3	
<b>Mandatory course</b>									
9	19BTM03	Essence of Indian Traditional Knowledge	MC	3	0	0	0	3	
<b>Total Credits</b>							<b>20</b>		

  
**Chairman**  
 Board of Studies  
 Department of Biotechnology  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408.


  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE, Accredited by NAAC, NBA & Affiliated to Anna University), RASIPURAM – 637 408						<b>CURRICULUM UG R - 2019</b>	
Department		Biotechnology							
Programme		B.Tech. – Biotechnology							
<b>SEMESTER – VII</b>									
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs	
				L	T	P			
<b>Theory</b>									
1.	19BTD15	Downstream Processing	PCC	3	0	0	3	3	
2.	19BTD16	Immunology	PCC	3	0	0	3	3	
3.	19BTD17	Disaster Management	PCC	3	0	0	3	3	
4.		Professional Electives - V	PEC	3	0	0	3	3	
5		Professional Electives - VI	PEC	3	0	0	3	3	
6		Open Electives-III	OEC	3	0	0	3	3	
<b>Practical</b>									
7	19BTF01	Project Phase-I	EEC	0	0	10	5	10	
8	19BTD26	Downstream Processing Laboratory	PCC	0	0	3	1	3	
9	19BTD27	Immunology Laboratory	PCC	0	0	3	1	3	
<b>Total Credits</b>							<b>25</b>		

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE, Accredited by NAAC, NBA & Affiliated to Anna University), RASIPURAM – 637 408						<b>CURRICULUM UG R - 2019</b>	
Department		Biotechnology							
Programme		B.Tech. – Biotechnology							
<b>SEMESTER – VIII</b>									
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs	
				L	T	P			
1.	19BTF02	Project work Phase - II	EEC	0	0	18	9	18	
<b>Total Credits</b>							<b>9</b>		

**Total Credits: 160**

Semester	I	II	III	IV	V	VI	VII	VIII	Total	%
HSS	3	2			3				8	5
BSS	10	11	4	4					29	18
GES	8	7	3	3					22	13
PC			14	14	11	13	9		61	38
PE					6	6	6		18	11
EEC							5	9	14	9
OE					3	3	3		9	6
<b>Total</b>	<b>21</b>	<b>20</b>	<b>21</b>	<b>21</b>	<b>23</b>	<b>22</b>	<b>23</b>	<b>9</b>	<b>160</b>	

  
**Chairman**  
Board of Studies  
Department of Biotechnology  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU



# MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

## B.Tech. – Chemical Engineering

### GROUPING OF COURSES

#### Humanities and Social Sciences [HS]

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1	19HSS01	Business English	HS	2	2	0	0	2
2	19HSS03	Psychology and Ethics	HS	2	2	0	0	2
3	19HSS02	English Communicative Skills Laboratory	HS	2	0	0	2	1
4	19HSS04	Technical English For Engineers	HS	2	2	0	0	2
5	19HSS05	Communicative English for Engineers	HS	2	2	0	0	2
6	19HSS06	Basics of Japanese Language	HS	2	2	0	0	2
7	19HSS07	Basics of French Language	HS	2	2	0	0	2
8	19HSS08	Professional Ethics and Human Values	HS	3	3	0	0	3

#### Basic Science Courses [BS]

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19BSS01	Engineering Physics	BS	3	3	0	0	3
2	19BSS02	Physics and Chemistry Laboratory	BS	2	0	0	2	1
3	19BSS03	Bio and Nanomaterials Sciences	BS	3	3	0	0	3
4	19BSS04	Material Sciences	BS	3	3	0	0	3
5	19BSS05	Physics for Mechanical Engineers	BS	3	3	0	0	3
6	19BSS11	Engineering Chemistry	BS	3	3	0	0	3
7	19BSS12	Environmental Science and Engineering	BS	3	3	0	0	3
8	19BSS13	Organic Chemistry	BS	3	3	0	0	3
9	19BSS14	Physical Chemistry	BS	3	3	0	0	3
10	19BSS15	Applied Chemistry	BS	3	3	0	0	3
11	19BSS16	Organic Chemistry Laboratory	BS	2	0	0	2	1
12	19BSS17	Physical Chemistry Laboratory	BS	2	0	0	2	1
13	19BSS21	Algebra and Calculus	BS	4	3	2	0	4

14	19BSS22	Differential Equations and Vector Analysis	BS	4	3	2	0	4
15	19BSS23	Transform and Partial Differential Equations	BS	4	3	2	0	4
16	19BSS24	Discrete Mathematics	BS	4	3	2	0	4
17	19BSS25	Statistical and Queuing Model	BS	4	3	2	0	4
18	19BSS26	Numerical Methods	BS	4	3	2	0	4
19	19BSS27	Probability and Random Processes	BS	4	3	2	0	4
20	19BSS28	Statistic and Numerical Methods	BS	4	3	2	0	4

**General Engineering Science Courses [GES]**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19GES01	Programming for Problem Solving Using C	GES	3	3	0	0	3
2	19GES02	Programming for Problem Solving Technique	GES	3	3	0	0	3
3	19GES03	Programming in C Laboratory	GES	2	0	0	2	1
4	19GES04	Programming in C and Python Laboratory	GES	2	0	0	2	1
5	19GES05	Electrical and Electronic Sciences	GES	3	3	0	0	3
6	19GES06	Mechanical and Building Sciences	GES	3	3	0	0	3
7	19GES07	Computer Aided Drafting Laboratory	GES	2	0	0	2	1
8	19GES08	Python Programming	GES	3	3	0	0	3
9	19GES09	Programming in Python Laboratory	GES	2	0	0	2	1
10	19GES10	Soft Skills Laboratory	GES	2	0	0	2	1
11	19GES11	Electronic Devices	GES	3	3	0	0	3
12	19GES12	Electronic Simulation Laboratory	GES	2	0	0	2	1
13	19GES13	Electric Circuits	GES	4	2	2	0	3
14	19GES14	Electric Circuits Laboratory	GES	2	0	0	2	1
15	19GES15	Manufacturing Process	GES	3	3	0	0	3
16	19GES16	Manufacturing Process Laboratory	GES	2	0	0	2	1
17	19GES17	Mechanical and Building Sciences Laboratory	GES	2	0	0	2	1
18	19GES18	Construction Materials	GES	3	3	0	0	3
19	19GES19	Concepts in Product Design	GES	3	3	0	0	3
20	19GES20	Renewable Energy Sources	GES	3	3	0	0	3
21	19GES21	Electrical Drives and Control	GES	3	3	0	0	3
22	19GES22	Electrical Drives and Control Laboratory	GES	2	0	0	2	1
23	19GES23	Analog and digital communication	GES	3	3	0	0	3
24	19GES24	Digital Principles and System Design	GES	3	3	0	0	3

*N. Gnanapavan*  
**Chairman**  
 Board of Studies  
 Department of Chemical Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist 637 408

**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.

25	19GES25	Digital Principles and System Design Laboratory	GES	2	0	0	2	1
26	19GES26	Engineering Drawing	GES	5	1	0	4	3
27	19GES27	Engineering Geology	GES	3	3	0	0	3
28	19GES28	Engineering Mechanics	GES	4	3	2	0	4
29	19GES29	Wireless Communication	GES	4	3	2	0	4
30	19GES30	Electronics and Microprocessor	GES	3	3	0	0	3
31	19GES31	Electronics and Microprocessor Laboratory	GES	2	0	0	2	1
32	19GES32	Data Structures using Python	GES	3	3	0	0	3

**Professional Core Courses [PCC]**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1	19CHD01	Chemical Process Calculations	PCC	4	2	2	0	3
2	19CHD02	Fluid Mechanics	PCC	3	3	0	0	3
3	19CHD03	Chemical Process Industries	PCC	2	2	0	0	2
4	19CHD04	Instrumental Methods of Analysis	PCC	3	3	0	0	3
5	19CHD05	Mechanics of solids	PCC	2	2	0	0	2
6	19CHD06	Chemical Engineering Thermodynamics I	PCC	3	3	0	0	3
7	19CHD07	Heat transfer	PCC	4	2	2	0	3
8	19CHD08	Mass Transfer – I	PCC	3	3	0	0	3
9	19CHD09	Mechanical Operations	PCC	2	2	0	0	2
10	19CHD10	Chemical Engineering Thermodynamics II	PCC	3	3	0	0	3
11	19CHD11	Mass Transfer – II	PCC	4	2	2	0	3
12	19CHD12	Chemical Reaction Engineering I	PCC	4	2	2	0	3
13	19CHD13	Transport Phenomena	PCC	3	3	0	0	3
14	19CHD14	Process Modeling and Simulation	PCC	3	3	0	0	3
15	19CHD15	Process Dynamics and Control	PCC	3	3	0	0	3
16	19CHD16	Chemical Reaction Engineering II	PCC	4	2	2	0	3
17	19CHD17	Fluid Mechanics Laboratory	PCC	3	0	0	3	1
18	19CHD18	Instrumental Methods of Analysis Laboratory	PCC	3	0	0	3	1
19	19CHD19	Heat Transfer Laboratory	PCC	3	0	0	3	1
20	19CHD20	Mechanical Operations Laboratory	PCC	3	0	0	3	1
21	19CHD21	Mass Transfer Laboratory	PCC	3	0	0	3	1
22	19CHD22	Process Equipment Design Laboratory	PCC	3	0	0	3	1
23	19CHD23	Process control Laboratory	PCC	3	0	0	3	1

**Chairman**

Board of Studies

Department of Chemical Engineering  
Muthayamma Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

**Professional Elective Courses [PEC]**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1	19CHE01	Enzyme Engineering	PEC	3	3	0	0	3
2	19CHE02	Petroleum Refining and Petrochemicals	PEC	3	3	0	0	3
3	19CHE03	Food Technology	PEC	3	3	0	0	3
4	19CHE04	Polymer Technology	PEC	3	3	0	0	3
5	19CHE05	Disaster Management	PEC	3	3	0	0	3
6	19CHE06	Air Pollution and Control	PEC	3	3	0	0	3
7	19CHE07	Waste Water Treatment	PEC	3	3	0	0	3
8	19CHE08	Electrochemical Engineering	PEC	3	3	0	0	3
9	19CHE09	Modern Separation Techniques	PEC	3	3	0	0	3
10	19CHE10	Optimization of Chemical Processes	PEC	3	3	0	0	3
11	19CHE11	Environmental Engineering	PEC	3	3	0	0	3
12	19CHE12	Process Plant Utilities	PEC	3	3	0	0	3
13	19CHE13	Fermentation Engineering	PEC	3	3	0	0	3
14	19CHE14	Pulp and Paper Technology	PEC	3	3	0	0	3
15	19CHE15	Energy Technology	PEC	3	3	0	0	3
16	19CHE16	Drugs and Pharmaceutical Technology	PEC	3	3	0	0	3
17	19CHE17	Chemical Process Plant Safety	PEC	3	3	0	0	3

**EMPLOYABILITY ENHANCEMENT COURSES [EEC]**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1	19CHF01	Project work – Phase-I	EEC	3	0	0	10	5
2	19CHF02	Project work – Phase-II	EEC	20	0	0	18	9

**OPEN ELECTIVE COURSES [OEC]**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1		Industrial Robotics	OEC	3	3	0	0	3
2		Industrial Waste Management	OEC	3	3	0	0	3
3		Biomedical Engineering	OEC	3	3	0	0	3
4		Electronics and Microprocessor	OEC	3	3	0	0	3
5		Programming in Python	OEC	3	3	0	0	3
6		Database Management Systems	OEC	3	3	0	0	3
7		Internet of Things	OEC	3	3	0	0	3

*(Signature)*  
Chairman

Board of Studies  
Department of Chemical Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

8		Soft Computing Techniques	OEC	3	3	0	0	3
9		M-Commerce	OEC	3	3	0	0	3
10		Programming in Java	OEC	3	3	0	0	3

**MANDATORY COURSES [MC]**


S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19CHM01	Organizational Behaviour	MC	3	3	0	0	0
2	19CHM02	India Constitution	MC	3	3	0	0	0
3	19CHM03	Essence of Indian Traditional Knowledge	MC	3	3	0	0	0

*N. G. Jeyaraj*  
**Chairman**  
 Board of Studies  
 Department of Chemical Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist 637 408

*[Signature]*  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU.**

Sl. No.		Course Code	Course Name	Category	Hours/ Week			Credit	Contact Hrs
				L T P			C		
<b>Theory</b>									
1.	19HSS01	Business English	HS	2	0	0	2	2	
2.	19BSS21	Algebra and Calculus	BS	3	2	0	4	5	
3.	19BSS01	Engineering Physics	BS	3	0	0	3	3	
4.	19BSS11	Engineering Chemistry	BS	3	0	0	3	3	
5.	19GES02	Programming for Problem Solving Technique	GES	3	0	0	3	3	
6.	19GES05	Electrical and Electronic Sciences	GES	3	0	0	3	3	
<b>Practical</b>									
7.	19GES07	CAD Lab	GES	0	0	3	1	3	
8.	19GES04	Programming in C and Python Laboratory	GES	0	0	3	1	3	
9.	19HSS02	English Communicative skills Laboratory	HS	0	0	2	1	2	
<b>Total Credits</b>							<b>21</b>		

Sl. No.		Course Code	Course Name	Category	Hours/ Week			Credit	Contact Hrs
				L T P			C		
<b>Theory</b>									
1.	19HSS03	Life Skills and workplace Psychology	HS	2	0	0	2	2	
2.	19BSS22	Differential Equations and Vector Analysis	BS	3	2	0	4	5	
3.	19BSS03	Bio and Nanomaterials Sciences	BS	3	0	0	3	3	
4.	19BSS12	Environmental Science and Engineering	BSS	3	0	0	3	3	
5.	19GES19	Concepts in Product Design	GES	3	0	0	3	3	
6.	19GES06	Mechanical and Building Sciences	GES	3	0	0	3	3	
<b>Practical</b>									
7.	19BSS02	Physics and Chemistry Laboratory	BS	0	0	2	1	2	
8.	19GES17	Mechanical and Building Sciences Laboratory	GES	0	0	3	1	3	
<b>Total Credits</b>							<b>20</b>		

  
**Chairman**  
 Board of Studies  
 Department of Chemical Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist 637 408

PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.

Sl. No.		Course Code	Course Name	Category	Hours/ Week			Credit	Contact Hrs
					L	T	P	C	
<b>SEMESTER – III</b>									
<b>Theory</b>									
1.	19BSS23	Transform and Partial Differential Equations		BS	3	2	0	4	5
2.	19BSS13	Organic Chemistry		BS	3	0	0	3	3
3.	19GES21	Electrical Drives and Controls		GES	3	0	0	3	3
4.	19CHD01	Chemical Process Calculations		PCC	2	2	0	3	4
5.	19CHD02	Fluid Mechanics		PCC	3	0	0	3	3
6.	19CHD03	Chemical Process Industries		PCC	2	0	0	2	4
<b>Practical</b>									
7	19BSS16	Organic Chemistry Laboratory		BS	0	0	3	1	3
8	19GES22	Electrical Drives and Controls Laboratory		GES	0	0	3	1	3
9	19CHD17	Fluid Mechanics Laboratory		PCC	0	0	3	1	3
<b>Total Credits</b>								<b>21</b>	

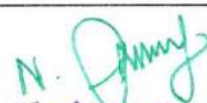
Sl. No.		Course Code	Course Name	Category	Hours/ Week			Credit	Contact Hrs
					L	T	P	C	
<b>SEMESTER – IV</b>									
<b>Theory</b>									
1.	19BSS26	Numerical Methods		BS	3	2	0	4	5
2.	19BSS14	Physical Chemistry		BS	3	0	0	3	3
3.	19CHD04	Instrumental Methods of Analysis		PCC	3	0	0	3	3
4.	19CHD05	Mechanics of solids		PCC	2	0	0	2	2
5.	19CHD06	Chemical Engineering Thermodynamics - I		PCC	3	0	0	3	3
6.	19GES20	Renewable Energy Sources		GES	3	0	0	3	3
<b>Practical</b>									
7	19BSS17	Physical Chemistry Laboratory		BS	0	0	3	1	3
8	19CHD18	Instrumental Methods of Analysis Laboratory		PCC	0	0	3	1	3
<b>Mandatory course</b>									
9	19CHM01	Organizational Behavior		MC	3	0	0	0	3
<b>Total Credits</b>								<b>20</b>	

*N. Jany*  
 Chairman  
 Board of Studies  
 Department of Chemical Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist 637 408


PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist  
 TAMILNADU


Sl. No.		Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs
					L	T	P		
<b>Theory</b>									
1.	19CHD07	Heat Transfer	PCC	2	2	0	3	4	
2.	19CHD08	Mass Transfer - I	PCC	3	0	0	3	3	
3.	19CHD09	Mechanical Operations	PCC	2	0	0	2	2	
4	19CHD10	Chemical Engineering Thermodynamics - II	PCC	3	0	0	3	3	
5		Professional Elective - I	PEC	3	0	0	3	3	
6		Professional Elective - II	PEC	3	0	0	3	3	
7		Open Elective - I	OEC	3	0	0	3	3	
<b>Practical</b>									
8	19CHD19	Heat Transfer Laboratory	PCC	0	0	3	1	3	
9	19CHD20	Mechanical Operations Laboratory	PCC	0	0	3	1	3	
<b>Mandatory course</b>									
10	19CHM02	India Constitution	MC	3	0	0	0	3	
<b>Total Credits</b>								<b>22</b>	

Sl. No.		Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs
					L	T	P		
<b>Theory</b>									
1.	19CHD11	Mass Transfer - II	PCC	2	2	0	3	4	
2.	19CHD12	Chemical Reaction Engineering - I	PCC	2	2	0	3	4	
3.	19CHD13	Transport Phenomena	PCC	3	0	0	3	3	
4.		Professional Elective - III	PEC	3	0	0	3	3	
5.		Professional Elective - IV	PEC	3	0	0	3	3	
6.		Open Elective - II	OEC	3	0	0	3	3	
<b>Practical</b>									
7	19CHD21	Mass Transfer Laboratory	PCC	0	0	3	1	3	
8	19CHD22	Process Equipment Design Laboratory	PCC	0	0	3	1	3	
<b>Mandatory course</b>									
9	19CHM03	Essence of Indian Traditional Knowledge	MC	3	0	0	0	3	
<b>Total Credits</b>								<b>20</b>	

  
**Chairman**  
 Board of Studies  
 Department of Chemical Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist 637 408


  
**PRINCIPAL,**  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

 <b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		CURRICULUM UG R - 2019						
Department		Chemical Engineering						
Programme		B.Tech. - Chemical Engineering						
SEMESTER – VII								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs
				L	T	P		
<b>Theory</b>								
1	19CHD14	Process Modeling and Simulation	PCC	3	0	0	3	3
2	19CHD15	Process Dynamics and Control	PCC	3	0	0	3	3
3	19CHD16	Chemical reaction Engineering - II	PCC	2	2	0	3	4
4		Professional Elective – V	PEC	3	0	0	3	3
5		Professional Elective - VI	PEC	3	0	0	3	3
6		Open Elective - III	OEC	3	0	0	3	3
<b>Practical</b>								
7	19CHD23	Process Control Laboratory	PCC	0	0	3	1	3
8	19CHF01	Project Phase I	EEC	0	0	10	7	6
<b>Total Credits</b>							<b>26</b>	

 <b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		CURRICULUM UG R - 2019						
Department		Chemical Engineering						
Programme		B.Tech. - Chemical Engineering						
SEMESTER – VIII								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Credit C	Contact Hrs
				L	T	P		
1.	19CHF02	Project Phase II	EEC	0	0	20	10	20
<b>Total Credits</b>							<b>10</b>	

Total Credits: 160

Semester	I	II	III	IV	V	VI	VII	VIII	Total	Percentage
HS	3	2							5	3
BS	10	11	8	8					37	23
ES	8	7	4	3					22	14
PC			9	9	13	11	10		52	33
PE					6	6	6		18	11
EEC							7	10	17	10
OE					3	3	3		9	6
<b>Total</b>	<b>21</b>	<b>20</b>	<b>21</b>	<b>20</b>	<b>22</b>	<b>20</b>	<b>26</b>	<b>9</b>	<b>160</b>	

  
 Chairman  
 Board of Studies  
 Department of Chemical Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist 637 408

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist  
 TAMILNADU



**MUTHAYAMMAL ENGINEERING COLLEGE**  
(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637408, Namakkal Dist., Tamil Nadu

**B.Tech – Artificial Intelligence and Data Science**

**GROUPING OF COURSES**

**1. Humanities and Social Sciences Courses (HS)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19HSS01	Business English	HS	2	2	0	0	2
2.	19HSS02	English Communicative Skills Laboratory	HS	2	0	0	2	1
3.	19HSS03	Life Skills and Workplace Psychology	HS	2	2	0	0	2
4.	19HSS04	Technical English For Engineers	HS	2	2	0	0	2
5.	19HSS05	Communicative English for Engineers	HS	2	2	0	0	2
6.	19HSS06	Basics of Japanese Language	HS	2	2	0	0	2
7.	19HSS07	Basics of French Language	HS	2	2	0	0	2

