

HEAD OF THE INSTITUTION  
DECLARATION FOR CBCS  
PROGRAMME



ISO 9001:2015 Certified Institution

# J.K.K.MUNIRAJAH COLLEGE OF TECHNOLOGY

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)  
Accredited by NAAC "A" Grade

**Smt.M.VASANTHAKUMARI**  
Chairman & Managing Trustee

**Smt.M.KASTHURIPRIYA** MBA.,  
Secretary

**Dr.K.SRIDHARAN** Ph.D.,  
Principal

06-03-2023

## TO WHOMSOEVER IT MAY CONCERN

This is to certify that the following list of UG and PG Programmes have implemented the Choice Based Credit System (CBCS) from the academic year 2017-18 onwards till now.

| Programme Code | Programme Name                                |
|----------------|-----------------------------------------------|
| 102            | B.E Automobile Engineering                    |
| 103            | B.E Civil Engineering                         |
| 104            | B.E Computer Science and Engineering          |
| 105            | B.E Electrical and Electronics Engineering    |
| 106            | B.E Electronics and Communication Engineering |
| 114            | B.E Mechanical Engineering                    |
| 205            | B.Tech Information Technology                 |
| 401            | M.E Applied Electronics                       |
| 405            | M.E Computer Science and Engineering          |
| 410            | M.E Manufacturing Engineering                 |
| 415            | M.E Power Electronics and Drives              |
| 622            | Master of Computer Applications               |
| 631            | Master of Business Administration             |

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**OF TECHNOLOGY**  
**T.N. PALAYAM (Po)-638 506**  
**Gobi (Tk), Erode (Dt).**



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## TO WHOMSOEVER IT MAY CONCERN

As per the directions from Anna University, Chennai regarding Choice Based Credit System (CBCS) introduction, for all the affiliated institutions from the academic year 2017-2018 onwards, we have implemented the Choice Based Credit System (CBCS) and Elective course system (2017 & 2021 Regulations) for all UG and PG Programmes in our Institution.

This is for your kind perusal.

  
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**ANNA UNIVERSITY LETTER  
FOR UG-CBCS PROGRAMME**

**ANNA UNIVERSITY : : CHENNAI - 600 025**

**AFFILIATED INSTITUTIONS**

**REGULATIONS 2017**

**CHOICE BASED CREDIT SYSTEM**

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

**(For the students admitted to B.E. / B.Tech. Programme at various Affiliated Institutions)**

**DEGREE OF BACHELOR OF ENGINEERING / BACHELOR OF TECHNOLOGY**

This Regulations is applicable to the students admitted to B.E./B.Tech. Programmes at all Engineering Colleges affiliated to Anna University, Chennai (other than Autonomous Colleges) and to all the University Colleges of Engineering of Anna University, Chennai from the academic year 2017 -2018 onwards.

**1. PRELIMINARY DEFINITIONS AND NOMENCLATURE**

In these Regulations, unless the context otherwise requires:

- I) **"Programme"** means Degree Programme, that is B.E./B.Tech. Degree Programme.
- II) **"Discipline"** means specialization or branch of B.E./B.Tech. Degree Programme, like Civil Engineering, Textile Technology, etc.
- III) **"Course"** means a theory or practical subject that is normally studied in a semester, like Mathematics, Physics, etc.
- IV) **"Director, Academic Courses"** means the authority of the University who is responsible for all academic activities of the Academic Programmes for implementation of relevant rules of this Regulations pertaining to the Academic Programmes.
- V) **"Chairman"** means the Head of the Faculty.
- VI) **"Head of the Institution"** means the Principal of the College.
- VII) **"Head of the Department"** means head of the Department concerned.
- VIII) **"Controller of Examinations"** means the authority of the University who is responsible for all activities of the University Examinations.
- IX) **"University"** means ANNA UNIVERSITY, CHENNAI.



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## 2. ADMISSION

Candidates seeking admission to the first semester of the eight semester B.E. / B.Tech. Degree Programme:

Should have passed the Higher Secondary Examinations of (10+2) Curriculum (Academic Stream) prescribed by the Government of Tamil Nadu with Mathematics, Physics and Chemistry as three of the four subjects of study under Part-III or any examination of any other University or authority accepted by the Syndicate of Anna University as equivalent thereto.

(OR)

Should have passed the Higher Secondary Examination of Vocational stream (Vocational groups in Engineering / Technology) as prescribed by the Government of Tamil Nadu.

### Lateral entry admission

- (i) The candidates who possess the Diploma in Engineering / Technology awarded by the State Board of Technical Education, Tamilnadu or its equivalent are eligible to apply for Lateral entry admission to the third semester of B.E. / B.Tech. in the branch corresponding to the branch of study.

(OR)

- (ii) The candidates who possess the Degree in Science (B.Sc.,) (10+2+3 stream) with Mathematics as a subject at the B.Sc. Level are eligible to apply for Lateral entry admission to the third semester of B.E. / B.Tech.

Such candidates shall undergo two additional Engineering subject(s) in the **third and fourth semesters** as prescribed by the University.

## 3. PROGRAMMES OFFERED

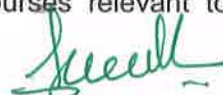
B.E. / B.Tech. Programmes under the Faculty of Civil Engineering, Faculty of Mechanical Engineering, Faculty of Electrical Engineering, Faculty of Information and Communication Engineering and Faculty of Technology.

## 4. STRUCTURE OF PROGRAMMES

### 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, Engineering Ethics and Human Values, Communication skills, 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.

  
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- vi. **Open Elective (OE)** courses include the courses from other branches which a student can choose from the list specified in the curriculum of the students B.E. / B. Tech. / B. Arch. Programmes.
- vii. **Employability Enhancement Courses (EEC)** include Project Work and/or Internship, Seminar, Professional Practices, Case Study and Industrial/Practical Training.

### **Personality and Character Development**

All students shall enroll, on admission, in any one of the personality and character development programmes (NCC/NSS/NSO/YRC) and undergo training for about 80 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.

**National Sports Organization (NSO)** 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.

### **Number of courses per semester**

Each semester curriculum shall normally have a blend of lecture courses not exceeding 7 and Laboratory courses and Employability Enhancement Course(s) not exceeding 4. Each Employability Enhancement Course may have credits assigned as per clause 4.4. However, the total number of courses per semester shall not exceed 10.

### **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 Laboratory Periods (also for EEC courses like / Seminar / Project Work / Case study / etc.) | 1       |

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

#### 4.5. Industrial Training / Internship

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.

##### Industrial Visit

Every student is required 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.

##### Value Added Courses

The Students may optionally undergo 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 / Two 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 Centre for Academic Courses and the Controller of Examinations after approval from the **Head of the Institution** concerned atleast one month before the course is offered. **Students can take a maximum of two one credit courses / one two credit course** during the entire duration of the Programme.

##### Online Courses

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

Students may be permitted to credit one online course (which are provided with certificate) subject to a maximum of three credits. The approved list of online courses will be provided by the Centre for Academic courses 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, Anna University. The details regarding online courses taken up by students should be sent to the Controller of Examinations, Anna University and Centre for Academic Courses one month before the commencement of End Semester Examination.

The students satisfying the following conditions shall be permitted to carry out their final semester Project work for six months in industry/research organizations.

The student should not have current arrears and shall have CGPA of 7.50 and above.

The student shall undergo the eighth semester courses in the sixth and seventh semesters. The Head of Department, in consultation with the faculty handling the said courses shall forward the proposal recommended by the Head of Institution to the Controller of Examinations through the Director, Centre for Academic courses for approval at least 4 weeks before the commencement of the sixth semester of the programme for approval.

### Medium of Instruction

The medium of instruction is English for all courses, examinations, seminar presentations and project / thesis / dissertation reports except for the programmes offered in Tamil Medium.

### 5. DURATION OF THE PROGRAMME

A student is ordinarily expected to complete the B.E. / B.Tech. Programme in 8 semesters (four academic years) but in any case not more than 14 Semesters for HSC (or equivalent) candidates and not more than 12 semesters for Lateral Entry Candidates.

A student is ordinarily expected to complete the B.E. Mechanical Engineering (Sandwich) Programme in 10 semesters (five academic years) but in any case not more than 18 Semesters for HSC (or equivalent) candidates.

Each semester shall normally consist of 75 working days or 540 periods of 50 minutes each. The Head of the Institution shall ensure that every teacher imparts instruction as per the number of periods specified in the syllabus and that the teacher teaches the full content of the specified syllabus for the course being taught.

The Head of the Institution may conduct additional classes for improvement, special coaching, conduct of model test etc., over and above the specified periods. But for the purpose of calculation of attendance requirement for writing the end semester examinations (as per clause 6) by the students, following method shall be used.

$$\text{Attendance} = \frac{\text{Percentage of Total no. of periods attended in all the courses per semester}}{(\text{No. of periods / week as prescribed in the curriculum}) \times 15} \times 100$$

taken together for all courses of the semester

The University Examination will ordinarily follow immediately after the last working day of the semester commencing from I semester as per the academic schedule prescribed from time to time.

The total period for completion of the programme reckoned from the commencement of the first semester to which the candidate was admitted shall not exceed the maximum period specified in clause 5.1 irrespective of the period of break of study (vide clause 18) in order that he/she may be eligible for the award of the degree (vide clause 16).

### 6. COURSE REGISTRATION

The Institution is responsible for registering the courses that each student is proposing to undergo in the ensuing semester. Each student has to register for all courses to be undergone in the curriculum of a particular semester (with the facility to drop courses to a maximum of 6 credits (vide clause 6.2)). The student can also register for courses for which the student has failed in the earlier semesters.

The registration details of the candidates may be approved by the Head of the Institution and forwarded to the Controller of Examinations. This registration is for undergoing the course as well as for writing the End Semester Examinations. No Elective course shall be offered by any department of any institution unless a minimum 10 students register for the course. However, if the students admitted in the associated Branch and Semester is less than 10, this minimum will not be applicable.

**The courses that a student registers in a particular semester may include**

- i. Courses of the current semester.
- ii. The core (Theory/Lab /EEC) courses that the student has not cleared in the previous semesters.
- iii. Elective courses which the student failed (either the same elective or a different elective instead).

### **Flexibility to Drop courses**

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.

From the III to final semesters, the student has the option of dropping existing courses in a semester during registration. Total number of credits of such courses cannot exceed 6.

The student shall register for the project work in the final semester only.

## **7. ATTENDANCE REQUIREMENTS FOR COMPLETION OF THE SEMESTER**

A Candidate who has fulfilled the following conditions shall be deemed to have satisfied the requirements for completion of a semester.

Ideally every student is expected to attend all classes of all the courses and secure 100% attendance. However, in order to give provision for certain unavoidable reasons such as Medical / participation in sports, the student is expected to attend at least 75% of the classes.

Therefore, he/she shall **secure not less than 75%** (after rounding off to the nearest integer) of overall attendance as calculated as per clause 5.3.

However, a candidate who secures overall attendance between 65% and 74% in the current semester due to medical reasons (prolonged hospitalization / accident / specific illness) / Participation in Sports events may be permitted to appear for the current semester examinations subject to the condition that the candidate shall submit the medical certificate / sports participation certificate attested by the Head of the Institution. The same shall be forwarded to the Controller of Examinations for record purposes.

Candidates who **secure less than 65% overall attendance and candidates who do not satisfy the clause 7.1 and 7.2** shall not be permitted to write the University examination at the end of the semester and not permitted to move to the next semester. They are required to repeat the incomplete semester in the next academic year, as per the norms prescribed.

## **8. CLASS ADVISOR**

There shall be a class advisor for each class. The class advisor will be one among the (course-instructors) of the class. He / She will be appointed by the HoD of the department concerned. The class advisor is the ex-officio member and the Convener of the class committee. The responsibilities for the class advisor shall be:

- To act as the channel of communication between the HoD and the students of the respective class.
- To collect and maintain various statistical details of students.
- To help the chairperson of the class committee in planning and conduct of the class committee meetings.
- To monitor the academic performance of the students including attendance and to inform the class committee.
- To attend to the students' welfare activities like awards, medals, scholarships and industrial visits.

## **9. CLASS COMMITTEE**

Every class shall have a class committee consisting of teachers of the class concerned, student representatives and a chairperson who is not teaching the class. It is like the 'Quality Circle' (more commonly used in industries) with the overall goal of improving the teaching- learning process. The functions of the class committee include

- Solving problems experienced by students in the class room and in the laboratories.

- Clarifying the regulations of the degree programme and the details of rules therein particularly (clause 5 and 7) which should be displayed on college Notice-Board.
- Informing the student representatives, the academic schedule including the dates of assessments and the syllabus coverage for each assessment.
- Informing the student representatives the details of Regulations regarding weightage used for each assessment. In the case of practical courses (laboratory / drawing / project work / seminar etc.) the breakup of marks for each experiment / exercise / module of work, should be clearly discussed in the class committee meeting and informed to the students.
- Analyzing the performance of the students of the class after each test and finding the ways and means of solving problems, if any.
- Identifying the weak students, if any, and requesting the teachers concerned to provide some additional help or guidance or coaching to such weak students.

The class committee for a class under a particular branch is normally constituted by the Head of the Department. However, if the students of different branches are mixed in a class (like the first semester which is generally common to all branches), the class committee is to be constituted by the Head of the Institution.

The class committee shall be constituted within the first week of each semester.

At least 4 student representatives (usually 2 boys and 2 girls) shall be included in the class committee.

The Chairperson of the class committee may invite the Class adviser(s) and the Head of the Department to the class committee meeting.

The Head of the Institution may participate in any class committee of the institution.

The chairperson is required to prepare the minutes of every meeting, submit the same to Head of the Institution within two days of the meeting and arrange to circulate it among the students and teachers concerned. If there are some points in the minutes requiring action by the management, the same shall be brought to the notice of the Management by the Head of the Institution.

The first meeting of the class committee shall be held within one week from the date of commencement of the semester, in order to inform the students about the nature and weightage of assessments within the framework of the Regulations. Two or three subsequent meetings may be held in a semester at suitable intervals. The Class Committee Chairman shall put on the Notice Board the cumulative attendance particulars of each student at the end of every such meeting to enable the students to know their attendance details to satisfy the clause 6 of this Regulation. During these meetings the student members representing the entire class, shall meaningfully interact and express the opinions and suggestions of the other students of the class in order to improve the effectiveness of the teaching-learning process.

#### 10. COURSE COMMITTEE FOR COMMON COURSES

Each common theory course offered to more than one discipline or group, shall have a "Course Committee" comprising all the teachers teaching the common course with one of them nominated as Course Coordinator. The nomination of the Course Coordinator shall be made by the Head of the Department / Head of the Institution depending upon whether all the teachers teaching the common course belong to a single department or to several departments. The 'Course committee' shall meet in order to arrive at a common scheme of evaluation for the test and shall ensure a uniform evaluation of the tests. Wherever feasible, the course committee may also prepare a common question paper for the internal assessment test(s).

## 11. SYSTEM OF EXAMINATION

Performance in each course of study shall be evaluated based on (i) continuous internal assessment throughout the semester and (ii) University examination at the end of the semester.

Each course, both theory and practical (including project work & viva voce Examinations) shall be evaluated for a maximum of 100 marks.

For all theory and practical courses including project work, the continuous internal assessment will carry **20 marks** while the End - Semester University examination will carry **80 marks**.

Industrial training and seminar shall carry 100 marks and shall be evaluated through internal assessment only.

The University examination (theory and practical) of 3 hours duration shall ordinarily be conducted between October and December during the odd semesters and between April and June during the even semesters.

The University examination for project work shall consist of evaluation of the final report submitted by the student or students of the project group (of not exceeding 4 students) by an external examiner and an internal examiner, followed by a viva-voce examination conducted separately for each student by a committee consisting of the external examiner, the supervisor of the project group and an internal examiner.

For the University examination in both theory and practical courses including project work the internal and external examiners shall be appointed by the Controller of Examinations.

## 12. PROCEDURE FOR AWARDING MARKS FOR INTERNAL ASSESSMENT

For all theory and practical courses (including project work) the continuous assessment shall be for a maximum of 20 marks. The above continuous assessment shall be awarded as per the procedure given below:

### THEORY COURSES

Three tests each carrying 100 marks shall be conducted during the semester by the Department / College concerned. The total marks obtained in all tests put together out of 300, shall be proportionately reduced for 20 marks and rounded to the nearest integer (This also implies equal weightage to all the three tests).

### LABORATORY COURSES

The maximum marks for Internal Assessment shall be 20 in case of practical courses. Every practical exercise / experiment shall be evaluated based on conduct of experiment / exercise and records maintained. There shall be at least one test. The criteria for arriving at the Internal Assessment marks of 20 is as follows: 75 marks shall be awarded for successful completion of all the prescribed experiments done in the Laboratory and 25 marks for the test. The total mark shall be reduced to 20 and rounded to the nearest integer.

### THEORY COURSES WITH LABORATORY COMPONENT

If there is a theory course with Laboratory component, there shall be three tests: the first two tests (each 100 marks) will be from theory portions and the third test (maximum mark 100) will be for laboratory component. The sum of marks of first two tests shall be reduced to 60 marks and the third test mark shall be reduced to 40 marks. The sum of these 100 marks may then be arrived at for 20 and rounded to the nearest integer.

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## PROJECT WORK

Project work may be allotted to a single student or to a group of students not exceeding 4 per group.

The Head of the Institutions shall constitute a review committee for project work for each branch of study. There shall be three reviews during the semester by the review committee. The student shall make presentation on the progress made by him / her before the committee. The total marks obtained in the three reviews shall be **reduced for 20 marks** and rounded to the nearest integer (as per the scheme given in 12.4.1).

The project report shall carry a maximum 30 marks. The project report shall be submitted as per the approved guidelines as given by Director, Academic Courses. Same mark shall be awarded to every student within the project group for the project report. The viva-voce examination shall carry 50 marks. Marks are awarded to each student of the project group based on the individual performance in the viva-voce examination.

| Review<br>I | Review<br>II | Review<br>III | End semester Examinations |          |                |          |            |
|-------------|--------------|---------------|---------------------------|----------|----------------|----------|------------|
|             |              |               | Thesis<br>Submission (30) |          | Viva-Voce (50) |          |            |
|             |              |               | Internal                  | External | Internal       | External | Supervisor |
| 5           | 7.5          | 7.5           | 15                        | 15       | 15             | 20       | 15         |

If a candidate fails to submit the project report on or before the specified deadline, he/she is deemed to have failed in the Project Work and shall re-register for the same in a subsequent semester.

## OTHER EMPLOYABILITY ENHANCEMENT COURSES

- The seminar / Case study is to be considered as purely INTERNAL (with 100% internal marks 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 Head of the Institution 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 (40%), presentation (40%) and response to the questions asked during presentation (20%).
- The Industrial / Practical Training, Summer Project, Internship, shall carry 100 marks and shall be evaluated through internal assessment only. At the end of Industrial / Practical training / internship / Summer Project, the candidate shall submit a certificate from the organization where he / she has undergone training and a brief report. 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 Institution. The certificates (issued by the organization) submitted by the students shall be attached to the mark list sent by the Head of the Institution to the Controller of Examinations.

## ASSESSMENT FOR VALUE ADDED COURSE

The one / two credit course shall carry 100 marks and shall be evaluated through **continuous assessments only**. Two Assessments shall be conducted during the semester by the Department concerned. The total marks obtained in the tests shall be reduced to 100 marks and rounded to the nearest integer. A committee consisting of the Head of the Department, staff handling the course and a senior Faculty member nominated by the Head of the Institution shall monitor the evaluation process. The list of students along with the marks and the grades earned may be forwarded to the Controller of Examinations for appropriate action at least one month before the commencement of End Semester Examinations.

## ASSESSMENT FOR ONLINE COURSES

Students may be permitted to credit one online course (which are provided with certificate) subject to a maximum of three credits. The approved list of online courses will be provided by the Centre for Academic courses from time to time. **This online course of 3 credits can be considered instead of one elective course.** The student needs to obtain certification or credit to become eligible for writing the End Semester Examination to be conducted by Anna University. **The course shall be evaluated through the End Semester Examination only conducted by Controller of Examinations, Anna University.**

**12.8. Internal marks approved by the Head of the Institution shall be displayed by the respective HODs within 5 days from the last working day.**

### **12.9 Attendance Record**

Every teacher is required to maintain an 'ATTENDANCE AND ASSESSMENT RECORD' which consists of attendance marked in each lecture or practical or project work class, the test marks and the record of class work (topic covered), separately for each course. 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 test marks and attendance. The Head of the department will put his signature and date after due verification. At the end of the semester, the record should be verified by the Head of the Institution who will keep this document in safe custody (for five years). The University or any inspection team appointed by the University may verify the records of attendance and assessment of both current and previous semesters.

## **13. REQUIREMENTS FOR APPEARING FOR UNIVERSITY EXAMINATIONS**

A candidate shall normally be permitted to appear for the University Examinations for all the courses registered in the current semester (vide clause 6) if he/she has satisfied the semester completion requirements (subject to Clause 7).

A candidate who has already appeared for any subject in a semester and passed the examination is not entitled to reappear in the same subject for improvement of grades.

## **14. PASSING REQUIREMENTS**

A candidate who secures not less than 50% of total marks prescribed for the course [Internal Assessment + End semester University Examinations] with a minimum of 45% of the marks prescribed for the end-semester University Examination, shall be declared to have passed the course and acquired the relevant number of credits. This is applicable for both theory and practical courses (including project work).

If a student fails to secure a pass in theory courses in the current semester examination, he/she is allowed to write arrear examinations for the next three consecutive semesters and their internal marks shall be carried over for the above mentioned period of three consecutive semesters. If a student fails to secure a pass in a course even after three consecutive arrear attempts, the student has to redo the course in the semester in which it is offered along with regular students.

That is, the students should have successfully completed the courses of (n minus 4)<sup>th</sup> semester to register for courses in n<sup>th</sup> semester.

Based on the above, the following prerequisites shall be followed for completing the degree programme:

- i. To enter into Semester V, the student should have no arrear in Semester I. Failing which the student shall redo the Semester I course/courses along with the regular students.

- ii. To enter into Semester VI, the student should have no arrear in Semester II. Failing which the student shall redo the Semester II course/courses along with the regular students.
- iii. To enter into Semester VII, the student should have no arrear in Semester III. Failing which the student shall redo the Semester III course/courses along with the regular students.
- iv. To enter into Semester VIII, the student should have no arrear in Semester IV. Failing which the student shall redo the Semester IV course/courses along with the regular students.

In case, if he/she has not successfully completed all the courses of semester V at the end of semester VIII, he/she shall redo the Semester V courses along with regular students. For the subsequent semesters of VI, VII and VIII, the same procedure shall be followed, subject to the maximum permissible period for this programme.

**Note:**

- The students who are admitted in **2017-2018 and 2018 – 2019** are permitted to appear for arrears upto VI semesters and will be allowed to move to VII semester only on completion of all the courses in the I semester.

In addition the following prerequisites shall be followed for completing the degree programme.

- i. To enter into Semester VII, the student should have no arrear in Semester I. Failing which the student shall redo the Semester I course/courses along with the regular students.
- ii. To enter into Semester VIII, the student should have no arrear in Semester II. Failing which the student shall redo the Semester II course/courses along with the regular students.

In case, if he/she has not successfully completed all the courses of semester III at the end of semester VIII, he/she shall redo the Semester III courses along with regular students. For the subsequent semesters of IV, V, VI, VII and VIII, the same procedure shall be followed, subject to the maximum permissible period for this programme.

If a student fails to secure a pass in a laboratory course, **the student shall register** for the course again, when offered next.

If a student fails to secure a pass in project work, **the student shall register** for the course again, when offered next.

The passing requirement for the courses which are assessed only through purely internal assessments (EEC courses except project work), is 50% of the internal assessment (continuous assessment) marks only.

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 COE through the Head of the Institution. The COE will arrange for the revaluation and the results will be intimated to the student concerned through the Head of the Institution. Revaluation is not permitted for laboratory course and project work.



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## 15. AWARD OF LETTER GRADES

All assessments of a course will be evaluated on absolute marks basis. However, for the purpose of reporting the performance of a candidate, letter grades, each carrying certain number of points, will be awarded as per the range of total marks (out of 100) obtained by the candidate in each subject as detailed below:

| Letter Grade                | Grade Points | Marks Range |
|-----------------------------|--------------|-------------|
| O (Outstanding)             | 10           | 91 - 100    |
| A + (Excellent)             | 9            | 81 - 90     |
| A (Very Good)               | 8            | 71 - 80     |
| B + (Good)                  | 7            | 61 - 70     |
| B (Average)                 | 6            | 50 - 60     |
| RA                          | 0            | <50         |
| SA (Shortage of Attendance) | 0            |             |
| W                           | 0            |             |

A student is deemed to have passed and acquired the corresponding credits in a particular course if he/she obtains any one of the following grades: "O", "A+", "A", "B+", "B".

'SA' denotes shortage of attendance (as per clause 7.3) and hence prevention from writing the end semester examinations. 'SA' will appear only in the result sheet.

"RA" denotes that the student has failed to pass in that course. "W" denotes **withdrawal** from the exam for the particular course. The grades RA and W will figure both in Marks Sheet as well as in Result Sheet). In both cases the student has to earn Continuous Assessment marks and appear for the End Semester Examinations.

If the grade W is given to course, the attendance requirement need not be satisfied.

If the grade RA is given to a core **theory course**, the attendance requirement need not be satisfied, but if the grade RA is given to a **Laboratory Course/ Project work / Seminar and any other EEC course**, the attendance requirements (vide clause 7) should be satisfied.

For the Co-curricular activities such as National Cadet Corps (NCC)/ National Service Scheme (NSS) / NSO / 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.**

The grades O, A+, A, B+, B obtained for the one credit course shall figure in the Mark sheet under the title 'Value Added Courses'. The Courses for which the grades are RA, SA **will not figure in the mark sheet.**

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## Grade sheet

After results are declared, Grade Sheets will be issued to each student which will contain the following details:

- The college in which the candidate has studied
- The list of courses enrolled during the semester and the grade scored.
- The Grade Point Average (GPA) for the semester and
- The Cumulative Grade Point Average (CGPA) of all courses enrolled from first semester onwards.

GPA for a semester is the ratio of the sum of the products of the number of credits for courses acquired and the corresponding points to the sum of the number of credits for the courses acquired in the semester.