**2. Basic Sciences Courses (BS)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19BSS01	Engineering Physics	BS	3	3	0	0	3
2.	19BSS02	Physics and Chemistry Laboratory	BS	2	0	0	2	1
3.	19BSS03	Bio and Nanomaterials Sciences	BS	3	3	0	0	3
4.	19BSS04	Material Sciences	BS	3	3	0	0	3
5.	19BSS05	Physics for Mechanical Engineers	BS	3	3	0	0	3
6.	19BSS11	Engineering Chemistry	BS	3	3	0	0	3
7.	19BSS12	Environmental Science and Engineering	BS	3	3	0	0	3
8.	19BSS13	Organic Chemistry	BS	3	3	0	0	3
9.	19BSS14	Physical Chemistry	BS	3	3	0	0	3
10.	19BSS15	Applied Chemistry	BS	3	3	0	0	3
11.	19BSS16	Organic Chemistry Laboratory	BS	3	0	0	3	1
12.	19BSS17	Physical Chemistry Laboratory	BS	3	0	0	3	1
13.	19BSS21	Algebra and Calculus	BS	4	3	1	0	4
14.	19BSS22	Differential Equations and Vector Analysis	BS	4	3	1	0	4
15.	19BSS23	Transforms and Partial Differential Equations	BS	4	3	1	0	4

**Chairman**

Board of Studies

Department of Artificial Intelligence & Data Science  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

**PRINCIPAL,**

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMIL NADU

Programme Code & Name: AD & B.TECH-Artificial Intelligence and Data Science

16.	19BSS24	Discrete Mathematics	BS	4	3	1	0	4
17.	19BSS25	Statistical and Queuing Model	BS	4	3	1	0	4
18.	19BSS26	Numerical Methods	BS	4	3	1	0	4
19.	19BSS27	Probability and Random Processes	BS	4	3	1	0	4
20.	19BSS28	Statistic and Numerical Methods	BS	4	3	1	0	4

3. General Engineering Science Courses (GES)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19GES01	Programming for Problem SolvingUsing C	GES	3	3	0	0	3
2	19GES02	Programming for Problem SolvingTechnique	GES	3	3	0	0	3
3	19GES03	Programming in C Laboratory	GES	2	0	0	2	1
4	19GES04	Programming in C and PythonLaboratory	GES	2	0	0	2	1
5	19GES05	Electrical and Electronic Sciences	GES	3	3	0	0	3
6	19GES06	Mechanical and Building Sciences	GES	3	3	0	0	3
7	19GES07	Computer Aided Drafting Laboratory	GES	2	0	0	2	1
8	19GES08	Python Programming	GES	3	3	0	0	3
9	19GES09	Programming in Python Laboratory	GES	2	0	0	2	1
10	19GES10	Soft Skills Laboratory	GES	2	0	0	2	1
11	19GES11	Electronic Devices	GES	3	3	0	0	3
12	19GES12	Electronic Simulation Laboratory	GES	2	0	0	2	1
13	19GES13	Electric Circuits	GES	3	2	1	0	3
14	19GES14	Electric Circuits Laboratory	GES	2	0	0	2	1
15	19GES15	Manufacturing Process	GES	3	3	0	0	3
16	19GES16	Manufacturing Process Laboratory	GES	2	0	0	2	1
17	19GES17	Mechanical and Building SciencesLaboratory	GES	2	0	0	2	1
18	19GES18	Construction Materials	GES	3	3	0	0	3
19	19GES19	Concepts in Product Design	GES	3	3	0	0	3
20	19GES20	Renewable Energy Sources	GES	3	3	0	0	3
21	19GES21	Electrical Drives and Control	GES	3	3	0	0	3
22	19GES22	Electrical Drives and ControlLaboratory	GES	2	0	0	2	1
23	19GES23	Analog and digital communication	GES	3	3	0	0	3
24	19GES24	Digital Principles and System Design	GES	3	3	0	0	3
25	19GES25	Digital Principles and System DesignLaboratory	GES	2	0	0	2	1
26	19GES26	Engineering Drawing	GES	5	1	0	4	3
27	19GES27	Engineering Geology	GES	3	3	0	0	3
28	19GES28	Engineering Mechanics	GES	4	3	1	0	4
29	19GES29	Wireless Communication	GES	4	3	1	0	4

**Chairman**

Board of Studies

Department of Artificial Intelligence & Data Science  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

**PRINCIPAL,**

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist  
TAMILNADU

Programme Code & Name: AD & B.TECH-Artificial Intelligence and Data Science

30	19GES30	Electronics and Microprocessor	GES	3	3	0	0	3
31	19GES31	Electronics and Microprocessor Laboratory	GES	2	0	0	2	1
32	19GES32	Data Structures using Python	GES	3	3	0	0	3

4. Professional Core Courses (PC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19ADC01	Data Structures and Files	PC	3	3	0	0	3
2.	19ADC02	Data Structures Lab Using C++	PC	2	0	0	2	1
3.	19ADC03	Processor Architecture	PC	3	3	0	0	3
4.	19ADC04	Processor Architecture Lab	PC	2	0	0	2	1
5.	19ADC05	Introduction to Data Science	PC	3	3	0	0	3
6.	19ADC06	Object Oriented Programming	PC	3	3	0	0	3
7.	19ADC07	Operating System	PC	3	3	0	0	3
8.	19ADC08	Operating System Lab	PC	2	0	0	2	1
9.	19ADC09	Design and Analysis of Algorithms	PC	3	3	0	0	3
10.	19ADC10	Database Design and Management	PC	3	3	0	0	3
11.	19ADC11	Database Design and Management Laboratory	PC	2	0	0	2	1
12.	19ADC12	Artificial Intelligence I	PC	3	3	0	0	3
13.	19ADC13	Artificial Intelligence I Laboratory	PC	2	0	0	2	1
14.	19ADC14	Data Analytics	PC	3	3	0	0	3
15.	19ADC15	Data Analytics Laboratory	PC	2	0	0	2	1
16.	19ADC16	Cognitive Systems	PC	3	3	0	0	3
17.	19ADC17	Optimization Techniques	PC	3	3	0	0	3
18.	19ADC18	Data Exploration and Visualization	PC	3	3	0	0	3
19.	19ADC19	Machine Learning	PC	3	3	0	0	3
20.	19ADC20	Machine Learning Laboratory	PC	2	0	0	2	1
21.	19ADC21	Business Analytics	PC	3	3	0	0	3
22.	19ADC22	Internet Programming and Web Technologies	PC	3	3	0	0	3
23.	19ADC23	Internet Programming and Web Technologies Laboratory	PC	2	0	0	2	1
24.	19ADC24	Artificial Intelligence II	PC	3	3	0	0	3
25.	19ADC25	Artificial Intelligence - II Laboratory	PC	2	0	0	2	1
26.	19ADC26	Data and Information Security	PC	3	3	0	0	3
27.	19ADC27	Deep Learning	PC	3	3	0	0	3
28.	19ADC28	Deep Learning Laboratory	PC	2	0	0	2	1

**Chairman**

Board of Studies

Department of Artificial Intelligence & Data Science  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

PRINCIPAL,

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU

Programme Code & Name: AD & B.TECH-Artificial Intelligence and Data Science

29.	19ADC29	AI and Robotics	PC	3	3	0	0	3
30.	19ADC30	Computer Vision	PC	3	3	0	0	3
31.	19ADC31	Mini Project on Data Sciences Pipeline	PC	4	0	0	4	2

5. Professional Elective Courses (PE)

S. No	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19ADE01	Software Development Processes	PE	3	3	0	0	3
2	19ADE02	Microprocessors and Microcontrollers	PE	3	3	0	0	3
3	19ADE03	Engineering Predictive Analytics	PE	3	3	0	0	3
4	19ADE04	Agile Methodologies	PE	3	3	0	0	3
5	19ADE05	Parallel Computing	PE	3	3	0	0	3
6	19ADE06	Software Architecture	PE	3	3	0	0	3
7	19ADE07	Internet of Things	PE	3	3	0	0	3
8	19ADE08	Health care Analytics	PE	3	3	0	0	3
9	19ADE09	Distributed Systems	PE	3	3	0	0	3
10	19ADE10	Mobile Applications Development	PE	3	3	0	0	3
11	19ADE11	Software Testing and Quality Assurance	PE	3	3	0	0	3
12	19ADE12	Cloud Computing	PE	3	3	0	0	3
13	19ADE13	Embedded Systems and Programming	PE	3	3	0	0	3
14	19ADE14	Operations and Supply Chain Management	PE	3	3	0	0	3
15	19ADE15	Speech Processing and Analytics	PE	3	3	0	0	3
16	19ADE16	Social Network Analytics	PE	3	3	0	0	3
17	19ADE17	Cyber Security	PE	3	3	0	0	3
18	19ADE18	Web Services and API Design	PE	3	3	0	0	3
19	19ADE19	Nonlinear Optimization	PE	3	3	0	0	3
20	19ADE20	Ethics of AI	PE	3	3	0	0	3
21	19ADE21	Engineering Economics	PE	3	3	0	0	3
22	19ADE22	Python for Data Science	PE	3	3	0	0	3
23	19ADE23	Python Laboratory	PE	2	0	0	2	1
24	19ADE24	Data Warehousing and Mining	PE	3	3	0	0	3
25	19ADE25	Cognitive Science and Analytics	PE	3	3	0	0	3
26	19ADE26	Big Data Analytics	PE	3	3	0	0	3
27	19ADE27	Big Data Analytics Laboratory	PE	2	0	0	2	1
28	19ADE28	Block Chain and Cryptography	PE	3	3	0	0	3
29	19ADE29	Principles of Management	PE	3	3	0	0	3

**Chairman**

Board of Studies

Department of Artificial Intelligence & Data Science

Muthayammal Engineering College (Autonomous)

Rasipuram, Namakkal Dist - 637 408

**PRINCIPAL,**

MUTHAYAMMAL ENGINEERING COLLEGE

(AUTONOMOUS)

RASIPURAM-637 408, NAMAKKAL Dist.

TAMILNADU

Programme Code & Name: AD & B.TECH-Artificial Intelligence and Data Science


30	19ADE30	IOT System And Analytics	PE	3	3	0	0	3
31	19ADE31	IOT System And Analytics Laboratory	PE	2	0	0	2	1
32	19ADE32	Bio-inspired Optimization Techniques	PE	3	3	0	0	3
33	19ADE35	Information Extraction and Retrieval	PE	3	3	0	0	3
34	19ADE36	Data Security and Privacy	PE	3	3	0	0	3
35	19ADE37	Adhoc and Sensor Networks	PE	3	3	0	0	3
36	16ADE38	Digital Image Processing	PE	3	3	0	0	3


6. Employability Enhancement Courses (EE)

S. No	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19ADP01	Project work-Phase I	EC	6	0	0	6	3
2	19ADP02	Project work-Phase II	EC	15	0	0	15	2
3	19ADP03	Comprehension	EC	4	0	0	4	2
4	19ADP04	Technical Seminar	EC	4	0	4	0	2
5	19ADP05	Entrepreneurship Development	EC	3	3	0	0	3
6	19ADP06	Professional Practices	EC	6	0	0	6	3
7	19ADP07	NPTEL- Introduction to Industry 4.0and Industrial Internet of Things	EC	-	-	-	-	-
8	19ADP08	NPTEL- Introduction to MachineLearning	EC	-	-	-	-	-
9	19ADP09	NPTEL- The Joy of Computingusing Python	EC	-	-	-	-	-
10	19ADP10	NPTEL-Data Analytics withPython	EC	-	-	-	-	-
11	19ADP11	Indian Constitution	EC	-	-	-	-	-
12	19ADP12	Value Education	EC	-	-	-	-	-
13	19ADP13	Disaster Management	EC	-	-	-	-	-
14	19ADP14	Pedagogy Studies	EC	-	-	-	-	-
15	19ADP15	Stress Management by Yoga	EC	-	-	-	-	-

  
**Chairman**  
**Board of Studies**  
**Department of Artificial Intelligence & Data Science**  
**Muthayammal Engineering College (Autonomous)**  
**Rasipuram, Namakkal Dist - 637 408.**

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU.**


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University) Rasipuram - 637 408, Namakkal Dist., Tamil Nadu				<b>CURRICULUMUG</b> <b>R - 2019</b>	
Department		Artificial Intelligence and Data Science					
Programme		B.Tech					
<b>SEMESTER – I</b>							
SL No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19HSS01	Business English	2	0	0	2	2
2.	19BSS21	Algebra and Calculus	3	1	0	4	4
3.	19BSS01	Engineering Physics	3	0	0	3	3
4.	19BSS11	Engineering Chemistry	3	0	0	3	3
5.	19GES01	Programming for Problem Solving Using C	3	0	0	3	3
6.	19GES06	Mechanical and Building Sciences	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19BSS02	Physics and Chemistry Lab	0	0	2	1	2
8.	19GES03	Programming in C Lab	0	0	2	1	2
9.	19HSS02	English Communicative Skills Lab	0	0	2	1	2
<b>Total Credits</b>						<b>21</b>	


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University) Rasipuram - 637 408, Namakkal Dist., Tamil Nadu				<b>CURRICULUMUG</b> <b>R - 2019</b>	
Department		Artificial Intelligence and Data Science					
Programme		B.Tech					
<b>SEMESTER – II</b>							
SL No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19HSS03	Life Skills and Workplace Psychology	2	0	0	2	2
2.	19BSS22	Differential Equations and Vector Analysis	3	1	0	4	4
3.	19BSS03	Bio and Nanomaterials Sciences	3	0	0	3	3
4.	19BSS12	Environmental Science and Engineering	3	0	0	3	3
5.	19GES19	Concepts in Product Design	3	0	0	3	3
6.	19GES08	Python Programming	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19GES10	Soft Skills Laboratory	0	0	2	1	2
8.	19GES09	Programming in Python Laboratory	0	0	2	1	2
<b>Total Credits</b>						<b>20</b>	

  
**Chairman**

**Board of Studies**  
 Department of Artificial Intelligence & Data Science  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University) Rasipuram - 637 408, Namakkal Dist., Tamil Nadu				<b>CURRICULUMUG</b> R - 2019	
Department		Artificial Intelligence and Data Science					
Programme		B.Tech					
SEMESTER – III							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
THEORY							
1.	19ADC01	Data Structures and Files	3	0	0	3	3
2.	19ADC03	Processor Architecture	3	0	0	3	3
3.	19ADC05	Introduction to Data Science	3	0	0	3	3
4.	19BSS23	Transforms and Partial Differential Equations	3	1	0	4	4
5.	19ADC06	Object Oriented Programming	3	0	0	3	3
6.	19ADC07	Operating Systems	3	0	0	3	3
PRACTICALS							
7.	19ADC04	Processor Architecture Lab	0	0	2	1	2
8.	19ADC02	Data Structures Lab using C++ Laboratory	0	0	2	1	2
9.	19ADC08	Operating Systems Lab	0	0	2	1	2
<b>Total Credits</b>						<b>22</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University) Rasipuram - 637 408, Namakkal Dist., Tamil Nadu				<b>CURRICULUMUG</b> R - 2019	
Department		Artificial Intelligence and Data Science					
Programme		B.Tech					
SEMESTER – IV							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
THEORY							
1.	19ADC09	Design and Analysis of Algorithms	3	0	0	3	3
2.	19ADC10	Database Design and Management	3	0	0	3	3
3.	19ADC12	Artificial Intelligence I	3	0	0	3	3
4.	19ADC14	Data Analytics	3	1	0	4	4
5.	19ADC16	Cognitive Systems	3	0	0	3	3
6.	PE	Elective I	3	0	0	3	3
PRACTICALS							
7.	19ADC11	Database Design and Management Laboratory	0	0	2	1	2
8.	19ADC13	Artificial Intelligence I Laboratory	0	0	2	1	2
9.	19ADC15	Data Analytics Laboratory	0	0	2	1	2
<b>Total Credits</b>						<b>22</b>	





**Chairman**

Board of Studies  
 Department of Artificial Intelligence & Data Science  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408.




**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
 RAŞIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University) Rasipuram - 637 408, Namakkal Dist., Tamil Nadu				<b>CURRICULUMUG</b> R - 2019	
Department		Artificial Intelligence and Data Science					
Programme		B.Tech					
<b>SEMESTER – V</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19ADC17	Optimization Techniques	3	0	0	3	3
2.	19ADC18	Data Exploration and Visualization	3	0	0	3	3
3.	19ADC19	Machine Learning	3	0	0	3	3
4.	19ADC21	Business Analytics	3	0	0	3	3
5.	PE	Elective II	3	0	0	3	3
6.	OE	(OE-1)	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19ADC20	Machine Learning Lab	0	0	3	1	3
8.	19ADC31	Mini Project on Data Sciences Pipeline	0	0	4	2	4
<b>Total Credits</b>						<b>21</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University) Rasipuram - 637 408, Namakkal Dist., Tamil Nadu				<b>CURRICULUMUG</b> R - 2019	
Department		Artificial Intelligence and Data Science					
Programme		B.Tech					
<b>SEMESTER – VI</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19ADC22	Internet Programming and Web Technologies	3	0	0	3	3
2.	19ADC24	Artificial Intelligence II	3	0	0	3	3
3.	19ADC26	Data and Information Security	3	0	0	3	3
4.	19ADC27	Deep Learning	3	0	0	3	3
5.	PE	Elective III	3	0	0	3	3
6.	OE	(OE – II)	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19ADC23	Internet Programming and Web Technologies	0	0	2	1	2
8.	19ADC25	Artificial Intelligence - II Laboratory	0	0	2	1	2
9.	19ADC28	Deep Learning Lab	0	0	2	1	2
<b>Total Credits</b>						<b>21</b>	

  
**Chairman**  
 Board of Studies  
 Department of Artificial Intelligence & Data Science  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University) Rasipuram - 637 408, Namakkal Dist., Tamil Nadu				<b>CURRICULUMUG</b> R - 2019	
Department		Artificial Intelligence and Data Science					
Programme		B.Tech					
<b>SEMESTER – VII</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19ADC29	AI and Robotics	3	0	0	3	3
2.	19ADC30	Computer Vision	3	0	0	3	3
3.	PE	Elective-IV	3	0	0	3	3
4.	PE	Elective-V	3	0	0	3	3
5.	PE	Elective-VI	3	0	0	3	3
6.	OE	(OE- III)	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19ADP01	Project Work I	0	0	6	3	6
<b>Total Credits</b>						<b>21</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University) Rasipuram - 637 408, Namakkal Dist., Tamil Nadu				<b>CURRICULUMUG</b> R - 2019	
Department		Artificial Intelligence and Data Science					
Programme		B.Tech					
<b>SEMESTER – VIII</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.		Mandatory Course(NPTEL)	-	-	-	-	-
<b>PRACTICALS</b>							
2.	19ADP02	Project Work II	0	0	15	12	15
<b>Total Credits</b>						<b>12</b>	

Total credits to be earned for the award of the degree 160

  
**Chairman**  
 Board of Studies  
 Department of Artificial Intelligence & Data Science  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMIL NADU



# MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)  
Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

**B.E - CYBER SECURITY**

**GROUPING OF COURSES**

**1. Humanities and Social Sciences including Management Courses (HS)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1	19HSS01	Business English	HS	2	2	0	0	2
2	19HSS02	English Communicative Skills Laboratory	HS	2	0	0	2	1
3	19HSS03	Life Skill and Work Place Psychology	HS	2	2	0	0	2
4	19HSS04	Technical English For Engineers	HS	2	2	0	0	2
5	19HSS05	Communicative English for Engineers	HS	2	2	0	0	2
6	19HSS06	Basics of Japanese Language	HS	2	2	0	0	2
7	19HSS07	Basics of French Language	HS	2	2	0	0	2
8	19HSS08	Professional Ethics and Human Values	HS	3	3	0	0	3

**2. Basic Science Courses (BS)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19BSS01	Engineering Physics	BS	3	3	0	0	3
2	19BSS02	Physics and Chemistry Laboratory	BS	2	0	0	2	1
3	19BSS03	Bio and Nanomaterials Sciences	BS	3	3	0	0	3
4	19BSS04	Material Sciences	BS	3	3	0	0	3
5	19BSS05	Physics for Mechanical Engineers	BS	3	3	0	0	3
6	19BSS11	Engineering Chemistry	BS	3	3	0	0	3
7	19BSS12	Environmental Science and Engineering	BS	3	3	0	0	3
8	19BSS13	Organic Chemistry	BS	3	3	0	0	3
9	19BSS14	Physical Chemistry	BS	3	3	0	0	3
10	19BSS15	Applied Chemistry	BS	3	3	0	0	3
11	19BSS16	Organic Chemistry Laboratory	BS	2	0	0	2	1
12	19BSS17	Physical Chemistry Laboratory	BS	2	0	0	2	1
13	19BSS21	Algebra and Calculus	BS	4	3	1	0	4
14	19BSS22	Differential Equations and Vector Analysis	BS	4	3	1	0	4


**Chairman**  
Board of Studies  
Department of Cyber Security  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408.

**PRINCIPAL,**  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL DIST.  
TAMILNADU

15	19BSS23	Transform and Partial Differential Equations	BS	4	3	1	0	4
16	19BSS24	Discrete Mathematics	BS	4	3	1	0	4
17	19BSS25	Statistical and Queuing Model	BS	4	3	1	0	4
18	19BSS26	Numerical Methods	BS	4	3	1	0	4
19	19BSS27	Probability and Random Processes	BS	4	3	1	0	4
20	19BSS28	Statistic and Numerical Methods	BS	4	3	1	0	4

### 3. General Engineering Science Courses (GES)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19GES01	Programming for Problem Solving Using C	GES	3	3	0	0	3
2	19GES02	Programming for Problem Solving Technique	GES	3	3	0	0	3
3	19GES03	Programming in C Laboratory	GES	2	0	0	2	1
4	19GES04	Programming in C and Python Laboratory	GES	2	0	0	2	1
5	19GES05	Electrical and Electronic Sciences	GES	3	3	0	0	3
6	19GES06	Mechanical and Building Sciences	GES	3	3	0	0	3
7	19GES07	Computer Aided Drafting Laboratory	GES	2	0	0	2	1
8	19GES08	Python Programming	GES	3	3	0	0	3
9	19GES09	Programming in Python Laboratory	GES	2	0	0	2	1
10	19GES10	Soft Skills Laboratory	GES	2	0	0	2	1
11	19GES11	Electronic Devices	GES	3	3	0	0	3
12	19GES12	Electronic Simulation Laboratory	GES	2	0	0	2	1
13	19GES13	Electric Circuits	GES	3	2	1	0	3
14	19GES14	Electric Circuits Laboratory	GES	2	0	0	2	1
15	19GES15	Manufacturing Process	GES	3	3	0	0	3
16	19GES16	Manufacturing Process Laboratory	GES	2	0	0	2	1
17	19GES17	Mechanical and Building Sciences Laboratory	GES	2	0	0	2	1
18	19GES18	Construction Materials	GES	3	3	0	0	3
19	19GES19	Concepts in Product Design	GES	3	3	0	0	3
20	19GES20	Renewable Energy Sources	GES	3	3	0	0	3
21	19GES21	Electrical Drives and Control	GES	3	3	0	0	3
22	19GES22	Electrical Drives and Control Laboratory	GES	2	0	0	2	1
23	19GES23	Analog and Digital communication	GES	3	3	0	0	3

  
**Chairman**  
 Board of Studies  
 Department of Cyber Security  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist 637 408.

PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.

24	19GES24	Digital Principles and System Design	GES	3	3	0	0	3
25	19GES25	Digital Principles and System Design Laboratory	GES	2	0	0	2	1
26	19GES26	Engineering Drawing	GES	5	1	0	4	3
27	19GES27	Engineering Geology	GES	3	3	0	0	3
28	19GES28	Engineering Mechanics	GES	4	3	1	0	4
29	19GES29	Wireless Communication	GES	4	3	1	0	4
30	19GES30	Electronics and Microprocessor	GES	3	3	0	0	3
31	19GES31	Electronics and Microprocessor Laboratory	GES	2	0	0	2	1
32	19GES32	Data Structures using Python	GES	3	3	0	0	3

  
**Chairman**  
 Board of Studies  
 Department of Cyber Security  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist 637 408.

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

4. Professional Core Courses (PCC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1	19CYC01	Data Structures	PCC	3	3	0	0	3
2	19CYC02	Data Structures Laboratory	PCC	2	0	0	2	1
3	19CYC03	Java Programming	PCC	3	3	0	0	3
4	19CYC04	Java Programming Laboratory	PCC	2	0	0	2	1
5	19CYC05	Computer Networks	PCC	3	3	0	0	3
6	19CYC06	Computer Organization and Architecture	PCC	3	3	0	0	3
7	19CYC07	Database Management Systems	PCC	3	3	0	0	3
8	19CYC08	Database Management Systems Laboratory	PCC	2	0	0	2	1
9	19CYC09	Cryptography and Network security	PCC	3	3	0	0	3
10	19CYC10	Cryptography and Network security Laboratory	PCC	2	0	0	2	1
11	19CYC11	Operating Systems	PCC	3	3	0	0	3
12	19CYC12	Operating Systems Laboratory	PCC	2	0	0	2	1
13	19CYC13	Information security	PCC	3	3	0	0	3
14	19CYC14	Digital Forensics	PCC	3	3	0	0	3
15	19CYC15	Introduction to Cyber Laws	PCC	3	3	0	0	3
16	19CYC16	Cyber Crime Investigations and Digital Forensics	PCC	3	3	0	0	3
17	19CYC17	Cloud Computing	PCC	3	3	0	0	3
18	19CYC18	Cloud Computing Laboratory	PCC	2	0	0	2	1
19	19CYC19	Mobile application development	PCC	3	3	0	0	3
20	19CYC20	Mobile application development laboratory	PCC	2	0	0	2	1
21	19CYC21	Wireless communications and networks	PCC	3	3	0	0	3
22	19CYC22	Wireless communications and networks laboratory	PCC	2	0	0	2	1
23	19CYC23	Computer forensic	PCC	3	3	0	0	3
24	19CYC24	Computer forensic laboratory	PCC	2	0	0	2	1
25	19CYC25	Web services	PCC	3	3	0	0	3
26	19CYC26	Web services lab	PCC	2	0	0	2	1
27	19CYC27	Cyber physical systems	PCC	3	3	0	0	3
28	19CYC28	Risk Management	PEC	3	3	0	0	3

  
**Chairman**  
 Board of Studies  
 Department of Cyber Security  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist 637 408.

  
**PRINCIPAL,**  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.

29	19CYC29	Intrusion Detection and Prevention System	PCC	3	3	0	0	3
30	19CYC30	Cyber Laws and Ethics	PCC	3	3	0	0	3
31	19CYC31	Software Engineering	PCC	3	3	0	0	3
32	19CYC32	Object Oriented Programming	PCC	3	3	0	0	3
33	19CYC33	Object Oriented Programming Laboratory	PCC	2	0	0	2	1
34	19CYC34	Design and Analysis of Algorithms	PCC	3	3	0	0	3
35	19CYC35	Design and Analysis of Algorithms Laboratory	PCC	2	0	0	2	1
36	19CYC36	Blockchain Technology	PCC	3	3	0	0	3
37	19CYC37	Mobile Communication	PCC	3	3	0	0	3
38	19CYC38	Internet of Things	PCC	3	3	0	0	3
39	19CYC39	Internet of Things Laboratory	PCC	2	0	0	2	1
40	19CYC40	Artificial Intelligence	PCC	3	3	0	0	3
41	19CYC41	Principles of Compiler Design	PCC	3	3	0	0	3
42	19CYC42	Compiler Design Laboratory	PCC	2	0	0	2	1
43	19CYC43	Data warehousing and Data Mining	PCC	3	3	0	0	3

#### 5. Professional Elective Courses (PEC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1	19CYE01	C# and .Net Framework	PEC	3	3	0	0	3
2	19CYE02	Software Project Management	PEC	3	3	0	0	3
3	19CYE03	Salesforce CRM and Platform	PEC	3	3	0	0	3
4	19CYE04	Salesforce CRM and Platform Laboratory	PEC	2	0	0	2	1
5	19CYE05	Biometric Systems & Biometric Image Process	PEC	3	3	0	0	3
6	19CYE06	AWS Academy Cloud Developing	PEC	3	3	0	0	3
7	19CYE07	AWS Academy Cloud Developing Laboratory	PEC	2	0	0	2	1
8	19CYE08	AWS Academy Cloud Architecting	PEC	3	3	0	0	3
9	19CYE09	AWS Academy Cloud Architecting Laboratory	PEC	2	0	0	2	1
10	19CYE10	AWS Academy Cloud Foundation	PEC	3	3	0	0	3
11	19CYE11	AWS Academy Cloud Foundation Laboratory	PEC	2	0	0	2	1
12	19CYE12	Ethical Hacking And Cyber Forensics	PEC	3	3	0	0	3

  
**Chairman**  
 Board of Studies  
 Department of Cyber Security  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist 637 408.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU.**

13	19CYE13	Ethical hacking Laboratory	PEC	2	0	0	2	1
14	19CYE14	Computer Forensics Analysis&Investigation	PEC	3	3	0	0	3
15	19CYE15	Computer Forensics Laboratory	PEC	2	0	0	2	1
16	19CYE16	Semantic Web	PEC	3	3	0	0	3
17	19CYE17	Network Programming and Management	PEC	3	3	0	0	3
18	19CYE18	Business Intelligence	PEC	3	3	0	0	3
19	19CYE19	Wireless Sensor Networks	PEC	3	3	0	0	3
20	19CYE20	Information Retrieval Techniques	PEC	3	3	0	0	3
21	19CYE21	Service Oriented Architecture	PEC	3	3	0	0	3
22	19CYE22	Agile Technology	PEC	3	3	0	0	3
23	19CYE23	Social Network Analysis	PEC	3	3	0	0	3
24	19CYE24	Game Programming	PEC	3	3	0	0	3
25	19CYE25	Natural Language Processing	PEC	3	3	0	0	3
26	19CYE26	Big data Analytics	PEC	3	3	0	0	3
27	19CYE27	Ad hoc and Sensor Networks	PEC	3	3	0	0	3
28	19CYE28	Management Information System	PEC	3	3	0	0	3
29	19CYE29	Software Quality Assurance	PEC	3	3	0	0	3
30	19CYE30	Bioinformatics	PEC	3	3	0	0	3
31	19CYE31	Docker and Kubernetes	PEC	3	3	0	0	3
32	19CYE32	Open Stack Essentials	PEC	3	3	0	0	3
33	19CYE33	User Centric Design	PEC	3	3	0	0	3
34	19CYE34	Software Testing	PEC	3	3	0	0	3
35	19CYE35	Soft computing	PEC	3	3	0	0	3
36	19CYE36	Real Time Systems	PEC	3	3	0	0	3
37	19CYE37	Machine Learning	PEC	3	3	0	0	3
38	19CYE38	High Speed Networks	PEC	3	3	0	0	3

#### 6. EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1	19CYP01	Project Work Phase I	EEC	6	0	0	6	5
2	19CYP02	Project Work Phase II	EEC	18	0	0	12	10
3	19CYP03	Comprehension	EEC	2	0	0	2	1
4	19CYP04	Technical Seminar	EEC	4	0	4	0	2
5	19CYP05	Entrepreneurship Development	EEC	3	3	0	0	3
6	19CYP06	Professional Practices	EEC	6	0	0	6	3


**Chairman**  
Board of Studies  
Department of Cyber Security  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408.

**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408. NAMAKKAL Dist.**  
**TAMILNADU.**


7	19CYM01	NPTEL- Internetwork Security	Mandatory Course	-	-	-	-	-
8	19CYM02	NPTEL- Systems and Usable Security	Mandatory Course	-	-	-	-	-
9	19CYM03	NPTEL- Ethical Hacking	Mandatory Course	-	-	-	-	-
10	19CYM04	NPTEL-Computer Networks and Internet Protocol	Mandatory Course	-	-	-	-	-
11	19CYA01	Indian Constitution	Audit Course	-	-	-	-	-
12	19CYA02	Value Education	Audit Course	-	-	-	-	-
13	19CYA03	Disaster Management	Audit Course	-	-	-	-	-
14	19CYA04	Pedagogy Studies	Audit Course	-	-	-	-	-
15	19CYA05	Stress Management by Yoga	Audit Course	-	-	-	-	-


**7. OPEN ELECTIVE COURSES (OEC)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19MEE07	Industrial Automation Robotics	OEC	3	3	0	0	3
2	19MEE18	Power Plant Engineering	OEC	3	3	0	0	3
3	19MEC26	Total Quality Management	OEC	3	3	0	0	3
4	19ECE06	Telecommunication Switching Networks	OEC	3	3	0	0	3
5	19ECE08	Mobile Ad-Hoc Networks	OEC	3	3	0	0	3
6	19PC-CED11	Water Supply Engineering	OEC	3	3	0	0	3
7	19PE-CEE05	Health Monitoring of Structures	OEC	3	3	0	0	3

  
**Chairman**  
 Board of Studies  
 Department of Cyber Security  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist 637 408.


  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408. NAMAKKAL Dist.**  
**TAMILNADU**


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					CURRICULUM UG R - 2019	
<b>Department</b>		<b>Cyber Security</b>						
<b>Programme</b>		<b>B.E</b>						
<b>SEMESTER – I</b>								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Contact Hrs	Credits
				L	T	P		
<b>THEORY</b>								
1.	19HSS01	Business English	HS	2	0	0	2	2
2.	19BSS01	Engineering Physics	BS	3	0	0	3	3
3.	19BSS11	Engineering Chemistry	BS	3	0	0	3	3
4.	19BSS21	Algebra and Calculus	BS	3	1	0	4	4
5.	19GES01	Programming for Problem Solving Using C	GES	3	0	0	3	3
6.	19GES06	Mechanical and Building Sciences	GES	3	0	0	3	3
<b>PRACTICAL</b>								
7.	19HSS02	English Communicative Skills Laboratory	HS	0	0	2	2	1
8.	19BSS02	Physics and Chemistry Laboratory	BS	0	0	2	2	1
9.	19GES03	Programming in C Laboratory	GES	0	0	2	2	1
<b>Total Credits</b>								<b>21</b>

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					CURRICULUM UG R - 2019	
<b>Department</b>		<b>Cyber Security</b>						
<b>Programme</b>		<b>B.E</b>						
<b>SEMESTER – II</b>								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Contact Hrs	Credits
				L	T	P		
<b>THEORY</b>								
1.	19HSS03	Life Skill and Work Place Psychology	HS	2	0	0	2	2
2.	19BSS12	Environmental Science and Engineering	BS	3	0	0	3	3
3.	19BSS22	Differential Equations and Vector Analysis	BS	3	1	0	4	4
4.	19BSS03	Bio and Nano materials Sciences	BS	3	0	0	3	3
5.	19GES19	Concepts in Product Design	GES	3	0	0	3	3
6.	19GES08	Python Programming	GES	3	0	0	3	3
<b>PRACTICAL</b>								
7.	19GES09	Programming in Python Laboratory	GES	0	0	2	2	1
8.	19GES10	Soft Skills Laboratory	GES	0	0	2	2	1
<b>Total Credits</b>								<b>20</b>

  
**Chairman**  
 Board of Studies  
 Department of Cyber Security  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist 637 408.


  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU.**


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408						CURRICULUM UG R - 2019	
<b>Department</b>		<b>Cyber Security</b>							
<b>Programme</b>		<b>B.E</b>							
<b>SEMESTER – III</b>									
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Contact Hrs	Credits	
				L	T	P			
<b>THEORY</b>									
1	19BSS23	Transform and Partial Differential Equations	BS	3	1	0	4	4	
2	19GES24	Digital Principles and System Design	GES	3	0	0	3	3	
3	19GES23	Analog and Digital Communication	GES	3	0	0	3	3	
4	19CYC01	Data Structures	PCC	3	0	0	3	3	
5	19CYC03	Java Programming	PCC	3	0	0	3	3	
6	19CYC05	Computer Networks	PCC	3	0	0	3	3	
<b>PRACTICAL</b>									
7	19GES25	Digital Principles and System Design Laboratory	GES	0	0	2	2	1	
8	19CYC02	Data Structures Laboratory	PCC	0	0	2	2	1	
9	19CYC04	Java Programming Laboratory	PCC	0	0	2	2	1	
							<b>Total Credits</b>	<b>22</b>	

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408						CURRICULUM UG R - 2019	
<b>Department</b>		<b>Cyber Security</b>							
<b>Programme</b>		<b>B.E</b>							
<b>SEMESTER – IV</b>									
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Contact Hrs	Credits	
				L	T	P			
<b>THEORY</b>									
1	19GES29	Wireless Communication	GES	3	1	0	3	4	
2	19CYC07	Database Management Systems	PCC	3	0	0	3	3	
3	19CYC09	Cryptography and Network security	PCC	3	0	0	3	3	
4	19CYC11	Operating Systems	PCC	3	0	0	3	3	
5	19CYC13	Information Security	PCC	3	0	0	3	3	
6	19CYC15	Introduction to Cyber Laws	PCC	3	0	0	3	3	
<b>PRACTICAL</b>									
7	19CYC08	Database Management Systems Laboratory	PCC	0	0	2	2	1	
8	19CYC10	Cryptography and Network security Laboratory	PCC	0	0	2	2	1	
9	19CYC12	Operating Systems Laboratory	PCC	0	0	2	2	1	
							<b>Total Credits</b>	<b>22</b>	

**Chairman**  
Board of Studies  
Department of Cyber Security  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408.


**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408						CURRICULUM UG R - 2019	
<b>Department</b>		Cyber Security							
<b>Programme</b>		B.E							
<b>SEMESTER – V</b>									
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Contact Hrs	Credits	
				L	T	P			
<b>THEORY</b>									
1	19HSS08	Professional Ethics and Human Values	HS	3	0	0	3	3	
2	19CYC16	Cyber crime investigations and digital forensics	PCC	3	0	0	3	3	
3	19CYC17	Cloud computing	PCC	3	0	0	3	3	
4	19CYC19	Web and mobile application security	PCC	3	0	0	3	3	
5		Elective – I	PEC	3	0	0	3	3	
6		Elective – II	PEC					3	
<b>PRACTICAL</b>									
7	19CYC18	Cloud computing Laboratory	PCC	0	0	2	2	1	
8	19CYC20	Web and mobile application Laboratory	PCC	0	0	2	2	1	
9	19CYE04	Salesforce CRM and platform Laboratory	PEC	0	0	2	2	1	
<b>Total Credits</b>								<b>21</b>	


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408						CURRICULUM UG R - 2019	
<b>Department</b>		Cyber Security							
<b>Programme</b>		B.E							
<b>SEMESTER – VI</b>									
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Contact Hrs	Credits	
				L	T	P			
<b>THEORY</b>									
1	19CYC21	Wireless sensor network security	PCC	3	0	0	3	3	
2	19CYC23	Forensic Analysis Tools	PCC	3	0	0	3	3	
3	19CYC25	Data Base Security	PCC	3	0	0	3	3	
4		Elective III	PEC	3	0	0	3	3	
5		Elective IV	PEC	3	0	0	3	3	
6		Open Elective I	OEC	3	0	0	3	3	
<b>PRACTICAL</b>									
7	19CYC22	Wireless sensor network Laboratory	PCC	0	0	2	2	1	
8	19CYC24	Forensic Analysis Tools Laboratory	PCC	0	0	2	2	1	
9	19CYC26	Data Base Security Laboratory	PCC	0	0	2	2	1	
<b>Total Credits</b>								<b>21</b>	

  
**Chairman**  
Board of Studies  
Department of Cyber Security  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist. 637 408.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					CURRICULUM UG R - 2019	
<b>Department</b>		Cyber Security						
<b>Programme</b>		B.E						
SEMESTER – VII								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Contact Hrs	Credits
				L	T	P		
<b>THEORY</b>								
1	19CYC27	Cyber Defense	PCC	3	0	0	3	3
2	19CYC28	Risk Management	PCC	3	0	0	3	3
3		Elective V	PEC	3	0	0	3	3
4		Elective VI	PEC	3	0	0	3	3
5		Open Elective III	OEC	3	0	0	3	3
6		Open Elective II	OEC	3	0	0	3	3
<b>PRACTICAL</b>								
7	19CYP01	Project work – Phase I	EEC	0	0	6	6	5
<b>Total Credits</b>								<b>23</b>

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					CURRICULUM UG R - 2019	
<b>Department</b>		Cyber Security						
<b>Programme</b>		B.E						
SEMESTER – VIII								
Sl. No.	Course Code	Course Name	Category	Hours/ Week			Contact Hrs	Credits
				L	T	P		
<b>THEORY</b>								
1		Mandatory Course (NPTEL)	-	-	-	-	-	-
<b>PRACTICAL</b>								
2	19CYP02	Project work - Phase II	EEC	0	0	12	18	10
<b>Total Credits</b>								<b>10</b>

  
**Chairman**  
Board of Studies  
Department of Cyber Security  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist 637 408.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU.**

**COURSE COMPONENT SUMMARY**

S. No.	Subject Area	Credits Per Semester								Credits Total	AICTE Credits
		I	II	III	IV	V	VI	VII	VIII		
1	HS	3	2			3				12	09
2	BS	11	10	4						21	24
3	GES	7	8	7	4					26	27
4	PCC			14	18	11	12	6		58	58
5	PEC					7	6	6		19	18
6	OEC						3	6		09	09
7	PROJ							5	10	15	15
<b>TOTAL</b>		<b>21</b>	<b>20</b>	<b>22</b>	<b>22</b>	<b>21</b>	<b>21</b>	<b>23</b>	<b>10</b>	<b>160</b>	<b>160</b>

Total Credits: 160

  
**Chairman**  
 Board of Studies  
 Department of Cyber Security  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist 637 408

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU.**

## MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

### DEPARTMENT OF MECHATRONICS

#### GROUPING OF COURSES

#### HUMANITIES AND SOCIAL SCIENCES COURSES (HS)

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19HSS01	Business English	HS	3	2	0	0	2
2	19HSS02	English Communicative Skills Laboratory	HS	2	0	0	2	1
3	19HSS03	Life Skills and Workplace Psychology	HS	3	2	0	0	2
4	19HSS04	Technical English For Engineers	HS	3	2	0	0	2
5	19HSS05	Communicative English for Engineers	HS	3	2	0	0	2
6	19HSS06	Basics of Japanese Language	HS	3	2	0	0	2
7	19HSS07	Basics of French Language	HS	3	2	0	0	2