CGPA will be calculated in a similar manner, considering all the courses registered from first semester. RA grades will be excluded for calculating GPA and CGPA.

$$\text{GPA / CGPA} = \frac{\sum_{i=1}^n C_i GP_i}{\sum_{i=1}^n C_i}$$

where  $C_i$  is the number of Credits assigned to the course

$GP_i$  is the point corresponding to the 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.

## 16 ELIGIBILITY FOR THE AWARD OF THE DEGREE

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.
- Successfully completed the course requirements, appeared for the End-Semester examinations and passed all the subjects prescribed in all the 8 semesters / (10 Semesters for B.E. Mechanical Engineering (Sandwich)) within a maximum period of 7 years (9 years in case of B.E. Mechanical Engineering (Sandwich) and 6 years in the case of Lateral Entry) reckoned from the commencement of the first (third in the case of Lateral Entry) semester to which the candidate was admitted.
- Successfully passed any additional courses prescribed by the Director, Academic Courses whenever readmitted under regulations R-2017 (vide clause 18.3)
- Successfully completed the NCC / NSS / NSO / YRC requirements.
- No disciplinary action pending against the student.
- The award of Degree must have been approved by the Syndicate of the University.

## CLASSIFICATION OF THE DEGREE AWARDED

### FIRST CLASS WITH DISTINCTION

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



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- Should have passed the examination in all the courses of all the eight semesters (10 Semesters in case of Mechanical (Sandwich) and 6 semesters in the case of Lateral Entry) in the student's First Appearance within **five** years (Six years in the case of Mechanical (Sandwich) and Four years in the case of Lateral Entry). Withdrawal from examination (vide Clause 17) will not be considered as an appearance.
- Should have secured a CGPA of not less than **8.50**.
- One year authorized break of study (if availed of) is included in the five years (Six years in the case of Mechanical (Sandwich) and four years in the case of lateral entry) for award of First class with Distinction.
- Should NOT have been prevented from writing end semester examination due to lack of attendance in any semester.

#### **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 (10 Semesters in case of Mechanical (Sandwich) and 6 semesters in the case of Lateral Entry) **within Six years**. (Seven years in case of Mechanical (Sandwich) and Five years in the case of Lateral Entry)
- One year authorized break of study (if availed of) or prevention from writing the End Semester examination due to lack of attendance (if applicable) is included in the duration of six years (Seven years in case of Mechanical (Sandwich) and five years in the case of lateral entry) for award of First class
- Should have secured a CGPA of not less than **7.00**.

#### **SECOND CLASS:**

All other students (not covered in clauses 16.2.1 and 16.2.2) who qualify for the award of the degree (vide Clause 16.1) shall be declared to have passed the examination in **Second Class**.

A candidate 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 for the purpose of classification. (subject to clause 17 and 18)

#### **Photocopy / Revaluation**

A candidate can apply for photocopy of his/her semester examination answer paper in a theory course, within 2 weeks from the declaration of results, on payment of a prescribed fee through proper application to the Controller of Examinations through the Head of Institutions. The answer script is to be valued and justified by a faculty member, who handled the subject and recommend for revaluation with breakup of marks for each question. Based on the recommendation, the candidate can register for the revaluation through proper application to the Controller of Examinations. The Controller of Examinations will arrange for the revaluation and the results will be intimated to the candidate concerned through the Head of the Institutions. Revaluation is not permitted for practical courses and for project work.

A candidate can apply for revaluation of answer scripts for not exceeding 5 subjects at a time.

#### **Review**

Candidates not satisfied with Revaluation can apply for Review of his/ her examination answer paper in a theory course, within the prescribed date on payment of a prescribed fee through proper application to Controller of Examination through the Head of the Institution.

Candidates applying for Revaluation only are eligible to apply for Review.

## 17. PROVISION FOR WITHDRAWAL FROM END-SEMESTER EXAMINATION

A student may, for valid reasons, (medically unfit / unexpected family situations / sports approved by Chairman, sports board and 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 Director, Student Affairs through the Head of the Institutions with required documents.

Withdrawal application is valid if the student is otherwise eligible to write the examination (Clause 7) and if it is made within TEN days prior to the commencement of the examination in that course or courses and recommended by the Head of the Institution and approved by the Controller of Examinations.

Notwithstanding the requirement of mandatory 10 days notice, applications for withdrawal for special cases under extraordinary conditions will be considered on the merit of the case.

In case of withdrawal from a course / courses (Clause 13) the course will figure both in Marks Sheet as well as in Result Sheet. **Withdrawal essentially requires the student to register for the course/courses** The student has to register for the course, fulfill the attendance requirements (vide clause 7), earn continuous assessment marks and attend the end semester examination. However, withdrawal shall not be construed as an appearance for the eligibility of a candidate for First Class with Distinction.

Withdrawal is permitted for the end semester examinations in the final semester only if the period of study the student concerned does not exceed 5 years as per clause 16.2.1.

## 18. PROVISION FOR AUTHORISED BREAK OF STUDY

A student is permitted to go on break of study for a maximum period of one year as a single spell.

Break of Study shall be granted only once for valid reasons for a maximum of one year during the entire period of study of the degree programme. However, in extraordinary situation the candidate may apply for additional break of study not exceeding another one year by paying prescribed fee for break of study. If a candidate intends to temporarily discontinue the programme in the middle of the semester for valid reasons, and to rejoin the programme in a subsequent year, permission may be granted based on the merits of the case provided he / she applies to the Director, Student Affairs in advance, but not later than the last date for registering for the end semester examination of the semester in question, through the Head of the Institution stating the reasons therefore and the probable date of rejoining the programme.

The candidates 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 Director, Academic Courses in the prescribed format through Head of the Institution at the beginning of the readmitted semester itself for prescribing additional courses, if any, from any semester of the regulations in-force, so as to bridge the curriculum in-force and the old curriculum.

The authorized break of study would not be counted towards the duration specified for passing all the courses for the purpose of classification (vide Clause 16.2).

The total period for completion of the Programme reckoned from, the commencement of the first semester to which the candidate was admitted shall not exceed the maximum period specified in clause 5.1 irrespective of the period of break of study in order that he/she may be eligible for the award of the degree.

If any student is prevented for want of required attendance, the period of prevention shall not be considered as authorized 'Break of Study' (Clause 18.1)

**19. DISCIPLINE**

Every student is required to observe disciplined and decorous behavior both inside and outside the college and not to indulge in any activity which will tend to bring down the prestige of the University / College. The Head of Institution shall constitute a disciplinary committee consisting of Head of Institution, Two Heads of Department of which one should be from the faculty of the student, to enquire into acts of indiscipline and notify the University about the disciplinary action recommended for approval. In case of any serious disciplinary action which leads to suspension or dismissal, then a committee shall be constituted including one representative from Anna University, Chennai. In this regard, the member will be nominated by the University on getting information from the Head of the Institution.

If a student indulges in malpractice in any of the University / internal examination he / she shall be liable for punitive action as prescribed by the University from time to time.

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

The University 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 Syndicate.



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# ANNA UNIVERSITY LETTER FOR PG-CBCS PROGRAMME

**ANNA UNIVERSITY : : CHENNAI - 600 025**

**AFFILIATED INSTITUTIONS**

**REGULATIONS 2017**

**CHOICE BASED CREDIT SYSTEM**

**COMMON TO ALL POST GRADUATE PROGRAMMES**

The following Regulations is applicable to the students admitted to M.E / M.Tech., M.C.A and M.B.A. Programmes at all Engineering Colleges affiliated to Anna University, Chennai (other than Autonomous Colleges) and to all the University Colleges of Engineering of Anna University, Chennai from the academic year 2017-2018.

**1 PRELIMINARY DEFINITIONS AND NOMENCLATURE**

In these Regulations, unless the context otherwise requires:

- i. **"Programme"** means Post graduate Degree Programme e.g. M.E., M.Tech. Degree Programme.
- ii. **"Branch"** means specialization or discipline of M.E. / M.Tech. Degree Programme like "Structural Engineering", "Engineering Design", etc.
- iii. **"Course"** means Theory or Practical subject that is normally studied in a semester, like Applied Mathematics, Advanced Thermodynamics, etc.
- iv. **"Director, Academic Courses"** means the authority of the University who is responsible for all academic activities of the University for implementation of relevant Rules and Regulations.
- v. **"Chairman"** means the Head of the Faculty.
- vi. **"Head of the Department"** means Head of the Department concerned.
- vii. **"Head of the Institution"** means the Principal of a College / Institution who is responsible for all academic activities of that College / Institution and for implementation of relevant Rules and Regulations.
- viii. **"Controller of Examinations"** means the Authority of the University who is responsible for all activities of the University Examinations.
- ix. **"University"** means ANNA UNIVERSITY, CHENNAI.

  
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## **2 PROGRAMMES OFFERED. MODES OF STUDY AND ADMISSION REQUIREMENTS**

### **P.G. PROGRAMMES OFFERED:**

1. M.E
2. M.Tech.
3. M.B.A.
4. M.C.A.

### **MODES OF STUDY:**

#### **Full-Time:**

Candidates admitted under 'Full-Time' should be available in the College / Institution during the entire duration of working hours (From Morning to Evening on Full-Time basis) for the curricular, co-curricular and extra-curricular activities assigned to them.

The Full-Time candidates should not attend any other Full-Time programme(s) / course(s) or take up any Full-Time job / Part-Time job in any Institution or Company during the period of the Full-Time programme. Violation of the above rules will result in cancellation of admission to the PG programme.

#### **Part-Time Mode:**

In this mode of study, the students are required to attend classes conducted in the evenings and complete the course in three years.

Conversion from one mode of study to the other is not permitted.

### **ADMISSION REQUIREMENTS:**

Candidates for admission to the first semester of the Post-Graduate Degree Programme shall be required to have passed an appropriate Under-Graduate Degree Examination of Anna University or equivalent as specified under qualification for admission as per the Tamil Nadu Common Admission (TANCA) criteria.

**Note:** TANCA releases the updated criteria during the admissions every academic year.

Admission shall be offered only to the candidates who possess the qualification prescribed against each programme.

Any other relevant qualification which is not prescribed against each programme shall be considered for equivalence by the committee constituted for the purpose. Admission to such degrees shall be offered only after obtaining equivalence to such degrees.

However, the Syndicate of the University may decide to restrict admission in any particular year to candidates having a subset of qualifications prescribed at the time of admission.

Notwithstanding the qualifying examination the candidate might have passed, he/she shall have a minimum level of proficiency in the appropriate programme / courses as prescribed by the Syndicate of the University from time to time.

Eligibility conditions for admission such as the class obtained, the number of attempts in qualifying examination and physical fitness will be as prescribed by the Syndicate of the University from time to time.

All Part-Time candidates should satisfy other conditions regarding Experience, Sponsorship etc. that may be prescribed by the Syndicate from time to time.

### 3 STRUCTURE OF THE PROGRAMMES

#### Categorization of Courses

Every Post Graduate Degree 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/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/or Internship, Seminar, Professional Practices, Summer Project, Case Study and Industrial / Practical Training.

Instead of two electives in the curriculum, the student may be permitted to choose a maximum of 2 courses from other PG programmes with the approval of the Head of the Department offering such courses.

#### Courses per Semester

Curriculum of a semester shall normally have a blend of lecture courses and practical courses including Employability Enhancement Courses. Each course may have credits assigned as per clause 3.3.

#### 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<br>(Laboratory / Seminar /<br>Project Work etc.) | 1       |

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

#### Project Work

The project work for M.E. / M.Tech. Programmes consist of Phase-I and Phase-II. The Phase-I is to be undertaken during III semester and Phase-II, which is a continuation of Phase-I is to be undertaken during IV semester.

In case of candidates of M.E. / M.Tech. Programmes not completing Phase-I of project work successfully, the candidates can undertake Phase-I again in the subsequent semester. In such cases the candidates can enroll for Phase-II, only after successful completion of Phase-I.

Project work shall be carried out under the supervision of a "qualified teacher" in the Department concerned. In this context "qualified teacher" means the faculty member possessing (i) PG degree with a minimum of 3 years experience in teaching or (ii) Ph.D. degree.

  
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A candidate may, however, in certain cases, be permitted to work on projects in an Industrial/Research Organization, on the recommendations of the Head of the Department Concerned. In such cases, the Project work shall be jointly supervised by a supervisor of the department and an expert, as a joint supervisor from the organization and the student shall be instructed to meet the supervisor periodically and to attend the review committee meetings for evaluating the progress.

The Project work (Phase II in the case of M.E/M.Tech.) shall be pursued for a minimum of 16 weeks during the final semester.

The deadline for submission of final Project Report is 60 calendar days from the last working day of the semester in which project / thesis / dissertation is done. However, the Phase-I of the Project work in the case M.E. / M.Tech. Programmes shall be submitted within a maximum period of 30 calendar days from the last working day of the semester as per the academic calendar published by the University.

### **Industrial Training / Internship**

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.

### **Value Added Courses**

**The Students may optionally undergo 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 / Two 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 Centre for Academic Courses and the Controller of Examinations after approval from the Head of the Institution concerned atleast one month before the course is offered. **Students can take a maximum of two one credit courses / one two credit course** during the entire duration of the Programme.

### **Online Courses**

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

Students may be permitted to credit one online course (which are provided with certificate) subject to a maximum of three credits. The approved list of online courses will be provided by the Centre for Academic courses 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, Anna University. The details regarding online courses taken up by students should be sent to the Controller of Examinations, Anna University and Centre for Academic Courses one month before the commencement of end Semester Examination.

### **Medium of Instruction**

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

#### 4 DURATION AND STRUCTURE OF THE PROGRAMMES:

The minimum and maximum period for completion of the P.G. Programmes are given below:

| Programme                  | Min. No. of Semesters | Max. No. of Semesters |
|----------------------------|-----------------------|-----------------------|
| M.E. / M.Tech. (Full-Time) | 4                     | 8                     |
| M.E. / M.Tech. (Part Time) | 6                     | 12                    |
| M.C.A. (Full Time)         | 6                     | 12                    |
| M.B.A. (Full Time)         | 4                     | 8                     |
| M.B.A. (Part Time)         | 6                     | 12                    |

The Curriculum and Syllabi of all the P.G. Programmes shall be approved by the Academic Council of Anna University. The number of Credits to be earned for the successful completion of the programme shall be as specified in the Curriculum of the respective specialization of the P.G. Programme

Each semester shall normally consist of 75 working days or 540 periods of each 50 minutes duration, for full-time mode of study or 250 periods for part-time mode of study. The Head of the Institution shall ensure that every teacher imparts instruction as per the number of periods specified in the syllabus and that the teacher teaches the full content of the specified syllabus for the course being taught. For the purpose of calculation of attendance requirement for writing the end semester examinations (as per clause 9) by students, following method shall be used.

$$\text{Percentage of Attendance} = \frac{\text{Total no. of periods attended in all the courses per semester}}{(\text{No. of periods / week as prescribed in the curriculum}) \times 15 \text{ taken together for all courses of the semester}} \times 100$$

End Semester Examinations conducted by the University will be scheduled after the last working day of the semester.

The minimum prescribed credits required for the award of the degree shall be within the limits specified below:

| Programme      | Prescribed Credit Range |
|----------------|-------------------------|
| M.E. / M.Tech. | 70 to 75                |

| Programme | Prescribed Credit Range |
|-----------|-------------------------|
| M.C.A.    | 115 - 120               |
| M.B.A.    | 86 - 90                 |

#### 5. COURSE REGISTRATION

The Institution is responsible for registering the courses that each student is proposing to undergo in the ensuing semester. Each student has to register for all courses to be undergone in the curriculum of a particular semester (with the facility to drop courses to a maximum of 6 credits (vide clause 5.2)). The student can also register for courses for which the student has failed in the earlier semesters.

The registration details of the candidates may be approved by the Head of the Institution and forwarded to the Controller of Examinations. This registration is for undergoing the course as well as for writing the End Semester Examinations.

**The courses that a student registers in a particular semester may include**

- i. Courses of the current semester.
- ii. The core (Theory/Lab /EEC) courses that the student has not cleared in the previous semesters.
- iii. Elective courses which the student failed (either the same elective or a different elective instead).

**Flexibility to Drop courses**

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.

From the II to Final semesters, the student has the option of dropping existing courses in a semester during registration. Total number of credits of such courses cannot exceed 6 for PG (Full Time) programmes and cannot exceed 3 for PG (Part Time) programmes.

**6 EVALUATION OF PROJECT WORK**

The evaluation of Project Work for Phase-I & Phase-II in the case of M.E. / M.Tech. and project work of M.B.A and M.C.A shall be done independently in the respective semesters and marks shall be allotted as per the weightages given in Clause 6.1.

There shall be three 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 Institution shall constitute the review committee for each branch of study. The total marks obtained in the three assessments shall be reduced to 20 marks and rounded to the nearest integer (as per the Table given below). There will be a vice-voce Examination during End Semester Examinations conducted by a Committee consisting of the supervisor, one internal examiner and one external examiner. The internal examiner and the external examiner shall be appointed by the Controller of Examination. The distribution of marks for the internal assessment and End semester examination is given below:

| Internal Assessment (20 Marks) |             |              | End Semester Examination (80 Marks) |                                   |                   |                     |
|--------------------------------|-------------|--------------|-------------------------------------|-----------------------------------|-------------------|---------------------|
| Review - I                     | Review - II | Review - III | Thesis Submission (30 Marks)        | Viva – Voce (Rounded to 50 Marks) |                   |                     |
|                                |             |              | External Examiner                   | Internal Examiner                 | External Examiner | Supervisor Examiner |
| 5                              | 7.5         | 7.5          | 30                                  | 15                                | 20                | 15                  |

The Project Report prepared according to approved guidelines as given by Director, Academic Courses and duly signed by the supervisor(s) and the Head of the Department concerned shall be submitted to the Head of the Institution.

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If the candidate fails to obtain 50% of the internal assessment marks in the Phase-I and Phase-II / final project, he/she will not be permitted to submit the report for that particular semester and has to re-enroll for the same in the subsequent semester.

If a candidate fails to submit the project report on or before the specified deadline, he/she is deemed to have failed in the Project Work and shall re-enroll for the same in a subsequent semester. This applies to both Phase-I and Phase-II in the case of M.E. / M.Tech. Project Work and the Final Project work of M.B.A. / M.C.A.

If a candidate fails in the end semester examinations of Phase-I, he/she has to resubmit the Project Report within 30 days from the date of declaration of the results. If he / she fails in the End semester examination of Phase-II of Project work of M.E. / M.Tech. or the Final Project work of M.B.A. / M.C.A, he/she shall resubmit the Project Report within 60 days from the date of declaration of the results. The resubmission of a project report and subsequent viva-voce examination will be considered as reappearance with payment of exam fee. For this purpose the same Internal and External examiners shall evaluate the resubmitted report.

A copy of the approved Project Report after the successful completion of viva-voce examinations shall be kept in the library of the college / institution.

Practical / Industrial Training, Summer Project if specified in the Curriculum shall not exceed the maximum duration of 4 weeks and should be organized by the Head of the Department for every student.

At the end of Practical / Industrial Training, Summer Project the candidate shall submit a certificate from the organization where he/she has undergone training and also a brief report. The evaluation for 100 marks will be carried out internally based on this report and a Viva- Voce Examination will be conducted by a Departmental Committee constituted by the Head of the Institution. Certificates submitted by the students shall be attached to the mark list sent by the Head of the Institution to the Controller of Examination.

## **7 CLASS ADVISER**

There shall be a class advisor for each class. The class advisor will be one among the (course-instructors) of the class. He / She will be appointed by the Head of the department concerned. The class advisor is the ex-officio member and the Convener of the class committee. The responsibilities for the class advisor shall be:

- To act as the channel of communication between the HoD and the students of the respective class.
- To collect and maintain various statistical details of students.
- To help the chairperson of the class committee in planning and conduct of the class committee meetings.
- To monitor the academic performance of the students including attendance and to inform the class committee.
- To attend to the students' welfare activities like awards, medals, scholarships and industrial visits.

## **8 CLASS COMMITTEE**

A Class Committee consists of teachers of the concerned class, student representatives and a chairperson who is not teaching the class. It is like the 'Quality Circle' (more commonly used in industries) with the overall goal of improving the teaching-learning process. The functions of the class committee include:

- Solving problems experienced by students in the class room and in the laboratories.
- Clarifying the regulations of the programme and the details of rules therein.
- Informing the student representatives, the "academic schedule" including the dates of assessments and the syllabus coverage for each assessment period.
- Informing the student representatives, the details of regulations regarding the weightage used for each assessment. In the case of practical courses (laboratory / project work / seminar etc.) the breakup of marks for each experiment/ exercise/ module of work, should be clearly discussed in the class committee meeting and informed to the students.
- Analyzing the performance of the students of the class after each test and finding the ways and means of improving the Students Performance
- Identifying the weak students, if any, in any specific subject and requesting the teachers concerned to provide some additional help or guidance or coaching to such weak students as frequently as possible.

The class committee for a class under a particular programme is normally constituted by the Head of the Department. However, if the students of different programmes are mixed in a class, the class committee is to be constituted by the Head of the Institution.

The class committee shall be constituted on the first working day of any semester or earlier.

At least 2 student representatives (usually 1 boy and 1 girl) shall be included in the class committee.

The chairperson of the class committee shall invite the Class adviser(s) and the Head of the Department to the meeting of the class committee.

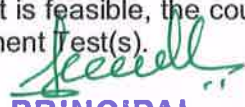
The Head of the Institution may participate in any class committee of the institution.

The Chairperson of the Class Committee is required to prepare the minutes of every meeting, submit the same to the Head of the Institution within two days of the meeting and arrange to circulate among the concerned students and teachers. If there are some points in the minutes requiring action by the management, the same shall be brought to the notice of the management by the Head of the Institution.

The first meeting of the class committee shall be held within one week from the date of commencement of the semester in order to inform the students about the nature and weightage of assessments within the framework of the Regulations. Two or three subsequent meetings may be held at suitable intervals. During these meetings the student members, representing the entire class, shall meaningfully interact and express the opinions and suggestions of the class students to improve the effectiveness of the teaching-learning process.

## 9 COURSE COMMITTEE FOR COMMON COURSES

Each common course offered to more than one group of students shall have a "Course Committee" comprising all the teachers teaching the common course with one of them nominated as Course Coordinator. The nomination of the course Coordinator shall be made by the Head of the Department / Head of the Institution depending upon whether all the teachers teaching the common course belong to a single department or to several departments. The 'Course committee' shall meet as often as possible and ensure uniform evaluation of the tests and arrive at a common scheme of evaluation for the tests. Wherever it is feasible, the course committee may also prepare a common question paper for the Assessment Test(s).

  
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## 10 ATTENDANCE REQUIREMENTS FOR COMPLETION OF A SEMESTER

A candidate who has fulfilled the following conditions shall be deemed to have satisfied the attendance requirements for completion of a semester.

Ideally every student is expected to attend all classes and earn 100% attendance. However in order to allow provision for certain unavoidable reasons such as prolonged hospitalization / accident / specific illness the student is expected to earn a minimum of 75% attendance to become eligible to write the End-Semester Examinations.

Therefore, every student shall secure not less than 75% of overall attendance in that semester as per clause 4.3.

However, a candidate who secures overall attendance between 65% and 74% in that current semester due to medical reasons (prolonged hospitalization / accident / specific illness / participation in sports events) may be permitted to appear for the current semester examinations subject to the condition that the candidate shall submit the medical certificate / sports participation certificate to the Head of the Institution. The same shall be forwarded to the Controller of Examinations for record purposes.

Candidates who could secure less than 65% overall attendance and **Candidates who do not satisfy the clauses 10.1 & 10.2** will not be permitted to write the end-semester examination of that current semester and are not permitted to go to next semester. They are required to repeat the incomplete semester in the next academic year.

## 11 PROCEDURES FOR AWARDING MARKS FOR INTERNAL ASSESSMENT(IA)

The maximum marks assigned to different courses shall be as given below:

Each of the theory and practical courses (including project work) shall carry a maximum of 100 marks of which 20 marks will be through internal assessment and the End Semester Examination (ESE) will carry 80 marks.

The marks for the continuous assessment shall be awarded as per the procedure given below:

### (i) Theory Courses:

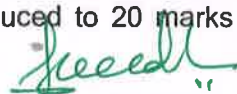
Three tests each carrying 100 marks shall be conducted during the semester by the Department / College concerned. The total marks obtained in all tests put together out of 300, shall be proportionately reduced for 20 marks and rounded to the nearest integer (This also implies equal weightage to all the three tests).

### (ii) Practical Courses:

The maximum marks for Internal Assessment shall be 20 in case of practical courses. Every practical exercise / experiment shall be evaluated based on conduct of experiment / exercise and records maintained. There shall be at least one test. The criteria for arriving at the Internal Assessment marks of 20 is as follows: 75 marks shall be awarded for successful completion of all the prescribed experiments done in the Laboratory and 25 marks for the test. The total mark shall be reduced to 20 and rounded to the nearest integer.

### (iii) Theory Courses with Laboratory component:

The maximum marks for Internal Assessment shall be 20 in case of theory courses with Laboratory component. For a theory course with Laboratory component, there shall be three assessments: the first two assessments (each with a maximum of 100 marks) will be from theory portions and the third assessment (maximum marks 100) will be for laboratory component. The sum of marks of all three assessments shall be reduced to 20 marks and rounded to the nearest integer.



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#### (iv) Other Employability Enhancement Courses

- (a) The seminar / Case study is to be considered as purely INTERNAL (with 100% internal marks 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 Head of the Institution 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 (40%), presentation (40%) and response to the questions asked during presentation (20%).
- (b) The Industrial / Practical Training shall carry 100 marks and shall be evaluated through internal assessment only. At the end of Industrial / Practical training / internship / Summer Project, the candidate shall submit a certificate from the organization where he / she has undergone training and a brief report. 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 Institution. Certificates submitted by the candidate shall be attached to the mark list sent by the Head of the Department.