#### BASIC SCIENCES COURSES (BS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19BSS01	Engineering Physics	BS	4	3	0	0	3
2.	19BSS02	Physics and Chemistry Laboratory	BS	2	0	0	2	1
3.	19BSS03	Bio and Nanomaterials Sciences	BS	4	3	0	0	3
4.	19BSS04	Material Sciences	BS	4	3	0	0	3
5.	19BSS05	Physics for Mechanical Engineers	BS	4	3	0	0	3
6.	19BSS11	Engineering Chemistry	BS	4	3	0	0	3
7.	19BSS12	Environmental Science and Engineering	BS	4	3	0	0	3
8.	19BSS13	Organic Chemistry	BS	4	3	0	0	3
9.	19BSS14	Physical Chemistry	BS	4	3	0	0	3
10.	19BSS15	Applied Chemistry	BS	4	3	0	0	3
11.	19BSS16	Organic Chemistry Laboratory	BS	3	0	0	3	1
12.	19BSS17	Physical Chemistry Laboratory	BS	3	0	0	3	1
13.	19BSS21	Algebra and Calculus	BS	5	3	1	0	4
14.	19BSS22	Differential Equations and Vector Analysis	BS	5	3	1	0	4
15.	19BSS23	Transform and Partial Differential Equations	BS	5	3	1	0	4
16.	19BSS24	Discrete Mathematics	BS	5	3	1	0	4
17.	19BSS25	Statistical and Queuing Model	BS	5	3	1	0	4
18.	19BSS26	Numerical Methods	BS	5	3	1	0	4

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Chairman-Board of Studies  
Department of Mechanical Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Programme Code & Name: MZ & B.E-Mechatronics Engineering

19.	19BSS27	Probability and Random Processes	BS	5	3	1	0	4
20.	19BSS28	Statistic and Numerical Methods	BS	5	3	1	0	4

**GENERAL ENGINEERING SCIENCE COURSES (GES)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19GES01	Programming for Problem Solving Using C	GES	3	3	0	0	3
2.	19GES02	Programming for Problem Solving Technique	GES	3	3	0	0	3
3.	19GES03	Programming in C Laboratory	GES	3	0	0	3	1
4.	19GES04	Programming in C and Python Laboratory	GES	3	0	0	3	1
5.	19GES05	Electrical and Electronic Sciences	GES	3	3	0	0	3
6.	19GES06	Mechanical and Building Sciences	GES	3	3	0	0	3
7.	19GES07	Computer Aided Drafting Laboratory	GES	3	0	0	3	1
8.	19GES08	Python Programming	GES	3	3	0	0	3
9.	19GES09	Programming in Python Laboratory	GES	3	0	0	3	1
10.	19GES10	Soft Skills Laboratory	GES	3	0	0	3	1
11.	19GES11	Electronic Devices	GES	3	3	0	0	3
12.	19GES12	Electronic Simulation Laboratory	GES	3	0	0	3	1
13.	19GES13	Electric Circuits	GES	3	2	1	0	3
14.	19GES14	Electric Circuits Laboratory	GES	3	0	0	3	1
15.	19GES15	Manufacturing Process	GES	3	3	0	0	3
16.	19GES16	Manufacturing Process Laboratory	GES	3	0	0	3	1
17.	19GES17	Mechanical and Building Sciences Laboratory	GES	3	0	0	3	1
18.	19GES18	Construction Materials	GES	3	3	0	0	3
19.	19GES19	Concepts in Product Design	GES	3	3	0	0	3
20.	19GES20	Renewable Energy Sources	GES	3	3	0	0	3
21.	19GES21	Electrical Drives and Control	GES	3	3	0	0	3
22.	19GES22	Electrical Drives and Control Laboratory	GES	3	0	0	3	1
23.	19GES23	Analog and digital communication	GES	3	3	0	0	3
24.	19GES24	Digital Principles and System Design	GES	3	3	0	0	3

PRINCIPAL

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Chairman-Board of Studies  
Department of Mechanical Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Programme Code & Name: MZ & B.E-Mechatronics Engineering

25.	19GES25	Digital Principles and System Design Laboratory	GES	3	0	0	3	1
26.	19GES26	Engineering Drawing	GES	4	1	0	3	3
27.	19GES27	Engineering Geology	GES	3	3	0	0	3
28.	19GES28	Engineering Mechanics	GES	4	3	1	0	3

**PROFESSIONAL CORE (PC)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19MZC01	Applied hydraulics and pneumatics	PC	3	3	0	0	3
2.	19MZC02	Fluid Mechanics and Machinery	PC	4	2	2	0	3
3.	19MZC03	Manufacturing Technology	PC	3	3	0	0	3
4.	19MZC04	Digital Electronics	PC	3	3	0	0	3
5.	19MZC05	Fluid mechanics and Machinery Laboratory	PC	2	0	0	2	1
6.	19MZC06	Manufacturing Technology Laboratory	PC	2	0	0	2	1
7.	19MZC07	Digital Electronics Laboratory	PC	2	0	0	2	1
8.	19MZC08	Control System Engineering	PC	3	3	0	0	3
9.	19MZC09	Strength of Materials	PC	4	2	2	0	3
10.	19MZC10	Metrology and Measurements	PC	3	3	0	0	3
11.	19MZC11	Computer Aided Design and Manufacturing	PC	3	3	0	0	3
12.	19MZC12	Microprocessors and Applications	PC	3	3	0	0	3
13.	19MZC13	Strength of Materials Laboratory	PC	2	0	0	2	1
14.	19MZC14	Microcontroller Laboratory	PC	2	0	0	2	1
15.	19MZC15	Assembly Drawing and Modeling Laboratory	PC	2	0	0	2	1
16.	19MZC16	Dynamics of Machines	PC	4	2	2	0	3
17.	19MZC17	Power Electronics	PC	3	3	0	0	3
18.	19MZC18	Design of Machine Elements	PC	4	2	2	0	3
19.	19MZC19	Principles of Robotics	PC	3	3	0	0	3
20.	19MZC20	Robotics and Machine Vision System	PC	3	3	0	0	3
21.	19MZC21	Dynamics of Machines Laboratory	PC	2	0	0	2	1

Chairman-Board of Studies  
Department of Mechanical Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Programme Code & Name: MZ & B.E-Mechatronics Engineering

22.	19MZC22	Power Electronics Laboratory	PC	2	0	0	2	1
23.	19MZC23	Micro Controller and PLC	PC	3	3	0	0	3
24.	19MZC24	Sensors and Signal Processing	PC	3	3	0	0	3
25.	19MZC25	Automation System Design	PC	3	3	0	0	3
26.	19MZC26	Sensors and Signal Processing Laboratory	PC	2	0	0	2	1
27.	19MZC27	Field and Service Robotics	PC	2	3	0	0	3

**PROFESSIONAL ELECTIVES (PE)**


S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19MZE01	Advanced Machining Processes	PE	3	3	0	0	3
2.	19MZE02	Total Quality Management	PE	3	3	0	0	3
3.	19MZE02	Principles of Management	PE	3	3	0	0	3
4.	19MZE04	Automotive Electronics	PE	3	3	0	0	3
5.	19MZE05	Advanced Microprocessors and Microcontrollers	PE	3	3	0	0	3
6.	19MZE06	System Software	PE	3	3	0	0	3
7.	19MZE07	Automobile Engineering	PE	3	3	0	0	3
8.	19MZE08	Intellectual Property Rights	PE	3	3	0	0	3
9.	19MZE09	Design of Pressure Vessel and Piping	PE	3	3	0	0	3
10.	19MZE10	Lean Manufacturing	PE	3	3	0	0	3
11.	19MZE11	Industrial Design and Applied Ergonomics	PE	3	3	0	0	3
12.	19MZE12	Process Planning and Cost Estimation	PE	3	3	0	0	3
13.	19MZE13	Operations Research	PE	3	3	0	0	3
14.	19MZE14	VLSI Design	PE	3	3	0	0	3
15.	19MZE15	Virtual instrumentation	PE	3	3	0	0	3
16.	19MZE16	Artificial Intelligence for Robotics	PE	3	3	0	0	3
17.	19MZE17	Special Machines and Controllers	PE	3	3	0	0	3

Chairman-Board of Studies  
Department of Mechanical Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Programme Code & Name: MZ & B.E-Mechatronics Engineering

18.	19MZE18	Advanced Control Systems	PE	3	3	0	0	3
19.	19MZE19	Foundation Skills in Integrated Product Development	PE	3	3	0	0	3
20.	19MZE20	Maintenance and Safety Engineering	PE	3	3	0	0	3
21.	19MZE21	Neural Networks and Fuzzy Systems	PE	3	3	0	0	3
22.	19MZE22	Industrial Robotics and Material Handling Systems	PE	3	3	0	0	3
23.	19MZE23	Totally Integrated Automation	PE	3	3	0	0	3
24.	19MZE24	Embedded System Design	PE	3	3	0	0	3
25.	19MZE25	Wireless Sensors Networks for Robotics	PE	3	3	0	0	3
26.	19MZE26	MEMS	PE	3	3	0	0	3
27.	19MZE27	Internet Tools and Java Programming	PE	3	3	0	0	3

  
 Chairman-Board of Studies  
 Department of Mechanical Engineering  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.

PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

Programme Code & Name: MZ & B.E-Mechatronics Engineering

**EMPLOYABILITY ENHANCEMENT COURSES (EEC)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19MZS01	Project work Phase -I	EEC	6	0	0	6	3
2.	19MZS02	Project work Phase -II	EEC	20	0	0	20	10
3.	19MZS03	Value Added Course /Internship	EEC	2	0	0	2	1
4.	19MZS04	Inter Disciplinary Project	EEC	3	0	0	3	1
5.	19MZS05	Constitution of India and professional Ethics	EEC	3	3	0	0	0
6.	19MZS06	Essence of Indian Traditional Knowledge	EEC	3	3	0	0	0

  
Chairman-Board of Studies  
Department of Mechanical Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
BASIPURAM-637 408, NAMAKKAL Dist.



  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
BASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

**COURSE COMPONENT SUMMARY**

Sl.No.	Subject Area	Credits per Semester								Credits Total	AICTE Credits
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	3	2	-	-	-	-	-	-	5	12
2.	BS	10	11	4	4	-	-	-	-	29	24
3.	GES	9	7	3	-	-	-	-	-	19	27
4.	PC	-	-	15	18	17	10	3	-	63	58
5.	PE	-	-	-	-	-	3	9	6	18	18
6.	OE	-	-	-	-	3	6	3	3	15	09
7.	EEC	-	-	-	-	-	1	3	10	14	15
<b>Total</b>		22	20	22	22	20	20	18	19	163	163



  
 Chairman-Board of Studies  
 Department of Mechanical Engineering  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>	
Department		Mechatronics			Total Credit: 163			
Programme		B. E						
<b>SEMESTER - I</b>								
Sl. No.	Course Code	Course Name	Hours/Week			Credit	Contact Hours	
			L	T	P			C
<b>THEORY</b>								
1.	19HSS01	Business English	2	0	0	2	2	
2.	19BSS21	Algebra & Calculus	3	1	0	4	4	
3.	19BSS01	Engineering Physics	3	0	0	3	3	
4.	19BSS11	Engineering Chemistry	3	0	0	3	3	
5.	19GES02	Programming for Problem Solving Techniques	3	0	0	3	3	
6.	19GES05	Electrical and Electronics Sciences	3	0	0	3	3	
<b>PRACTICAL</b>								
7	19GES07	Computer Aided Drafting Laboratory	0	0	4	2	4	
8	19GES04	Programming in C & Python Laboratory	0	0	3	1	3	
9	19HSS02	English Communicative Skills Laboratory	0	0	3	1	3	
<b>Total Credits</b>						<b>22</b>	<b>28</b>	
		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>	
Department		Mechatronics						
Programme		B.E						
<b>SEMESTER - II</b>								
Sl. No.	Course Code	Course Name	Hours/Week			Credit	Contact Hours	
			L	T	P			C
1.	19HSS03	Life Skill Psychology and Ethics	2	0	0	2	2	
2.	19BSS22	Differential Equations and Vector Analysis	3	2	0	4	5	
3.	19BSS03	Bio and Nano Material Sciences	3	0	0	3	3	
4.	19BSS12	Environmental Science and Engineering	3	0	0	3	3	
5.	19GES19	Concepts in Product Design	3	0	0	3	3	
6.	19GES15	Manufacturing Processes	3	0	0	3	3	
<b>PRACTICAL</b>								
7	19BSS02	Physics and Chemistry Laboratory	0	0	2	1	2	
8	19GES16	Manufacturing Processes Laboratory	0	0	3	1	3	
<b>Total Credits</b>						<b>20</b>	<b>24</b>	



Chairman-Board of  
 Department of Mechanical Engineering  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.

PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> <b>UG</b> <b>R – 2019</b>	
Department		Mechatronics						
Programme		B.E						
SEMESTER – III								
Sl. No.	Course Code	Course Name	Hours/Week			Credit	Contact Hours	
			L	T	P			C
<b>THEORY</b>								
1.	19BSS23	Transform and Partial Differential Equations	3	1	0	4	4	
2.	19RAC01	Applied hydraulics and pneumatics	3	0	0	3	3	
3.	19GES21	Electrical Drives and Control	3	0	0	3	3	
4.	19RAC02	Fluid Mechanics and Machinery	2	2	0	3	4	
5.	19RAC03	Manufacturing Technology	3	0	0	3	3	
6.	19RAC04	Digital Electronics	3	0	0	3	3	
<b>PRACTICAL</b>								
7	19RAC05	Fluid mechanics and Machinery Laboratory	0	0	2	1	2	
8	19RAC06	Manufacturing Technology Laboratory	0	0	2	1	2	
9	19RAC07	Digital Electronics Laboratory	0	0	2	1	2	
<b>Total Credits</b>						<b>22</b>	<b>26</b>	
		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>	
Department		Mechatronics						
Programme		B.E						
SEMESTER - IV								
Sl. No.	Course Code	Course Name	Hours/Week			Credit	Contact Hours	
			L	T	P			C
1.	19BSS28	Statistics and Numerical Methods	3	1	0	4	4	
2.	19RAC08	Control System Engineering	3	0	0	3	3	
3.	19RAC09	Strength of Materials	2	2	0	3	4	
4.	19RAC10	Metrology and Measurements	3	0	0	3	3	
5.	19RAC11	Computer Aided Design and Manufacturing	3	0	0	3	3	
6.	19RAC12	Microprocessors and Applications	3	0	0	3	3	
<b>PRACTICAL</b>								
7	19RAC13	Strength of Materials Laboratory	0	0	2	1	2	
8	19RAC14	Microcontroller Laboratory	0	0	2	1	2	
9	19RAC15	Assembly Drawing and Modeling Laboratory	0	0	2	1	2	
<b>Total Credits</b>						<b>22</b>	<b>26</b>	



Chairman-Board of Studies  
 Department of Mechanical Engineering  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.

PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist  
 TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R - 2019	
Department		Mechatronics					
Programme		B.E					
<b>SEMESTER - V</b>							
Sl. No.	Course Code	Course Name	Hours/Week			Credit	Contact Hours
			L	T	P		
1.	19RAC16	Dynamics of Machines	2	2	0	3	4
2.	19RAC17	Power Electronics	3	0	0	3	3
3.	19RAC18	Design of Machine Elements	2	2	0	3	4
4.	<b>19RAC19</b>	Principles of Robotics	3	0	0	3	3
5.	<b>19RAC20</b>	Robotics and Machine Vision System	3	0	0	3	3
6.	19*****	OPEN ELECTIVE-I	3	0	0	3	3
<b>PRACTICAL</b>							
7.	19RAC21	Dynamics of Machines Laboratory	0	0	2	1	2
8.	19RAC22	Power Electronics Laboratory	0	0	2	1	2
<b>Total Credits</b>						<b>20</b>	<b>24</b>
		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R - 2019	
Department		Mechatronics					
Programme		B.E					
<b>SEMESTER - VI</b>							
Sl. No.	Course Code	Course Name	Hours/Week			Credit	Contact Hours
			L	T	P		
1.	19RAC23	Micro Controller and PLC	3	0	0	3	3
2.	19RAC24	Sensors and Signal Processing	3	0	0	3	3
3.	<b>19RAC25</b>	Automation System Design	3	0	0	3	3
4.	19RAE**	PROFESSIONAL ELECTIVE -I	3	0	0	3	3
5.	19*****	OPEN ELECTIVE-II	3	0	0	3	3
6.	19*****	OPEN ELECTIVE-III	3	0	0	3	3
<b>PRACTICAL</b>							
6	19RAC26	Sensors and Signal Processing Laboratory	0	0	2	1	2
	19RAS04	Interdisciplinary Project	0	0	3	1	3
<b>Total Credits</b>						<b>20</b>	<b>23</b>

Chairman-Board of Studies  
 Department of Mechanical Engineering  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.

PRINCIPAL  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>	
Department		Mechatronics						
Programme		B.E						
SEMESTER - VII								
Sl. No.	Course Code	Course Name	Hours/Week			Credit	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	19RAS06	Essence of Indian Traditional Knowledge	3	3	0	0	6	
2.	19RAC27	Field and Service Robotics	3	0	0	3	3	
3.	19RAE**	PROFESSIONAL ELECTIVE -II	3	0	0	3	3	
4.	19RAE**	PROFESSIONAL ELECTIVE -III	3	0	0	3	3	
5.	19RAE**	PROFESSIONAL ELECTIVE -IV	3	0	0	3	3	
6.	19*****	OPEN ELECTIVE-IV	3	0	0	3	3	
<b>PRACTICAL</b>								
6.	19RAS01	Project work Phase –I	0	0	6	3	6	
<b>Total Credits</b>						<b>18</b>	<b>27</b>	
		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>	
Department		Mechatronics						
Programme		B.E.						
SEMESTER - VIII								
Sl. No.	Course Code	Course Name	Hours/Week			Credit	Contact Hours	
			L	T	P			
1.	19RAS05	Constitution of India and Professional Ethics	3	0	0	0	3	
2.	19RAE**	PROFESSIONAL ELECTIVE -V	3	0	0	3	3	
3.	19RAE**	PROFESSIONAL ELECTIVE -VI	3	0	0	3	3	
4.	19*****	OPEN ELECTIVE-V	3	0	0	3	3	
<b>PRACTICAL</b>								
5.	19RAS02	Project work Phase -II	0	0	20	10	20	
<b>Total Credits</b>						<b>19</b>	<b>32</b>	

Chairman-Board of Studies  
 Department of Mechanical Engineering  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.

PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

# MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

## DEPARTMENT OF ROBOTICS AND AUTOMATION

### GROUPING OF COURSES

#### HUMANITIES AND SOCIAL SCIENCES COURSES (HS)

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19HSS01	Business English	HS	3	2	0	0	2
2	19HSS02	English Communicative Skills Laboratory	HS	2	0	0	2	1
3	19HSS03	Life Skills and Workplace Psychology	HS	3	2	0	0	2
4	19HSS04	Technical English For Engineers	HS	3	2	0	0	2
5	19HSS05	Communicative English for Engineers	HS	3	2	0	0	2
6	19HSS06	Basics of Japanese Language	HS	3	2	0	0	2
7	19HSS07	Basics of French Language	HS	3	2	0	0	2

#### BASIC SCIENCES COURSES (BS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19BSS01	Engineering Physics	BS	4	3	0	0	3
2.	19BSS02	Physics and Chemistry Laboratory	BS	2	0	0	2	1
3.	19BSS03	Bio and Nanomaterials Sciences	BS	4	3	0	0	3
4.	19BSS04	Material Sciences	BS	4	3	0	0	3
5.	19BSS05	Physics for Mechanical Engineers	BS	4	3	0	0	3
6.	19BSS11	Engineering Chemistry	BS	4	3	0	0	3
7.	19BSS12	Environmental Science and Engineering	BS	4	3	0	0	3
8.	19BSS13	Organic Chemistry	BS	4	3	0	0	3
9.	19BSS14	Physical Chemistry	BS	4	3	0	0	3
10.	19BSS15	Applied Chemistry	BS	4	3	0	0	3
	19BSS16	Organic Chemistry Laboratory	BS	3	0	0	3	1
	19BSS17	Physical Chemistry Laboratory	BS	3	0	0	3	1
	19BSS21	Algebra and Calculus	BS	5	3	1	0	4
	19BSS22	Differential Equations and Vector Analysis	BS	5	3	1	0	4
15.	19BSS23	Transform and Partial Differential Equations	BS	5	3	1	0	4
16.	19BSS24	Discrete Mathematics	BS	5	3	1	0	4
17.	19BSS25	Statistical and Queuing Model	BS	5	3	1	0	4
18.	19BSS26	Numerical Methods	BS	5	3	1	0	4

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Chairman-Board of Studies  
Department of Mechanical Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

19.	19BSS27	Probability and Random Processes	BS	5	3	1	0	4
20.	19BSS28	Statistic and Numerical Methods	BS	5	3	1	0	4

### GENERAL ENGINEERING SCIENCE COURSES (GES)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19GES01	Programming for Problem Solving Using C	GES	3	3	0	0	3
2.	19GES02	Programming for Problem Solving Technique	GES	3	3	0	0	3
3.	19GES03	Programming in C Laboratory	GES	3	0	0	3	1
4.	19GES04	Programming in C and Python Laboratory	GES	3	0	0	3	1
5.	19GES05	Electrical and Electronic Sciences	GES	3	3	0	0	3
6.	19GES06	Mechanical and Building Sciences	GES	3	3	0	0	3
7.	19GES07	Computer Aided Drafting Laboratory	GES	3	0	0	3	1
8.	19GES08	Python Programming	GES	3	3	0	0	3
9.	19GES09	Programming in Python Laboratory	GES	3	0	0	3	1
10.	19GES10	Soft Skills Laboratory	GES	3	0	0	3	1
11.	19GES11	Electronic Devices	GES	3	3	0	0	3
12.	19GES12	Electronic Simulation Laboratory	GES	3	0	0	3	1
13.	19GES13	Electric Circuits	GES	3	2	1	0	3
14.	19GES14	Electric Circuits Laboratory	GES	3	0	0	3	1
15.	19GES15	Manufacturing Process	GES	3	3	0	0	3
16.	19GES16	Manufacturing Process Laboratory	GES	3	0	0	3	1
17.	19GES17	Mechanical and Building Sciences Laboratory	GES	3	0	0	3	1
18.	19GES18	Construction Materials	GES	3	3	0	0	3
19.	19GES19	Concepts in Product Design	GES	3	3	0	0	3
20.	19GES20	Renewable Energy Sources	GES	3	3	0	0	3
21.	19GES21	Electrical Drives and Control	GES	3	3	0	0	3
22.	19GES22	Electrical Drives and Control Laboratory	GES	3	0	0	3	1
23.	19GES23	Analog and digital communication	GES	3	3	0	0	3
24.	19GES24	Digital Principles and System Design	GES	3	3	0	0	3

Chairman-Board of Studies  
Department of Mechanical Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

25.	19GES25	Digital Principles and System Design Laboratory	GES	3	0	0	3	1
26.	19GES26	Engineering Drawing	GES	4	1	0	3	3
27.	19GES27	Engineering Geology	GES	3	3	0	0	3
28.	19GES28	Engineering Mechanics	GES	4	3	1	0	3

### PROFESSIONAL CORE (PC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19RAC01	Applied hydraulics and pneumatics	PC	3	3	0	0	3
2.	19RAC02	Fluid Mechanics and Machinery	PC	4	2	2	0	3
3.	19RAC03	Manufacturing Technology	PC	3	3	0	0	3
4.	19RAC04	Digital Electronics	PC	3	3	0	0	3
5.	19RAC05	Fluid mechanics and Machinery Laboratory	PC	2	0	0	2	1
6.	19RAC06	Manufacturing Technology Laboratory	PC	2	0	0	2	1
7.	19RAC07	Digital Electronics Laboratory	PC	2	0	0	2	1
8.	19RAC08	Control System Engineering	PC	3	3	0	0	3
9.	19RAC09	Strength of Materials	PC	4	2	2	0	3
10.	19RAC10	Metrology and Measurements	PC	3	3	0	0	3
11.	19RAC11	Computer Aided Design and Manufacturing	PC	3	3	0	0	3
12.	19RAC12	Microprocessors and Applications	PC	3	3	0	0	3
13.	19RAC13	Strength of Materials Laboratory	PC	2	0	0	2	1
14.	19RAC14	Microcontroller Laboratory	PC	2	0	0	2	1
15.	19RAC15	Assembly Drawing and Modeling Laboratory	PC	2	0	0	2	1
16.	19RAC16	Dist.Dynamics of Machines	PC	4	2	2	0	3
17.	19RAC17	Power Electronics	PC	3	3	0	0	3
18.	19RAC18	Design of Machine Elements	PC	4	2	2	0	3
19.	19RAC19	Principles of Robotics	PC	3	3	0	0	3
20.	19RAC20	Robotics and Machine Vision System	PC	3	3	0	0	3
21.	19RAC21	Dynamics of Machines Laboratory	PC	2	0	0	2	1

Chairman-Board of Studies  
 Department of Mechanical Engineering  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.

PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

22.	19RAC22	Power Electronics Laboratory	PC	2	0	0	2	1
23.	19RAC23	Micro Controller and PLC	PC	3	3	0	0	3
24.	19RAC24	Sensors and Signal Processing	PC	3	3	0	0	3
25.	19RAC25	Automation System Design	PC	3	3	0	0	3
26.	19RAC26	Sensors and Signal Processing Laboratory	PC	2	0	0	2	1
27.	19RAC27	Field and Service Robotics	PC	2	3	0	0	3

### PROFESSIONAL ELECTIVES (PE)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19RAE01	Advanced Machining Processes	PE	3	3	0	0	3
2.	19RAE02	Total Quality Management	PE	3	3	0	0	3
3.	19RAE02	Principles of Management	PE	3	3	0	0	3
4.	19RAE04	Automotive Electronics	PE	3	3	0	0	3
5.	19RAE05	Advanced Microprocessors and Microcontrollers	PE	3	3	0	0	3
6.	19RAE06	System Software	PE	3	3	0	0	3
7.	19RAE07	Automobile Engineering	PE	3	3	0	0	3
8.	19RAE08	Intellectual Property Rights	PE	3	3	0	0	3
9.	19RAE09	Design of Pressure Vessel and Piping	PE	3	3	0	0	3
10.	19RAE10	Lean Manufacturing	PE	3	3	0	0	3
11.	19RAE11	Industrial Design and Applied Ergonomics	PE	3	3	0	0	3
12.	19RAE12	Process Planning and Cost Estimation	PE	3	3	0	0	3
13.	19RAE13	Operations Research	PE	3	3	0	0	3
14.	19RAE14	VLSI Design	PE	3	3	0	0	3
15.	19RAE15	Virtual instrumentation	PE	3	3	0	0	3
16.	19RAE16	Artificial Intelligence for Robotics	PE	3	3	0	0	3
17.	19RAE17	Special Machines and Controllers	PE	3	3	0	0	3

Chairman-Board of Studies  
Department of Mechanical Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

18.	19RAE18	Advanced Control Systems	PE	3	3	0	0	3
19.	19RAE19	Foundation Skills in Integrated Product Development	PE	3	3	0	0	3
20.	19RAE20	Maintenance and Safety Engineering	PE	3	3	0	0	3
21.	19RAE21	Neural Networks and Fuzzy Systems	PE	3	3	0	0	3
22.	19RAE22	Industrial Robotics and Material Handling Systems	PE	3	3	0	0	3
23.	19RAE23	Totally Integrated Automation	PE	3	3	0	0	3
24.	19RAE24	Embedded System Design	PE	3	3	0	0	3
25.	19RAE25	Wireless Sensors Networks for Robotics	PE	3	3	0	0	3
26.	19RAE26	MEMS	PE	3	3	0	0	3
27.	19RAE27	Internet Tools and Java Programming	PE	3	3	0	0	3

  
 Chairman-Board of Studies  
 Department of Mechanical Engineering  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 BASIPURAM-637 408, NAMAKKAL Dist.

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 BASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.

### EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19RAS01	Project work Phase -I	EEC	6	0	0	6	3
2.	19RAS02	Project work Phase -II	EEC	20	0	0	20	10
3.	19RAS03	Value Added Course /Internship	EEC	2	0	0	2	1
4.	19RAS04	Inter Disciplinary Project	EEC	3	0	0	3	1
5.	19RAS05	Constitution of India and professional Ethics	EEC	3	3	0	0	0
6.	19RAS06	Essence of Indian Traditional Knowledge	EEC	3	3	0	0	0

  
Chairman-Board of Studies  
Department of Mechanical Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 409, NAMAKKAL Dist.

  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

### COURSE COMPONENT SUMMARY




Sl.No.	Subject Area	Credits per Semester								Credits Total	AICTE Credits
		I	II	III	IV	V	VI	VII	VIII		
1.	HS	3	2	-	-	-	-	-	-	5	12
2.	BS	10	11	4	4	-	-	-	-	29	24
3.	GES	9	7	3	-	-	-	-	-	19	27
4.	PC	-	-	15	18	17	10	3	-	63	58
5.	PE	-	-	-	-	-	3	9	6	18	18
6.	OE	-	-	-	-	3	6	3	3	15	09
7.	EEC	-	-	-	-	-	1	3	10	14	15
<b>Total</b>		22	20	22	22	20	20	18	19	163	163



Chairman-Board of Studies  
 Department of Mechanical Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.




PRINCIPAL,  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU


 <b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		CURRICULUM UG R - 2019					
Department		Robotics and Automation		Total Credit: 163			
Programme		B. E					
<b>SEMESTER - I</b>							
Sl. No.	Course Code	Course Name	Hours/Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19HSS01	Business English	2	0	0	2	2
2.	19BSS21	Algebra & Calculus	3	1	0	4	4
3.	19BSS01	Engineering Physics	3	0	0	3	3
4.	19BSS11	Engineering Chemistry	3	0	0	3	3
5.	19GES02	Programming for Problem Solving Techniques	3	0	0	3	3
6.	19GES05	Electrical and Electronics Sciences	3	0	0	3	3
<b>PRACTICAL</b>							
7	19GES07	Computer Aided Drafting Laboratory	0	0	4	2	4
8	19GES04	Programming in C & Python Laboratory	0	0	3	1	3
9	19HSS02	English Communicative Skills Laboratory	0	0	3	1	3
<b>Total Credits</b>						<b>22</b>	<b>28</b>
 <b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		CURRICULUM UG R - 2019					
Department		Robotics and Automation					
Programme		B.E					
<b>SEMESTER - II</b>							
Sl. No.	Course Code	Course Name	Hours/Week			Credit C	Contact Hours
			L	T	P		
1.	19HSS03	Life Skill Psychology and Ethics	2	0	0	2	2
2.	19BSS22	Differential Equations and Vector Analysis	3	2	0	4	5
3.	19BSS03	Bio and Nano Material Sciences	3	0	0	3	3
4.	19BSS12	Environmental Science and Engineering	3	0	0	3	3
5.	19GES19	Concepts in Product Design	3	0	0	3	3
6.	19GES15	Manufacturing Processes	3	0	0	3	3
<b>PRACTICAL</b>							
7	19BSS02	Physics and Chemistry Laboratory	0	0	2	1	2
8	19GES16	Manufacturing Processes Laboratory	0	0	3	1	3
<b>Total Credits</b>						<b>20</b>	<b>24</b>
 <b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408		CURRICULUM UG R – 2019					
Department		Robotics and Automation					
Programme		B.E					
<b>SEMESTER – III</b>							

Chairman-Board of Studies  
 Department of Mechanical Engineering  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.


PRINCIPAL  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

Sl. No.	Course Code	Course Name	Hours/Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19BSS23	Transform and Partial Differential Equations	3	1	0	4	4
2.	19RAC01	Applied hydraulics and pneumatics	3	0	0	3	3
3.	19GES21	Electrical Drives and Control	3	0	0	3	3
4.	19RAC02	Fluid Mechanics and Machinery	2	2	0	3	4
5.	19RAC03	Manufacturing Technology	3	0	0	3	3
6.	19RAC04	Digital Electronics	3	0	0	3	3
<b>PRACTICAL</b>							
7.	19RAC05	Fluid mechanics and Machinery Laboratory	0	0	2	1	2
8.	19RAC06	Manufacturing Technology Laboratory	0	0	2	1	2
9.	19RAC07	Digital Electronics Laboratory	0	0	2	1	2
<b>Total Credits</b>						<b>22</b>	<b>26</b>
		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R - 2019	
Department		Robotics and Automation					
Programme		B.E					
<b>SEMESTER - IV</b>							
Sl. No.	Course Code	Course Name	Hours/Week			Credit C	Contact Hours
			L	T	P		
1.	19BSS28	Statistics and Numerical Methods	3	1	0	4	4
2.	19RAC08	Control System Engineering	3	0	0	3	3
3.	19RAC09	Strength of Materials	2	2	0	3	4
4.	19RAC10	Metrology and Measurements	3	0	0	3	3
5.	19RAC11	Computer Aided Design and Manufacturing	3	0	0	3	3
6.	19RAC12	Microprocessors and Applications	3	0	0	3	3
<b>PRACTICAL</b>							
7.	19RAC13	Strength of Materials Laboratory	0	0	2	1	2
8.	19RAC14	Microcontroller Laboratory	0	0	2	1	2
9.	19RAC15	Assembly Drawing and Modeling Laboratory	0	0	2	1	2
<b>Total Credits</b>						<b>22</b>	<b>26</b>


Chairman-Board of Studies  
Department of Mechanical Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R - 2019	
Department		Robotics and Automation					
Programme		B.E					
<b>SEMESTER - V</b>							
Sl. No.	Course Code	Course Name	Hours/Week			Credit C	Contact Hours
			L	T	P		
1.	19RAC16	Dynamics of Machines	2	2	0	3	4
2.	19RAC17	Power Electronics	3	0	0	3	3


PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

3.	19RAC18	Design of Machine Elements	2	2	0	3	4
4.	19RAC19	Principles of Robotics	3	0	0	3	3
5.	19RAC20	Robotics and Machine Vision System	3	0	0	3	3
6.	19*****	OPEN ELECTIVE-I	3	0	0	3	3
<b>PRACTICAL</b>							
7.	19RAC21	Dynamics of Machines Laboratory	0	0	2	1	2
8.	19RAC22	Power Electronics Laboratory	0	0	2	1	2
<b>Total Credits</b>						<b>20</b>	<b>24</b>
		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R - 2019	
Department		Robotics and Automation					
Programme		B.E					
<b>SEMESTER - VI</b>							
Sl. No.	Course Code	Course Name	Hours/Week			Credit	Contact Hours
			L	T	P		
1.	19RAC23	Micro Controller and PLC	3	0	0	3	3
2.	19RAC24	Sensors and Signal Processing	3	0	0	3	3
3.	19RAC25	Automation System Design	3	0	0	3	3
4.	19RAE**	PROFESSIONAL ELECTIVE -I	3	0	0	3	3
5.	19*****	OPEN ELECTIVE-II	3	0	0	3	3
6.	19*****	OPEN ELECTIVE-III	3	0	0	3	3
<b>PRACTICAL</b>							
6	19RAC26	Sensors and Signal Processing Laboratory	0	0	2	1	2
7	19RAS04	Interdisciplinary Project	0	0	3	1	3
<b>Total Credits</b>						<b>20</b>	<b>23</b>

Chairman-Board of Studies  
Department of Mechanical Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> (An Autonomous Institution) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> UG R - 2019	
Department		Robotics and Automation					
Programme		B.E					
<b>SEMESTER - VII</b>							
Sl. No.	Course Code	Course Name	Hours/Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19RAS06	Essence of Indian Traditional Knowledge	3	3	0	0	6
2.	19RAC27	Field and Service Robotics	3	0	0	3	3

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist  
TAMILNADU

3.	19RAE**	PROFESSIONAL ELECTIVE -II	3	0	0	3	3
4.	19RAE**	PROFESSIONAL ELECTIVE -III	3	0	0	3	3
5.	19RAE**	PROFESSIONAL ELECTIVE -IV	3	0	0	3	3
6	19*****	OPEN ELECTIVE-IV	3	0	0	3	3
<b>PRACTICAL</b>							
6	19RAS01	Project work Phase -I	0	0	6	3	6
<b>Total Credits</b>						<b>18</b>	<b>27</b>
		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>(An Autonomous Institution)</b> <b>(Approved by AICTE &amp; Affiliated to Anna University),</b> <b>RASIPURAM – 637 408</b>				<b>CURRICULUM</b> <b>UG</b> <b>R - 2019</b>	
Department		Robotics and Automation					
Programme		B.E.					
<b>SEMESTER - VIII</b>							
Sl. No.	Course Code	Course Name	Hours/Week			Credit	Contact Hours
			L	T	P		
1.	19RAS05	Constitution of India and Professional Ethics	3	0	0	0	3
2.	19RAE**	PROFESSIONAL ELECTIVE -V	3	0	0	3	3
3.	19RAE**	PROFESSIONAL ELECTIVE -VI	3	0	0	3	3
4.	19*****	OPEN ELECTIVE-V	3	0	0	3	3
<b>PRACTICAL</b>							
5.	19RAS02	Project work Phase -II	0	0	20	10	20
<b>Total Credits</b>						<b>19</b>	<b>32</b>

  
 Chairman-Board of Studies  
 Department of Mechanical Engineering  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

# MUTHAYAMMAL ENGINEERING COLLEGE

## RASIPURAM

### M.E. CAD/CAM

#### GROUPING OF COURSES

##### 1. Foundation Course(FC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19CMA01	Advanced Numerical Methods	FC	4	3	1	0	4
2	19CMA02	Applied Mathematics	FC	4	3	1	0	4
3	19CMA03	Applied Probability and Statistics	FC	4	3	1	0	4
4	19CMA04	Design of Experiments and Research Methodology	FC	3	3	0	0	3

##### 2. Professional Core(PC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19CMB01	Computer Aided Design	PC	3	3	0	0	3
2	19CMB02	Competitive Manufacturing Systems	PC	3	3	0	0	3
3	19CMB03	Design for Manufacture and Assembly	PC	3	3	0	0	3
4	19CMB04	CNC Machines and Robotics	PC	3	3	0	0	3
5	19CMB05	Advanced Strength of Materials	PC	3	2	1	0	3
6	19CMB06	Finite Element Analysis and Applications	PC	3	3	0	0	3
7	19CMB07	Integrated Product and Process Development	PC	3	3	0	0	3
8	19CMB08	Industrial Safety Management	PC	3	3	0	0	3
9	19CMB09	Applied Materials Engineering	PC	3	3	0	0	3
10	19CMB10	Computational Fluid Dynamics	PC	3	2	1	0	3
11	19CMB11	Data communications in CAD/CAM	PC	3	3	0	0	3
12	19CMB12	Mechanisms Design and Computer Aided Design	PC	3	3	0	0	3

Chairman Board of Studies  
Department of Mechanical Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.

PRINCIPAL  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

14	19CMP02	CNC Machines and Robotics Laboratory	PC	3	0	0	3	1
15	19CMP03	Finite Element Analysis and Applications Laboratory	PC	3	0	0	3	1

### 3. Professional Electives(PE)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19CMC01	Optimization Techniques in Design	PE	3	2	1	0	3
2	19CMC02	Advanced Tool Design	PE	3	2	1	0	3
3	19CMC03	Computer Control in Process Planning	PE	3	2	1	0	3
4	19CMC04	Reliability in Engineering Systems	PE	3	2	1	0	3
5	19CMC05	Tribology in Composite Materials Design	PE	3	2	1	0	3
6	19CMC06	Design of Material Handling Equipments	PE	3	3	0	0	3
7	19CMC07	Mechatronics Applications in Manufacturing	PE	3	3	0	0	3
8	19CMC08	Modeling and Analysis of Manufacturing Systems	PC	3	3	0	0	3
9	19CMC09	Productivity Management and Re-Engineering	PE	3	3	0	0	3
10	19CMC10	Design and Manufacturing of Composite Materials	PE	3	3	0	0	3
11	19CMC11	Integrated Mechanical Design	PE	3	3	0	0	3
12	19CMC12	Additive Manufacturing	PE	3	3	0	0	3
13	19CMC13	Geometric Modeling	PE	3	3	0	0	3

### 4. Employability Enhancement Courses

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19CMD01	Project Work Phase -I	EEC	12	0	0	12	6
2.	19CMD02	Project work Phase -II	EEC	24	0	0	24	12
	19CMD03	Seminar	EEC	3	0	0	3	1
	19CMD04	Design & Analysis Project	EEC	3	0	0	3	1

Chairman-Board of Studies  
Department of Mechanical Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.



PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

**CREDITS**

S.No	Subject Area	CREDITS AS PER SEMESTER				Total Credit
		I	II	III	IV	
1	FC	4	-	-	-	4
2	PC	17	10	-	-	27
3	PE	-	6	9	-	15
4	SDC	-	2	6	12	20
<b>Total</b>		<b>21</b>	<b>18</b>	<b>15</b>	<b>12</b>	<b>66</b>



  
Chairman-Board of Studies  
Department of Mechanical Engineering  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.

  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> <b>PG</b> <b>R - 2019</b>	
Department		Mechanical						
Programme		M.E CAD/CAM						
SEMESTER - I								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	19CMA02	Applied Mathematics	3	1	0	4	4	
2.	19CMB01	Computer Aided Design	3	0	0	3	3	
3.	19CMB02	Competitive Manufacturing Systems	3	0	0	3	3	
4.	19CMB03	Design for Manufacture and Assembly	3	0	0	3	3	
5.	19CMB04	CNC Machines and Robotics	3	0	0	3	3	
6.	19CMB05	Advanced Strength of Materials	2	1	0	3	3	
<b>PRACTICALS</b>								
1	19CMP01	Computer Aided Design Laboratory	0	0	3	1	3	
2	19CMP02	CNC Machines and Robotics Laboratory	0	0	3	1	3	
<b>TotalCredits</b>						<b>21</b>		
		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> <b>PG</b> <b>R - 2019</b>	
Department		Mechanical						
Programme		M.E CAD/CAM						
SEMESTER - II								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	19CMB06	Finite Element Analysis and Applications	3	0	0	3	3	
2.	19CMB07	Integrated Product and Process Development	3	0	0	3	3	
3.	19CMB08	Industrial Safety Management	3	0	0	3	3	
4.	19CMC**	Elective I	2	1	0	3	3	
5.	19CMC**	Elective II	3	0	0	3	3	
<b>PRACTICALS</b>								
6.	19CMB06	Finite Element Analysis and Applications Laboratory	0	0	3	1	3	
7.	19CMD04	Design & Analysis Project	0	0			3	
	19CMD03	Seminar	0	0			3	
<b>Total Credits</b>								

Board of Studies  
 Department of Mechanical Engineering  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM - 637 408, NAMAKKAL Dist.

PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM - 637 408, NAMAKKAL Dist.  
 TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> <b>PG</b> <b>R - 2019</b>	
Department		Mechanical						
Programme		M.E CAD/CAM						
<b>SEMESTER - III</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	19CMC**	Elective III	2	1	0	3	3	
2.	19CMC**	Elective IV	3	0	0	3	3	
3.	19CMC**	Elective V	3	0	0	3	3	
<b>PRACTICALS</b>								
4	19CMD01	Project Work Phase I	0	0	12	6	12	
<b>Total Credits</b>						<b>15</b>		
		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> <b>PG</b> <b>R - 2019</b>	
Department		Mechanical						
Programme		M.E CAD/CAM						
<b>SEMESTER - IV</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P			
<b>PRACTICALS</b>								
1.	16CMD02	Project Work Phase II	0	0	24	12	12	
<b>Total Credits</b>						<b>12</b>		

  
 Chairman-Board of Studies  
 Department of Mechanical Engineering  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU



## MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

M.E. - COMPUTER SCIENCE AND ENGINEERING

### GROUPING OF COURSES

#### FOUNDATION COURSE [FC]

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19MCA01	Advanced Numerical Methods	FC	5	3	2	0	4
2.	19MCA02	Applied Mathematics	FC	5	3	2	0	4
3.	19MCA03	Applied Probability And Statistics	FC	5	3	2	0	4

#### PROFESSIONAL CORE [PC]

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19MCB01	Soft Computing	PC	3	3	0	2	4
2.	19MCB02	Advanced Data Structures and Algorithms	PC	5	3	0	2	4
3.	19MCB03	Multimedia communications	PC	3	3	0	0	3
4.	19MCB04	Data Mining Techniques	PC	3	3	0	0	3
5.	19MCB05	Advanced operating systems	PC	5	3	0	0	3
6.	19MCB06	Network Design and Technologies	PC	3	3	0	0	3
7.	19MCB07	Machine learning techniques	PC	3	3	0	0	3
8.	19MCB08	Machine learning techniques Laboratory	PC	4	0	0	4	2
9.	19MCB09	Advanced software Engineering	PC	3	3	0	0	3
10.	19MCB10	Advanced Database Technology	PC	3	3	0	2	4
11.	19MCB11	Advanced Database Technology Laboratory	PC	4	0	0	4	2
12.	19MCB12	Big data Analytics	PC	3	3	0	0	3
13.	19MCB13	Research Methodology and IPR	PC	3	3	0	0	3

  
**Chairman**  
 Board of Studies  
 Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.

  
**PRINCIPAL**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

Programme Code & Name: MC & M.E-Computer Science and Engineering

**PROFESSIONAL ELECTIVES [PE]**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19MCC01	Advanced Algorithms	PE	3	3	0	0	3
2.	19MCC02	Advanced Algorithm Laboratory	PE	4	0	0	2	1
3.	19MCC03	Cloud Computing	PE	3	3	0	0	3
4.	19MCC04	Cloud Computing Laboratory	PE	4	0	0	4	2
5.	19MCC05	Web Data Mining	PE	3	3	0	0	3
6.	19MCC06	Web Analytics and Development	PE	3	3	0	0	3
7.	19MCC07	Data Storage Technologies and Networks	PE	3	3	0	0	3
8.	19MCC08	Pattern classification and Analysis	PE	3	3	0	0	3
9.	19MCC09	Mobile and Pervasive Computing	PE	3	3	0	0	3
10.	19MCC10	Ad Hoc and Wireless Sensor Networks	PE	3	3	0	0	3
11.	19MCC11	Internet of things	PE	3	3	0	0	3
12.	19MCC12	Data Preparation and Analysis	PE	3	3	0	0	3
13.	19MCC13	Advanced Computer Architecture	PE	3	3	0	0	3

**EMPLOYABILITY ENHANCEMENT COURSES (EEC)**


S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19MCD01	Mini Project with Seminar	EEC	2	2	0	0	2
2	19MCD02	Dissertation I	EEC	12	0	0	12	6
3	19MCD03	Dissertation II	EEC	24	0	0	24	12
4	19MCD04	Value Education	AC	2	2	0	0	0
5	19MCD05	Disaster Management	AC	2	2	0	0	0
6	19MCD06	Sanskrit for Technical Knowledge	AC	2	2	0	0	0
7	19MCD07	English for Research Paper Writing	AC	2	2	0	0	0
8	19MCD08	Constitution of India	AC	2	2	0	0	0
9	19MCD09	Pedagogy Studies	AC	2	2	0	0	0
10	19MCD10	Stress Management by Yoga	AC	2	2	0	0	0




**Chairman**  
Board of Studies  
Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Programme Code & Name: MC & M.E-Computer Science and Engineering


		MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				CURRICULUM PG R – 2019	
Department		Computer Science and Engineering					
Programme		M.E					
<b>SEMESTER – I</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19MCA02	Applied Mathematics	3	2	0	4	5
2.	19MCB04	Data Mining Techniques	3	0	0	3	3
3.	19MCB05	Advanced Operating System	3	0	0	3	3
4.	19MCB07	Machine Learning Techniques	3	0	0	3	3
5.	19MCB13	Research Methodology and IPR	3	0	0	3	3
6.	PE	Professional Elective – I	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19MCB08	Laboratory 1(Based On Core) Machine learning techniques Laboratory	0	0	4	2	4
8.	PE	Professional Laboratory 2(Based On Elective)	0	0	2	1	4
<b>Total Credits</b>						<b>22</b>	

		MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous) (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				CURRICULUM PG R – 2019	
Department		Computer Science and Engineering					
Programme		M.E					
<b>SEMESTER – II</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19MCB10	Advanced Database Technology	3	0	0	4	3
2.	19MCB12	Big Data Analytics	3	0	0	3	3
3.	19MCB06	Network Design and Technologies	3	0	0	3	3
4.	PE	Professional Elective – II	3	0	0	3	3
5.	PE	Professional Elective – III	3	0	0	3	3
<b>PRACTICALS</b>							
6.	19MCB11	Laboratory 3 (Based on Core) Advanced Database Technology Lab	0	0	4	2	4
7.	PE	Professional Laboratory 4 (Based on Elective)	0	0	4	2	4
8.	19MCD01	Mini Project with Seminar	2	0	0	2	2
<b>Total Credits</b>						<b>22</b>	


  
**Chairman**  
 Board of Studies  
 Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL DIST.  
 TAMILNADU.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

Programme Code & Name: MC & M.E-Computer Science and Engineering

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> PG R – 2019	
Department		Computer Science and Engineering						
Programme		M.E						
<b>SEMESTER – III</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P	C		
<b>THEORY</b>								
1.	PE	Professional Elective – IV	3	0	0	3	3	
2.	PE	Professional Elective – V	3	0	0	3	3	
<b>PRACTICAL</b>								
3.	19MCD02	Dissertation-I	0	0	12	6	12	
<b>Total Credits</b>						<b>12</b>		

\*Students going for Industrial Project/Thesis will complete these courses through MOOCs

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM</b> PG R – 2019	
Department		Computer Science and Engineering						
Programme		M.E						
<b>SEMESTER – IV</b>								
Sl. No.	Course Code	Course Name	Hours/week			Credit	Contact Hours	
			L	T	P	C		
<b>PRACTICAL</b>								
1.	19MCD03	Dissertation II	0	0	24	12	24	
<b>Total Credits</b>						<b>12</b>		

  
**Chairman**  
Board of Studies  
Department of Computer Science and Engineering  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist,  
TAMILNADU.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU



## MUTHAYAMMAL ENGINEERING COLLEGE

An Autonomous Institution

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)  
Rasipuram-637408, Namakkal Dist.

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### GROUPING OF COURSES

#### 1. Foundation Course (FC)

Sl. No.	Course Code	Course Name	Category	Contact Hrs	Hours/ Week			Credit
					L	T	P	
1.	19PSA01	Advanced Numerical Methods	FC	4	3	1	0	4
2.	19PSA02	Applied Mathematics	FC	4	3	1	0	4
3.	19PSA03	Applied Probability and Statistics	FC	4	3	1	0	4

#### 2. Professional Core (PC)

Sl. No.	Course Code	Course Name	Category	Contact Hrs	Hours/ Week			Credit
					L	T	P	
1.	19PSB01	Linear and Non-Linear Systems Theory	PC	3	3	0	0	3
2.	19PSB02	Electrical Transients in Power Systems	PC	3	3	0	0	3
3.	19PSB03	Advanced Power System Analysis	PC	5	3	1	0	3
4.	19PSB04	Advanced Power System Operation and Control	PC	5	3	0	0	3
5.	19PSB05	Advanced Power System Operation and Control Laboratory	PC	3	0	0	3	1
6.	19PSB06	Advanced Power System Dynamics	PC	3	3	0	0	3
7.	19PSB07	Substation Equipment & Design	PC	3	3	0	0	3
8.	19PSB08	Advanced Power System Protection	PC	3	3	0	0	3
9.	19PSB09	Restructured Power System	PC	3	3	0	0	3
10.	19PSB10	Restructured Power System Laboratory	PC	3	0	0	3	1
11.	19PSB11	Solar and Energy Storage Systems	PC	3	3	0	0	3
12.	19PSB12	Power System Security	PC	3	3	0	0	3

*A. Jay*  
The Chairman  
Board of Studies,

Department of Electrical and Electronics Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram-637 408, Namakkal Dt.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

13	19PSB13	Industrial Power System Analysis and Design	PC	3	3	0	0	3
14	19PSB14	Power System Planning and Reliability	PC	3	3	0	0	3

### 3. Professional Elective (PE)

Sl. No.	Course Code	Course Name	Category	Contact Hrs	Hours/ Week			Credit C
					L	T	P	
1.	19PSC01	Flexible AC Transmission Systems	PE	3	3	0	0	3
2.	19PSC02	Microcontroller Based System Design	PE	3	3	0	0	3
3.	19PSC03	Design and Analysis of Inverters	PE	3	3	0	0	3
4.	19PSC04	Power Quality	PE	3	3	0	0	3
5.	19PSC05	Advanced Digital Signal Processing	PE	3	3	0	0	3
6.	19PSC06	Energy Management and Auditing	PE	3	3	0	0	3
7.	19PSC07	High Voltage Direct Current Transmission	PE	3	3	0	0	3
8.	19PSC08	Application of MEMS Technology	PE	3	3	0	0	3
9.	19PSC09	Distributed Generation and Micro Grid	PE	3	3	0	0	3
10.	19PSC10	Wind Energy Conversion Systems	PE	3	3	0	0	3
11.	19PSC11	Power Plant Instrumentation and Control	PE	3	3	0	0	3
12.	19PSC12	Smart Grid	PE	3	3	0	0	3
13.	19PSC13	Power Electronics for Renewable Energy Systems	PE	3	3	0	0	3
14.	19PSC14	Real time operating systems	PE	3	3	0	0	3
15.	19PSC15	Soft Computing Techniques	PE	3	3	0	0	3

### 4. Employability Enhancement Courses (EEC)

Sl. No.	Course Code	Course Name	Category	Contact Hrs	Hours/ Week			Credit C
					L	T	P	
1.	19PSD01	Project Work-Phase I	EEC	12	0	0	12	6
2.	19PSD02	Project Work-Phase II	EEC	24	0	0	24	12

  
The Chairman  
Board of Studies,

Department of Electrical and Electronics Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram-637 408, Namakkal Dt.

  
PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

Programme Code & Name: PSE & M.E- Power Systems Engineering



**MUTHAYAMMAL ENGINEERING COLLEGE**

An Autonomous Institution  
(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)  
Rasipuram-637408, Namakkal Dist.

**CURRICULUM  
PG  
R - 2019**

Department Electrical and Electronics Engineering

Programme Power Systems Engineering

**SEMESTER – I**

Sl. No.	Course Code	Course Name	Category	Hours /Week			Contact Hours	Credits
				L	T	P		
<b>THEORY</b>								
1.	19PSA02	Applied Mathematics	FC	3	1	0	4	4
2.	19PSB01	Linear and Non Linear Systems Theory	PC	3	0	0	3	3
3.	19PSB02	Electrical Transients in Power Systems	PC	3	0	0	3	3
4.	19PSB03	Advanced Power System Analysis	PC	3	1	0	4	4
5.	19PSB04	Advanced Power System Operation and Control	PC	3	0	0	3	3
6.	19PSB11	Solar and Energy Storage Systems	PC	3	0	0	3	3
<b>PRACTICAL</b>								
7.	19PSB05	Advanced Power System Operation and Control Laboratory	PC	0	0	3	3	1
<b>TOTAL</b>								<b>21</b>



**MUTHAYAMMAL ENGINEERING COLLEGE**

An Autonomous Institution  
(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)  
Rasipuram-637408, Namakkal Dist.

**CURRICULUM  
PG  
R - 2019**

Department Electrical and Electronics Engineering

Programme Power Systems Engineering

**SEMESTER – II**

Sl. No.	Course Code	Course Name	Category	Hours /Week			Contact Hours	Credits
				L	T	P		
<b>THEORY</b>								
1.	19PSB06	Advanced Power System Dynamics	PC	3	0	0	3	3
2.	19PSB08	Advanced Power System Protection	PC	3	0	0	3	3
3.	19PSB09	Restructured Power System	PC	3	0	0	3	3
4.		Elective-I	PE	3	0	0	3	3
5.		Elective-II	PE	3	0	0	3	3

*[Signature]*  
**The Chairman**  
Board of Studies,

Department of Electrical and Electronics Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram-637 408, Namakkal Dt.

*[Signature]*  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist  
TAMILNADU



**MUTHAYAMMAL ENGINEERING COLLEGE**

**An Autonomous Institution**

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)  
Rasipuram-637408, Namakkal Dist.

**CURRICULUM  
PG  
R - 2019**

Department Electrical and Electronics Engineering

Programme Power Systems Engineering

**SEMESTER – III**

Sl. No.	Course Code	Course Name	Category	Hours /Week			Contact Hours	Credits
				L	T	P		
1.		Elective- IV	PE	3	0	0	3	3
2.		Elective-V	PE	3	0	0	3	3
3.		Elective-VI	PE	3	0	0	3	3
4.	19PSD01	Project Work - Phase I	EEC	0	0	12	12	6
<b>TOTAL</b>								<b>15</b>
6.		Elective-III	PE	3	0	0	3	3
<b>PRACTICAL</b>								
7.	19PSB10	Restructured Power System Laboratory	PC	0	0	3	3	1
<b>TOTAL</b>								<b>19</b>



**MUTHAYAMMAL ENGINEERING COLLEGE**

**An Autonomous Institution**

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)  
Rasipuram-637408, Namakkal Dist.

**CURRICULUM  
PG  
R - 2019**

Department Electrical and Electronics Engineering

Programme Power Systems Engineering

**SEMESTER – IV**

Sl. No.	Course Code	Course Name	Category	Hours /Week			Contact Hours	Credits
				L	T	P		
1.	19PSD02	Project Work - Phase II	EEC	0	0	24	24	12
<b>TOTAL</b>								<b>12</b>

*The Chairman*  
Board of Studies,  
Department of Electrical and Electronics Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram-637 408, Namakkal Dt.

*PRINCIPAL,*  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

**MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)**  
**Rasipuram – 637408.**

**Department** Department of Management Studies

**Programme** Master of Business Administration

**Grouping of Courses**

**I - Foundation Course**

Sl. No.	Course Code	Course Name	Hours/ Week			Credit
			L	T	P	C
1	19MBA01	Essentials of Management	3	0	0	3
2	19MBA02	Business Statistics	3	2	0	4
3	19MBA03	Managerial Economics	4	0	0	4
4	19MBA04	Organizational Behaviour	3	0	0	3
5	19MBA05	Accounting for Management	3	2	0	4
6	19MBA06	Business Law	3	0	0	3
7	19MBA07	Business Environment	3	0	0	3
8	19MBA08	Indian Ethos for Management	3	0	0	3
9	19MBA09	Business Communication	0	0	4	2
10	19MBA10	Managerial Skills for Effectiveness	3	0	0	3
11	19SHA08	Principles of Management and Engineering Ethics	3	0	0	3

**II - Professional Core**

Sl. No.	Course Code	Course Name	Hours/ Week			Credit
			L	T	P	C
1	19MBB01	Marketing Management	3	0	0	3
2	19MBB02	Financial Management	3	2	0	4
3	19MBB03	Operations Management	3	2	0	4
4	19MBB04	Human Resource Management	3	0	0	3
5	19MBB05	Quantitative Methods and Techniques	3	2	0	4
6	19MBB06	Information System for Management	4	0	0	4
7	19MBB07	Research Methods	3	0	0	3
8	19MBB08	Strategic Management	4	0	0	4
9	19MBB09	International Business Management	4	0	0	4
10	19MBB10	Business Application Modules	0	0	4	2
11	19MBB11	Event Management(Laboratory)	0	0	4	2

**III - Professional Electives**

**I. Marketing**

Sl. No.	Course Code	Course Name	Hours/ Week			Credit
			L	T	P	C
1	19MBC01	Advertising and Promotion Management	4	0	0	4
2	19MBC02	Brand Management	3	0	0	3
3	19MBC03	Consumer Behaviour	3	0	0	3
4	19MBC04	Retail Management	3	0	0	3



**Chairman**  
 Board of Studies  
 Department of MBA

Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408.

PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

5	19MBC05	Rural Marketing	4	0	0	4
6	19MBC06	Services Marketing	3	0	0	3
7	19MBC07	Digital Marketing	3	0	0	3
<b>2. Finance</b>						
Sl. No.	Course Code	Course Name	Hours/ Week			Credit
			L	T	P	C
1	19MBC11	Financial Derivatives	3	0	0	3
2	19MBC12	Merchant Banking and Financial Services	4	0	0	4
3	19MBC13	Security Analysis and Portfolio Management	4	0	0	4
4	19MBC14	Banking and Indian Financial System	3	0	0	3
5	19MBC15	Risk Management and Insurance	3	0	0	3
6	19MBC16	Corporate Finance	4	0	0	4
<b>3. Human Resource</b>						
1	19MBC21	Training and Development	4	0	0	4
2	19MBC22	Industrial Relations and Labour Laws	4	0	0	4
3	19MBC23	Managerial Behavior and Effectiveness	3	0	0	3
4	19MBC24	Competency Mapping and Development	3	0	0	3
5	19MBC25	Performance Management	3	0	0	3
6	19MBC26	Cross Culture Management	3	0	0	3
<b>4. Operations Management</b>						
1	19MBC31	Project Management	4	0	0	4
2	19MBC32	Lean Manufacturing	3	0	0	3
3	19MBC33	Service Operations Management	3	0	0	3
4	19MBC34	Supply Chain and Logistics Management	3	0	0	3
5	19MBC35	Total Quality Management	4	0	0	4
<b>5. Systems</b>						
1	19MBC41	E-Commerce	4	0	0	4
2	19MBC42	Business Intelligence	3	0	0	3
3	19MBC43	Knowledge Management	3	0	0	3
4	19MBC44	Relational Database Management System	4	0	0	4
<b>6. General Management</b>						
1	19MBC51	Disaster Management	3	0	0	3



**Chairman**

Board of Studies

Department of MBA

Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408

Principal,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

2	19MBC52	Environmental Management	4	0	0	4
3	19MBC53	Business Ethics	3	0	0	3
4	19MBC54	Entrepreneurship Development	4	0	0	4

**IV - Employability Enhancement Courses**

Sl. No.	Course Code	Course Name	Hours/ Week			Credit
			L	T	P	C
1	19MBD01	Summer Internship	0	0	2	1
2	19MBD02	Field Survey	0	0	4	2
3	19MBD03	Project Work	0	0	30	15



**Chairman**

Board of Studies  
Department of MBA

Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.




**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU

MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous) Rasipuram-637408 (Approved by AICTE, New Delhi & Affiliated to Anna University) MBA Model Curriculum - Regulation 2019						Curriculum PG R - 2019	
Department		Department of Management Studies					
Programme		Master of Business Administration					
<b>SEMESTER - I</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	
			L	T	P		C
<b>THEORY</b>							
1	19MBA01	Essentials of Management	3	0	0	3	
2	19MBA02	Business Statistics	3	2	0	4	
3	19MBA03	Managerial Economics	4	0	0	4	
4	19MBA04	Organizational Behaviour	3	0	0	3	
5	19MBA05	Accounting for Management	3	2	0	4	
6	19MBA06	Business Law	3	0	0	3	
<b>PRACTICAL</b>							
7	19MBA09	Business Communication	0	0	4	2	
<b>Total Credits</b>						<b>23</b>	
<b>SEMESTER - II</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	
			L	T	P		C
<b>THEORY</b>							
1	19MBB01	Marketing Management	3	0	0	3	
2	19MBB02	Financial Management	3	2	0	4	
3	19MBB03	Operations Management	3	2	0	4	
4	19MBB04	Human Resource Management	3	0	0	3	
5	19MBB05	Quantitative Methods and Techniques	3	2	0	4	
6	19MBB06	Information System for Management	4	0	0	4	
7	19MBB07	Research Methods	3	0	0	3	
<b>PRACTICAL</b>							
8	19MBB10	Business Application Modules	0	0	4	2	
<b>Total Credits</b>						<b>27</b>	

### Summer Internship [Course Code - 19MBD01]


Summer Internship opting student has to undergo for an Industrial Training in an organization for the period of 2 weeks. The training report with the company certificate around 40 pages about the summer internship should be submitted before a review committee constituted by the HOD will be evaluated based on their presentation of the reports and Viva-Voce examination. Evaluation report should be sent to the Controller of Examinations through the Principal.