#### Assessment for Value Added Course

The one / two credit course shall carry 100 marks and shall be evaluated through **continuous assessments only**. Two Assessments shall be conducted during the semester by the Department concerned. The total marks obtained in the tests shall be reduced to 100 marks and rounded to the nearest integer. A committee consisting of the Head of the Department, staff handling the course and a senior Faculty member nominated by the Head of the Institution shall monitor the evaluation process. The list of students along with the marks and the grades earned may be forwarded to the Controller of Examinations for appropriate action at least one month before the commencement of End Semester Examinations

#### Assessment for Online Courses

Students may be permitted to credit one online course (which are provided with certificate) subject to a maximum of three credits. The approved list of online courses will be provided by the Centre for Academic courses from time to time. **This online course of 3 credits can be considered instead of one elective course.** The student needs to obtain certification or credit to become eligible for writing the End Semester Examination to be conducted by Anna University. **The course shall be evaluated through the End Semester Examination only conducted by Controller of Examinations, Anna University.**

Internal marks approved by the Head of the Institution shall be displayed by the respective HODs within 5 days from the last working day.

Every teacher is required to maintain an 'ATTENDANCE AND ASSESSMENT RECORD' which consists of attendance marked in each lecture or practical or project work class, the test marks and the record of class work (topics covered), separately for each course. 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 test marks and attendance. The Head of the department will put his signature and date after due verification. At the end the semester, the record should be verified by the Head of the institution who will keep this document in safe custody (for five years). The university or any inspection team appointed by the University may inspect the records of attendance and assessments of both current and previous semesters.

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## 12 REQUIREMENTS FOR APPEARING FOR SEMESTER EXAMINATION

A candidate shall normally be permitted to appear for the University examinations of the current semester if he/she has satisfied the semester completion requirements as per clause 10.1 & 10.2 and has registered for examination in all courses of the current semester.

Further, registration is mandatory for all the courses in the current semester as well as for arrear(s) course(s) for the university examinations failing which, the candidate will not be permitted to move to the higher semester.

A student who has passed all the courses prescribed in the curriculum for the award of the degree shall not be permitted to re-enroll to improve his/her marks in a course or the aggregate marks / CGPA.

## 13 UNIVERSITY EXAMINATIONS

There shall be an End- Semester Examination of 3 hours duration in each lecture based course.

The examinations shall ordinarily be conducted between October and December during the odd semesters and between April and June in the even semesters.

For the practical examinations (including project work), both internal and external examiners shall be appointed by the University.

## WEIGHTAGE

The following will be the weightage for different courses.

i) Lecture or Lecture cum Tutorial based course:

|                          |   |     |
|--------------------------|---|-----|
| Internal Assessment      | - | 20% |
| End Semester Examination | - | 80% |

ii) Laboratory based courses

|                          |   |     |
|--------------------------|---|-----|
| Internal Assessment      | - | 20% |
| End Semester Examination | - | 80% |

iii) Project work

|                     |   |     |
|---------------------|---|-----|
| Internal Assessment | - | 20% |
|---------------------|---|-----|

Evaluation of Project Report

|                       |   |     |
|-----------------------|---|-----|
| by external examiner  | - | 30% |
| Viva-Voce Examination | - | 50% |

iv) Practical training / summer project / seminar

|                     |   |      |
|---------------------|---|------|
| Internal Assessment | - | 100% |
|---------------------|---|------|

## 14 PASSING REQUIREMENTS

A candidate who secures not less than 50% of total marks prescribed for the course with a minimum of 50% of the marks prescribed for each of the course of the End-Semester University Examination in both theory and practical courses shall be declared to have passed in the course and acquired the relevant number of credits.

If a student fails to secure a pass in theory courses in the current semester examination, he/she is allowed to write arrear examinations for the next three consecutive semesters and their internal marks shall be carried over for the above mentioned period of three consecutive semesters.

In case, if he/she has not successfully completed all the courses of semester I at the end of semester IV, he/she shall redo the semester I courses along with regular students. For the subsequent semesters of II, III and IV, the same procedure shall be followed, subject to the maximum permissible period for this programme.

For MCA programme, to register for courses in V and VI semesters, the student should have successfully completed all the courses of I and II semesters respectively. In case, if he/she has not successfully completed all the courses of semester III at the end of semester VI, he/she shall redo the semester III courses along with regular students. For the subsequent semesters of IV, V and VI, the same procedure shall be followed, subject to the maximum permissible period for this programme.

If a student fails to secure a pass in a laboratory course, the student shall register for the course again, when offered next.

If a student fails to secure a pass in project work even after availing clause (6.3), the student shall register for the course again, when offered next.

The passing requirement for the courses which are assessed only through purely internal assessment (EEC courses except project work), is 50% of the internal assessment marks only.

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 COE through the Head of the Institution. The COE will arrange for the revaluation and the results will be intimated to the student concerned through the Head of the Institution. Revaluation is not permitted for laboratory course and project work.

## 15 AWARD OF LETTER GRADES

All assessments of a course will be evaluated on absolute marks basis. However, for the purpose of reporting the performance of a candidate, letter grades, each carrying certain number of points, will be awarded as per the range of total marks (out of 100) obtained by the candidate in each subject as detailed below:

| Letter Grade                | Grade Points | Marks Range |
|-----------------------------|--------------|-------------|
| O (Outstanding)             | 10           | 91 - 100    |
| A + (Excellent)             | 9            | 81 - 90     |
| A (Very Good)               | 8            | 71 - 80     |
| B + (Good)                  | 7            | 61 - 70     |
| B (Average)                 | 6            | 50 - 60     |
| RA                          | 0            | <50         |
| SA (Shortage of Attendance) | 0            |             |
| W                           | 0            |             |

A student is deemed to have passed and acquired the corresponding credits in a particular course if he/she obtains any one of the following grades: "O", "A+", "A", "B+", "B".

'SA' denotes shortage of attendance (as per clause 10.3) and hence prevention from writing the end semester examinations. 'SA' will appear only in the result sheet.

"RA" denotes that the student has failed to pass in that course. "W" denotes **withdrawal** from the exam for the particular course. The grades RA and W will figure both in Marks Sheet as well as in Result Sheet). In both cases the student has to earn Continuous Assessment marks and appear for the End Semester Examinations.

If the grade W is given to course, the attendance requirement need not be satisfied.

If the grade RA is given to a core **theory course**, the attendance requirement need not be satisfied, but if the grade RA is given to a **Laboratory Course/ Project work / Seminar and any other EEC course**, the attendance requirements (vide clause 10) should be satisfied.

The grades O, A+, A, B+, B obtained for the one credit course shall figure in the Mark sheet under the title '**Value Added Courses**'. The Courses for which the grades are RA, SA **will not figure in the mark sheet**.

## GRADE SHEET

After results are declared, Grade Sheets will be issued to each student which will contain the following details:

- The college in which the candidate has studied.
- The list of courses enrolled 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 enrolled from first semester onwards.

GPA for a semester is the ratio of the sum of the products of the number of credits for courses acquired and the corresponding points to the sum of the number of credits for the courses acquired in the semester. CGPA will be calculated in a similar manner, considering all the courses registered from first semester. RA grades will be excluded for calculating GPA and CGPA.

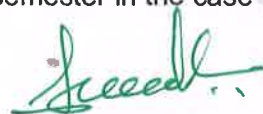
$$\text{GPA / CGPA} = \frac{\sum_{i=1}^n C_i GP_i}{\sum_{i=1}^n C_i}$$

where

$C_i$  is the number of credits assigned to the course

$GP_i$  is the Grade point corresponding to the 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.



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## 16 ELIGIBILITY FOR THE AWARD OF THE DEGREE

A student shall be declared to be eligible for the award of the PG Degree (M.E./ M.Tech., M.C.A., M.B.A.) 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.
- ii. a. **M.E./ M.Tech., M.B.A.(Full Time)**  
Successfully completed the course requirements, appeared for the End-Semester examinations and passed all the subjects prescribed in all the 4 semesters within a maximum period of 4 years reckoned from the commencement of the first semester to which the candidate was admitted.
- b. **M.E./ M.Tech., M.B.A.(Part Time) and M.C.A.(Full Time)**  
Successfully completed the course requirements, appeared for the End-Semester examinations and passed all the subjects prescribed in all the 6 semesters within a maximum period of 6 years reckoned from the commencement of the first semester to which the candidate was admitted.
- iii. Successfully passed any additional courses prescribed by the Director, Academic Courses whenever readmitted under regulations other than R-2017 (vide clause 19.3)
- iv. No disciplinary action pending against the student.
- v. The award of Degree must have been approved by the Syndicate of the University.

## 17 CLASSIFICATION OF THE DEGREE AWARDED

### FIRST CLASS WITH DISTINCTION:

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

#### **M.E. / M.Tech. M.B.A.(Full Time)**

- 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 authorised break of study of one year (if availed). Withdrawal from examination (vide Clause 18) 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.

#### **M.E. / M.Tech. M.B.A.(Part Time) and M.C.A (Full Time)**

- Should have passed the examination in all the courses of all the six semesters in the student's First Appearance within **four** years, which includes authorised break of study of one year (if availed). Withdrawal from examination (vide Clause 18) 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.



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### **FIRST CLASS:**

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

#### **M.E. / M.Tech. M.B.A.(Full Time)**

- 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**.

#### **M.E. / M.Tech. M.B.A. (Part Time) and M.C.A (Full Time)**

- Should have passed the examination in all the courses of all six semesters **within four 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**.

### **SECOND CLASS:**

All other students (not covered in clauses 17.1 and 17.2) who qualify for the award of the degree (vide Clause 16.1) shall be declared to have passed the examination in **Second Class**.

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 18) for the purpose of classification.

#### **Photocopy / Revaluation**

A candidate can apply for photocopy of his/her semester examination answer paper in a theory course, within 2 weeks from the declaration of results, on payment of a prescribed fee through proper application to the Controller of Examinations through the Head of Institutions. The answer script is to be valued and justified by a faculty member, who handled the subject and recommend for revaluation with breakup of marks for each question. Based on the recommendation, the candidate can register for the revaluation through proper application to the Controller of Examinations. The Controller of Examinations will arrange for the revaluation and the results will be intimated to the candidate concerned through the Head of the Institutions. Revaluation is not permitted for practical courses and for project work.

A candidate can apply for revaluation of answer scripts for not exceeding 5 subjects at a time.

#### **Review**

Candidates not satisfied with Revaluation can apply for Review of his/ her examination answer paper in a theory course, within the prescribed date on payment of a prescribed fee through proper application to Controller of Examination through the Head of the Institution.

Candidates applying for Revaluation only are eligible to apply for Review.

### **18 PROVISION FOR WITHDRAWAL FROM EXAMINATION:**

A student may, for valid reasons, (medically unfit / unexpected family situations / sports approved by Chairman, sports board and 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 Director, Student Affairs through the Head of the Institutions with required documents.

Withdrawal application is valid if the student is otherwise eligible to write the examination (Clause 10) and if it is made within TEN days prior to the commencement of the examination in that course or courses and recommended by the Head of the Institution and approved by the Controller of Examinations.

Notwithstanding the requirement of mandatory 10 days notice, applications for withdrawal for special cases under extraordinary conditions will be considered on the merit of the case.

In case of withdrawal from a course / courses (Clause 12) the course will figure both in Marks Sheet as well as in Result Sheet. **Withdrawal essentially requires the student to register for the course/courses** The student has to register for the course, fulfill the attendance requirements (vide clause 10), earn continuous assessment marks and attend the end semester examination. However, withdrawal shall not be construed as an appearance for the eligibility of a candidate for First Class with Distinction.

Withdrawal is permitted for the end semester examinations in the final semester only if the period of study the student concerned does not exceed 3 years as per clause 17.1.

## **19 AUTHORIZED BREAK OF STUDY FROM A PROGRAMME**

A student is permitted to go on break of study for a maximum period of one year as a single spell.

Break of Study shall be granted only once for valid reasons for a maximum of one year during the entire period of study of the degree programme. However, in extraordinary situation the candidate may apply for additional break of study not exceeding another one year by paying prescribed fee for break of study. If a candidate intends to temporarily discontinue the programme in the middle of the semester for valid reasons, and to rejoin the programme in a subsequent year, permission may be granted based on the merits of the case provided he / she applies to the Director, Student Affairs in advance, but not later than the last date for registering for the end semester examination of the semester in question, through the Head of the Institution stating the reasons therefore and the probable date of rejoining the programme.

The candidates 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 Director, Academic Courses in the prescribed format through Head of the Institution at the beginning of the readmitted semester itself for prescribing additional courses, if any, from any semester of the regulations in-force, so as to bridge the curriculum in-force and the old curriculum.

The authorized break of study would not be counted towards the duration specified for passing all the courses for the purpose of classification (vide Clause 17.1).

The total period for completion of the Programme reckoned from, the commencement of the first semester to which the candidate was admitted shall not exceed the maximum period specified in clause 4.1 irrespective of the period of break of study in order that he/she may be eligible for the award of the degree.

If any student is prevented for want of required attendance, the period of prevention shall not be considered as authorized 'Break of Study' (Clause 19.1)

## **20 DISCIPLINE**

Every student is required to observe disciplined and decorous behavior both inside and outside the college and not to indulge in any activity which will tend to bring down the prestige of the University / College. The Head of Institution shall constitute a disciplinary committee consisting of Head of Institution, Two Heads of Department of which one should be from the faculty of the student, to enquire into acts of indiscipline and notify the University about the disciplinary action

recommended for approval. In case of any serious disciplinary action which leads to suspension or dismissal, then a committee shall be constituted including one representative from Anna University, Chennai. In this regard, the member will be nominated by the University on getting information from the Head of the Institution.

If a student indulges in malpractice in any of the University / internal examination he / she shall be liable for punitive action as prescribed by the University from time to time.

## **21 REVISION OF REGULATIONS, CURRICULUM AND SYLLABI**

The University 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 Syndicate.

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# STRUCTURE OF THE PROGRAM WITH COURSES, CREDITS AND ELECTIVES

**ANNA UNIVERSITY, CHENNAI**  
**NON-AUTONOMOUS AFFILIATED COLLEGES**  
**REGULATIONS 2021**  
**CHOICE BASED CREDIT SYSTEM**  
**B. E. AUTOMOBILE ENGINEERING**  
**CURRICULUM AND SYLLABI FOR SEMESTERS I TO II**  
**SEMESTER I**

| Sl. No.          | Course code | Course Title                                      | Cate - Gory | Periods per week |          |           | Total contact periods | Credits   |
|------------------|-------------|---------------------------------------------------|-------------|------------------|----------|-----------|-----------------------|-----------|
|                  |             |                                                   |             | L                | T        | P         |                       |           |
| 1.               | IP3151      | Induction Programme                               | -           | -                | -        | -         | -                     | 0         |
| <b>THEORY</b>    |             |                                                   |             |                  |          |           |                       |           |
| 2.               | HS3151      | Professional English - I                          | HSMC        | 3                | 0        | 0         | 3                     | 3         |
| 3.               | MA3151      | Matrices and Calculus                             | BSC         | 3                | 1        | 0         | 4                     | 4         |
| 4.               | PH3151      | Engineering Physics                               | BSC         | 3                | 0        | 0         | 3                     | 3         |
| 5.               | CY3151      | Engineering Chemistry                             | BSC         | 3                | 0        | 0         | 3                     | 3         |
| 6.               | GE3151      | Problem Solving and Python Programming            | ESC         | 3                | 0        | 0         | 3                     | 3         |
| 7.               | GE3152      | தமிழர் மரபு/ Heritage of Tamils                   | HSMC        | 1                | 0        | 0         | 1                     | 1         |
| <b>PRACTICAL</b> |             |                                                   |             |                  |          |           |                       |           |
| 7                | GE3171      | Problem Solving and Python Programming Laboratory | ESC         | 0                | 0        | 4         | 4                     | 2         |
| 8                | BS3171      | Physics and Chemistry Laboratory                  | BSC         | 0                | 0        | 4         | 4                     | 2         |
| 9                | GE3172      | English Laboratory \$                             | EEC         | 0                | 0        | 2         | 2                     | 1         |
| <b>TOTAL</b>     |             |                                                   |             | <b>16</b>        | <b>1</b> | <b>10</b> | <b>27</b>             | <b>22</b> |

\$ Skill Based Course

**SEMESTER II**

| Sl. No.   | Course code | Course Title                                            | Cate - Gory | Periods per Week |   |    | Total contact periods | Credits |
|-----------|-------------|---------------------------------------------------------|-------------|------------------|---|----|-----------------------|---------|
|           |             |                                                         |             | L                | T | P  |                       |         |
| THEORY    |             |                                                         |             |                  |   |    |                       |         |
| 1.        | HS3251      | Professional English - II                               | HSMC        | 2                | 0 | 0  | 2                     | 2       |
| 2.        | MA3251      | Statistics and Numerical Methods                        | BSC         | 3                | 1 | 0  | 4                     | 4       |
| 3.        | PH3251      | Materials Science                                       | BSC         | 3                | 0 | 0  | 3                     | 3       |
| 4.        | BE3251      | Basic Electrical and Electronics Engineering            | ESC         | 3                | 0 | 0  | 3                     | 3       |
| 5.        | GE3251      | Engineering Graphics                                    | ESC         | 2                | 0 | 4  | 6                     | 4       |
| 6.        | GE3252      | தமிழரும் தொழில்நுட்பமும் / Tamils                       | HSMC        | 1                | 0 | 0  | 1                     | 1       |
| 7.        |             | NCC Credit Course Level 1*                              | -           | 2                | 0 | 0  | 2                     | 2       |
| PRACTICAL |             |                                                         |             |                  |   |    |                       |         |
| 8.        | GE3271      | Engineering Practices Laboratory                        | ESC         | 0                | 0 | 4  | 4                     | 2       |
| 9.        | BE3271      | Basic Electrical and Electronics Engineering Laboratory | ESC         | 0                | 0 | 4  | 4                     | 2       |
| 10.       | GE3272      | Communication Laboratory / Foreign Language \$          | EEC         | 0                | 0 | 4  | 4                     | 2       |
| TOTAL     |             |                                                         |             | 14               | 1 | 16 | 31                    | 23      |

\* NCC Credit Course level 1 is offered for NCC students only. The grades earned by the students will be recorded in the Mark Sheet, however the same shall not be considered for the computation of CGPA.

\$ Skill Based Course

ANNA UNIVERSITY, CHENNAI  
AFFILIATED INSTITUTIONS  
**B.E. AUTOMOBILE ENGINEERING**  
REGULATIONS – 2017  
**CHOICE BASED CREDIT SYSTEM**  
III TO VIII SEMESTERS CURRICULA AND SYLLABI

**SEMESTER III**

| SL. NO.          | COURSE CODE | COURSE TITLE                                                       | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|------------------|-------------|--------------------------------------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>    |             |                                                                    |          |                 |           |          |           |           |
| 1.               | MA8353      | Transforms and Partial Differential Equations                      | BS       | 4               | 4         | 0        | 0         | 4         |
| 2.               | ME8391      | Engineering Thermodynamics                                         | PC       | 5               | 3         | 2        | 0         | 4         |
| 3.               | CE8395      | Strength of Materials for Mechanical Engineers                     | ES       | 3               | 3         | 0        | 0         | 3         |
| 4.               | AT8301      | Spark Ignition Engines                                             | PC       | 3               | 3         | 0        | 0         | 3         |
| 5.               | ME8392      | Manufacturing Technology                                           | PC       | 3               | 3         | 0        | 0         | 3         |
| 6.               | CE8394      | Fluid Mechanics and Machinery                                      | ES       | 4               | 4         | 0        | 0         | 4         |
| <b>PRACTICAL</b> |             |                                                                    |          |                 |           |          |           |           |
| 7.               | CE8381      | Strength of Materials and Fluid Mechanics and Machinery Laboratory | ES       | 4               | 0         | 0        | 4         | 2         |
| 8.               | ME8381      | Computer Aided Machine Drawing                                     | PC       | 4               | 0         | 0        | 4         | 2         |
| 9.               | HS8381      | Interpersonal Skills/Listening & Speaking                          | EEC      | 2               | 0         | 0        | 2         | 1         |
| <b>TOTAL</b>     |             |                                                                    |          | <b>32</b>       | <b>20</b> | <b>2</b> | <b>10</b> | <b>26</b> |

**SEMESTER IV**

| SL. NO.          | COURSE CODE | COURSE TITLE                               | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|------------------|-------------|--------------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>    |             |                                            |          |                 |           |          |           |           |
| 1.               | MA8452      | Statistics and Numerical Methods           | BS       | 4               | 4         | 0        | 0         | 4         |
| 2.               | AT8401      | Compression Ignition Engines               | PC       | 3               | 3         | 0        | 0         | 3         |
| 3.               | ME8491      | Engineering Metallurgy                     | PC       | 3               | 3         | 0        | 0         | 3         |
| 4.               | EC8396      | Electronics and Microprocessors            | ES       | 3               | 3         | 0        | 0         | 3         |
| 5.               | AT8402      | Automotive Chassis                         | PC       | 3               | 3         | 0        | 0         | 3         |
| 6.               | PR8451      | Mechanics of Machines                      | PC       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICAL</b> |             |                                            |          |                 |           |          |           |           |
| 7.               | AT8411      | Automotive Components Laboratory           | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.               | EC8382      | Electronics and Microprocessors Laboratory | ES       | 4               | 0         | 0        | 4         | 2         |
| <b>TOTAL</b>     |             |                                            |          | <b>27</b>       | <b>19</b> | <b>0</b> | <b>10</b> | <b>23</b> |

### SEMESTER V

| SL. NO.          | COURSE CODE | COURSE TITLE                                     | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|------------------|-------------|--------------------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>    |             |                                                  |          |                 |           |          |           |           |
| 1.               | ME8593      | Design of Machine Elements                       | PC       | 3               | 3         | 0        | 0         | 3         |
| 2.               | AT8501      | Automotive Transmission                          | PC       | 3               | 3         | 0        | 0         | 3         |
| 3.               | AT8502      | Automotive Electrical and Electronics Systems    | PC       | 3               | 3         | 0        | 0         | 3         |
| 4.               | AT8503      | Vehicle Design Data Characteristics              | PC       | 3               | 3         | 0        | 0         | 3         |
| 5.               | AT8504      | Automotive Fuels and Lubricants                  | PC       | 3               | 3         | 0        | 0         | 3         |
| 6.               |             | Open Elective - I                                | OE       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICAL</b> |             |                                                  |          |                 |           |          |           |           |
| 7.               | AT8511      | Automotive Electrical and Electronics Laboratory | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.               | AT8512      | Automotive Fuels and Lubricants Laboratory       | PC       | 4               | 0         | 0        | 4         | 2         |
| 9.               | HS8581      | Professional Communication                       | EEC      | 2               | 0         | 0        | 2         | 1         |
| <b>TOTAL</b>     |             |                                                  |          | <b>28</b>       | <b>18</b> | <b>0</b> | <b>10</b> | <b>23</b> |

### SEMESTER VI

| SL. NO.          | COURSE CODE | COURSE TITLE                                        | CATEGORY | CONTACT PERIODS | L         | T        | P        | C         |
|------------------|-------------|-----------------------------------------------------|----------|-----------------|-----------|----------|----------|-----------|
| <b>THEORY</b>    |             |                                                     |          |                 |           |          |          |           |
| 1.               | GE8077      | Total Quality Management                            | HS       | 3               | 3         | 0        | 0        | 3         |
| 2.               | AT8601      | Automotive Engine Components Design                 | PC       | 3               | 3         | 0        | 0        | 3         |
| 3.               | AT8602      | Automotive Chassis Components Design                | PC       | 3               | 3         | 0        | 0        | 3         |
| 4.               | AT8603      | Two and Three Wheelers                              | PC       | 3               | 3         | 0        | 0        | 3         |
| 5.               | AT8604      | Vehicle Dynamics                                    | PC       | 3               | 3         | 0        | 0        | 3         |
| 6.               |             | Professional Elective - I                           | PE       | 3               | 3         | 0        | 0        | 3         |
| <b>PRACTICAL</b> |             |                                                     |          |                 |           |          |          |           |
| 7.               | AT8611      | Computer Aided Engine and Chassis Design Laboratory | PC       | 4               | 0         | 0        | 4        | 2         |
| 8.               | AT8612      | Two and Three Wheelers Laboratory                   | PC       | 4               | 0         | 0        | 4        | 2         |
| <b>TOTAL</b>     |             |                                                     |          | <b>26</b>       | <b>18</b> | <b>0</b> | <b>8</b> | <b>22</b> |

### SEMESTER VII

| SL. NO.          | COURSE CODE | COURSE TITLE                                       | CATEGORY | CONTACT PERIODS | L         | T        | P        | C         |
|------------------|-------------|----------------------------------------------------|----------|-----------------|-----------|----------|----------|-----------|
| <b>THEORY</b>    |             |                                                    |          |                 |           |          |          |           |
| 1.               | AT8701      | Engine and Vehicle Management System               | PC       | 3               | 3         | 0        | 0        | 3         |
| 2.               | ME8692      | Finite Element Analysis                            | PC       | 3               | 3         | 0        | 0        | 3         |
| 3.               | AT8702      | Vehicle Maintenance                                | PC       | 3               | 3         | 0        | 0        | 3         |
| 4.               |             | Open Elective - II                                 | OE       | 3               | 3         | 0        | 0        | 3         |
| 5.               |             | Professional Elective – II                         | PE       | 3               | 3         | 0        | 0        | 3         |
| 6.               |             | Professional Elective – III                        | PE       | 3               | 3         | 0        | 0        | 3         |
| <b>PRACTICAL</b> |             |                                                    |          |                 |           |          |          |           |
| 7.               | AT8711      | Engine Performance and Emission Testing Laboratory | PC       | 4               | 0         | 0        | 4        | 2         |
| 8.               | AT8712      | Vehicle Maintenance Laboratory                     | PC       | 4               | 0         | 0        | 4        | 2         |
| <b>TOTAL</b>     |             |                                                    |          | <b>26</b>       | <b>18</b> | <b>0</b> | <b>8</b> | <b>22</b> |

### SEMESTER VIII

| SL. NO.          | COURSE CODE | COURSE TITLE               | CATEGORY | CONTACT PERIODS | L        | T        | P         | C         |
|------------------|-------------|----------------------------|----------|-----------------|----------|----------|-----------|-----------|
| <b>THEORY</b>    |             |                            |          |                 |          |          |           |           |
| 1.               | AT8801      | Vehicle Body Engineering   | PC       | 3               | 3        | 0        | 0         | 3         |
| 2.               |             | Professional Elective – IV | PE       | 3               | 3        | 0        | 0         | 3         |
| 3.               |             | Professional Elective – V  | PE       | 3               | 3        | 0        | 0         | 3         |
| <b>PRACTICAL</b> |             |                            |          |                 |          |          |           |           |
| 4.               | AT8811      | Project Work               | EEC      | 20              | 0        | 0        | 20        | 10        |
| <b>TOTAL</b>     |             |                            |          | <b>29</b>       | <b>9</b> | <b>0</b> | <b>20</b> | <b>19</b> |

**TOTAL NUMBER OF CREDITS TO BE EARNED FOR AWARD OF THE DEGREE = 185**

### HUMANITIES AND SOCIAL SCIENCES (HS)

| SL. NO. | COURSE CODE | COURSE TITLE                          | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---------|-------------|---------------------------------------|----------|-----------------|---|---|---|---|
| 1.      | HS8151      | Communicative English                 | HS       | 4               | 4 | 0 | 0 | 4 |
| 2.      | HS8251      | Technical English                     | HS       | 4               | 4 | 0 | 0 | 4 |
| 3.      | GE8291      | Environmental Science and Engineering | HS       | 3               | 3 | 0 | 0 | 3 |
| 4.      | GE8077      | Total Quality Management              | HS       | 3               | 3 | 0 | 0 | 3 |

### BASIC SCIENCES (BS)

| SL. NO. | COURSE CODE | COURSE TITLE                                  | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---------|-------------|-----------------------------------------------|----------|-----------------|---|---|---|---|
| 1.      | MA8151      | Engineering Mathematics I                     | BS       | 5               | 3 | 2 | 0 | 4 |
| 2.      | PH8151      | Engineering Physics                           | BS       | 3               | 3 | 0 | 0 | 3 |
| 3.      | CY8151      | Engineering Chemistry                         | BS       | 3               | 3 | 0 | 0 | 3 |
| 4.      | BS8161      | Physics and Chemistry Laboratory              | BS       | 4               | 0 | 0 | 4 | 2 |
| 5.      | MA8251      | Engineering Mathematics II                    | BS       | 4               | 4 | 0 | 0 | 4 |
| 6.      | PH8251      | Materials Science                             | BS       | 3               | 3 | 0 | 0 | 3 |
| 7.      | MA8353      | Transforms and Partial Differential Equations | BS       | 4               | 4 | 0 | 0 | 4 |
| 8.      | MA8452      | Statistics and Numerical Methods              | BS       | 4               | 4 | 0 | 0 | 4 |

### ENGINEERING SCIENCES (ES)

| SL. NO. | COURSE CODE | COURSE TITLE                                                             | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---------|-------------|--------------------------------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.      | GE8151      | Problem Solving and Python Programming                                   | ES       | 3               | 3 | 0 | 0 | 3 |
| 2.      | GE8152      | Engineering Graphics                                                     | ES       | 6               | 2 | 0 | 4 | 4 |
| 3.      | GE8161      | Problem Solving and Python Programming Laboratory                        | ES       | 4               | 0 | 0 | 4 | 2 |
| 4.      | BE8253      | Basic Electrical, Electronics and Instrumentation Engineering            | ES       | 3               | 3 | 0 | 0 | 3 |
| 5.      | GE8292      | Engineering Mechanics                                                    | ES       | 5               | 3 | 2 | 0 | 4 |
| 6.      | GE8261      | Engineering Practices Laboratory                                         | ES       | 4               | 0 | 0 | 4 | 2 |
| 7.      | BE8261      | Basic Electrical, Electronics and Instrumentation Engineering Laboratory | ES       | 4               | 0 | 0 | 4 | 2 |
| 8.      | CE8395      | Strength of Materials for Mechanical Engineers                           | ES       | 3               | 3 | 0 | 0 | 3 |
| 9.      | CE8394      | Fluid Mechanics and Machinery                                            | ES       | 4               | 4 | 0 | 0 | 4 |
| 10.     | CE8381      | Strength of Materials and Fluid Mechanics and Machinery Laboratory       | ES       | 4               | 0 | 0 | 4 | 2 |
| 11.     | EC8396      | Electronics and Microprocessors                                          | ES       | 3               | 3 | 0 | 0 | 3 |
| 12.     | EC8382      | Electronics and Microprocessors Laboratory                               | ES       | 4               | 0 | 0 | 4 | 2 |

### PROFESSIONAL CORE (PC)

| SL. NO. | COURSE CODE | COURSE TITLE                                        | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---------|-------------|-----------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.      | ME8391      | Engineering Thermodynamics                          | PC       | 5               | 3 | 2 | 0 | 4 |
| 2.      | AT8301      | Spark Ignition Engines                              | PC       | 3               | 3 | 0 | 0 | 3 |
| 3.      | ME8392      | Manufacturing Technology                            | PC       | 3               | 3 | 0 | 0 | 3 |
| 4.      | ME8381      | Computer Aided Machine Drawing                      | PC       | 4               | 0 | 0 | 4 | 2 |
| 5.      | AT8401      | Compression Ignition Engines                        | PC       | 3               | 3 | 0 | 0 | 3 |
| 6.      | ME8491      | Engineering Metallurgy                              | PC       | 3               | 3 | 0 | 0 | 3 |
| 7.      | AT8402      | Automotive Chassis                                  | PC       | 3               | 3 | 0 | 0 | 3 |
| 8.      | PR8451      | Mechanics of Machines                               | PC       | 3               | 3 | 0 | 0 | 3 |
| 9.      | AT8411      | Automotive Components Laboratory                    | PC       | 4               | 0 | 0 | 4 | 2 |
| 10.     | ME8593      | Design of Machine Elements                          | PC       | 3               | 3 | 0 | 0 | 3 |
| 11.     | AT8501      | Automotive Transmission                             | PC       | 3               | 3 | 0 | 0 | 3 |
| 12.     | AT8502      | Automotive Electrical and Electronics Systems       | PC       | 3               | 3 | 0 | 0 | 3 |
| 13.     | AT8503      | Vehicle Design Data Characteristics                 | PC       | 3               | 3 | 0 | 0 | 3 |
| 14.     | AT8504      | Automotive Fuels and Lubricants                     | PC       | 3               | 3 | 0 | 0 | 3 |
| 15.     | AT8511      | Automotive Electrical and Electronics Laboratory    | PC       | 4               | 0 | 0 | 4 | 2 |
| 16.     | AT8512      | Automotive Fuels and Lubricants Laboratory          | PC       | 4               | 0 | 0 | 4 | 2 |
| 17.     | AT8601      | Automotive Engine Components Design                 | PC       | 3               | 3 | 0 | 0 | 3 |
| 18.     | AT8602      | Automotive Chassis Components Design                | PC       | 3               | 3 | 0 | 0 | 3 |
| 19.     | AT8603      | Two and Three Wheelers                              | PC       | 3               | 3 | 0 | 0 | 3 |
| 20.     | AT8611      | Computer Aided Engine and Chassis Design Laboratory | PC       | 4               | 0 | 0 | 4 | 2 |
| 21.     | AT8612      | Two and Three Wheelers Laboratory                   | PC       | 4               | 0 | 0 | 4 | 2 |
| 22.     | AT8701      | Engine and Vehicle Management System                | PC       | 3               | 3 | 0 | 0 | 3 |
| 23.     | ME8692      | Finite Element Analysis                             | PC       | 3               | 3 | 0 | 0 | 3 |
| 24.     | AT8702      | Vehicle Maintenance                                 | PC       | 3               | 3 | 0 | 0 | 3 |
| 25.     | AT8604      | Vehicle Dynamics                                    | PC       | 3               | 3 | 0 | 0 | 3 |
| 26.     | AT8711      | Engine Performance and Emission Testing Laboratory  | PC       | 4               | 0 | 0 | 4 | 2 |
| 27.     | AT8712      | Vehicle Maintenance Laboratory                      | PC       | 4               | 0 | 0 | 4 | 2 |
| 28.     | AT8801      | Vehicle Body Engineering                            | PC       | 3               | 3 | 0 | 0 | 3 |

## ELECTIVES FOR B.E. AUTOMOBILE ENGINEERING

### SEMESTER VI, ELECTIVE – I

| SL. NO. | COURSE CODE | COURSE TITLE                                        | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---------|-------------|-----------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.      | AT8001      | Automotive Air-Conditioning                         | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.      | AT8002      | Advance Theory of IC Engines                        | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.      | AT8003      | Metrology and Measurements for Automobile Engineers | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.      | PR8072      | New Product Development                             | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.      | GE8075      | Intellectual Property Rights                        | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.      | GE8073      | Fundamentals of Nano Science                        | PE       | 3               | 3 | 0 | 0 | 3 |

### SEMESTER VII, ELECTIVE – II

| SL. NO. | COURSE CODE | COURSE TITLE                           | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---------|-------------|----------------------------------------|----------|-----------------|---|---|---|---|
| 1.      | AT8091      | Manufacturing of Automotive Components | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.      | AT8004      | New Generation and Hybrid Vehicles     | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.      | AT8005      | Automotive Aerodynamics                | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.      | AT8006      | Off Road Vehicles                      | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.      | MG8491      | Operations Research                    | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.      | GE8071      | Disaster Management                    | PE       | 3               | 3 | 0 | 0 | 3 |

### SEMESTER VII, ELECTIVE – III

| SL. NO. | COURSE CODE | COURSE TITLE                      | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---------|-------------|-----------------------------------|----------|-----------------|---|---|---|---|
| 1.      | AT8007      | Noise, Vibration and Measurements | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.      | PR8071      | Lean Six Sigma                    | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.      | ME8099      | Robotics                          | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.      | ME8092      | Composite Materials and Mechanics | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.      | GE8074      | Human Rights                      | PE       | 3               | 3 | 0 | 0 | 3 |

### SEMESTER VIII, ELECTIVE – IV

| SL. NO. | COURSE CODE | COURSE TITLE                     | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---------|-------------|----------------------------------|----------|-----------------|---|---|---|---|
| 1.      | AT8008      | Transport Management             | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.      | MG8091      | Entrepreneurship Development     | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.      | AT8009      | Automotive Safety                | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.      | AT8010      | Automotive Pollution and Control | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.      | AT8011      | Automotive Testing               | PE       | 3               | 3 | 0 | 0 | 3 |

### SEMESTER VIII, ELECTIVE – V

| SL. NO. | COURSE CODE | COURSE TITLE                         | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---------|-------------|--------------------------------------|----------|-----------------|---|---|---|---|
| 1.      | PR8491      | Computer Integrated Manufacturing    | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.      | AT8012      | Alternative Fuels and Energy Systems | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.      | MG8591      | Principles of Management             | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.      | GE8076      | Professional Ethics in Engineering   | PE       | 3               | 3 | 0 | 0 | 3 |

### EMPLOYABILITY ENHANCEMENT COURSES (EEC)

| SL. NO. | COURSE CODE | COURSE TITLE                                | CATEGORY | CONTACT PERIODS | L | T | P  | C  |
|---------|-------------|---------------------------------------------|----------|-----------------|---|---|----|----|
| 1.      | HS8381      | Interpersonal Skills/Listening and Speaking | EEC      | 2               | 0 | 0 | 2  | 1  |
| 2.      | HS8581      | Professional Communication                  | EEC      | 2               | 0 | 0 | 2  | 1  |
| 3.      | AT8811      | Project Work                                | EEC      | 20              | 0 | 0 | 20 | 10 |

### SUMMARY

| SL NO | SUBJECT AREA          | CREDITS AS PER SEMESTER |    |     |    |    |    |     |      | CREDITS TOTAL | Percentage % |
|-------|-----------------------|-------------------------|----|-----|----|----|----|-----|------|---------------|--------------|
|       |                       | I                       | II | III | IV | V  | VI | VII | VIII |               |              |
| 1.    | HS                    | 04                      | 07 | 00  | 00 | 00 | 03 | 00  | 00   | 14            | 7.56         |
| 2.    | BS                    | 12                      | 07 | 04  | 04 | 00 | 00 | 00  | 00   | 27            | 14.59        |
| 3.    | ES                    | 09                      | 11 | 09  | 05 | 00 | 00 | 00  | 00   | 34            | 17.83        |
| 4.    | PC                    | 00                      | 00 | 12  | 14 | 19 | 16 | 13  | 03   | 77            | 42.00        |
| 5.    | PE                    | 00                      | 00 | 00  | 00 | 00 | 03 | 06  | 06   | 15            | 8.10         |
| 6.    | OE                    | 00                      | 00 | 00  | 00 | 03 | 00 | 03  | 00   | 06            | 3.24         |
| 7.    | EEC                   | 00                      | 00 | 01  | 00 | 01 | 00 | 00  | 10   | 13            | 7.02         |
|       | Total                 | 25                      | 25 | 26  | 23 | 23 | 22 | 22  | 19   | 185           |              |
| 8     | Non Credit/ Mandatory |                         |    |     |    |    |    |     |      |               |              |

**ANNA UNIVERSITY, CHENNAI**  
**NON-AUTONOMOUS AFFILIATED COLLEGES**  
**REGULATIONS 2021**  
**CHOICE BASED CREDIT SYSTEM**  
**B. E. CIVIL ENGINEERING**  
**CURRICULUM AND SYLLABI FOR SEMESTERS I TO II**  
**SEMESTER I**

| S. NO.            | COURSE CODE | COURSE TITLE                                      | CATEGORY | PERIODS PER WEEK |          |           | TOTAL CONTACT PERIODS | CREDITS   |
|-------------------|-------------|---------------------------------------------------|----------|------------------|----------|-----------|-----------------------|-----------|
|                   |             |                                                   |          | L                | T        | P         |                       |           |
| 1.                | IP3151      | Induction Programme                               | -        | -                | -        | -         | -                     | 0         |
| <b>THEORY</b>     |             |                                                   |          |                  |          |           |                       |           |
| 2.                | HS3151      | Professional English - I                          | HSMC     | 3                | 0        | 0         | 3                     | 3         |
| 3.                | MA3151      | Matrices and Calculus                             | BSC      | 3                | 1        | 0         | 4                     | 4         |
| 4.                | PH3151      | Engineering Physics                               | BSC      | 3                | 0        | 0         | 3                     | 3         |
| 5.                | CY3151      | Engineering Chemistry                             | BSC      | 3                | 0        | 0         | 3                     | 3         |
| 6.                | GE3151      | Problem Solving and Python Programming            | ESC      | 3                | 0        | 0         | 3                     | 3         |
| 7.                | GE3152      | தமிழர் மரபு /Heritage of Tamils                   | HSMC     | 1                | 0        | 0         | 1                     | 1         |
| <b>PRACTICALS</b> |             |                                                   |          |                  |          |           |                       |           |
| 8.                | GE3171      | Problem Solving and Python Programming Laboratory | ESC      | 0                | 0        | 4         | 4                     | 2         |
| 9.                | BS3171      | Physics and Chemistry Laboratory                  | BSC      | 0                | 0        | 4         | 4                     | 2         |
| 10.               | GE3172      | English Laboratory <sup>§</sup>                   | EEC      | 0                | 0        | 2         | 2                     | 1         |
| <b>TOTAL</b>      |             |                                                   |          | <b>16</b>        | <b>1</b> | <b>10</b> | <b>27</b>             | <b>22</b> |

<sup>§</sup> Skill Based Course

**SEMESTER II**

| SEMESTER II |             |                                                                          |          |                  |   |    |                       |                |
|-------------|-------------|--------------------------------------------------------------------------|----------|------------------|---|----|-----------------------|----------------|
| S. NO.      | COURSE CODE | COURSE TITLE                                                             | CATEGORY | PERIODS PER WEEK |   |    | TOTAL CONTACT PERIODS | CREDITS        |
|             |             |                                                                          |          | L                | T | P  |                       |                |
| THEORY      |             |                                                                          |          |                  |   |    |                       |                |
| 1.          | HS3251      | Professional English - II                                                | HSMC     | 2                | 0 | 0  | 2                     | 2              |
| 2.          | MA3251      | Statistics and Numerical Methods                                         | BSC      | 3                | 1 | 0  | 4                     | 4              |
| 3.          | PH3201      | Physics for Civil Engineering                                            | BSC      | 3                | 0 | 0  | 3                     | 3              |
| 4.          | BE3252      | Basic Electrical, Electronics and Instrumentation Engineering            | ESC      | 3                | 0 | 0  | 3                     | 3              |
| 5.          | GE3251      | Engineering Graphics                                                     | ESC      | 2                | 0 | 4  | 6                     | 4              |
| 6.          |             | NCC Credit Course Level 1 <sup>#</sup>                                   | -        | 2                | 0 | 0  | 2                     | 2 <sup>#</sup> |
| 7.          | GE3252      | தமிழரும் தொழில்நுட்பமும் / Tamils and Technology                         | HSMC     | 1                | 0 | 0  | 1                     | 1              |
| PRACTICALS  |             |                                                                          |          |                  |   |    |                       |                |
| 8.          | GE3271      | Engineering Practices Laboratory                                         | ESC      | 0                | 0 | 4  | 4                     | 2              |
| 9.          | BE3272      | Basic Electrical, Electronics and Instrumentation Engineering Laboratory | ESC      | 0                | 0 | 4  | 4                     | 2              |
| 10.         | GE3272      | Communication Laboratory / Foreign Language <sup>\$</sup>                | EEC      | 0                | 0 | 4  | 4                     | 2              |
| TOTAL       |             |                                                                          |          | 14               | 1 | 16 | 31                    | 23             |

<sup>#</sup> NCC Credit Course level 1 is offered for NCC students only. The grades earned by the students will be recorded in the Mark Sheet, however the same shall not be considered for the computation of CGPA

<sup>§</sup> Skill Based Course

**ANNA UNIVERSITY, CHENNAI  
AFFILIATED INSTITUTIONS**

**B.E. CIVIL ENGINEERING**

**REGULATIONS – 2017**

**CHOICE BASED CREDIT SYSTEM**

**III TO VIII SEMESTERS CURRICULA & SYLLABI**

**SEMESTER III**

| S.No              | COURSE CODE | COURSE TITLE                                  | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|-------------------|-------------|-----------------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                                               |          |                 |           |          |           |           |
| 1.                | MA8353      | Transforms and Partial Differential Equations | BS       | 4               | 4         | 0        | 0         | 4         |
| 2.                | CE8301      | Strength of Materials I                       | PC       | 3               | 3         | 0        | 0         | 3         |
| 3.                | CE8302      | Fluid Mechanics                               | PC       | 3               | 3         | 0        | 0         | 3         |
| 4.                | CE8351      | Surveying                                     | PC       | 3               | 3         | 0        | 0         | 3         |
| 5.                | CE8391      | Construction Materials                        | PC       | 3               | 3         | 0        | 0         | 3         |
| 6.                | CE8392      | Engineering Geology                           | ES       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                                               |          |                 |           |          |           |           |
| 7.                | CE8311      | Construction Materials Laboratory             | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.                | CE8361      | Surveying Laboratory                          | PC       | 4               | 0         | 0        | 4         | 2         |
| 9.                | HS8381      | Interpersonal Skills / Listening and Speaking | EEC      | 2               | 0         | 0        | 2         | 1         |
| <b>TOTAL</b>      |             |                                               |          | <b>29</b>       | <b>19</b> | <b>0</b> | <b>10</b> | <b>24</b> |

**SEMESTER IV**

| S.No              | COURSE CODE | COURSE TITLE                          | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|-------------------|-------------|---------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                                       |          |                 |           |          |           |           |
| 1.                | MA8491      | Numerical Methods                     | BS       | 4               | 4         | 0        | 0         | 4         |
| 2.                | CE8401      | Construction Techniques and Practices | PC       | 3               | 3         | 0        | 0         | 3         |
| 3.                | CE8402      | Strength of Materials II              | PC       | 3               | 3         | 0        | 0         | 3         |
| 4.                | CE8403      | Applied Hydraulic Engineering         | PC       | 3               | 3         | 0        | 0         | 3         |
| 5.                | CE8404      | Concrete Technology                   | PC       | 3               | 3         | 0        | 0         | 3         |
| 6.                | CE8491      | Soil Mechanics                        | PC       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                                       |          |                 |           |          |           |           |
| 7.                | CE8481      | Strength of Materials Laboratory      | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.                | CE8461      | Hydraulic Engineering Laboratory      | PC       | 4               | 0         | 0        | 4         | 2         |
| 9.                | HS8461      | Advanced Reading and Writing          | EEC      | 2               | 0         | 0        | 2         | 1         |
| <b>TOTAL</b>      |             |                                       |          | <b>29</b>       | <b>19</b> | <b>0</b> | <b>10</b> | <b>24</b> |

### SEMESTER V

| S.No              | COURSE CODE | COURSE TITLE                                  | CATEGORY | CONTACT PERIODS | L         | T        | P        | C         |
|-------------------|-------------|-----------------------------------------------|----------|-----------------|-----------|----------|----------|-----------|
| <b>THEORY</b>     |             |                                               |          |                 |           |          |          |           |
| 1.                | CE8501      | Design of Reinforced Cement Concrete Elements | PC       | 5               | 3         | 2        | 0        | 4         |
| 2.                | CE8502      | Structural Analysis I                         | PC       | 3               | 3         | 0        | 0        | 3         |
| 3.                | EN8491      | Water Supply Engineering                      | PC       | 3               | 3         | 0        | 0        | 3         |
| 4.                | CE8591      | Foundation Engineering                        | PC       | 3               | 3         | 0        | 0        | 3         |
| 5.                |             | Professional Elective I                       | PE       | 3               | 3         | 0        | 0        | 3         |
| 6.                |             | Open Elective I                               | OE       | 3               | 3         | 0        | 0        | 3         |
| <b>PRACTICALS</b> |             |                                               |          |                 |           |          |          |           |
| 7.                | CE8511      | Soil Mechanics Laboratory                     | PC       | 4               | 0         | 0        | 4        | 2         |
| 8.                | CE8512      | Water and Waste Water Analysis Laboratory     | PC       | 4               | 0         | 0        | 4        | 2         |
| 9.                | CE8513      | Survey Camp (2 weeks –During IV Semester)     | EEC      | 0               | 0         | 0        | 0        | 2         |
| <b>TOTAL</b>      |             |                                               |          | <b>28</b>       | <b>18</b> | <b>2</b> | <b>8</b> | <b>25</b> |

### SEMESTER VI

| S.No              | COURSE CODE | COURSE TITLE                                     | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|-------------------|-------------|--------------------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                                                  |          |                 |           |          |           |           |
| 1.                | CE8601      | Design of Steel Structural Elements              | PC       | 5               | 3         | 2        | 0         | 4         |
| 2.                | CE8602      | Structural Analysis II                           | PC       | 3               | 3         | 0        | 0         | 3         |
| 3.                | CE8603      | Irrigation Engineering                           | PC       | 3               | 3         | 0        | 0         | 3         |
| 4.                | CE8604      | Highway Engineering                              | PC       | 3               | 3         | 0        | 0         | 3         |
| 5.                | EN8592      | Wastewater Engineering                           | PC       | 3               | 3         | 0        | 0         | 3         |
| 6.                |             | Professional Elective II                         | PE       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                                                  |          |                 |           |          |           |           |
| 7.                | CE8611      | Highway Engineering Laboratory                   | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.                | CE8612      | Irrigation and Environmental Engineering Drawing | PC       | 4               | 0         | 0        | 4         | 2         |
| 9.                | HS8581      | Professional Communication                       | EEC      | 2               | 0         | 0        | 2         | 1         |
| <b>TOTAL</b>      |             |                                                  |          | <b>30</b>       | <b>18</b> | <b>2</b> | <b>10</b> | <b>24</b> |

### SEMESTER VII

| S.No              | COURSE CODE | COURSE TITLE                                                       | CATEGORY | CONTACT PERIODS | L         | T        | P        | C         |
|-------------------|-------------|--------------------------------------------------------------------|----------|-----------------|-----------|----------|----------|-----------|
| <b>THEORY</b>     |             |                                                                    |          |                 |           |          |          |           |
| 1.                | CE8701      | Estimation, Costing and Valuation Engineering                      | PC       | 3               | 3         | 0        | 0        | 3         |
| 2.                | CE8702      | Railways, Airports, Docks and Harbour Engineering                  | PC       | 3               | 3         | 0        | 0        | 3         |
| 3.                | CE8703      | Structural Design and Drawing                                      | PC       | 5               | 3         | 0        | 2        | 4         |
| 4.                |             | Professional Elective III                                          | PE       | 3               | 3         | 0        | 0        | 3         |
| 5.                |             | Open Elective II*                                                  | OE       | 3               | 3         | 0        | 0        | 3         |
| <b>PRACTICALS</b> |             |                                                                    |          |                 |           |          |          |           |
| 6.                | CE8711      | Creative and Innovative Project (Activity Based - Subject Related) | EEC      | 4               | 0         | 0        | 4        | 2         |
| 7.                | CE8712      | Industrial Training (4 weeks During VI Semester – Summer)          | EEC      | 0               | 0         | 0        | 0        | 2         |
| <b>TOTAL</b>      |             |                                                                    |          | <b>21</b>       | <b>15</b> | <b>0</b> | <b>6</b> | <b>20</b> |

### SEMESTER VIII

| S.No              | COURSE CODE | COURSE TITLE             | CATEGORY | CONTACT PERIODS | L        | T        | P         | C         |
|-------------------|-------------|--------------------------|----------|-----------------|----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                          |          |                 |          |          |           |           |
| 1.                |             | Professional Elective IV | PE       | 3               | 3        | 0        | 0         | 3         |
| 2.                |             | Professional Elective V  | PE       | 3               | 3        | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                          |          |                 |          |          |           |           |
| 3.                | CE8811      | Project Work             | EEC      | 20              | 0        | 0        | 20        | 10        |
| <b>TOTAL</b>      |             |                          |          | <b>26</b>       | <b>6</b> | <b>0</b> | <b>20</b> | <b>16</b> |

**TOTAL NO. OF CREDITS: 183**

\*Course from the curriculum of other UG Programmes.