  
**Chairman**  
 Board of Studies  
 Department of MBA  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408.

  
**PRINCIPAL,**  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.

SEMESTER – III						
Sl. No.	Course Code	Course Name	Hours/ Week			Credit
			L	T	P	C
<b>THEORY</b>						
1	19MBB08	Strategic Management	4	0	0	4
2	19MBB09	International Business Management	4	0	0	4
<b>Electives (3+3=6 Subjects)</b>						
3	19MBC01	Advertising and Promotion Management	4	0	0	4
4	19MBC03	Consumer Behaviour	3	0	0	3
5	19MBC06	Services Marketing	3	0	0	3
6	19MBC13	Security Analysis and Portfolio Management	4	0	0	4
7	19MBC14	Banking and Indian Financial System	3	0	0	3
8	19MBC15	Risk Management and Insurance	3	0	0	3
9	19MBC22	Industrial Relations and Labour Laws	4	0	0	4
10	19MBC23	Managerial Behavior and Effectiveness	3	0	0	3
11	19MBC25	Performance Management	3	0	0	3
12	19MBD01	Summer Internship	0	0	2	1
<b>Total Credits</b>						<b>29</b>
SEMESTER – IV						
Sl. No.	Course Code	Course Name	Hours/ Week			Credit
			L	T	P	C
<b>PRACTICAL</b>						
1	19MBD03	Project Work	0	0	30	15
<b>Total Credits</b>						<b>15</b>

**TOTAL No. of CREDITS = 94**

  
**Chairman**  
 Board of Studies  
 Department of MBA  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408.

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING CO.,  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dis.  
 TAMILNADU



**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(An Autonomous Institution)**

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

**MASTER OF COMPUTER APPLICATIONS**

**GROUPING OF COURSES**

**FOUNDATION COURSE [FC]**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19CAA01	Mathematical Foundations of Computer Science	FC	4	3	1	0	4

**PROFESSIONAL CORE [PC]**

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19CAB01	Computer Organizations and Architecture	PC	3	3	0	0	3
2.	19CAB02	Data Structures and Algorithms	PC	3	3	0	0	3
3.	19CAB03	Relational Data Base Management	PC	3	3	0	0	3
4.	19CAB04	Problem Solving and Python Programming	PC	3	3	0	0	3
5.	19CAB05	Operating Systems	PC	3	3	0	0	3
6.	19CAB06	Data Structures and Algorithms Laboratory	PC	4	0	0	4	2
7.	19CAB07	Relational Data Base Management Systems Laboratory	PC	4	0	0	4	2
8.	19CAB08	Python Programming Laboratory	PC	4	0	0	4	2
9.	19CAB09	Data Communication and Networks	PC	3	3	0	0	3
10.	19CAB10	Software Engineering	PC	3	3	0	0	3
11.	19CAB11	Internet and Java Programming	PC	3	3	0	0	3
12.	19CAB12	Object Oriented Analysis and Design	PC	3	3	0	0	3
13.	19CAB13	Big Data Analytics	PC	3	3	0	0	3

Chairman  
Board of Studies  
Department of MCA

Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

PRINCIPAL  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.

14.	19CAB14	Internet Programming Laboratory	PC	4	0	0	4	2
15.	19CAB15	Software Development Laboratory – Case Tools Lab	PC	4	0	0	4	2
16.	19CAB16	Data Analytics Laboratory	PC	4	0	0	4	2
17.	19CAB17	Mobile Computing	PC	3	3	0	0	3
18.	19CAB18	Network Programming	PC	3	3	0	0	3
19.	19CAB19	Mobile App Development Laboratory	PC	4	0	0	4	2
20.	19CAB20	Network Programming Laboratory	PC	4	0	0	4	2

**PROFESSIONAL ELECTIVES [PE]**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1.	19CAC01	Software Project Management	PE	3	3	0	0	3
2.	19CAC02	Web Technologies	PE	3	3	0	0	3
3.	19CAC03	E Learning	PE	3	3	0	0	3
4.	19CAC04	Software Quality and Testing	PE	3	3	0	0	3
5.	19CAC05	Advances in Operating Systems	PE	3	3	0	0	3
6.	19CAC06	Cyber Security	PE	3	3	0	0	3
7.	19CAC07	C# and .Net Programming	PE	3	3	0	0	3
8.	19CAC08	Wireless Networking	PE	3	3	0	0	3
9.	19CAC09	Web Design	PE	3	3	0	0	3
10.	19CAC10	Network Programming and Security	PE	3	3	0	0	3
11.	19CAC11	Cloud Computing Technologies	PE	3	3	0	0	3
12.	19CAC12	Bio Inspired Computing	PE	3	3	0	0	3
13.	19CAC13	Information Retrieval Techniques	PE	3	3	0	0	3
14.	19CAC14	Software Architecture	PE	3	3	0	0	3
15.	19CAC15	Digital Forensics	PE	3	3	0	0	3
16.	19CAC16	Data Mining and Data Warehousing	PE	3	3	0	0	3
17.	19CAC17	Operations Research	PE	3	3	0	0	3
18.	19CAC18	Professional Ethics in IT	PE	3	3	0	0	3

Chairman  
Board of Studies  
Department of MCA

Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal Dist - 637 408.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMIL NADU

19.	19CAC19	Marketing Management	PE	3	3	0	0	3
20.	19CAC20	Organizational Behavior	PE	3	3	0	0	3
21.	19CAC21	Software Testing and Quality Assurance	PE	3	3	0	0	3
22.	19CAC22	Advances in Networking	PE	3	3	0	0	3
23.	19CAC23	Soft Computing Techniques	PE	3	3	0	0	3
24.	19CAC24	Deep Learning	PE	3	3	0	0	3
25.	19CAC25	Big Data Processing	PE	3	3	0	0	3

### EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
I	19CAD01	Project Work	EEC	24	0	0	24	12


### COURSE COMPONENT SUMMARY

S. No.	Subject Area	Credits Per Semester				Credits Total	AICTE Credits
		I	II	III	IV		
1	FC	4	-	-	-	4	4
2	PC	21	21	10	-	52	52
3	PE	0	3	12	-	15	15
4	EEC	0	0	0	12	12	12
<b>TOTAL</b>		25	24	22	12	83	83

**Total Credits: 83**


  
**Chairman**  
 Board of Studies  
 Department of MCA  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408.


  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM PG R – 2019</b>	
Department		Master of Computer Applications					
Programme		M.C.A					
<b>SEMESTER – I</b>							
Sl.No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P	C	
<b>THEORY</b>							
1.	19CAA01	Mathematical Foundations of Computer Science	3	1	0	4	4
2.	19CAB01	Computer Organization and Architecture	3	0	0	3	3
3.	19CAB02	Data Structures and Algorithms	3	0	0	3	3
4.	19CAB03	Relational Data Base Management Systems	3	0	0	3	3
5.	19CAB04	Problem Solving and Python Programming	3	0	0	3	3
6.	19CAB05	Operating Systems	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19CAB06	Data Structures and Algorithms Laboratory	0	0	4	2	4
8.	19CAB07	Relational Data Base Management Systems Laboratory	0	0	4	2	4
9.	19CAB08	Python Programming Laboratory	0	0	4	2	4
<b>Total Credits</b>						<b>25</b>	


  
**Chairman**  
 Board of Studies  
 Department of MCA  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU

 Estd. 2000		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>PG</b> <b>R – 2019</b>	
Department		Master of Computer Applications					
Programme		M.C.A					
		<b>SEMESTER – II</b>					
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19CAB09	Data Communication and Networks	3	0	0	3	3
2.	19CAB10	Software Engineering	3	0	0	3	3
3.	19CAB11	Internet and Java Programming	3	0	0	3	3
4.	19CAB12	Object Oriented Analysis and Design	3	0	0	3	3
5.	19CAB13	Big Data Analytics	3	0	0	3	3
6.		<b>Elective I</b>	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19CAB14	Internet Programming Laboratory	0	0	4	2	4
8.	19CAB15	Software Development- CASE Tools Laboratory	0	0	4	2	4
9.	19CAB16	Data Analytics Laboratory	0	0	4	2	4
<b>Total Credits</b>						<b>24</b>	


  
**Chairman**  
 Board of Studies  
 Department of MCA  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
 RASIPURAM-637 408, NAMAKKAL Dist.

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM PG R – 2019</b>	
Department		Master of Computer Applications					
Programme		M.C.A					
<b>SEMESTER – III</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P	C	
<b>THEORY</b>							
1.	19CAB17	Mobile Computing	3	0	0	3	3
2.	19CAB18	Network Programming	3	0	0	3	3
3.		<b>Elective II</b>	3	0	0	3	3
4.		<b>Elective III</b>	3	0	0	3	3
5.		<b>Elective IV</b>	3	0	0	3	3
6.		<b>Elective V</b>	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19CAB19	Mobile App Development Lab	0	0	4	2	4
8.	19CAB20	Network Programming Lab	0	0	4	2	4
<b>Total Credits</b>						<b>22</b>	

  
**Chairman**  
 Board of Studies  
 Department of MCA  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU**

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408				<b>CURRICULUM</b> <b>PG</b> <b>R – 2019</b>	
Department		Master of Computer Applications					
Programme		M.C.A					
<b>SEMESTER – IV</b>							
Sl. No.	Course Code	Course Name	Hours/week			Credit	Contact Hours
			L	T	P		
<b>PRACTICAL</b>							
1	19CAD01	Project Work	0	0	24	12	24
<b>Total Credits</b>						<b>12</b>	

  
**Chairman**  
 Board of Studies  
 Department of MCA  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal Dist - 637 408.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU**



## MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

### B.E. –ELECTRONICS AND COMMUNICATION ENGINEERING

#### GROUPING OF COURSES

##### Regulation-2019

#### 1. Humanities and Social Sciences including Management Courses (HS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/ Week			C
					L	T	P	
1	19HSS01	Business English	HS	2	2	0	0	2
2	19HSS03	Life Skills and Workplace Psychology	HS	2	2	0	0	2
3	19HSS02	English Communicative Skills Laboratory	HS	2	0	0	2	1
4	19HSS04	Technical English For Engineers	HS	2	2	0	0	2
5	19HSS05	Communicative English for Engineers	HS	2	2	0	0	2
6	19HSS06	Basics of Japanese Language	HS	2	2	0	0	2
7	19HSS07	Basics of French Language	HS	2	2	0	0	2
8	19HSS08	Professional Ethics and Human Values	HS	3	3	0	0	3

#### 2. Basic Science Courses (BS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19BSS01	Engineering Physics	BS	3	3	0	0	3
2	19BSS02	Physics and Chemistry Laboratory	BS	2	0	0	2	1
3	19BSS03	Bio and Nanomaterials Sciences	BS	3	3	0	0	3
4	19BSS04	Material Sciences	BS	3	3	0	0	3
5	19BSS05	Physics fir Mechanical Engineers	BS	3	3	0	0	3
6	19BSS11	Engineering Chemistry	BS	3	3	0	0	3
7	19BSS12	Environmental Science and Engineering	BS	3	3	0	0	3
8	19BSS13	Organic Chemistry	BS	3	3	0	0	3

  
**CHAIRMAN**  
 Board of Studies  
 Department of Electronics and Communication Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal - 637 408.

  
**PRINCIPAL**  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.

9	19BSS14	Physical Chemistry	BS	3	3	0	0	3
10	19BSS15	Applied Chemistry	BS	3	3	0	0	3
11	19BSS16	Organic Chemistry Laboratory	BS	2	0	0	2	1
12	19BSS17	Physical Chemistry Laboratory	BS	2	0	0	2	1
13	19BSS21	Algebra and Calculus	BS	4	3	1	0	4
14	19BSS22	Differential Equations and Vector Analysis	BS	4	3	1	0	4
15	19BSS23	Transform and Partial Differential Equations	BS	4	3	1	0	4
16	19BSS24	Discrete Mathematics	BS	4	3	1	0	4
17	19BSS25	Statistical and Queuing Model	BS	4	3	1	0	4
18	19BSS26	Numerical Methods	BS	4	3	1	0	4
19	19BSS27	Probability and Random Processes	BS	4	3	1	0	4
20	19BSS28	Statistic and Numerical Methods	BS	4	3	1	0	4

**3. General Engineering Science Courses (GES)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	19GES01	Programming for Problem Solving Using C	GES	3	3	0	0	3
2	19GES02	Programming for Problem Solving Technique	GES	3	3	0	0	3
3	19GES03	Programming in C Laboratory	GES	2	0	0	2	1
4	19GES04	Programming in C and Python Laboratory	GES	2	0	0	2	1
5	19GES05	Electrical and Electronic Sciences	GES	3	3	0	0	3
6	19GES06	Mechanical and Building Sciences	GES	3	3	0	0	3
7	19GES07	Computer Aided Drafting Laboratory	GES	2	0	0	2	1
8	19GES08	Python Programming	GES	3	3	0	0	3
9	19GES09	Programming in Python Laboratory	GES	2	0	0	2	1
10	19GES10	Soft Skills Laboratory	GES	2	0	0	2	1
11	19GES11	Electronic Devices	GES	3	3	0	0	3
12	19GES12	Electronic Simulation Laboratory	GES	2	0	0	2	1

  
 CHAIRMAN  
 Board of Studies  
 Department of Electronics and Communication Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal - 637 408.

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408. NAMAKKAL Dist.  
 TAMILNADU.

Programme Code & Name: EC & B.E. - Electronics and Communication Engineering

13	19GES13	Electric Circuits	GES	3	2	1	0	3
14	19GES14	Electric Circuits Laboratory	GES	2	0	0	2	1
15	19GES15	Manufacturing Process	GES	3	3	0	0	3
16	19GES16	Manufacturing Process Laboratory	GES	2	0	0	2	1
17	19GES17	Mechanical and Building Sciences Laboratory	GES	2	0	0	2	1
18	19GES18	Construction Materials	GES	3	3	0	0	3
19	19GES19	Concepts in Product Design	GES	3	3	0	0	3
20	19GES20	Renewable Energy Sources	GES	3	3	0	0	3
21	19GES21	Electrical Drives and Control	GES	3	3	0	0	3
22	19GES22	Electrical Drives and Control Laboratory	GES	2	0	0	2	1
23	19GES23	Analog and digital communication	GES	3	3	0	0	3
24	19GES24	Digital Principles and System Design	GES	3	3	0	0	3
25	19GES25	Digital Principles and System Design Laboratory	GES	2	0	0	2	1
26	19GES26	Engineering Drawing	GES	5	1	0	4	3
27	19GES27	Engineering Geology	GES	3	3	0	0	3
28	19GES28	Engineering Mechanics	GES	4	3	1	0	4
29	19GES29	Wireless Communication	GES	4	3	1	0	4
30	19GES30	Electronics and Microprocessor	GES	3	3	0	0	3
31	19GES31	Electronics and Microprocessor Laboratory	GES	2	0	0	2	1
32	19GES32	Data Structures using Python	GES	3	3	0	0	3

4. Professional Core (PC):

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			C
					L	T	P	
1.	19ECC01	Electric Network Analysis and Machines	PC	3	3	0	0	3
2.	19ECC02	Signals and Systems	PC	4	3	1	0	4
3.	19ECC03	Analog Electronics	PC	4	3	1	0	4
4.	19ECC04	Digital System Design	PC	3	3	0	0	3
5.	19ECC05	Electromagnetic Fields	PC	3	3	0	0	3
6.	19ECC06	Analog Communication Systems	PC	3	3	0	0	3


CHAIRMAN  
Board of Studies  
Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 408.

PRINCIPAL  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

Programme Code & Name: EC & B.E. - Electronics and Communication Engineering

7.	19ECC07	Microcontroller Based System Design	PC	3	3	0	0	3
8.	19ECC08	Antenna Systems Engineering	PC	4	3	1	0	4
9.	19ECC09	Digital Signal Processing	PC	4	3	1	0	4
10.	19ECC10	Digital Communication Systems	PC	3	3	0	0	3
11.	19ECC11	Microwave Engineering	PC	3	3	0	0	3
12.	19ECC12	VLSI Circuit Design	PC	3	3	0	0	3
13.	19ECC13	Computer Networks	PC	3	3	0	0	3
14.	19ECC14	Control Engineering	PC	3	3	0	0	3
15.	19ECC15	Embedded Systems & RTOS	PC	3	3	0	0	3
16.	19ECC16	NEMS and MEMS Technology	PC	3	3	0	0	3
17.	19ECC17	Digital Image Processing	PE	3	3	0	0	3
18.	19ECC18	Analog Electronics Laboratory	PC	2	0	0	2	1
19.	19ECC19	Digital System Design Laboratory	PC	2	0	0	2	1
20.	19ECC20	Analog Communication Systems Laboratory	PC	2	0	0	2	1
21.	19ECC21	Microcontroller Based System Design Laboratory	PC	2	0	0	2	1
22.	19ECC22	Signal Processing Laboratory	PC	2	0	0	2	1
23.	19ECC23	Digital Communication Systems Laboratory	PC	2	0	0	2	1
24.	19ECC24	Microwave Engineering Laboratory	PC	2	0	0	2	1
25.	19ECC25	VLSI Design Laboratory	PC	2	0	0	2	1
26.	19ECC26	Embedded Systems Laboratory	PC	2	0	0	2	1
27.	19ECC27	Digital Image Processing Laboratory	PC	2	0	0	2	1

  
 CHAIRMAN  
 Board of Studies  
 Department of Electronics and Communication Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal - 637 408.

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408. NAMAKKAL Dist.  
 TAMILNADU.

**5. Professional Electives (PE):**

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			C
					L	T	P	
1.	19ECE01	Radar and Navigational Aids	PE	3	3	0	0	3
2.	19ECE02	Electromagnetic Interference And Compatibility	PE	3	3	0	0	3
3.	19ECE03	Sensors and Transducers	PE	3	3	0	0	3
4.	19ECE04	High Speed Networks	PE	3	3	0	0	3
5.	19ECE05	Wireless Sensor Networks	PE	3	3	0	0	3
6.	19ECE06	Telecommunication Switching Networks	PE	3	3	0	0	3
7.	19ECE07	Cognitive Radio Networks	PE	3	3	0	0	3
8.	19ECE08	Mobile Ad-Hoc Networks	PE	3	3	0	0	3
9.	19ECE09	Biomedical Engineering	PE	3	3	0	0	3
10.	19ECE10	Bio Signal and Image Processing	PE	3	3	0	0	3
11.	19ECE11	Bio Sensors & Bio MEMS	PE	3	3	0	0	3
12.	19ECE12	Pattern Recognition and AI Techniques	PE	3	3	0	0	3
13.	19ECE13	Soft Computing	PE	3	3	0	0	3
14.	19ECE14	Wireless Communication	PE	3	3	0	0	3
15.	19ECE15	Satellite Communication	PE	3	3	0	0	3
16.	19ECE16	Optical Fiber Communication	PE	3	3	0	0	3
17.	19ECE17	AI and Machine Learning	PE	3	3	0	0	3
18.	19ECE18	Optoelectronic Devices	PE	3	3	0	0	3
19.	19ECE19	Nanoelectronics	PE	3	3	0	0	3
20.	19ECE20	ASIC Design	PE	3	3	0	0	3
21.	19ECE21	Low Power VLSI Design	PE	3	3	0	0	3
22.	19ECE22	Reconfigurable Computing using FPGAs	PE	3	3	0	0	3
23.	19ECE23	System on Chip Design	PE	3	3	0	0	3

  
**CHAIRMAN**  
 Board of Studies  
 Department of Electronics and Communication Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal - 637 408.

  
**PRINCIPAL**  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408. NAMAKKAL Dist.  
 TAMILNADU.

24.	19ECE24	Computer Architecture and organization	PE	3	3	0	0	3
25.	19ECE25	Internet of Things	PE	3	3	0	0	3
26.	19ECE26	Automotive Electronics	PE	3	3	0	0	3
27.	19ECE27	Electronic Instrumentations and Measurement Techniques	PE	3	3	0	0	3

**6. Employability Enhancement Courses (EEC) :**

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			C
					L	T	P	
1.	19ECP01	Project Work Phase - I	EEC	10	0	0	10	5
2.	19ECP02	Project Work Phase -II	EEC	18	0	0	18	9
3.	19ECP03	Presentation Skill and Technical Seminar	EEC	2	0	0	2	1
4.	19ECP04	Internship	EEC	0	0	0	0	1

**7. Mandatory Courses (MC) :**

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			C
					L	T	P	
1.	19ECM01	Indian Constitution	MC	2	2	0	0	0
2.	19ECM02	Essence of Indian Traditional Knowledge	MC	2	2	0	0	0



CHAIRMAN  
Board of Studies

Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 408.



PRINCIPAL,

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU.



## MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

### B.E. -ELECTRONICS AND COMMUNICATION ENGINEERING

#### CREDIT SUMMARY

Regulation-2019

S.No	Subject Area	CREDITS AS PER SEMESTER								Total Credit
		I	II	III	IV	V	VI	VII	VIII	
1	HS	3	2	-	-	-	-	3	-	8
2	BS	11	10	4	4	-	-	-	-	29
3	GES	7	8	1	3	-	-	-	-	19
4	PC	-	-	19	17	21	11	-	-	68
5	PE	-	-	-	-	-	6	6	-	12
6	OE	-	-	-	-	-	3	6	-	9
7	EEC	-	-	-	-	-	1	5	10	16
<b>Total</b>		<b>21</b>	<b>20</b>	<b>24</b>	<b>24</b>	<b>21</b>	<b>21</b>	<b>20</b>	<b>10</b>	<b>161</b>

CHAIRMAN

Board of Studies

Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 408.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU.



**MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)**  
(Approved by AICTE & Affiliated to Anna University),  
RASIPURAM – 637 408

**CURRICULUM**  
**UG**  
**R - 2019**

Department	Electronics and Communication Engineering
Programme	B.E.