### HUMANITIES AND SOCIAL SCIENCES (HS)

| S.No | COURSE CODE | COURSE TITLE                          | CATEGORY | CONTACT PERIODS | L | T | P | C |
|------|-------------|---------------------------------------|----------|-----------------|---|---|---|---|
| 1.   | HS8151      | Communicative English                 | HS       | 4               | 4 | 0 | 0 | 4 |
| 2.   | HS8251      | Technical English                     | HS       | 4               | 4 | 0 | 0 | 4 |
| 3.   | GE8291      | Environmental Science and Engineering | HS       | 3               | 3 | 0 | 0 | 3 |

### BASIC SCIENCES (BS)

| S.No | COURSE CODE | COURSE TITLE                                  | CATEGORY | CONTACT PERIODS | L | T | P | C |
|------|-------------|-----------------------------------------------|----------|-----------------|---|---|---|---|
| 1.   | MA8151      | Engineering Mathematics – I                   | BS       | 4               | 4 | 0 | 0 | 4 |
| 2.   | PH8151      | Engineering Physics                           | BS       | 3               | 3 | 0 | 0 | 3 |
| 3.   | CY8151      | Engineering Chemistry                         | BS       | 3               | 3 | 0 | 0 | 3 |
| 4.   | BS8161      | Physics and Chemistry Laboratory              | BS       | 4               | 0 | 0 | 4 | 2 |
| 5.   | MA8251      | Engineering Mathematics – II                  | BS       | 4               | 4 | 0 | 0 | 4 |
| 6.   | PH8201      | Physics for Civil Engineering                 | BS       | 3               | 3 | 0 | 0 | 3 |
| 7.   | MA8353      | Transforms and Partial Differential Equations | BS       | 4               | 4 | 0 | 0 | 4 |
| 8.   | MA8491      | Numerical Methods                             | BS       | 4               | 4 | 0 | 0 | 4 |

### ENGINEERING SCIENCES (ES)

| S.No. | COURSE CODE | COURSE TITLE                                      | CATEGORY | CONTACT PERIODS | L | T | P | C |
|-------|-------------|---------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.    | GE8151      | Problem Solving and Python Programming            | ES       | 3               | 3 | 0 | 0 | 3 |
| 2.    | GE8152      | Engineering Graphics                              | ES       | 6               | 2 | 0 | 4 | 4 |
| 3.    | GE8161      | Problem Solving and Python Programming Laboratory | ES       | 4               | 0 | 0 | 4 | 2 |
| 4.    | BE8251      | Basic Electrical and Electronics Engineering      | ES       | 3               | 3 | 0 | 0 | 3 |
| 5.    | GE8292      | Engineering Mechanics                             | ES       | 5               | 3 | 2 | 0 | 4 |
| 6.    | GE8261      | Engineering Practices Laboratory                  | ES       | 4               | 0 | 0 | 4 | 2 |
| 7.    | CE8392      | Engineering Geology                               | ES       | 3               | 3 | 0 | 0 | 3 |

### PROFESSIONAL CORE (PC)

| S.No | COURSE CODE | COURSE TITLE                    | CATEGORY | CONTACT PERIODS | L | T | P | C |
|------|-------------|---------------------------------|----------|-----------------|---|---|---|---|
| 1.   | CE8211      | Computer Aided Building Drawing | PC       | 4               | 0 | 0 | 4 | 2 |
| 2.   | CE8391      | Construction Materials          | PC       | 3               | 3 | 0 | 0 | 3 |
| 3.   | CE8301      | Strength of Materials I         | PC       | 3               | 3 | 0 | 0 | 3 |
| 4.   | CE8302      | Fluid Mechanics                 | PC       | 3               | 3 | 0 | 0 | 3 |
| 5.   | CE8351      | Surveying                       | PC       | 3               | 3 | 0 | 0 | 3 |

|     |        |                                                   |    |   |   |   |   |   |
|-----|--------|---------------------------------------------------|----|---|---|---|---|---|
| 6.  | CE8481 | Strength of Materials Laboratory                  | PC | 4 | 0 | 0 | 4 | 2 |
| 7.  | CE8361 | Surveying Laboratory                              | PC | 4 | 0 | 0 | 4 | 2 |
| 8.  | CE8311 | Construction Materials Laboratory                 | PC | 4 | 0 | 0 | 4 | 2 |
| 9.  | CE8401 | Construction Techniques and Practices             | PC | 3 | 3 | 0 | 0 | 3 |
| 10. | CE8402 | Strength of Materials II                          | PC | 3 | 3 | 0 | 0 | 3 |
| 11. | CE8403 | Applied Hydraulic Engineering                     | PC | 3 | 3 | 0 | 0 | 3 |
| 12. | CE8404 | Concrete Technology                               | PC | 3 | 3 | 0 | 0 | 3 |
| 13. | CE8491 | Soil Mechanics                                    | PC | 3 | 3 | 0 | 0 | 3 |
| 14. | CE8461 | Hydraulic Engineering Laboratory                  | PC | 4 | 0 | 0 | 4 | 2 |
| 15. | CE8501 | Design of Reinforced Cement Concrete Elements     | PC | 5 | 3 | 2 | 0 | 4 |
| 16. | CE8502 | Structural Analysis I                             | PC | 3 | 3 | 0 | 0 | 3 |
| 17. | CE8511 | Soil Mechanics Laboratory                         | PC | 4 | 0 | 0 | 4 | 2 |
| 18. | CE8512 | Water and Waste Water Analysis Laboratory         | PC | 4 | 0 | 0 | 4 | 2 |
| 19. | CE8591 | Foundation Engineering                            | PC | 3 | 3 | 0 | 0 | 3 |
| 20. | CE8601 | Design of Steel Structural Elements               | PC | 5 | 3 | 2 | 0 | 4 |
| 21. | CE8602 | Structural Analysis II                            | PC | 3 | 3 | 0 | 0 | 3 |
| 22. | CE8603 | Irrigation Engineering                            | PC | 3 | 3 | 0 | 0 | 3 |
| 23. | CE8604 | Highway Engineering                               | PC | 3 | 3 | 0 | 0 | 3 |
| 24. | CE8611 | Highway Engineering Laboratory                    | PC | 4 | 0 | 0 | 4 | 2 |
| 25. | CE8612 | Irrigation and Environmental Engineering Drawing  | PC | 4 | 0 | 0 | 4 | 2 |
| 26. | EN8592 | Wastewater Engineering                            | PC | 3 | 3 | 0 | 0 | 3 |
| 27. | EN8491 | Water Supply Engineering                          | PC | 3 | 3 | 0 | 0 | 3 |
| 28. | CE8701 | Estimation, Costing and Valuation Engineering     | PC | 3 | 3 | 0 | 0 | 3 |
| 29. | CE8702 | Railways, Airports, Docks and Harbour Engineering | PC | 3 | 3 | 0 | 0 | 3 |
| 30. | CE8703 | Structural Design and Drawing                     | PC | 5 | 3 | 0 | 2 | 4 |

### EMPLOYABILITY ENHANCEMENT COURSES (EEC)

| S.No | COURSE CODE | COURSE TITLE                                                       | CATEGORY | CONTACT PERIODS | L | T | P  | C  |
|------|-------------|--------------------------------------------------------------------|----------|-----------------|---|---|----|----|
| 1.   | HS8381      | Interpersonal Skills / Listening and Speaking                      | EEC      | 2               | 0 | 0 | 2  | 1  |
| 2.   | HS8461      | Advanced Reading and Writing                                       | EEC      | 2               | 0 | 0 | 2  | 1  |
| 3.   | CE8513      | Survey Camp (2 weeks – During IV Semester)                         | EEC      | 0               | 0 | 0 | 0  | 2  |
| 4.   | HS8581      | Professional Communication                                         | EEC      | 2               | 0 | 0 | 2  | 1  |
| 5.   | CE8711      | Creative and Innovative Project (Activity Based - Subject Related) | EEC      | 4               | 0 | 0 | 4  | 2  |
| 6.   | CE8712      | Industrial Training (4 weeks During VI Semester – Summer)          | EEC      | 0               | 0 | 0 | 0  | 2  |
| 7.   | CE8811      | Project Work                                                       | EEC      | 20              | 0 | 0 | 20 | 10 |

### PROFESSIONAL ELECTIVE

#### SEMESTER V

#### ELECTIVE - I

| S.No | COURSE CODE | COURSE TITLE                                    | CATEGORY | CONTACT PERIODS | L | T | P | C |
|------|-------------|-------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.   | GI8012      | Digital Cadastre                                | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.   | GI8013      | Advanced Surveying                              | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.   | GI8014      | Geographic Information System                   | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.   | GI8015      | Geoinformatics Applications for Civil Engineers | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.   | GI8491      | Total Station and GPS Surveying                 | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.   | GE8071      | Disaster Management                             | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.   | GE8074      | Human Rights                                    | PE       | 3               | 3 | 0 | 0 | 3 |

#### SEMESTER VI

#### ELECTIVE - II

| S.No | COURSE CODE | COURSE TITLE                                          | CATEGORY | CONTACT PERIODS | L | T | P | C |
|------|-------------|-------------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.   | CE8001      | Ground Improvement Techniques                         | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.   | CE8002      | Introduction to Soil Dynamics and Machine Foundations | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.   | CE8003      | Rock Engineering                                      | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.   | CE8004      | Urban Planning and Development                        | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.   | CE8005      | Air Pollution and Control Engineering                 | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.   | GE8075      | Intellectual Property Rights                          | PE       | 3               | 3 | 0 | 0 | 3 |

**SEMESTER VII  
ELECTIVE – III**

| S.No | COURSE CODE | COURSE TITLE                                        | CATEGORY | CONTACT PERIODS | L | T | P | C |
|------|-------------|-----------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.   | CE8006      | Pavement Engineering                                | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.   | CE8007      | Traffic Engineering and Management                  | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.   | CE8008      | Transport and Environment                           | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.   | CE8009      | Industrial Structures                               | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.   | CE8010      | Environmental and Social Impact Assessment          | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.   | CE8011      | Design of Prestressed Concrete Structures           | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.   | CE8012      | Construction Planning and Scheduling                | PE       | 3               | 3 | 0 | 0 | 3 |
| 8.   | EN8591      | Municipal Solid Waste Management                    | PE       | 3               | 3 | 0 | 0 | 3 |
| 9.   | GE8077      | Total Quality Management                            | PE       | 3               | 3 | 0 | 0 | 3 |
| 10.  | GE8072      | Foundation Skills In Integrated Product Development | PE       | 3               | 3 | 0 | 0 | 3 |

**SEMESTER VIII  
ELECTIVE – IV**

| S.No | COURSE CODE | COURSE TITLE                              | CATEGORY | CONTACT PERIODS | L | T | P | C |
|------|-------------|-------------------------------------------|----------|-----------------|---|---|---|---|
| 1.   | CE8013      | Coastal Engineering                       | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.   | CE8014      | Participatory Water Resources Management  | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.   | CE8015      | Integrated Water Resources Management     | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.   | CE8016      | Groundwater Engineering                   | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.   | CE8017      | Water Resources Systems Engineering       | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.   | CE8018      | Geo-Environmental Engineering             | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.   | CE8091      | Hydrology and Water Resources Engineering | PE       | 3               | 3 | 0 | 0 | 3 |
| 8.   | GE8076      | Professional Ethics in Engineering        | PE       | 3               | 3 | 0 | 0 | 3 |

**SEMESTER VIII  
ELECTIVE – V**

| S.No | COURSE CODE | COURSE TITLE                                         | CATEGORY | CONTACT PERIODS | L | T | P | C |
|------|-------------|------------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.   | CE8019      | Computer Aided Design of Structures                  | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.   | CE8020      | Maintenance, Repair and Rehabilitation of Structures | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.   | CE8021      | Structural Dynamics and Earthquake Engineering       | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.   | CE8022      | Prefabricated Structures                             | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.   | CE8023      | Bridge Engineering                                   | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.   | GE8073      | Fundamentals of Nanoscience                          | PE       | 3               | 3 | 0 | 0 | 3 |

### SUMMARY

| S.No | Subject Area         | Credits per Semester |    |     |    |    |    |     |      | Credits Total |
|------|----------------------|----------------------|----|-----|----|----|----|-----|------|---------------|
|      |                      | I                    | II | III | IV | V  | VI | VII | VIII |               |
| 1    | HS                   | 4                    | 7  |     |    |    |    |     |      | 11            |
| 2    | BS                   | 12                   | 7  | 4   | 4  |    |    |     |      | 27            |
| 3    | ES                   | 9                    | 9  | 3   |    |    |    |     |      | 21            |
| 4    | PC                   |                      | 2  | 16  | 19 | 17 | 20 | 10  |      | 84            |
| 5    | PE                   |                      |    |     |    | 3  | 3  | 3   | 6    | 15            |
| 6    | OE                   |                      |    |     |    | 3  |    | 3   |      | 6             |
| 7    | EEC                  |                      |    | 1   | 1  | 2  | 1  | 4   | 10   | 19            |
|      | Total                | 25                   | 25 | 24  | 24 | 25 | 24 | 20  | 16   | 183           |
| 8    | Non-Credit/Mandatory |                      |    |     |    |    |    |     |      |               |

**PRINCIPAL**

**JKK MUNIRAJAH COLLEGE  
OF TECHNOLOGY  
T.N. PALAYAM (Po)-638 506.  
GOBI (TK), ERODE (Dt).**

**ANNA UNIVERSITY, CHENNAI**  
**NON- AUTONOMOUS AFFILIATED COLLEGES**  
**REGULATIONS 2021**

**B. E. COMPUTER SCIENCE AND ENGINEERING**  
**CHOICE BASED CREDIT SYSTEM**  
**CURRICULA AND SYLLABI FOR SEMESTERS I TO II**  
**SEMESTER I**

| S. NO.            | COURSE CODE | COURSE TITLE                                      | CATE-GORY | PERIODS PER WEEK |          |           | TOTAL CONTACT PERIODS | CREDITS   |
|-------------------|-------------|---------------------------------------------------|-----------|------------------|----------|-----------|-----------------------|-----------|
|                   |             |                                                   |           | L                | T        | P         |                       |           |
| 1.                | IP3151      | Induction Programme                               | -         | -                | -        | -         | -                     | 0         |
| <b>THEORY</b>     |             |                                                   |           |                  |          |           |                       |           |
| 2.                | HS3151      | Professional English - I                          | HSMC      | 3                | 0        | 0         | 3                     | 3         |
| 3.                | MA3151      | Matrices and Calculus                             | BSC       | 3                | 1        | 0         | 4                     | 4         |
| 4.                | PH3151      | Engineering Physics                               | BSC       | 3                | 0        | 0         | 3                     | 3         |
| 5.                | CY3151      | Engineering Chemistry                             | BSC       | 3                | 0        | 0         | 3                     | 3         |
| 6.                | GE3151      | Problem Solving and Python Programming            | ESC       | 3                | 0        | 0         | 3                     | 3         |
| 7.                | GE3152      | தமிழர் மரபு /Heritage of Tamils                   | HSMC      | 1                | 0        | 0         | 1                     | 1         |
| <b>PRACTICALS</b> |             |                                                   |           |                  |          |           |                       |           |
| 8.                | GE3171      | Problem Solving and Python Programming Laboratory | ESC       | 0                | 0        | 4         | 4                     | 2         |
| 9.                | BS3171      | Physics and Chemistry Laboratory                  | BSC       | 0                | 0        | 4         | 4                     | 2         |
| 10.               | GE3172      | English Laboratory \$                             | EEC       | 0                | 0        | 2         | 2                     | 1         |
| <b>TOTAL</b>      |             |                                                   |           | <b>16</b>        | <b>1</b> | <b>10</b> | <b>27</b>             | <b>22</b> |

\$ Skill Based Course

**SEMESTER II**

| S. NO.     | COURSE CODE | COURSE TITLE                                              | CATE- GORY | PERIODS PER WEEK |   |    | TOTAL CONTACT PERIODS | CREDITS        |
|------------|-------------|-----------------------------------------------------------|------------|------------------|---|----|-----------------------|----------------|
|            |             |                                                           |            | L                | T | P  |                       |                |
| THEORY     |             |                                                           |            |                  |   |    |                       |                |
| 1.         | HS3251      | Professional English - II                                 | HSMC       | 2                | 0 | 0  | 2                     | 2              |
| 2.         | MA3251      | Statistics and Numerical Methods                          | BSC        | 3                | 1 | 0  | 4                     | 4              |
| 3.         | PH3256      | Physics for Information Science                           | BSC        | 3                | 0 | 0  | 3                     | 3              |
| 4.         | BE3251      | Basic Electrical and Electronics Engineering              | ESC        | 3                | 0 | 0  | 3                     | 3              |
| 5.         | GE3251      | Engineering Graphics                                      | ESC        | 2                | 0 | 4  | 6                     | 4              |
| 6.         | CS3251      | Programming in C                                          | PCC        | 3                | 0 | 0  | 3                     | 3              |
| 7.         | GE3252      | தமிழரும் தொழில்நுட்பமும் /Tamils and Technology           | HSMC       | 1                | 0 | 0  | 1                     | 1              |
| 8.         |             | NCC Credit Course Level 1 <sup>#</sup>                    | -          | 2                | 0 | 0  | 2                     | 2 <sup>#</sup> |
| PRACTICALS |             |                                                           |            |                  |   |    |                       |                |
| 9.         | GE3271      | Engineering Practices Laboratory                          | ESC        | 0                | 0 | 4  | 4                     | 2              |
| 10.        | CS3271      | Programming in C Laboratory                               | PCC        | 0                | 0 | 4  | 4                     | 2              |
| 11.        | GE3272      | Communication Laboratory / Foreign Language <sup>\$</sup> | EEC        | 0                | 0 | 4  | 4                     | 2              |
| TOTAL      |             |                                                           |            | 17               | 1 | 16 | 34                    | 26             |

# NCC Credit Course level 1 is offered for NCC students only. The grades earned by the students will be recorded in the Mark Sheet, however the same shall not be considered for the computation of CGPA.

\$ Skill Based Course

**ANNA UNIVERSITY, CHENNAI**  
**AFFILIATED INSTITUTIONS**  
**B.E. COMPUTER SCIENCE AND ENGINEERING**  
**REGULATIONS – 2017**  
**CHOICE BASED CREDIT SYSTEM**  
**III - VIII SEMESTERS CURRICULA AND SYLLABI**

**SEMESTER III**

| Sl.No             | COURSE CODE | COURSE TITLE                              | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|-------------------|-------------|-------------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                                           |          |                 |           |          |           |           |
| 1.                | MA8351      | Discrete Mathematics                      | BS       | 4               | 4         | 0        | 0         | 4         |
| 2.                | CS8351      | Digital Principles and System Design      | ES       | 4               | 4         | 0        | 0         | 4         |
| 3.                | CS8391      | Data Structures                           | PC       | 3               | 3         | 0        | 0         | 3         |
| 4.                | CS8392      | Object Oriented Programming               | PC       | 3               | 3         | 0        | 0         | 3         |
| 5.                | EC8395      | Communication Engineering                 | ES       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                                           |          |                 |           |          |           |           |
| 6.                | CS8381      | Data Structures Laboratory                | PC       | 4               | 0         | 0        | 4         | 2         |
| 7.                | CS8383      | Object Oriented Programming Laboratory    | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.                | CS8382      | Digital Systems Laboratory                | ES       | 4               | 0         | 0        | 4         | 2         |
| 9.                | HS8381      | Interpersonal Skills/Listening & Speaking | EEC      | 2               | 0         | 0        | 2         | 1         |
| <b>TOTAL</b>      |             |                                           |          | <b>31</b>       | <b>17</b> | <b>0</b> | <b>14</b> | <b>24</b> |

**SEMESTER IV**

| Sl. No            | COURSE CODE | COURSE TITLE                           | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|-------------------|-------------|----------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                                        |          |                 |           |          |           |           |
| 1.                | MA8402      | Probability and Queueing Theory        | BS       | 4               | 4         | 0        | 0         | 4         |
| 2.                | CS8491      | Computer Architecture                  | PC       | 3               | 3         | 0        | 0         | 3         |
| 3.                | CS8492      | Database Management Systems            | PC       | 3               | 3         | 0        | 0         | 3         |
| 4.                | CS8451      | Design and Analysis of Algorithms      | PC       | 3               | 3         | 0        | 0         | 3         |
| 5.                | CS8493      | Operating Systems                      | PC       | 3               | 3         | 0        | 0         | 3         |
| 6.                | CS8494      | Software Engineering                   | PC       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                                        |          |                 |           |          |           |           |
| 7.                | CS8481      | Database Management Systems Laboratory | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.                | CS8461      | Operating Systems Laboratory           | PC       | 4               | 0         | 0        | 4         | 2         |
| 9.                | HS8461      | Advanced Reading and Writing           | EEC      | 2               | 0         | 0        | 2         | 1         |
| <b>TOTAL</b>      |             |                                        |          | <b>29</b>       | <b>19</b> | <b>0</b> | <b>10</b> | <b>24</b> |

### SEMESTER V

| Sl. No            | COURSE CODE | COURSE TITLE                                    | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|-------------------|-------------|-------------------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                                                 |          |                 |           |          |           |           |
| 1.                | MA8551      | Algebra and Number Theory                       | BS       | 4               | 4         | 0        | 0         | 4         |
| 2.                | CS8591      | Computer Networks                               | PC       | 3               | 3         | 0        | 0         | 3         |
| 3.                | EC8691      | Microprocessors and Microcontrollers            | PC       | 3               | 3         | 0        | 0         | 3         |
| 4.                | CS8501      | Theory of Computation                           | PC       | 3               | 3         | 0        | 0         | 3         |
| 5.                | CS8592      | Object Oriented Analysis and Design             | PC       | 3               | 3         | 0        | 0         | 3         |
| 6.                |             | Open Elective I                                 | OE       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                                                 |          |                 |           |          |           |           |
| 7.                | EC8681      | Microprocessors and Microcontrollers Laboratory | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.                | CS8582      | Object Oriented Analysis and Design Laboratory  | PC       | 4               | 0         | 0        | 4         | 2         |
| 9.                | CS8581      | Networks Laboratory                             | PC       | 4               | 0         | 0        | 4         | 2         |
| <b>TOTAL</b>      |             |                                                 |          | <b>31</b>       | <b>19</b> | <b>0</b> | <b>12</b> | <b>25</b> |

### SEMESTER VI

| Sl. No            | COURSE CODE | COURSE TITLE                              | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|-------------------|-------------|-------------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                                           |          |                 |           |          |           |           |
| 1.                | CS8651      | Internet Programming                      | PC       | 3               | 3         | 0        | 0         | 3         |
| 2.                | CS8691      | Artificial Intelligence                   | PC       | 3               | 3         | 0        | 0         | 3         |
| 3.                | CS8601      | Mobile Computing                          | PC       | 3               | 3         | 0        | 0         | 3         |
| 4.                | CS8602      | Compiler Design                           | PC       | 5               | 3         | 0        | 2         | 4         |
| 5.                | CS8603      | Distributed Systems                       | PC       | 3               | 3         | 0        | 0         | 3         |
| 6.                |             | Professional Elective I                   | PE       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                                           |          |                 |           |          |           |           |
| 7.                | CS8661      | Internet Programming Laboratory           | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.                | CS8662      | Mobile Application Development Laboratory | PC       | 4               | 0         | 0        | 4         | 2         |
| 9.                | CS8611      | Mini Project                              | EEC      | 2               | 0         | 0        | 2         | 1         |
| 10.               | HS8581      | Professional Communication                | EEC      | 2               | 0         | 0        | 2         | 1         |
| <b>TOTAL</b>      |             |                                           |          | <b>32</b>       | <b>18</b> | <b>0</b> | <b>14</b> | <b>25</b> |

### SEMESTER VII

| Sl. No            | COURSE CODE | COURSE TITLE                      | CATEGORY | CONTACT PERIODS | L         | T        | P        | C         |
|-------------------|-------------|-----------------------------------|----------|-----------------|-----------|----------|----------|-----------|
| <b>THEORY</b>     |             |                                   |          |                 |           |          |          |           |
| 1.                | MG8591      | Principles of Management          | HS       | 3               | 3         | 0        | 0        | 3         |
| 2.                | CS8792      | Cryptography and Network Security | PC       | 3               | 3         | 0        | 0        | 3         |
| 3.                | CS8791      | Cloud Computing                   | PC       | 3               | 3         | 0        | 0        | 3         |
| 4.                |             | Open Elective II                  | OE       | 3               | 3         | 0        | 0        | 3         |
| 5.                |             | Professional Elective II          | PE       | 3               | 3         | 0        | 0        | 3         |
| 6.                |             | Professional Elective III         | PE       | 3               | 3         | 0        | 0        | 3         |
| <b>PRACTICALS</b> |             |                                   |          |                 |           |          |          |           |
| 7.                | CS8711      | Cloud Computing Laboratory        | PC       | 4               | 0         | 0        | 4        | 2         |
| 8.                | IT8761      | Security Laboratory               | PC       | 4               | 0         | 0        | 4        | 2         |
| <b>TOTAL</b>      |             |                                   |          | <b>26</b>       | <b>18</b> | <b>0</b> | <b>8</b> | <b>22</b> |

### SEMESTER VIII

| Sl. No            | COURSE CODE | COURSE TITLE             | CATEGORY | CONTACT PERIODS | L        | T        | P         | C         |
|-------------------|-------------|--------------------------|----------|-----------------|----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                          |          |                 |          |          |           |           |
| 1.                |             | Professional Elective IV | PE       | 3               | 3        | 0        | 0         | 3         |
| 2.                |             | Professional Elective V  | PE       | 3               | 3        | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                          |          |                 |          |          |           |           |
| 3.                | CS8811      | Project Work             | EEC      | 20              | 0        | 0        | 20        | 10        |
| <b>TOTAL</b>      |             |                          |          | <b>26</b>       | <b>6</b> | <b>0</b> | <b>20</b> | <b>16</b> |

**TOTAL NO. OF CREDITS: 185**

### HUMANITIES AND SOCIAL SCIENCES (HS)

| SI. NO | COURSE CODE | COURSE TITLE                          | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|---------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | HS8151      | Communicative English                 | HS       | 4               | 4 | 0 | 0 | 4 |
| 2.     | HS8251      | Technical English                     | HS       | 4               | 4 | 0 | 0 | 4 |
| 3.     | GE8291      | Environmental Science and Engineering | HS       | 3               | 3 | 0 | 0 | 3 |
| 4.     | MG8591      | Principles of Management              | HS       | 3               | 3 | 0 | 0 | 3 |

### BASIC SCIENCES (BS)

| SI. NO | COURSE CODE | COURSE TITLE                     | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|----------------------------------|----------|-----------------|---|---|---|---|
| 1.     | MA8151      | Engineering Mathematics I        | BS       | 4               | 4 | 0 | 0 | 4 |
| 2.     | PH8151      | Engineering Physics              | BS       | 3               | 3 | 0 | 0 | 3 |
| 3.     | CY8151      | Engineering Chemistry            | BS       | 3               | 3 | 0 | 0 | 3 |
| 4.     | BS8161      | Physics and Chemistry Laboratory | BS       | 4               | 0 | 0 | 4 | 2 |
| 5.     | MA8251      | Engineering Mathematics II       | BS       | 4               | 4 | 0 | 0 | 4 |
| 6.     | PH8252      | Physics for Information Science  | BS       | 3               | 3 | 0 | 0 | 3 |
| 7.     | MA8351      | Discrete Mathematics             | BS       | 4               | 4 | 0 | 0 | 4 |
| 8.     | MA8402      | Probability and Queueing Theory  | BS       | 4               | 4 | 0 | 0 | 4 |
| 9.     | MA8551      | Algebra and Number Theory        | BS       | 4               | 4 | 0 | 0 | 4 |

### ENGINEERING SCIENCES (ES)

| SI. NO | COURSE CODE | COURSE TITLE                                              | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|-----------------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | GE8151      | Problem Solving and Python Programming                    | ES       | 3               | 3 | 0 | 0 | 3 |
| 2.     | GE8152      | Engineering Graphics                                      | ES       | 6               | 2 | 0 | 4 | 4 |
| 3.     | GE8161      | Problem Solving and Python Programming Laboratory         | ES       | 4               | 0 | 0 | 4 | 2 |
| 4.     | BE8255      | Basic Electrical, Electronics and Measurement Engineering | ES       | 3               | 3 | 0 | 0 | 3 |
| 5.     | GE8261      | Engineering Practices Laboratory                          | ES       | 4               | 0 | 0 | 4 | 2 |
| 6.     | CS8351      | Digital Principles and System Design                      | ES       | 4               | 4 | 0 | 0 | 4 |
| 7.     | EC8395      | Communication Engineering                                 | ES       | 3               | 3 | 0 | 0 | 3 |
| 8.     | CS8382      | Digital Systems Laboratory                                | ES       | 4               | 0 | 0 | 4 | 2 |

**PROFESSIONAL CORE (PC)**

| Sl. NO | COURSE CODE | COURSE TITLE                                    | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|-------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | CS8251      | Programming in C                                | PC       | 3               | 3 | 0 | 0 | 3 |
| 2.     | CS8261      | C Programming Laboratory                        | PC       | 4               | 0 | 0 | 4 | 2 |
| 3.     | CS8391      | Data Structures                                 | PC       | 3               | 3 | 0 | 0 | 3 |
| 4.     | CS8392      | Object Oriented Programming                     | PC       | 3               | 3 | 0 | 0 | 3 |
| 5.     | CS8381      | Data Structures Laboratory                      | PC       | 4               | 0 | 0 | 4 | 2 |
| 6.     | CS8383      | Object Oriented Programming Laboratory          | PC       | 4               | 0 | 0 | 4 | 2 |
| 7.     | CS8491      | Computer Architecture                           | PC       | 3               | 3 | 0 | 0 | 3 |
| 8.     | CS8492      | Database Management Systems                     | PC       | 3               | 3 | 0 | 0 | 3 |
| 9.     | CS8451      | Design and Analysis of Algorithms               | PC       | 3               | 3 | 0 | 0 | 3 |
| 10.    | CS8493      | Operating Systems                               | PC       | 3               | 3 | 0 | 0 | 3 |
| 11.    | CS8494      | Software Engineering                            | PC       | 3               | 3 | 0 | 0 | 3 |
| 12.    | CS8481      | Database Management Systems Laboratory          | PC       | 4               | 0 | 0 | 4 | 2 |
| 13.    | CS8461      | Operating Systems Laboratory                    | PC       | 4               | 0 | 0 | 4 | 2 |
| 14.    | CS8591      | Computer Networks                               | PC       | 3               | 3 | 0 | 0 | 3 |
| 15.    | EC8691      | Microprocessors and Microcontrollers            | PC       | 3               | 3 | 0 | 0 | 3 |
| 16.    | CS8501      | Theory of Computation                           | PC       | 3               | 3 | 0 | 0 | 3 |
| 17.    | CS8592      | Object Oriented Analysis and Design             | PC       | 3               | 3 | 0 | 0 | 3 |
| 18.    | EC8681      | Microprocessors and Microcontrollers Laboratory | PC       | 4               | 0 | 0 | 4 | 2 |
| 19.    | CS8582      | Object Oriented Analysis and Design Laboratory  | PC       | 4               | 0 | 0 | 4 | 2 |
| 20.    | CS8581      | Networks Laboratory                             | PC       | 4               | 0 | 0 | 4 | 2 |
| 21.    | CS8651      | Internet Programming                            | PC       | 3               | 3 | 0 | 0 | 3 |
| 22.    | CS8691      | Artificial Intelligence                         | PC       | 3               | 3 | 0 | 0 | 3 |
| 23.    | CS8601      | Mobile Computing                                | PC       | 3               | 3 | 0 | 0 | 3 |
| 24.    | CS8602      | Compiler Design                                 | PC       | 5               | 3 | 0 | 2 | 4 |
| 25.    | CS8603      | Distributed Systems                             | PC       | 3               | 3 | 0 | 0 | 3 |
| 26.    | CS8661      | Internet Programming Laboratory                 | PC       | 4               | 0 | 0 | 4 | 2 |
| 27.    | CS8662      | Mobile Application Development Laboratory       | PC       | 4               | 0 | 0 | 4 | 2 |
| 28.    | CS8792      | Cryptography and Network Security               | PC       | 3               | 3 | 0 | 0 | 3 |
| 29.    | CS8791      | Cloud Computing                                 | PC       | 3               | 3 | 0 | 0 | 3 |
| 30.    | CS8711      | Cloud Computing Laboratory                      | PC       | 4               | 0 | 0 | 4 | 2 |
| 31.    | IT8761      | Security Laboratory                             | PC       | 4               | 0 | 0 | 4 | 2 |

## PROFESSIONAL ELECTIVES (PE)

### SEMESTER VI ELECTIVE - I

| Sl. No | COURSE CODE | COURSE TITLE                     | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|----------------------------------|----------|-----------------|---|---|---|---|
| 1.     | CS8075      | Data Warehousing and Data Mining | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.     | IT8076      | Software Testing                 | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.     | IT8072      | Embedded Systems                 | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.     | CS8072      | Agile Methodologies              | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.     | CS8077      | Graph Theory and Applications-   | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.     | IT8071      | Digital Signal Processing        | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.     | GE8075      | Intellectual Property Rights     | PE       | 3               | 3 | 0 | 0 | 3 |

### SEMESTER VII ELECTIVE - II

| Sl. No | COURSE CODE | COURSE TITLE                     | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|----------------------------------|----------|-----------------|---|---|---|---|
| 1.     | CS8091      | Big Data Analytics               | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.     | CS8082      | Machine Learning Techniques      | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.     | CS8092      | Computer Graphics and Multimedia | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.     | IT8075      | Software Project Management      | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.     | CS8081      | Internet of Things               | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.     | IT8074      | Service Oriented Architecture    | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.     | GE8077      | Total Quality Management         | PE       | 3               | 3 | 0 | 0 | 3 |

### SEMESTER VII ELECTIVE - III

| Sl. No | COURSE CODE | COURSE TITLE                                        | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|-----------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | CS8083      | Multi-core Architectures and Programming            | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.     | CS8079      | Human Computer Interaction                          | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.     | CS8073      | C# and .Net Programming                             | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.     | CS8088      | Wireless Adhoc and Sensor Networks                  | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.     | CS8071      | Advanced Topics on Databases                        | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.     | GE8072      | Foundation Skills in Integrated Product Development | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.     | GE8074      | Human Rights                                        | PE       | 3               | 3 | 0 | 0 | 3 |
| 8.     | GE8071      | Disaster Management                                 | PE       | 3               | 3 | 0 | 0 | 3 |

**SEMESTER VIII  
ELECTIVE - IV**

| Sl. No | COURSE CODE | COURSE TITLE                       | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | EC8093      | Digital Image Processing           | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.     | CS8085      | Social Network Analysis            | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.     | IT8073      | Information Security               | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.     | CS8087      | Software Defined Networks          | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.     | CS8074      | Cyber Forensics                    | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.     | CS8086      | Soft Computing                     | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.     | GE8076      | Professional Ethics in Engineering | PE       | 3               | 3 | 0 | 0 | 3 |

**SEMESTER VIII  
ELECTIVE - V**

| Sl. No | COURSE CODE | COURSE TITLE                     | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|----------------------------------|----------|-----------------|---|---|---|---|
| 1.     | CS8080      | Information Retrieval Techniques | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.     | CS8078      | Green Computing                  | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.     | CS8076      | GPU Architecture and Programming | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.     | CS8084      | Natural Language Processing      | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.     | CS8001      | Parallel Algorithms              | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.     | IT8077      | Speech Processing                | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.     | GE8073      | Fundamentals of Nanoscience      | PE       | 3               | 3 | 0 | 0 | 3 |

**EMPLOYABILITY ENHANCEMENT COURSES (EEC)**

| Sl. No | COURSE CODE | COURSE TITLE                              | CATEGORY | CONTACT PERIODS | L | T | P  | C  |
|--------|-------------|-------------------------------------------|----------|-----------------|---|---|----|----|
| 1.     | HS8381      | Interpersonal Skills/Listening & Speaking | EEC      | 2               | 0 | 0 | 2  | 1  |
| 2.     | HS8461      | Advanced Reading and Writing              | EEC      | 2               | 0 | 0 | 2  | 1  |
| 3.     | CS8611      | Mini Project                              | EEC      | 2               | 0 | 0 | 2  | 1  |
| 4.     | HS8581      | Professional Communication                | EEC      | 2               | 0 | 0 | 2  | 1  |
| 5.     | CS8811      | Project Work                              | EEC      | 20              | 0 | 0 | 20 | 10 |

## SUMMARY

| S.NO. | SUBJECT AREA           | CREDITS AS PER SEMESTER |    |     |    |    |    |     |      | CREDITS TOTAL | Percentage |
|-------|------------------------|-------------------------|----|-----|----|----|----|-----|------|---------------|------------|
|       |                        | I                       | II | III | IV | V  | VI | VII | VIII |               |            |
| 1.    | HS                     | 4                       | 7  |     |    |    |    | 3   |      | 14            | 7.60%      |
| 2.    | BS                     | 12                      | 7  | 4   | 4  | 4  |    |     |      | 31            | 16.8%      |
| 3.    | ES                     | 9                       | 5  | 9   |    |    |    |     |      | 23            | 12.5%      |
| 4.    | PC                     |                         | 5  | 10  | 19 | 18 | 20 | 10  |      | 82            | 44.5%      |
| 5.    | PE                     |                         |    |     |    |    | 3  | 6   | 6    | 15            | 8.15%      |
| 6.    | OE                     |                         |    |     |    | 3  |    | 3   |      | 6             | 3.3%       |
| 7.    | EEC                    |                         |    | 1   | 1  |    | 2  |     | 10   | 14            | 7.65%      |
|       | Total                  | 25                      | 24 | 24  | 24 | 25 | 25 | 22  | 16   | 185           |            |
| 8.    | Non Credit / Mandatory |                         |    |     |    |    |    |     |      |               |            |



**PRINCIPAL**

**JKK MUNIRAJAH COLLEGE  
OF TECHNOLOGY  
T.N. PALAYAM (Po)-638 506  
GOBI (Tk), ERODE (Dt).**

**ANNA UNIVERSITY, CHENNAI**  
**NON-AUTONOMOUS AFFILIATED COLLEGES**  
**REGULATIONS 2021**  
**CHOICE BASED CREDIT SYSTEM**  
**B.E. ELECTRICAL AND ELECTRONICS ENGINEERING**  
**CURRICULUM AND SYLLABI FOR SEMESTERS I AND II**  
**SEMESTER – I**

| S. NO.            | COURSE CODE | COURSE TITLE                                      | CATEGORY | PERIODS PER WEEK |          |           | TOTAL CONTACT PERIODS | CREDITS   |
|-------------------|-------------|---------------------------------------------------|----------|------------------|----------|-----------|-----------------------|-----------|
|                   |             |                                                   |          | L                | T        | P         |                       |           |
| 1.                | IP3151      | Induction Programme                               | -        | -                | -        | -         | -                     | 0         |
| <b>THEORY</b>     |             |                                                   |          |                  |          |           |                       |           |
| 2.                | HS3151      | Professional English - I                          | HSMC     | 3                | 0        | 0         | 3                     | 3         |
| 3.                | MA3151      | Matrices and Calculus                             | BSC      | 3                | 1        | 0         | 4                     | 4         |
| 4.                | PH3151      | Engineering Physics                               | BSC      | 3                | 0        | 0         | 3                     | 3         |
| 5.                | CY3151      | Engineering Chemistry                             | BSC      | 3                | 0        | 0         | 3                     | 3         |
| 6.                | GE3151      | Problem Solving and Python Programming            | ESC      | 3                | 0        | 0         | 3                     | 3         |
| 7.                | GE3152      | தமிழர் மரபு / Heritage of Tamils                  | HSMC     | 1                | 0        | 0         | 1                     | 1         |
| <b>PRACTICALS</b> |             |                                                   |          |                  |          |           |                       |           |
| 8.                | GE3171      | Problem Solving and Python Programming Laboratory | ESC      | 0                | 0        | 4         | 4                     | 2         |
| 9.                | BS3171      | Physics and Chemistry Laboratory                  | BSC      | 0                | 0        | 4         | 4                     | 2         |
| 10.               | GE3172      | English Laboratory <sup>\$</sup>                  | EEC      | 0                | 0        | 2         | 2                     | 1         |
| <b>TOTAL</b>      |             |                                                   |          | <b>16</b>        | <b>1</b> | <b>10</b> | <b>27</b>             | <b>22</b> |

<sup>\$</sup> Skill Based Course

**SEMESTER – II**

| SEMESTER - II |             |                                                           |            |                  |   |    |                       |                |
|---------------|-------------|-----------------------------------------------------------|------------|------------------|---|----|-----------------------|----------------|
| S. NO.        | COURSE CODE | COURSE TITLE                                              | CATE- GORY | PERIODS PER WEEK |   |    | TOTAL CONTACT PERIODS | CREDITS        |
|               |             |                                                           |            | L                | T | P  |                       |                |
| THEORY        |             |                                                           |            |                  |   |    |                       |                |
| 1.            | HS3251      | Professional English - II                                 | HSMC       | 2                | 0 | 0  | 2                     | 2              |
| 2.            | MA3251      | Statistics and Numerical Methods                          | BSC        | 3                | 1 | 0  | 4                     | 4              |
| 3.            | PH3202      | Physics for Electrical Engineering                        | BSC        | 3                | 0 | 0  | 3                     | 3              |
| 4.            | BE3255      | Basic Civil and Mechanical Engineering                    | ESC        | 3                | 0 | 0  | 3                     | 3              |
| 5.            | GE3251      | Engineering Graphics                                      | ESC        | 2                | 0 | 4  | 6                     | 4              |
| 6.            | EE3251      | Electric Circuit Analysis                                 | PCC        | 3                | 1 | 0  | 4                     | 4              |
| 7.            |             | NCC Credit Course Level1 <sup>#</sup>                     | -          | 2                | 0 | 0  | 2                     | 2 <sup>#</sup> |
| 8.            | GE3252      | தமிழரும் தொழில்நுட்பமும் / Tamils and Technology          | HSMC       | 1                | 0 | 0  | 1                     | 1              |
| PRACTICALS    |             |                                                           |            |                  |   |    |                       |                |
| 8.            | GE3271      | Engineering Practices Laboratory                          | ESC        | 0                | 0 | 4  | 4                     | 2              |
| 9.            | EE3271      | Electric Circuits Laboratory                              | PCC        | 0                | 0 | 4  | 4                     | 2              |
|               | GE3272      | Communication Laboratory / Foreign Language <sup>\$</sup> | EEC        | 0                | 0 | 4  | 4                     | 2              |
| TOTAL         |             |                                                           |            | 17               | 2 | 16 | 35                    | 27             |

<sup>#</sup> NCC Credit Course level 1 is offered for NCC students only. The grades earned by the students will be recorded in the Mark Sheet, however the same shall not be considered for the computation of CGPA.

<sup>\$</sup> Skill Based Course

**ANNA UNIVERSITY, CHENNAI**  
**AFFILIATED INSTITUTIONS**

**B.E. ELECTRICAL AND ELECTRONICS ENGINEERING**

**REGULATIONS – 2017**

**CHOICE BASED CREDIT SYSTEM**

**III TO VIII SEMESTERS CURRICULA & SYLLABI**

**SEMESTER III**

| S.NO.             | COURSE CODE | COURSE TITLE                                  | CATEGORY | CONTACT PERIODS | L         | T        | P        | C         |
|-------------------|-------------|-----------------------------------------------|----------|-----------------|-----------|----------|----------|-----------|
| <b>THEORY</b>     |             |                                               |          |                 |           |          |          |           |
| 1.                | MA8353      | Transforms and Partial Differential Equations | BS       | 4               | 4         | 0        | 0        | 4         |
| 2.                | EE8351      | Digital Logic Circuits                        | PC       | 4               | 2         | 2        | 0        | 3         |
| 3.                | EE8391      | Electromagnetic Theory                        | PC       | 4               | 2         | 2        | 0        | 3         |
| 4.                | EE8301      | Electrical Machines - I                       | PC       | 4               | 2         | 2        | 0        | 3         |
| 5.                | EC8353      | Electron Devices and Circuits                 | ES       | 3               | 3         | 0        | 0        | 3         |
| 6.                | ME8792      | Power Plant Engineering                       | ES       | 3               | 3         | 0        | 0        | 3         |
| <b>PRACTICALS</b> |             |                                               |          |                 |           |          |          |           |
| 7.                | EC8311      | Electronics Laboratory                        | ES       | 4               | 0         | 0        | 4        | 2         |
| 8.                | EE8311      | Electrical Machines Laboratory - I            | PC       | 4               | 0         | 0        | 4        | 2         |
| <b>TOTAL</b>      |             |                                               |          | <b>30</b>       | <b>16</b> | <b>6</b> | <b>8</b> | <b>23</b> |

**SEMESTER IV**

| S.NO.             | COURSE CODE | COURSE TITLE                                      | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|-------------------|-------------|---------------------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                                                   |          |                 |           |          |           |           |
| 1.                | MA8491      | Numerical Methods                                 | BS       | 4               | 4         | 0        | 0         | 4         |
| 2.                | EE8401      | Electrical Machines - II                          | PC       | 4               | 2         | 2        | 0         | 3         |
| 3.                | EE8402      | Transmission and Distribution                     | PC       | 3               | 3         | 0        | 0         | 3         |
| 4.                | EE8403      | Measurements and Instrumentation                  | PC       | 3               | 3         | 0        | 0         | 3         |
| 5.                | EE8451      | Linear Integrated Circuits and Applications       | PC       | 3               | 3         | 0        | 0         | 3         |
| 6.                | IC8451      | Control Systems                                   | PC       | 5               | 3         | 2        | 0         | 4         |
| <b>PRACTICALS</b> |             |                                                   |          |                 |           |          |           |           |
| 7.                | EE8411      | Electrical Machines Laboratory - II               | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.                | EE8461      | Linear and Digital Integrated Circuits Laboratory | PC       | 4               | 0         | 0        | 4         | 2         |
| 9.                | EE8412      | Technical Seminar                                 | EEC      | 2               | 0         | 0        | 2         | 1         |
| <b>TOTAL</b>      |             |                                                   |          | <b>32</b>       | <b>18</b> | <b>4</b> | <b>10</b> | <b>25</b> |

### SEMESTER V

| S.NO.             | COURSE CODE | COURSE TITLE                           | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|-------------------|-------------|----------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                                        |          |                 |           |          |           |           |
| 1.                | EE8501      | Power System Analysis                  | PC       | 3               | 3         | 0        | 0         | 3         |
| 2.                | EE8551      | Microprocessors and Microcontrollers   | PC       | 3               | 3         | 0        | 0         | 3         |
| 3.                | EE8552      | Power Electronics                      | PC       | 3               | 3         | 0        | 0         | 3         |
| 4.                | EE8591      | Digital Signal Processing              | PC       | 4               | 2         | 2        | 0         | 3         |
| 5.                | CS8392      | Object Oriented Programming            | ES       | 3               | 3         | 0        | 0         | 3         |
| 6.                |             | Open Elective I*                       | OE       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                                        |          |                 |           |          |           |           |
| 7.                | EE8511      | Control and Instrumentation Laboratory | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.                | HS8581      | Professional Communication             | EEC      | 2               | 0         | 0        | 2         | 1         |
| 9.                | CS8383      | Object Oriented Programming Laboratory | ES       | 4               | 0         | 0        | 4         | 2         |
| <b>TOTAL</b>      |             |                                        |          | <b>29</b>       | <b>17</b> | <b>2</b> | <b>10</b> | <b>23</b> |

### SEMESTER VI

| S.NO.             | COURSE CODE | COURSE TITLE                                    | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|-------------------|-------------|-------------------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                                                 |          |                 |           |          |           |           |
| 1.                | EE8601      | Solid State Drives                              | PC       | 3               | 3         | 0        | 0         | 3         |
| 2.                | EE8602      | Protection and Switchgear                       | PC       | 3               | 3         | 0        | 0         | 3         |
| 3.                | EE8691      | Embedded Systems                                | ES       | 3               | 3         | 0        | 0         | 3         |
| 4.                |             | Professional Elective I                         | PE       | 3               | 3         | 0        | 0         | 3         |
| 5.                |             | Professional Elective II                        | PE       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                                                 |          |                 |           |          |           |           |
| 6.                | EE8661      | Power Electronics and Drives Laboratory         | PC       | 4               | 0         | 0        | 4         | 2         |
| 7.                | EE8681      | Microprocessors and Microcontrollers Laboratory | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.                | EE8611      | Mini Project                                    | EEC      | 4               | 0         | 0        | 4         | 2         |
| <b>TOTAL</b>      |             |                                                 |          | <b>27</b>       | <b>15</b> | <b>0</b> | <b>12</b> | <b>21</b> |

### SEMESTER VII

| S.NO.             | COURSE CODE | COURSE TITLE                        | CATEGORY | CONTACT PERIODS | L         | T        | P        | C         |
|-------------------|-------------|-------------------------------------|----------|-----------------|-----------|----------|----------|-----------|
| <b>THEORY</b>     |             |                                     |          |                 |           |          |          |           |
| 1.                | EE8701      | High Voltage Engineering            | PC       | 3               | 3         | 0        | 0        | 3         |
| 2.                | EE8702      | Power System Operation and Control  | PC       | 3               | 3         | 0        | 0        | 3         |
| 3.                | EE8703      | Renewable Energy Systems            | PC       | 3               | 3         | 0        | 0        | 3         |
| 4.                |             | Open Elective II*                   | OE       | 3               | 3         | 0        | 0        | 3         |
| 5.                |             | Professional Elective III           | PE       | 3               | 3         | 0        | 0        | 3         |
| 6.                |             | Professional Elective IV            | PE       | 3               | 3         | 0        | 0        | 3         |
| <b>PRACTICALS</b> |             |                                     |          |                 |           |          |          |           |
| 7.                | EE8711      | Power System Simulation Laboratory  | PC       | 4               | 0         | 0        | 4        | 2         |
| 8.                | EE8712      | Renewable Energy Systems Laboratory | PC       | 4               | 0         | 0        | 4        | 2         |
| <b>TOTAL</b>      |             |                                     |          | <b>26</b>       | <b>18</b> | <b>0</b> | <b>8</b> | <b>22</b> |

### SEMESTER VIII

| S.NO.             | COURSE CODE | COURSE TITLE             | CATEGORY | CONTACT PERIODS | L        | T        | P         | C         |
|-------------------|-------------|--------------------------|----------|-----------------|----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                          |          |                 |          |          |           |           |
| 1.                |             | Professional Elective V  | PE       | 3               | 3        | 0        | 0         | 3         |
| 2.                |             | Professional Elective VI | PE       | 3               | 3        | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                          |          |                 |          |          |           |           |
| 3.                | EE8811      | Project Work             | EEC      | 20              | 0        | 0        | 20        | 10        |
| <b>TOTAL</b>      |             |                          |          | <b>26</b>       | <b>6</b> | <b>0</b> | <b>20</b> | <b>16</b> |

**TOTAL NO. OF CREDITS: 180**

\*Course from the curriculum of other UG Programmes.