**SEMESTER - I**

Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19HSS01	Business English	2	0	0	2	2
2.	19BSS21	Algebra and Calculus	3	1	0	4	4
3.	19BSS01	Engineering Physics	3	0	0	3	3
4.	19BSS11	Engineering Chemistry	3	0	0	3	3
5.	19GES02	Programming for Problem Solving Technique	3	0	0	3	3
6.	19GES06	Mechanical and Building Sciences	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19BSS02	Physics and Chemistry Laboratory	0	0	2	1	2
8.	19GES03	Programming in C Laboratory	0	0	2	1	2
9.	19HSS02	English Communicative Skills Laboratory	0	0	2	1	2
10.	19ECM01	Induction Training	2	0	0	0	2
<b>Total Credits</b>						<b>21</b>	



**MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)**  
(Approved by AICTE & Affiliated to Anna University),  
RASIPURAM – 637 408

**CURRICULUM**  
**UG**  
**R - 2019**

Department	Electronics and Communication Engineering
Programme	B.E.

**SEMESTER - II**

Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19HSS03	Life Skills and Workplace Psychology	2	0	0	2	3
2.	19BSS22	Differential Equations and Vector Analysis	3	1	0	4	4
3.	19BSS03	Bio and Nanomaterials Sciences	3	0	0	3	3
4.	19BSS12	Environmental Science and Engineering	3	0	0	3	3
5.	19GES19	Concepts in Product Design	3	0	0	3	3
6.	19GES11	Electronic Devices	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19GES12	Electronic Simulation Laboratory	0	0	2	1	2
8.	19GES09	Programming in Python Laboratory	0	0	2	1	2
<b>Total Credits</b>						<b>20</b>	

CHAIRMAN  
Board of Studies

Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 408

PRINCIPAL  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU.



**MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)**  
(Approved by AICTE & Affiliated to Anna University),  
RASIPURAM – 637 408

**CURRICULUM**  
UG  
R - 2019

Department		Electronics and Communication Engineering					
Programme		B.E					
<b>SEMESTER - III</b>							
Sl. No.	Course Code	Course Name	Hours / Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19BSS23	Transform and Partial Differential Equations	3	1	0	4	4
2.	19ECC01	Electric Network Analysis and Machines	3	0	0	3	3
3.	19ECC02	Signals and Systems	3	1	0	4	4
4.	19ECC03	Analog Electronics	3	1	0	4	4
5.	19ECC04	Digital System Design	3	0	0	3	3
6.	19ECC05	Electromagnetic Fields	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19ECC18	Analog Electronics Laboratory	0	0	2	1	2
8.	19ECC19	Digital System Design Laboratory	0	0	2	1	2
9.	19GES10	Soft Skills Laboratory	0	0	2	1	2
<b>Total Credits</b>						<b>24</b>	



**MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)**  
(Approved by AICTE & Affiliated to Anna University),  
RASIPURAM – 637 408

**CURRICULUM**  
UG  
R - 2019

Department		Electronics and Communication Engineering					
Programme		B.E.					
<b>SEMESTER – IV</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19BSS25	Statistical and Queuing Model	3	1	0	4	4
2.	19ECC06	Analog Communication Systems	3	0	0	3	3
3.	19ECC07	Microcontroller Based System Design	3	0	0	3	3
4.	19ECC08	Antenna Systems Engineering	3	1	0	4	4
5.	19ECC09	Digital Signal Processing	3	1	0	4	4
6.	19GES32	Data Structures using Python	3	0	0	3	3
<b>PRACTICALS</b>							
6.	19ECC20	Analog Communication Systems Laboratory	0	0	2	1	2
7.	19ECC21	Microcontroller Based System Design Laboratory	0	0	2	1	2
8.	19ECC22	Signal Processing Laboratory	0	0	2	1	2
<b>Total Credits</b>						<b>24</b>	

CHAIRMAN

Board of Studies

Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 408.

PRINCIPAL,

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.



**MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)**  
(Approved by AICTE & Affiliated to Anna University),  
RASIPURAM – 637 408

**CURRICULUM**  
UG  
R - 2019

Department		Electronics and Communication Engineering					
Programme		B.E.					
<b>SEMESTER – V</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19ECC10	Digital Communication Systems	3	0	0	3	3
2.	19ECC11	Microwave Engineering	3	0	0	3	3
3.	19ECC12	VLSI Circuit Design	3	0	0	3	3
4.	19ECC13	Computer Networks	3	0	0	3	3
5.	19ECC14	Control Engineering	3	0	0	3	3
6.		Professional Elective I	3	0	0	3	3
<b>PRACTICALS</b>							
7.	19ECC23	Digital Communication Systems Laboratory	0	0	2	1	2
8.	19ECC24	Microwave Engineering Laboratory	0	0	2	1	2
9.	19ECC25	VLSI Design Laboratory	0	0	2	1	2
<b>Total Credits</b>						<b>21</b>	

Department		Electronics and Communication Engineering					
Programme		B.E.					
<b>SEMESTER – VI</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19ECC15	Embedded Systems & RTOS	3	0	0	3	3
2.	19ECC16	NEMS and MEMS Technology	3	0	0	3	3
3.	19ECC17	Digital Image Processing	3	0	0	3	3
4.		Professional Elective II	3	0	0	3	3
5.		Professional Elective III	3	0	0	3	3
6.		Open Elective I	3	0	0	3	3
7.		Mandatory Course I	2	0	0	0	2
<b>PRACTICALS</b>							
8.	19ECC26	Embedded Systems Laboratory	0	0	2	1	2
9.	19ECC27	Digital Image Processing Laboratory	0	0	2	1	2
10.	19ECP03	Presentation Skill and Technical Seminar	2	0	0	1	2
<b>Total Credits</b>						<b>21</b>	

**CHAIRMAN**  
Board of Studies

Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 408

**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU.**



**MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)**  
(Approved by AICTE & Affiliated to Anna University),  
RASIPURAM – 637 408

**CURRICULUM**  
**UG**  
**R - 2019**


Department		Electronics and Communication Engineering					
Programme		B.E.					
<b>SEMESTER – VII</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>THEORY</b>							
1.	19HSS08	Professional Ethics and Human Values	3	0	0	3	3
2.		Professional Elective IV	3	0	0	3	3
3.		Professional Elective V	3	0	0	3	3
4.		Open Elective II	3	0	0	3	3
5.		Open Elective III	3	0	0	3	3
6.		Mandatory Course II	2	0	0	0	2
<b>PRACTICALS</b>							
7.	19ECP01	Project Work Phase I	0	0	10	5	10
<b>Total Credits</b>						<b>20</b>	



**MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)**  
(Approved by AICTE & Affiliated to Anna University),  
RASIPURAM – 637 408

**CURRICULUM**  
**UG**  
**R - 2019**

Department		Electronics and Communication Engineering					
Programme		B.E.					
<b>SEMESTER – VIII</b>							
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours
			L	T	P		
<b>PRACTICALS</b>							
1.	19ECP02	Project Work Phase II	0	0	18	9	18
2.	19ECP04	Internship	0	0	0	1	
<b>Total Credits</b>						<b>10</b>	

  
**CHAIRMAN**  
Board of Studies  
Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 408.

  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RASIPURAM-637 408, NAMAKKAL Dist.**  
**TAMILNADU.**



## MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)  
Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

### M.E. – VLSI DESIGN

#### GROUPING OF COURSES

#### FOUNDATION COURSES (FC):

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	19VLA01	Advanced Numerical Methods	FC	5	3	2	0	4
2.	19VLA02	Applied Mathematics	FC	5	3	2	0	4
3.	19VLA03	Applied Probability and Statistics	FC	5	3	2	0	4

#### Professional Core (PC):

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	19VLB01	VLSI Signal Processing	PC	5	3	2	0	4
2.	19VLB02	VLSI Design Techniques	PC	3	3	0	0	3
3.	19VLB03	Analog VLSI Circuit Design	PC	3	3	0	0	3
4.	19VLB04	Solid State Device Modeling and Simulation	PC	3	3	0	0	3
5.	19VLB05	ASIC Design		3	3	0	0	3
6.	19VLB07	Digital CMOS VLSI Design	PC	5	3	0	0	3
7.	19VLB08	CAD for VLSI Circuits	PC	5	3	2	0	4
8.	19VLB09	Low Power VLSI Design	PC	3	3	0	0	3
9.	19VLB11	Testing of VLSI Circuits	PC	3	3	0	0	3
10.	19VLB06	VLSI Design Techniques Laboratory	PC	2	0	0	2	1
11.	19VLB10	Digital CMOS VLSI Design Laboratory	PC	2	0	0	2	1

CHAIRMAN  
Board of Studies

Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 408.

PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

**Professional Electives (PE):**

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	19VLC01	Signal Integrity for High Speed Devices	PE	3	3	0	0	3
2.	19VLC02	Advanced Digital System Design	PE	3	3	0	0	3
3.	19VLC03	Submicron VLSI Design	PE	3	3	0	0	3
4.	19VLC04	VLSI Technology	PE	3	3	0	0	3
5.	19VLC05	DSP Integrated Circuits	PE	3	3	0	0	3
6.	19VLC06	ARM Processor and Applications	PE	3	3	0	0	3
7.	19VLC07	Hardware Design Verification Techniques	PE	3	3	0	0	3
8.	19VLC08	Design and Analysis of Algorithms	PE	3	3	0	0	3
9.	19VLC09	MEMS and NEMS	PE	3	3	0	0	3
10.	19VLC10	Soft Computing	PE	3	3	0	0	3
11.	19VLC11	VLSI for Wireless Communication	PE	3	3	0	0	3
12.	19VLC12	Reconfigurable Architectures	PE	3	3	0	0	3
13.	19VLC13	Research Methodology	PE	3	3	0	0	3
14.	19VLC14	RF Integrated Circuit Design	PE	3	3	0	0	3
15.	19VLC15	Electromagnetic Interference and Compatibility	PE	3	3	0	0	3



CHAIRMAN  
Board of Studies

Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 408.




PRINCIPAL  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU.

**Employability Enhancement Courses (EEC):**


S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	19VLD01	Project Work Phase -I	EEC	12	0	0	12	6
2.	19VLD02	Project Work Phase -II	EEC	24	0	0	24	12


**Audit Courses (AC) :**

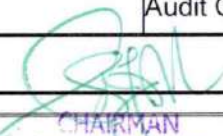
S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	19VLE01	English for Research Paper Writing	AC	2	2	0	0	0
2.	19VLE02	Disaster Management	AC	2	2	0	0	0
3.	19VLE03	Sanskrit for Technical Knowledge	AC	2	2	0	0	0
4.	19VLE04	Value Education	AC	2	2	0	0	0
5.	19VLE05	Constitution of India	AC	2	2	0	0	0
6.	19VLE06	Pedagogy Studies	AC	2	2	0	0	0
7.	19VLE07	Stress Management by Yoga	AC	2	2	0	0	0
8.	19VLE08	Personality Development through Life Enlightenment Skills.	AC	2	2	0	0	0

  
**CHAIRMAN**  
 Board of Studies  
 Department of Electronics and Communication Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal - 637 400.


  
**PRINCIPAL,**  
**MUTHAYAMMAL ENGINEERING COLLEGE**  
**(AUTONOMOUS)**  
**RAŞIPURAM-637 408. NAMAKKAL Dist.**  
**TAMILNADU.**


		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>(Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					CURRICULUM PG R - 2019	
Department		Electronics and Communication Engineering						
Programme		M.E. – VLSI Design						
<b>SEMESTER - I</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	19VLA02	Applied Mathematics	3	2	0	4	5	
2.	19VLB01	VLSI Signal Processing	3	2	0	4	5	
3.	19VLB02	VLSI Design Techniques	3	0	0	3	5	
4.	19VLB03	Analog VLSI Circuit Design	3	0	0	3	3	
5.	19VLB04	Solid State Device Modeling and Simulation	3	0	0	3	3	
6.	19VLB05	ASIC Design	3	0	0	3	3	
7.	19VLB06	VLSI Design Techniques Laboratory	0	0	2	1	2	
<b>Total Credits</b>						<b>21</b>		

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>(Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					CURRICULUM PG R - 2019	
Department		Electronics and Communication Engineering						
Programme		M.E. – VLSI Design						
<b>SEMESTER - II</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	19VLB07	Digital CMOS VLSI Design	3	0	0	3	5	
2.	19VLB08	CAD for VLSI Circuits	3	2	0	4	5	
3.	19VLB09	Low Power VLSI Design	3	0	0	3	3	
4.		Elective I	3	0	0	3	3	
5.		Elective II	3	0	0	3	3	
6.		Elective III	3	0	0	3	3	
7.	19VLB10	Digital CMOS VLSI Design Laboratory	0	0	2	1	2	
8.		Audit Course 1	2	0	0	0	2	
<b>Total Credits</b>						<b>20</b>		

  
 CHAIRMAN  
 Board of Studies  
 Department of Electronics and Communication Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal - 637 408.

PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>(Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					CURRICULUM PG R - 2019	
Department		Electronics and Communication Engineering						
Programme		M.E. – VLSI Design						
<b>SEMESTER - III</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	19VLB09	Testing of VLSI Circuits	3	0	0	3	3	
2.		Elective IV	3	0	0	3	3	
3.		Elective V	3	0	0	3	3	
4.		Audit Course - 2	2	0	0	0	2	
<b>PRACTICAL</b>								
5.	19VLD01	Project Work Phase-I	0	0	12	6	12	
<b>Total Credits</b>						<b>15</b>		

		<b>MUTHAYAMMAL ENGINEERING COLLEGE</b> <b>(Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					CURRICULUM PG R - 2019	
Department		Electronics and Communication Engineering						
Programme		M.E. – VLSI Design						
<b>SEMESTER - IV</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit	Contact Hours	
			L	T	P			
<b>PRACTICAL</b>								
1.	19VLD02	Project Work Phase-II	0	0	24	12	24	
<b>Total Credits</b>						<b>12</b>		

Total Credits To Be Earned For The Award Of Degree: 68

  
 CHAIRMAN

Board of Studies

Department of Electronics and Communication Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal - 637 408.

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.



# MUTHAYAMMAL ENGINEERING COLLEGE

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Accredited by NAAC & Affiliated to Anna University)

Rasipuram - 637 408, Namakkal Dist., Tamil Nadu

## M.E. – COMMUNICATION SYSTEMS

### GROUPING OF COURSES

#### Foundation Courses (FC) :

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	19MSA01	Advanced Numerical Methods	FC	5	3	2	0	4
2.	19MSA02	Applied Mathematics	FC	5	3	2	0	4
3.	19MSA03	Applied Probability and Statistics	FC	5	3	2	0	4

#### Professional Core (PC) :

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	19MSB01	Radiation Systems	PC	5	3	2	0	4
2.	19MSB02	Information Theory and Coding	PC	3	3	0	0	3
3.	19MSB03	Statistical Signal Processing	PC	3	3	0	0	3
4.	19MSB04	Optical Communication Networks	PC	3	3	0	0	3
5.	19MSB05	Mobile Communication Networks	PC	3	3	0	0	3
6.	19MSB06	Modern Digital Communication Techniques	PC	5	3	2	0	4
7.	19MSB07	RF System Design	PC	3	3	0	0	3
8.	19MSB08	Electromagnetic Interference and Compatibility	PC	3	3	0	0	3
9.	19MSB09	Microwave Integrated Circuits	PC	3	3	0	0	3
10.	19MSB10	Communication Network Design	PC	3	3	0	0	3
11.	19MSB11	Wireless Networks	PC	3	3	0	0	3
12.	19MSB12	DSP Processor Architecture and Programming	PC	3	3	0	0	3
13.	19MSB13	Statistical Signal Processing Laboratory	PC	2	0	0	2	1
14.	19MSB14	RF System Design Laboratory	PC	2	0	0	2	1

#### Professional Electives (PE):

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	19MSC01	Multimedia and Compression Techniques	PE	3	3	0	0	3

Board of Studies

Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 408.

PRINCIPAL,

MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408, NAMAKKAL Dist.  
TAMILNADU.

Programme Code & Name: CO & Communication Systems

2.	19MSC02	Routing Algorithms	PE	3	3	0	0	3
3.	19MSC03	Adaptive Beam Forming	PE	3	3	0	0	3
4.	19MSC04	Biological Effects of Microwaves	PE	3	3	0	0	3
5.	19MSC05	Soft Computing	PE	3	3	0	0	3
6.	19MSC06	Wireless Security System	PE	3	3	0	0	3
7.	19MSC07	RTOS and its Applications	PE	3	3	0	0	3
8.	19MSC08	Optical Signal Processing in Communication	PE	3	3	0	0	3
9.	19MSC09	High Speed Switching Architecture	PE	3	3	0	0	3
10.	19MSC10	Mobile Adhoc Networks	PE	3	3	0	0	3
11.	19MSC11	RF MEMS	PE	3	3	0	0	3
12.	19MSC12	Satellite Remote Sensing	PE	3	3	0	0	3

**Employability Enhancement Courses (EEC):**

S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	19MSD01	Project Work Phase -I	EEC	12	0	0	12	6
2.	19MSD02	Project Work Phase -II	EEC	24	0	0	24	12


**Audit Courses (AC) :**


S.No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/week			Credit
					L	T	P	
1.	19MSE01	English for Research Paper Writing	AC	2	2	0	0	0
2.	19MSE02	Disaster Management	AC	2	2	0	0	0
3.	19MSE03	Sanskrit for Technical Knowledge	AC	2	2	0	0	0
4.	19MSE04	Value Education	AC	2	2	0	0	0
5.	19MSE05	Constitution of India	AC	2	2	0	0	0
6.	19MSE06	Pedagogy Studies	AC	2	2	0	0	0
7.	19MSE07	Stress Management by Yoga	AC	2	2	0	0	0
8.	19MSE08	Personality Development through Life Enlightenment Skills.	AC	2	2	0	0	0

CHAIRMAN  
Board of Studies

Department of Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Rasipuram, Namakkal - 637 406.


PRINCIPAL,  
MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU.


 Estd. 2000		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM PG R - 2019</b>	
Department			Electronics and Communication Engineering					
Programme			M.E. – Communication Systems					
<b>SEMESTER - I</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	19MSA02	Applied Mathematics	3	2	0	4	5	
2.	19MSB01	Radiation Systems	3	2	0	4	5	
3.	19MSB02	Information Theory and Coding	3	0	0	3	3	
4.	19MSB03	Statistical signal processing	3	0	2	4	5	
5.	19MSB04	Optical Communication Networks	3	0	0	3	3	
6.	19MSB05	Mobile Communication Networks	3	0	0	3	3	
7.		Audit Course 1	2	0	0	0	2	
<b>PRACTICAL</b>								
8.	19MSB13	Statistical signal processing Laboratory	2	0	0	1	2	
<b>Total Credits</b>						<b>21</b>		

 Estd. 2000		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM PG R - 2019</b>	
Department			Electronics and Communication Engineering					
Programme			M.E. – Communication Systems					
<b>SEMESTER - II</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.	19MSB06	Modern Digital Communication Techniques	3	2	0	4	5	
2.	19MSB07	RF System Design	3	0	0	3	3	
3.	19MSB08	Electromagnetic Interference and Compatibility	3	0	0	3	3	
4.		Elective I	3	0	0	3	3	
5.		Elective II	3	0	0	3	3	
6.		Elective III	3	0	0	3	3	
7.		Audit Course 2	2	0	0	0	2	
<b>PRACTICAL</b>								
8.	19MSB14	RF System Design Laboratory	2	0	2	1	2	
<b>Total Credits</b>						<b>20</b>		

CHAIRMAN  
Board of Studies  
Electronics and Communication Engineering  
Muthayammal Engineering College (Autonomous)  
Namakkal - 637 408.

ML MUTHAYAMMAL ENGINEERING COLLEGE  
(AUTONOMOUS)  
RASIPURAM-637 408. NAMAKKAL Dist.  
TAMILNADU.

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM PG R - 2019</b>	
Department			Electronics and Communication Engineering					
Programme			M.E. – Communication Systems					
<b>SEMESTER - III</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours	
			L	T	P			
<b>THEORY</b>								
1.		Elective IV	3	0	0	3	3	
2.		Elective V	3	0	0	3	3	
3.		Open Elective I	3	0	0	3	3	
<b>PRACTICAL</b>								
4.	19MSD01	Project Work Phase -I	0	0	12	6	12	
<b>Total Credits</b>						<b>15</b>		

		<b>MUTHAYAMMAL ENGINEERING COLLEGE (Autonomous)</b> (Approved by AICTE & Affiliated to Anna University), RASIPURAM – 637 408					<b>CURRICULUM PG R - 2019</b>	
Department			Electronics and Communication Engineering					
Programme			M.E. – Communication Systems					
<b>SEMESTER - IV</b>								
Sl. No.	Course Code	Course Name	Hours/ Week			Credit C	Contact Hours	
			L	T	P			
<b>PRACTICAL</b>								
1.	19MSD02	Project Work Phase -II	0	0	24	12	24	
<b>Total Credits</b>						<b>12</b>		

Total Credits to be earned for the Award of Degree: 68

  
 CHAIRMAN  
 Board of Studies

Department of Electronics and Communication Engineering  
 Muthayammal Engineering College (Autonomous)  
 Rasipuram, Namakkal - 637 408

  
 PRINCIPAL,  
 MUTHAYAMMAL ENGINEERING COLLEGE  
 (AUTONOMOUS)  
 RASIPURAM-637 408, NAMAKKAL Dist.  
 TAMILNADU.