### PROFESSIONAL ELECTIVE – I ( VI SEMESTER)

| S.NO. | COURSE CODE | COURSE TITLE                      | CATEGORY | CONTACT PERIODS | L | T | P | C |
|-------|-------------|-----------------------------------|----------|-----------------|---|---|---|---|
| 1.    | IC8651      | Advanced Control System           | PE       | 4               | 2 | 2 | 0 | 3 |
| 2.    | EE8001      | Visual Languages and Applications | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.    | EE8002      | Design of Electrical Apparatus    | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.    | EE8003      | Power Systems Stability           | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.    | EE8004      | Modern Power Converters           | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.    | GE8075      | Intellectual Property Rights      | PE       | 3               | 3 | 0 | 0 | 3 |

### PROFESSIONAL ELECTIVE – II ( VI SEMESTER)

|    |        |                             |    |   |   |   |   |   |
|----|--------|-----------------------------|----|---|---|---|---|---|
| 1. | RO8591 | Principles of Robotics      | PE | 3 | 3 | 0 | 0 | 3 |
| 2. | EE8005 | Special Electrical Machines | PE | 3 | 3 | 0 | 0 | 3 |
| 3. | EE8006 | Power Quality               | PE | 3 | 3 | 0 | 0 | 3 |
| 4. | EE8007 | EHVAC Transmission          | PE | 3 | 3 | 0 | 0 | 3 |
| 5. | EC8395 | Communication Engineering   | PE | 3 | 3 | 0 | 0 | 3 |

### PROFESSIONAL ELECTIVE – III ( VII SEMESTER)

|    |        |                                                     |    |   |   |   |   |   |
|----|--------|-----------------------------------------------------|----|---|---|---|---|---|
| 1. | GE8071 | Disaster Management                                 | PE | 3 | 3 | 0 | 0 | 3 |
| 2. | GE8074 | Human Rights                                        | PE | 3 | 3 | 0 | 0 | 3 |
| 3. | MG8491 | Operations Research                                 | PE | 3 | 3 | 0 | 0 | 3 |
| 4. | MA8391 | Probability and Statistics                          | PE | 4 | 4 | 0 | 0 | 4 |
| 5. | EI8075 | Fibre Optics and Laser Instrumentation              | PE | 3 | 3 | 0 | 0 | 3 |
| 6. | GE8072 | Foundation Skills in Integrated Product Development | PE | 3 | 3 | 0 | 0 | 3 |

### PROFESSIONAL ELECTIVE – IV ( VII SEMESTER)

|    |        |                                            |    |   |   |   |   |   |
|----|--------|--------------------------------------------|----|---|---|---|---|---|
| 1. | EE8008 | System Identification and Adaptive Control | PE | 3 | 3 | 0 | 0 | 3 |
| 2. | CS8491 | Computer Architecture                      | PE | 3 | 3 | 0 | 0 | 3 |
| 3. | EE8009 | Control of Electrical Drives               | PE | 3 | 3 | 0 | 0 | 3 |
| 4. | EC8095 | VLSI Design                                | PE | 3 | 3 | 0 | 0 | 3 |
| 5. | EE8010 | Power Systems Transients                   | PE | 3 | 3 | 0 | 0 | 3 |
| 6. | GE8077 | Total Quality Management                   | PE | 3 | 3 | 0 | 0 | 3 |

### PROFESSIONAL ELECTIVE – V ( VIII SEMESTER)

|    |        |                                                          |    |   |   |   |   |   |
|----|--------|----------------------------------------------------------|----|---|---|---|---|---|
| 1. | EE8011 | Flexible AC Transmission Systems                         | PE | 3 | 3 | 0 | 0 | 3 |
| 2. | EE8012 | Soft Computing Techniques                                | PE | 3 | 3 | 0 | 0 | 3 |
| 3. | EE8013 | Power Systems Dynamics                                   | PE | 3 | 3 | 0 | 0 | 3 |
| 4. | EE8014 | SMPS and UPS                                             | PE | 3 | 3 | 0 | 0 | 3 |
| 5. | EE8015 | Electric Energy Generation, Utilization and Conservation | PE | 3 | 3 | 0 | 0 | 3 |
| 6. | GE8076 | Professional Ethics in Engineering                       | PE | 3 | 3 | 0 | 0 | 3 |
| 7. | MG8591 | Principles of Management                                 | PE | 3 | 3 | 0 | 0 | 3 |

### PROFESSIONAL ELECTIVE – VI ( VIII SEMESTER)

|    |        |                                          |    |   |   |   |   |   |
|----|--------|------------------------------------------|----|---|---|---|---|---|
| 1. | EE8016 | Energy Management and Auditing           | PE | 3 | 3 | 0 | 0 | 3 |
| 2. | CS8391 | Data Structures                          | PE | 3 | 3 | 0 | 0 | 3 |
| 3. | EE8017 | High Voltage Direct Current Transmission | PE | 3 | 3 | 0 | 0 | 3 |
| 4. | EE8018 | Microcontroller Based System Design      | PE | 3 | 3 | 0 | 0 | 3 |
| 5. | EE8019 | Smart Grid                               | PE | 3 | 3 | 0 | 0 | 3 |
| 6. | EI8073 | Biomedical Instrumentation               | PE | 3 | 3 | 0 | 0 | 3 |
| 7. | GE8073 | Fundamentals of Nanoscience              | PE | 3 | 3 | 0 | 0 | 3 |

\*Professional Electives are grouped according to elective number as was done previously.

### HUMANITIES AND SOCIALSCIENCES (HS)

| S.No | COURSE CODE | COURSE TITLE                          | CATEGORY | CONTACT PERIODS | L | T | P | C |
|------|-------------|---------------------------------------|----------|-----------------|---|---|---|---|
| 1.   | HS8151      | Communicative English                 | HS       | 4               | 4 | 0 | 0 | 4 |
| 2.   | HS8251      | Technical English                     | HS       | 4               | 4 | 0 | 0 | 4 |
| 3.   | GE8291      | Environmental Science and Engineering | HS       | 3               | 3 | 0 | 0 | 3 |

### BASIC SCIENCES (BS)

| S.No | COURSE CODE | COURSE TITLE                                  | CATEGORY | CONTACT PERIODS | L | T | P | C |
|------|-------------|-----------------------------------------------|----------|-----------------|---|---|---|---|
| 1.   | MA8151      | Engineering Mathematics I                     | BS       | 4               | 4 | 0 | 0 | 4 |
| 2.   | PH8151      | Engineering Physics                           | BS       | 3               | 3 | 0 | 0 | 3 |
| 3.   | CY8151      | Engineering Chemistry                         | BS       | 3               | 3 | 0 | 0 | 3 |
| 4.   | BS8161      | Physics and Chemistry Laboratory              | BS       | 4               | 0 | 0 | 4 | 2 |
| 5.   | MA8251      | Engineering Mathematics II                    | BS       | 4               | 4 | 0 | 0 | 4 |
| 6.   | PH8253      | Physics For Electronics Engineering           | BS       | 3               | 3 | 0 | 0 | 3 |
| 7.   | MA8353      | Transforms and Partial Differential Equations | BS       | 4               | 4 | 0 | 0 | 4 |
| 8.   | MA8491      | Numerical Methods                             | BS       | 4               | 4 | 0 | 0 | 4 |

### ENGINEERING SCIENCES (ES)

| S.NO | COURSE CODE | COURSE TITLE                           | CATEGORY | CONTACT PERIODS | L | T | P | C |
|------|-------------|----------------------------------------|----------|-----------------|---|---|---|---|
| 1.   | GE8151      | Problem Solving and Python programming | ES       | 3               | 3 | 0 | 0 | 3 |
| 2.   | GE8152      | Engineering Graphics                   | ES       | 6               | 2 | 0 | 4 | 4 |
| 3.   | GE8161      | Problem Solving and                    | ES       |                 | 0 | 0 | 4 | 2 |

|     |        |                                        |    |   |   |   |   |   |
|-----|--------|----------------------------------------|----|---|---|---|---|---|
|     |        | Python programming Laboratory          |    | 4 |   |   |   |   |
| 4.  | BE8252 | Basic Civil and Mechanical Engineering | ES | 4 | 4 | 0 | 0 | 4 |
| 5.  | GE8261 | Engineering Practices Laboratory       | ES | 4 | 0 | 0 | 4 | 2 |
| 6.  | EC8353 | Electron Devices and Circuits          | ES | 3 | 3 | 0 | 0 | 3 |
| 7.  | ME8792 | Power Plant Engineering                | ES | 3 | 3 | 0 | 0 | 3 |
| 8.  | EC8311 | Electronics Laboratory                 | ES | 4 | 0 | 0 | 4 | 2 |
| 9.  | CS8392 | Object Oriented Programming            | ES | 3 | 3 | 0 | 0 | 3 |
| 10. | CS8383 | Object Oriented Programming Laboratory | ES | 4 | 0 | 0 | 4 | 2 |
| 11. | EE8691 | Embedded Systems                       | ES | 3 | 3 | 0 | 0 | 3 |

#### PROFESSIONAL CORE (PC)

| S.No | COURSE CODE | COURSE TITLE                                | CATEGORY | CONTACT PERIODS | L | T | P | C |
|------|-------------|---------------------------------------------|----------|-----------------|---|---|---|---|
| 1.   | EE8251      | Circuit Theory                              | PC       | 4               | 2 | 2 | 0 | 3 |
| 2.   | EE8261      | Electric Circuits Laboratory                | PC       | 4               | 0 | 0 | 4 | 2 |
| 3.   | EE8351      | Digital Logic Circuits                      | PC       | 4               | 2 | 2 | 0 | 3 |
| 4.   | EE8391      | Electromagnetic Theory                      | PC       | 4               | 2 | 2 | 0 | 3 |
| 5.   | EE8301      | Electrical Machines - I                     | PC       | 4               | 2 | 2 | 0 | 3 |
| 6.   | EE8311      | Electrical Machines Laboratory - I          | PC       | 4               | 0 | 0 | 4 | 2 |
| 7.   | EE8401      | Electrical Machines - II                    | PC       | 4               | 2 | 2 | 0 | 3 |
| 8.   | EE8402      | Transmission and Distribution               | PC       | 3               | 3 | 0 | 0 | 3 |
| 9.   | EE8403      | Measurements and Instrumentation            | PC       | 3               | 3 | 0 | 0 | 3 |
| 10.  | EE8451      | Linear Integrated Circuits and Applications | PC       | 3               | 3 | 0 | 0 | 3 |
| 11.  | IC8451      | Control Systems                             | PC       | 5               | 3 | 2 | 0 | 4 |
| 12.  | EE8411      | Electrical Machines Laboratory II           | PC       | 4               | 0 | 0 | 4 | 2 |

|     |        |                                                   |    |   |   |   |   |   |
|-----|--------|---------------------------------------------------|----|---|---|---|---|---|
| 13. | EE8461 | Linear and Digital Integrated Circuits Laboratory | PC | 4 | 0 | 0 | 4 | 2 |
| 14. | EE8501 | Power System Analysis                             | PC | 3 | 3 | 0 | 0 | 3 |
| 15. | EE8551 | Microprocessors and Microcontrollers              | PC | 3 | 3 | 0 | 0 | 3 |
| 16. | EE8552 | Power Electronics                                 | PC | 3 | 3 | 0 | 0 | 3 |
| 17. | EE8591 | Digital Signal Processing                         | PC | 4 | 2 | 2 | 0 | 3 |
| 18. | EE8511 | Control and Instrumentation Laboratory            | PC | 4 | 0 | 0 | 4 | 2 |
| 19. | EE8601 | Solid State Drives                                | PC | 3 | 3 | 0 | 0 | 3 |
| 20. | EE8602 | Protection and Switchgear                         | PC | 3 | 3 | 0 | 0 | 3 |
| 21. | EE8661 | Power Electronics and Drives Laboratory           | PC | 4 | 0 | 0 | 4 | 2 |
| 22. | EE8681 | Microprocessors and Microcontrollers Laboratory   | PC | 4 | 0 | 0 | 4 | 2 |
| 23. | EE8701 | High Voltage Engineering                          | PC | 3 | 3 | 0 | 0 | 3 |
| 24. | EE8702 | Power System Operation and Control                | PC | 3 | 3 | 0 | 0 | 3 |
| 25. | EE8703 | Renewable Energy Systems                          | PC | 3 | 3 | 0 | 0 | 3 |
| 26. | EE8711 | Power System Simulation Laboratory                | PC | 4 | 0 | 0 | 4 | 2 |
| 27. | EE8712 | Renewable Energy Systems Laboratory               | PC | 4 | 0 | 0 | 4 | 2 |

#### EMPLOYABILITY ENHANCEMENT COURSES (EEC)

| S.No | COURSE CODE | COURSE TITLE               | CATEGORY | CONTACT PERIODS | L | T | P  | C  |
|------|-------------|----------------------------|----------|-----------------|---|---|----|----|
| 1.   | EE8412      | Technical seminar          | EEC      | 2               | 0 | 0 | 2  | 1  |
| 2.   | HS8581      | Professional Communication | EEC      | 2               | 0 | 0 | 2  | 1  |
| 3.   | EE8611      | Mini Project               | EEC      | 4               | 0 | 0 | 4  | 2  |
| 4.   | EE8811      | Project work               | EEC      | 20              | 0 | 0 | 20 | 10 |

## SUMMARY

| S.NO. | SUBJECT AREA                  | CREDITS AS PER SEMESTER |           |           |           |           |           |           |           | CREDITS TOTAL |
|-------|-------------------------------|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------------|
|       |                               | I                       | II        | III       | IV        | V         | VI        | VII       | VIII      |               |
| 1.    | HS                            | 4                       | 7         | -         | -         | -         | -         | -         |           | 11            |
| 2.    | BS                            | 12                      | 7         | 4         | 4         | -         | -         | -         |           | 27            |
| 3.    | ES                            | 9                       | 6         | 8         | -         | 5         | 3         | -         |           | 31            |
| 4.    | PC                            | -                       | 5         | 11        | 20        | 14        | 10        | 13        | -         | 73            |
| 5.    | PE                            |                         |           |           |           |           | 6         | 6         | 6         | 18            |
| 6.    | OE                            |                         |           |           |           | 3         | -         | 3         |           | 6             |
| 7.    | EEC                           |                         |           |           | 1         | 1         | 2         |           | 10        | 14            |
|       | <b>Total</b>                  | <b>25</b>               | <b>25</b> | <b>23</b> | <b>25</b> | <b>23</b> | <b>21</b> | <b>22</b> | <b>16</b> | <b>180</b>    |
|       | <b>Non Credit / Mandatory</b> | -                       | -         | -         | -         | -         | -         | -         | -         | 0             |

**PRINCIPAL**

**JKK MUNIRAJAH COLLEGE  
OF TECHNOLOGY  
T.N. PALAYAM (Po)-638 506,  
GOBI (Tk), ERODE (Dt).**

**ANNA UNIVERSITY, CHENNAI**  
**NON- AUTONOMOUS AFFILIATED COLLEGES**  
**REGULATIONS 2021**

**B. E. ELECTRONICS AND COMMUNICATION ENGINEERING**

**CHOICE BASED CREDIT SYSTEM**

**CURRICULA AND SYLLABI FOR SEMESTERS I TO II**

**SEMESTER I**

| S. NO.            | COURSE CODE | COURSE TITLE                                      | CATE-GORY | PERIODS PER WEEK |          |           | TOTAL CONTACT PERIODS | CREDITS   |
|-------------------|-------------|---------------------------------------------------|-----------|------------------|----------|-----------|-----------------------|-----------|
|                   |             |                                                   |           | L                | T        | P         |                       |           |
| 1.                | IP3151      | Induction Programme                               | -         | -                | -        | -         | -                     | 0         |
| <b>THEORY</b>     |             |                                                   |           |                  |          |           |                       |           |
| 2.                | HS3151      | Professional English - I                          | HSMC      | 3                | 0        | 0         | 3                     | 3         |
| 3.                | MA3151      | Matrices and Calculus                             | BSC       | 3                | 1        | 0         | 4                     | 4         |
| 4.                | PH3151      | Engineering Physics                               | BSC       | 3                | 0        | 0         | 3                     | 3         |
| 5.                | CY3151      | Engineering Chemistry                             | BSC       | 3                | 0        | 0         | 3                     | 3         |
| 6.                | GE3151      | Problem Solving and Python Programming            | ESC       | 3                | 0        | 0         | 3                     | 3         |
| 7.                | GE3152      | தமிழர் மரபு /Heritage of Tamils                   | HSMC      | 1                | 0        | 0         | 1                     | 1         |
| <b>PRACTICALS</b> |             |                                                   |           |                  |          |           |                       |           |
| 8.                | GE3171      | Problem Solving and Python Programming Laboratory | ESC       | 0                | 0        | 4         | 4                     | 2         |
| 9.                | BS3171      | Physics and Chemistry Laboratory                  | BSC       | 0                | 0        | 4         | 4                     | 2         |
| 10.               | GE3172      | English Laboratory \$                             | EEC       | 0                | 0        | 2         | 2                     | 1         |
| <b>TOTAL</b>      |             |                                                   |           | <b>16</b>        | <b>1</b> | <b>10</b> | <b>27</b>             | <b>22</b> |

\$ Skill Based Course

**SEMESTER II**

| SEMESTER II |             |                                                 |            |                  |   |    |                       |         |
|-------------|-------------|-------------------------------------------------|------------|------------------|---|----|-----------------------|---------|
| S. NO.      | COURSE CODE | COURSE TITLE                                    | CATE- GORY | PERIODS PER WEEK |   |    | TOTAL CONTACT PERIODS | CREDITS |
|             |             |                                                 |            | L                | T | P  |                       |         |
| THEORY      |             |                                                 |            |                  |   |    |                       |         |
| 1.          | HS3251      | Professional English - II                       | HSMC       | 2                | 0 | 0  | 2                     | 2       |
| 2.          | MA3251      | Statistics and Numerical Methods                | BSC        | 3                | 1 | 0  | 4                     | 4       |
| 3.          | PH3254      | Physics for Electronics Engineering             | BSC        | 3                | 0 | 0  | 3                     | 3       |
| 4.          | BE3254      | Electrical and Instrumentation Engineering      | ESC        | 3                | 0 | 0  | 3                     | 3       |
| 5.          | GE3251      | Engineering Graphics                            | ESC        | 2                | 0 | 4  | 6                     | 4       |
| 6.          | EC3251      | Circuit Analysis                                | PCC        | 3                | 1 | 0  | 4                     | 4       |
| 7.          | GE3252      | தமிழரும் தொழில்நுட்பமும் /Tamils and Technology | HSMC       | 1                | 0 | 0  | 1                     | 1       |
| 8.          |             | NCC Credit Course Level 1#                      | -          | 2                | 0 | 0  | 2                     | 2*      |
| PRACTICALS  |             |                                                 |            |                  |   |    |                       |         |
| 9.          | GE3271      | Engineering Practices Laboratory                | ESC        | 0                | 0 | 4  | 4                     | 2       |
| 10.         | EC3271      | Circuits Analysis Laboratory                    | PCC        | 0                | 0 | 2  | 2                     | 1       |
| 11.         | GE3272      | Communication Laboratory / Foreign Language \$  | EEC        | 0                | 0 | 4  | 4                     | 2       |
| TOTAL       |             |                                                 |            | 17               | 1 | 14 | 33                    | 26      |

# NCC Credit Course level 1 is offered for NCC students only. The grades earned by the students will be recorded in the Mark Sheet, however the same shall not be considered for the computation of CGPA.

\$ Skill Based Course

**ANNA UNIVERSITY, CHENNAI**  
**AFFILIATED INSTITUTIONS**

**B.E. ELECTRONICS AND COMMUNICATION ENGINEERING**

**REGULATIONS – 2017**

**CHOICE BASED CREDIT SYSTEM**

**III - VIII SEMESTERS CURRICULA AND SYLLABI**

**SEMESTER III**

| Sl. No            | COURSE CODE | COURSE TITLE                                      | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|-------------------|-------------|---------------------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                                                   |          |                 |           |          |           |           |
| 1.                | MA8352      | Linear Algebra and Partial Differential Equations | BS       | 4               | 4         | 0        | 0         | 4         |
| 2.                | EC8393      | Fundamentals of Data Structures In C              | ES       | 3               | 3         | 0        | 0         | 3         |
| 3.                | EC8351      | Electronic Circuits- I                            | PC       | 3               | 3         | 0        | 0         | 3         |
| 4.                | EC8352      | Signals and Systems                               | PC       | 4               | 4         | 0        | 0         | 4         |
| 5.                | EC8392      | Digital Electronics                               | PC       | 3               | 3         | 0        | 0         | 3         |
| 6.                | EC8391      | Control Systems Engineering                       | PC       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                                                   |          |                 |           |          |           |           |
| 7.                | EC8381      | Fundamentals of Data Structures in C Laboratory   | ES       | 4               | 0         | 0        | 4         | 2         |
| 8.                | EC8361      | Analog and Digital Circuits Laboratory            | PC       | 4               | 0         | 0        | 4         | 2         |
| 9.                | HS8381      | Interpersonal Skills/Listening & Speaking         | EEC      | 2               | 0         | 0        | 2         | 1         |
| <b>TOTAL</b>      |             |                                                   |          | <b>30</b>       | <b>20</b> | <b>0</b> | <b>10</b> | <b>25</b> |

**SEMESTER IV**

| Sl. No            | COURSE CODE | COURSE TITLE                              | CATEGORY | CONTACT PERIODS | L         | T        | P        | C         |
|-------------------|-------------|-------------------------------------------|----------|-----------------|-----------|----------|----------|-----------|
| <b>THEORY</b>     |             |                                           |          |                 |           |          |          |           |
| 1.                | MA8451      | Probability and Random Processes          | BS       | 4               | 4         | 0        | 0        | 4         |
| 2.                | EC8452      | Electronic Circuits II                    | PC       | 3               | 3         | 0        | 0        | 3         |
| 3.                | EC8491      | Communication Theory                      | PC       | 3               | 3         | 0        | 0        | 3         |
| 4.                | EC8451      | Electromagnetic Fields                    | PC       | 4               | 4         | 0        | 0        | 4         |
| 5.                | EC8453      | Linear Integrated Circuits                | PC       | 3               | 3         | 0        | 0        | 3         |
| 6.                | GE8291      | Environmental Science and Engineering     | HS       | 3               | 3         | 0        | 0        | 3         |
| <b>PRACTICALS</b> |             |                                           |          |                 |           |          |          |           |
| 7.                | EC8461      | Circuits Design and Simulation Laboratory | PC       | 4               | 0         | 0        | 4        | 2         |
| 8.                | EC8462      | Linear Integrated Circuits Laboratory     | PC       | 4               | 0         | 0        | 4        | 2         |
| <b>TOTAL</b>      |             |                                           |          | <b>28</b>       | <b>20</b> | <b>0</b> | <b>8</b> | <b>24</b> |

### SEMESTER V

| Sl. No            | COURSE CODE | COURSE TITLE                           | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|-------------------|-------------|----------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                                        |          |                 |           |          |           |           |
| 1.                | EC8501      | Digital Communication                  | PC       | 3               | 3         | 0        | 0         | 3         |
| 2.                | EC8553      | Discrete-Time Signal Processing        | PC       | 4               | 4         | 0        | 0         | 4         |
| 3.                | EC8552      | Computer Architecture and Organization | PC       | 3               | 3         | 0        | 0         | 3         |
| 4.                | EC8551      | Communication Networks                 | PC       | 3               | 3         | 0        | 0         | 3         |
| 5.                |             | Professional Elective I                | PE       | 3               | 3         | 0        | 0         | 3         |
| 6.                |             | Open Elective I                        | OE       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                                        |          |                 |           |          |           |           |
| 7.                | EC8562      | Digital Signal Processing Laboratory   | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.                | EC8561      | Communication Systems Laboratory       | PC       | 4               | 0         | 0        | 4         | 2         |
| 9.                | EC8563      | Communication Networks Laboratory      | PC       | 4               | 0         | 0        | 4         | 2         |
| <b>TOTAL</b>      |             |                                        |          | <b>31</b>       | <b>19</b> | <b>0</b> | <b>12</b> | <b>25</b> |

### SEMESTER VI

| Sl. No            | COURSE CODE | COURSE TITLE                                    | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|-------------------|-------------|-------------------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                                                 |          |                 |           |          |           |           |
| 1.                | EC8691      | Microprocessors and Microcontrollers            | PC       | 3               | 3         | 0        | 0         | 3         |
| 2.                | EC8095      | VLSI Design                                     | PC       | 3               | 3         | 0        | 0         | 3         |
| 3.                | EC8652      | Wireless Communication                          | PC       | 3               | 3         | 0        | 0         | 3         |
| 4.                | MG8591      | Principles of Management                        | HS       | 3               | 3         | 0        | 0         | 3         |
| 5.                | EC8651      | Transmission Lines and RF Systems               | PC       | 3               | 3         | 0        | 0         | 3         |
| 6.                |             | Professional Elective -II                       | PE       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                                                 |          |                 |           |          |           |           |
| 7.                | EC8681      | Microprocessors and Microcontrollers Laboratory | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.                | EC8661      | VLSI Design Laboratory                          | PC       | 4               | 0         | 0        | 4         | 2         |
| 9.                | EC8611      | Technical Seminar                               | EEC      | 2               | 0         | 0        | 2         | 1         |
| 10.               | HS8581      | Professional Communication                      | EEC      | 2               | 0         | 0        | 2         | 1         |
| <b>TOTAL</b>      |             |                                                 |          | <b>30</b>       | <b>18</b> | <b>0</b> | <b>12</b> | <b>24</b> |

### SEMESTER VII

| Sl.No             | COURSE CODE | COURSE TITLE                        | CATEGORY | CONTACT PERIODS | L         | T        | P        | C         |
|-------------------|-------------|-------------------------------------|----------|-----------------|-----------|----------|----------|-----------|
| <b>THEORY</b>     |             |                                     |          |                 |           |          |          |           |
| 1.                | EC8701      | Antennas and Microwave Engineering  | PC       | 3               | 3         | 0        | 0        | 3         |
| 2.                | EC8751      | Optical Communication               | PC       | 3               | 3         | 0        | 0        | 3         |
| 3.                | EC8791      | Embedded and Real Time Systems      | PC       | 3               | 3         | 0        | 0        | 3         |
| 4.                | EC8702      | Ad hoc and Wireless Sensor Networks | PC       | 3               | 3         | 0        | 0        | 3         |
| 5.                |             | Professional Elective -III          | PE       | 3               | 3         | 0        | 0        | 3         |
| 6.                |             | Open Elective - II                  | OE       | 3               | 3         | 0        | 0        | 3         |
| <b>PRACTICALS</b> |             |                                     |          |                 |           |          |          |           |
| 7.                | EC8711      | Embedded Laboratory                 | PC       | 4               | 0         | 0        | 4        | 2         |
| 8.                | EC8761      | Advanced Communication Laboratory   | PC       | 4               | 0         | 0        | 4        | 2         |
| <b>TOTAL</b>      |             |                                     |          | <b>26</b>       | <b>18</b> | <b>0</b> | <b>8</b> | <b>22</b> |

### SEMESTER VIII

| Sl. No            | COURSE CODE | COURSE TITLE             | CATEGORY | CONTACT PERIODS | L        | T        | P         | C         |
|-------------------|-------------|--------------------------|----------|-----------------|----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                          |          |                 |          |          |           |           |
| 1.                |             | Professional Elective IV | PE       | 3               | 3        | 0        | 0         | 3         |
| 2.                |             | Professional Elective V  | PE       | 3               | 3        | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                          |          |                 |          |          |           |           |
| 3.                | EC8811      | Project Work             | EEC      | 20              | 0        | 0        | 20        | 10        |
| <b>TOTAL</b>      |             |                          |          | <b>26</b>       | <b>6</b> | <b>0</b> | <b>20</b> | <b>16</b> |

**TOTAL NO. OF CREDITS: 186**

### HUMANITIES AND SOCIALSCIENCES (HS)

| SI.NO | COURSE CODE | COURSE TITLE                          | CATEGORY | CONTACT PERIODS | L | T | P | C |
|-------|-------------|---------------------------------------|----------|-----------------|---|---|---|---|
| 1.    | HS8151      | Communicative English                 | HS       | 4               | 4 | 0 | 0 | 4 |
| 2.    | HS8251      | Technical English                     | HS       | 4               | 4 | 0 | 0 | 4 |
| 3.    | GE8291      | Environmental Science and Engineering | HS       | 3               | 3 | 0 | 0 | 3 |
| 4.    | MG8591      | Principles of Management              | HS       | 3               | 3 | 0 | 0 | 3 |

### BASIC SCIENCES (BS)

| SI.NO | COURSE CODE | COURSE TITLE                                      | CATEGORY | CONTACT PERIODS | L | T | P | C |
|-------|-------------|---------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.    | MA8151      | Engineering Mathematics I                         | BS       | 4               | 4 | 0 | 0 | 4 |
| 2.    | PH8151      | Engineering Physics                               | BS       | 3               | 3 | 0 | 0 | 3 |
| 3.    | CY8151      | Engineering Chemistry                             | BS       | 3               | 3 | 0 | 0 | 3 |
| 4.    | BS8161      | Physics and Chemistry Laboratory                  | BS       | 4               | 0 | 0 | 4 | 2 |
| 5.    | MA8251      | Engineering Mathematics II                        | BS       | 4               | 4 | 0 | 0 | 4 |
| 6.    | PH8253      | Physics for Electronics Engineering               | BS       | 3               | 3 | 0 | 0 | 3 |
| 7.    | MA8352      | Linear Algebra and Partial Differential Equations | BS       | 4               | 4 | 0 | 0 | 4 |
| 8.    | MA8451      | Probability and Random Processes                  | BS       | 4               | 4 | 0 | 0 | 4 |

### ENGINEERING SCIENCES (ES)

| SI. NO | COURSE CODE | COURSE TITLE                                      | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|---------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | GE8151      | Problem Solving and Python Programming            | ES       | 3               | 3 | 0 | 0 | 3 |
| 2.     | GE8152      | Engineering Graphics                              | ES       | 6               | 2 | 0 | 4 | 4 |
| 3.     | GE8161      | Problem Solving and Python Programming Laboratory | ES       | 4               | 0 | 0 | 4 | 2 |
| 4.     | BE8254      | Basic Electrical and Instrumentation Engineering  | ES       | 3               | 3 | 0 | 0 | 3 |
| 5.     | GE8261      | Engineering Practices Laboratory                  | ES       | 4               | 0 | 0 | 4 | 2 |
| 6.     | EC8393      | Fundamentals of Data Structures In C              | ES       | 3               | 3 | 0 | 0 | 3 |
| 7.     | EC8381      | Fundamentals of Data Structures in C Laboratory   | ES       | 4               | 0 | 0 | 4 | 2 |

### PROFESSIONAL CORE (PC)

| SI.NO | COURSE CODE | COURSE TITLE                              | CATEGORY | CONTACT PERIODS | L | T | P | C |
|-------|-------------|-------------------------------------------|----------|-----------------|---|---|---|---|
| 1.    | EC8251      | Circuit Analysis                          | PC       | 4               | 4 | 0 | 0 | 4 |
| 2.    | EC8252      | Electronic Devices                        | PC       | 3               | 3 | 0 | 0 | 3 |
| 3.    | EC8261      | Circuits and Devices Lab                  | PC       | 4               | 0 | 0 | 4 | 2 |
| 4.    | EC8351      | Electronic Circuits- I                    | PC       | 3               | 3 | 0 | 0 | 3 |
| 5.    | EC8352      | Signals and Systems                       | PC       | 4               | 4 | 0 | 0 | 4 |
| 6.    | EC8392      | Digital Electronics                       | PC       | 3               | 3 | 0 | 0 | 3 |
| 7.    | EC8391      | Control System Engineering                | PC       | 3               | 3 | 0 | 0 | 3 |
| 8.    | EC8361      | Analog and Digital Circuits Laboratory    | PC       | 4               | 0 | 0 | 4 | 2 |
| 9.    | EC8452      | Electronic Circuits II                    | PC       | 3               | 3 | 0 | 0 | 3 |
| 10.   | EC8491      | Communication Theory                      | PC       | 3               | 3 | 0 | 0 | 3 |
| 11.   | EC8451      | Electromagnetic Fields                    | PC       | 4               | 4 | 0 | 0 | 4 |
| 12.   | EC8453      | Linear Integrated Circuits                | PC       | 3               | 3 | 0 | 0 | 3 |
| 13.   | EC8461      | Circuits Design and Simulation Laboratory | PC       | 4               | 0 | 0 | 4 | 2 |
| 14.   | EC8462      | Linear Integrated Circuits Laboratory     | PC       | 4               | 0 | 0 | 4 | 2 |
| 15.   | EC8501      | Digital Communication                     | PC       | 3               | 3 | 0 | 0 | 3 |
| 16.   | EC8553      | Discrete-Time Signal Processing           | PC       | 4               | 4 | 0 | 0 | 4 |
| 17.   | EC8651      | Transmission Lines and RF Systems         | PC       | 3               | 3 | 0 | 0 | 3 |
| 18.   | EC8552      | Computer Architecture and Organization    | PC       | 3               | 3 | 0 | 0 | 3 |
| 19.   | EC8551      | Communication Networks                    | PC       | 3               | 3 | 0 | 0 | 3 |
| 20.   | EC8562      | Digital Signal Processing Laboratory      | PC       | 4               | 0 | 0 | 4 | 2 |
| 21.   | EC8561      | Communication Systems Laboratory          | PC       | 4               | 0 | 0 | 4 | 2 |
| 22.   | EC8563      | Communication Networks Laboratory         | PC       | 4               | 0 | 0 | 4 | 2 |
| 23.   | EC8691      | Microprocessors and Microcontrollers      | PC       | 3               | 3 | 0 | 0 | 3 |
| 24.   | EC8095      | VLSI Design                               | PC       | 3               | 3 | 0 | 0 | 3 |
| 25.   | EC8652      | Wireless Communication                    | PC       | 3               | 3 | 0 | 0 | 3 |
| 26.   | EC8661      | VLSI Design Laboratory                    | PC       | 4               | 0 | 0 | 4 | 2 |

|     |        |                                                 |    |   |   |   |   |   |
|-----|--------|-------------------------------------------------|----|---|---|---|---|---|
| 27. | EC8681 | Microprocessors and Microcontrollers Laboratory | PC | 4 | 0 | 0 | 4 | 2 |
| 28. | EC8701 | Antennas and Microwave Engineering              | PC | 3 | 3 | 0 | 0 | 3 |
| 29. | EC8751 | Optical Communication                           | PC | 3 | 3 | 0 | 0 | 3 |
| 30. | EC8791 | Embedded and Real Time Systems                  | PC | 3 | 3 | 0 | 0 | 3 |
| 31. | EC8702 | Ad hoc and Wireless Sensor Networks             | PC | 3 | 3 | 0 | 0 | 3 |
| 32. | EC8711 | Embedded Laboratory                             | PC | 4 | 0 | 0 | 4 | 2 |
| 33. | EC8761 | Advanced Communication Laboratory               | PC | 4 | 0 | 0 | 4 | 2 |

**PROFESSIONAL ELECTIVES (PE)  
SEMESTER V  
ELECTIVE I**

| Sl. No | COURSE CODE | COURSE TITLE                     | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|----------------------------------|----------|-----------------|---|---|---|---|
| 1.     | CS8392      | Object Oriented Programming      | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.     | EC8073      | Medical Electronics              | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.     | CS8493      | Operating Systems                | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.     | EC8074      | Robotics and Automation          | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.     | EC8075      | Nano Technology and Applications | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.     | GE8074      | Human Rights                     | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.     | GE8077      | Total Quality Management         | PE       | 3               | 3 | 0 | 0 | 3 |

**SEMESTER VI  
ELECTIVE II**

| Sl. No | COURSE CODE | COURSE TITLE                             | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|------------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | CS8792      | Cryptography and Network Security        | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.     | EC8091      | Advanced Digital Signal Processing       | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.     | EC8001      | MEMS and NEMS                            | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.     | EC8002      | Multimedia Compression and Communication | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.     | EC8003      | CMOS Analog IC Design                    | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.     | EC8004      | Wireless Networks                        | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.     | GE8075      | Intellectual Property Rights             | PE       | 3               | 3 | 0 | 0 | 3 |

**SEMESTER VII  
ELECTIVE III**

| Sl. No | COURSE CODE | COURSE TITLE                                        | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|-----------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | EC8092      | Advanced Wireless Communication                     | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.     | EC8071      | Cognitive Radio                                     | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.     | GE8072      | Foundation Skills in Integrated Product Development | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.     | CS8082      | Machine Learning Techniques                         | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.     | EC8005      | Electronics Packaging and Testing                   | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.     | EC8006      | Mixed Signal IC Design                              | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.     | GE8071      | Disaster Management                                 | PE       | 3               | 3 | 0 | 0 | 3 |

**SEMESTER VIII  
ELECTIVE IV**

| Sl.No | COURSE CODE | COURSE TITLE                                    | CATEGORY | CONTACT PERIODS | L | T | P | C |
|-------|-------------|-------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.    | EC8072      | Electro Magnetic Interference and Compatibility | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.    | EC8007      | Low power SoC Design                            | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.    | EC8008      | Photonic Networks                               | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.    | EC8009      | Compressive Sensing                             | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.    | EC8093      | Digital Image Processing                        | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.    | GE8076      | Professional Ethics in Engineering              | PE       | 3               | 3 | 0 | 0 | 3 |

**SEMESTER VIII  
ELECTIVE V**

| Sl.No | COURSE CODE | COURSE TITLE                     | CATEGORY | CONTACT PERIODS | L | T | P | C |
|-------|-------------|----------------------------------|----------|-----------------|---|---|---|---|
| 1.    | EC8010      | Video Analytics                  | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.    | EC8011      | DSP Architecture and Programming | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.    | EC8094      | Satellite Communication          | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.    | CS8086      | Soft Computing                   | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.    | IT8006      | Principles of Speech Processing  | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.    | GE8073      | Fundamentals of Nanoscience      | PE       | 3               | 3 | 0 | 0 | 3 |

\*Professional Electives are grouped according to elective number as was done previously.

**EMPLOYABILITY ENHANCEMENT COURSES (EEC)**

| S.NO | COURSE CODE | COURSE TITLE                              | CATEGORY | CONTACT PERIODS | L | T | P  | C  |
|------|-------------|-------------------------------------------|----------|-----------------|---|---|----|----|
| 1.   | HS8381      | Interpersonal Skills/Listening & Speaking | EEC      | 2               | 0 | 0 | 2  | 1  |
| 2.   | EC8611      | Technical Seminar                         | EEC      | 2               | 0 | 0 | 2  | 1  |
| 3.   | HS8581      | Professional Communication                | EEC      | 2               | 0 | 0 | 2  | 1  |
| 4.   | EC8811      | Project Work                              | EEC      | 20              | 0 | 0 | 20 | 10 |

## SUMMARY

| S.NO. | SUBJECT AREA                  | CREDITS AS PER SEMESTER |           |           |           |           |           |           |           | CREDITS TOTAL | Percentage |
|-------|-------------------------------|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------------|------------|
|       |                               | I                       | II        | III       | IV        | V         | VI        | VII       | VIII      |               |            |
| 1.    | HS                            | 4                       | 4         |           | 3         |           | 3         |           |           | 14            | 7.56%      |
| 2.    | BS                            | 12                      | 7         | 4         | 4         |           |           |           |           | 27            | 14.6%      |
| 3.    | ES                            | 9                       | 5         | 5         |           |           |           |           |           | 19            | 10.27%     |
| 4.    | PC                            |                         | 9         | 15        | 17        | 19        | 16        | 16        |           | 92            | 50%        |
| 5.    | PE                            |                         |           |           |           | 3         | 3         | 3         | 6         | 15            | 8.10%      |
| 6.    | OE                            |                         |           |           |           | 3         |           | 3         |           | 6             | 3.24%      |
| 7.    | EEC                           |                         |           | 1         |           |           | 2         |           | 10        | 13            | 6.48%      |
|       | <b>Total</b>                  | <b>25</b>               | <b>25</b> | <b>25</b> | <b>24</b> | <b>25</b> | <b>24</b> | <b>22</b> | <b>16</b> | <b>186</b>    |            |
| 8.    | <b>Non Credit / Mandatory</b> |                         |           |           |           |           |           |           |           |               |            |



**PRINCIPAL**

**JKK MUNIRAJAH COLLEGE  
OF TECHNOLOGY**

**T.N. PALAYAM (Po)-638 506.  
GOBI (Tk), ERODE (Dt).**

**ANNA UNIVERSITY, CHENNAI**  
**NON-AUTONOMOUS AFFILIATED COLLEGES**  
**REGULATIONS 2021**  
**CHOICE BASED CREDIT SYSTEM**  
**B. E. MECHANICAL ENGINEERING**  
**CURRICULUM AND SYLLABI FOR SEMESTERS I TO II**  
**SEMESTER I**

| SL. NO.          | COURSE CODE | COURSE TITLE                                      | CATE - GORY | PERIODS PER WEEK |          |           | TOTAL CONTACT PERIODS | CREDITS   |
|------------------|-------------|---------------------------------------------------|-------------|------------------|----------|-----------|-----------------------|-----------|
|                  |             |                                                   |             | L                | T        | P         |                       |           |
| 1.               | IP3151      | Induction Programme                               | -           | -                | -        | -         | -                     | 0         |
| <b>THEORY</b>    |             |                                                   |             |                  |          |           |                       |           |
| 2.               | HS3151      | Professional English - I                          | HSMC        | 3                | 0        | 0         | 3                     | 3         |
| 3.               | MA3151      | Matrices and Calculus                             | BSC         | 3                | 1        | 0         | 4                     | 4         |
| 4.               | PH3151      | Engineering Physics                               | BSC         | 3                | 0        | 0         | 3                     | 3         |
| 5.               | CY3151      | Engineering Chemistry                             | BSC         | 3                | 0        | 0         | 3                     | 3         |
| 6.               | GE3151      | Problem Solving and Python Programming            | ESC         | 3                | 0        | 0         | 3                     | 3         |
| 7.               | GE3152      | தமிழர் மரபு/<br>Heritage of Tamils                | HSMC        | 1                | 0        | 0         | 1                     | 1         |
| <b>PRACTICAL</b> |             |                                                   |             |                  |          |           |                       |           |
| 7                | GE3171      | Problem Solving and Python Programming Laboratory | ESC         | 0                | 0        | 4         | 4                     | 2         |
| 8                | BS3171      | Physics and Chemistry Laboratory                  | BSC         | 0                | 0        | 4         | 4                     | 2         |
| 9                | GE3172      | English Laboratory \$                             | EEC         | 0                | 0        | 2         | 2                     | 1         |
| <b>TOTAL</b>     |             |                                                   |             | <b>16</b>        | <b>1</b> | <b>10</b> | <b>27</b>             | <b>22</b> |

\$ Skill Based Course

**SEMESTER II**

| SEMESTER II |             |                                                         |             |                  |   |    |                       |         |
|-------------|-------------|---------------------------------------------------------|-------------|------------------|---|----|-----------------------|---------|
| SL. NO.     | COURSE CODE | COURSE TITLE                                            | CATE - GORY | PERIODS PER WEEK |   |    | TOTAL CONTACT PERIODS | CREDITS |
|             |             |                                                         |             | L                | T | P  |                       |         |
| THEORY      |             |                                                         |             |                  |   |    |                       |         |
| 1.          | HS3251      | Professional English - II                               | HSMC        | 2                | 0 | 0  | 2                     | 2       |
| 2.          | MA3251      | Statistics and Numerical Methods                        | BSC         | 3                | 1 | 0  | 4                     | 4       |
| 3.          | PH3251      | Materials Science                                       | BSC         | 3                | 0 | 0  | 3                     | 3       |
| 4.          | BE3251      | Basic Electrical and Electronics Engineering            | ESC         | 3                | 0 | 0  | 3                     | 3       |
| 5.          | GE3251      | Engineering Graphics                                    | ESC         | 2                | 0 | 4  | 6                     | 4       |
| 6.          | GE3252      | தமிழரும் தொழில்நுட்பமும் / Tamils and Technology        | HSMC        | 1                | 0 | 0  | 1                     | 1       |
|             |             |                                                         |             |                  |   |    |                       |         |
| 7.          |             | NCC Credit Course Level 1#                              | -           | 2                | 0 | 0  | 2                     | 2       |
| PRACTICAL   |             |                                                         |             |                  |   |    |                       |         |
| 8.          | GE3271      | Engineering Practices Laboratory                        | ESC         | 0                | 0 | 4  | 4                     | 2       |
| 9.          | BE3271      | Basic Electrical and Electronics Engineering Laboratory | ESC         | 0                | 0 | 4  | 4                     | 2       |
| 10.         | GE3272      | Communication Laboratory / Foreign Language \$          | EEC         | 0                | 0 | 4  | 4                     | 2       |
| TOTAL       |             |                                                         |             | 14               | 1 | 16 | 31                    | 23      |

# NCC Credit Course level 1 is offered for NCC students only. The grades earned by the students will be recorded in the Mark Sheet, however the same shall not be considered for the computation of CGPA.

\$ Skill Based Course

**ANNA UNIVERSITY, CHENNAI**  
**AFFILIATED INSTITUTIONS**

**B.E. MECHANICAL ENGINEERING**

**REGULATIONS – 2017**

**CHOICE BASED CREDIT SYSTEM**

**III TO VIII SEMESTERS CURRICULA AND SYLLABI**

**SEMESTER III**

| SL. NO.          | COURSE CODE | COURSE TITLE                                  | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|------------------|-------------|-----------------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>    |             |                                               |          |                 |           |          |           |           |
| 1.               | MA8353      | Transforms and Partial Differential Equations | BS       | 4               | 4         | 0        | 0         | 4         |
| 2.               | ME8391      | Engineering Thermodynamics                    | PC       | 5               | 3         | 2        | 0         | 4         |
| 3.               | CE8394      | Fluid Mechanics and Machinery                 | ES       | 4               | 4         | 0        | 0         | 4         |
| 4.               | ME8351      | Manufacturing Technology - I                  | PC       | 3               | 3         | 0        | 0         | 3         |
| 5.               | EE8353      | Electrical Drives and Controls                | ES       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICAL</b> |             |                                               |          |                 |           |          |           |           |
| 6.               | ME8361      | Manufacturing Technology Laboratory - I       | PC       | 4               | 0         | 0        | 4         | 2         |
| 7.               | ME8381      | Computer Aided Machine Drawing                | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.               | EE8361      | Electrical Engineering Laboratory             | ES       | 4               | 0         | 0        | 4         | 2         |
| 9.               | HS8381      | Interpersonal Skills / Listening & Speaking   | EEC      | 2               | 0         | 0        | 2         | 1         |
| <b>TOTAL</b>     |             |                                               |          | <b>33</b>       | <b>17</b> | <b>2</b> | <b>14</b> | <b>25</b> |

**SEMESTER IV**

| SL. NO.          | COURSE CODE | COURSE TITLE                                                       | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|------------------|-------------|--------------------------------------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>    |             |                                                                    |          |                 |           |          |           |           |
| 1.               | MA8452      | Statistics and Numerical Methods                                   | BS       | 4               | 4         | 0        | 0         | 4         |
| 2.               | ME8492      | Kinematics of Machinery                                            | PC       | 3               | 3         | 0        | 0         | 3         |
| 3.               | ME8451      | Manufacturing Technology – II                                      | PC       | 3               | 3         | 0        | 0         | 3         |
| 4.               | ME8491      | Engineering Metallurgy                                             | PC       | 3               | 3         | 0        | 0         | 3         |
| 5.               | CE8395      | Strength of Materials for Mechanical Engineers                     | ES       | 3               | 3         | 0        | 0         | 3         |
| 6.               | ME8493      | Thermal Engineering- I                                             | PC       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICAL</b> |             |                                                                    |          |                 |           |          |           |           |
| 7.               | ME8462      | Manufacturing Technology Laboratory – II                           | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.               | CE8381      | Strength of Materials and Fluid Mechanics and Machinery Laboratory | ES       | 4               | 0         | 0        | 4         | 2         |
| 9.               | HS8461      | Advanced Reading and Writing                                       | EEC      | 2               | 0         | 0        | 2         | 1         |
| <b>TOTAL</b>     |             |                                                                    |          | <b>29</b>       | <b>19</b> | <b>0</b> | <b>10</b> | <b>24</b> |

### SEMESTER V

| SL. NO.          | COURSE CODE | COURSE TITLE                          | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|------------------|-------------|---------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>    |             |                                       |          |                 |           |          |           |           |
| 1.               | ME8595      | Thermal Engineering- II               | PC       | 3               | 3         | 0        | 0         | 3         |
| 2.               | ME8593      | Design of Machine Elements            | PC       | 3               | 3         | 0        | 0         | 3         |
| 3.               | ME8501      | Metrology and Measurements            | PC       | 3               | 3         | 0        | 0         | 3         |
| 4.               | ME8594      | Dynamics of Machines                  | PC       | 4               | 4         | 0        | 0         | 4         |
| 5.               |             | Open Elective I                       | OE       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICAL</b> |             |                                       |          |                 |           |          |           |           |
| 6.               | ME8511      | Kinematics and Dynamics Laboratory    | PC       | 4               | 0         | 0        | 4         | 2         |
| 7.               | ME8512      | Thermal Engineering Laboratory        | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.               | ME8513      | Metrology and Measurements Laboratory | PC       | 4               | 0         | 0        | 4         | 2         |
| <b>TOTAL</b>     |             |                                       |          | <b>28</b>       | <b>16</b> | <b>0</b> | <b>12</b> | <b>22</b> |

### SEMESTER VI

| SL. NO.          | COURSE CODE | COURSE TITLE                            | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|------------------|-------------|-----------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>    |             |                                         |          |                 |           |          |           |           |
| 1.               | ME8651      | Design of Transmission Systems          | PC       | 3               | 3         | 0        | 0         | 3         |
| 2.               | ME8691      | Computer Aided Design and Manufacturing | PC       | 3               | 3         | 0        | 0         | 3         |
| 3.               | ME8693      | Heat and Mass Transfer                  | PC       | 5               | 3         | 2        | 0         | 4         |
| 4.               | ME8692      | Finite Element Analysis                 | PC       | 3               | 3         | 0        | 0         | 3         |
| 5.               | ME8694      | Hydraulics and Pneumatics               | PC       | 3               | 3         | 0        | 0         | 3         |
| 6.               |             | Professional Elective - I               | PE       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICAL</b> |             |                                         |          |                 |           |          |           |           |
| 7.               | ME8681      | CAD / CAM Laboratory                    | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.               | ME8682      | Design and Fabrication Project          | EEC      | 4               | 0         | 0        | 4         | 2         |
| 9.               | HS8581      | Professional Communication              | EEC      | 2               | 0         | 0        | 2         | 1         |
| <b>TOTAL</b>     |             |                                         |          | <b>30</b>       | <b>18</b> | <b>2</b> | <b>10</b> | <b>24</b> |

### SEMESTER VII

| SL. NO.          | COURSE CODE | COURSE TITLE                         | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|------------------|-------------|--------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>    |             |                                      |          |                 |           |          |           |           |
| 1.               | ME8792      | Power Plant Engineering              | PC       | 3               | 3         | 0        | 0         | 3         |
| 2.               | ME8793      | Process Planning and Cost Estimation | PC       | 3               | 3         | 0        | 0         | 3         |
| 3.               | ME8791      | Mechatronics                         | PC       | 3               | 3         | 0        | 0         | 3         |
| 4.               |             | Open Elective - II                   | OE       | 3               | 3         | 0        | 0         | 3         |
| 5.               |             | Professional Elective – II           | PE       | 3               | 3         | 0        | 0         | 3         |
| 6.               |             | Professional Elective – III          | PE       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICAL</b> |             |                                      |          |                 |           |          |           |           |
| 7.               | ME8711      | Simulation and Analysis Laboratory   | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.               | ME8781      | Mechatronics Laboratory              | PC       | 4               | 0         | 0        | 4         | 2         |
| 9.               | ME8712      | Technical Seminar                    | EEC      | 2               | 0         | 0        | 2         | 1         |
| <b>TOTAL</b>     |             |                                      |          | <b>28</b>       | <b>18</b> | <b>0</b> | <b>10</b> | <b>23</b> |

### SEMESTER VIII

| SL. NO.          | COURSE CODE | COURSE TITLE              | CATEGORY | CONTACT PERIODS | L        | T        | P         | C         |
|------------------|-------------|---------------------------|----------|-----------------|----------|----------|-----------|-----------|
| <b>THEORY</b>    |             |                           |          |                 |          |          |           |           |
| 1.               | MG8591      | Principles of Management  | HS       | 3               | 3        | 0        | 0         | 3         |
| 2.               |             | Professional Elective– IV | PE       | 3               | 3        | 0        | 0         | 3         |
| <b>PRACTICAL</b> |             |                           |          |                 |          |          |           |           |
| 3.               | ME8811      | Project Work              | EEC      | 20              | 0        | 0        | 20        | 10        |
| <b>TOTAL</b>     |             |                           |          | <b>29</b>       | <b>9</b> | <b>0</b> | <b>20</b> | <b>16</b> |

**TOTAL NUMBER OF CREDITS TO BE EARNED FOR AWARD OF THE DEGREE = 184**

### HUMANITIES AND SOCIAL SCIENCES (HS)

| SL. NO. | COURSE CODE | COURSE TITLE                          | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---------|-------------|---------------------------------------|----------|-----------------|---|---|---|---|
| 1.      | HS8151      | Communicative English                 | HS       | 4               | 4 | 0 | 0 | 4 |
| 2.      | HS8251      | Technical English                     | HS       | 4               | 4 | 0 | 0 | 4 |
| 3.      | GE8291      | Environmental Science and Engineering | HS       | 3               | 3 | 0 | 0 | 3 |
| 4.      | MG8591      | Principles of Management              | HS       | 3               | 3 | 0 | 0 | 3 |

### BASIC SCIENCE (BS)

| SL. NO. | COURSE CODE | COURSE TITLE                                  | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---------|-------------|-----------------------------------------------|----------|-----------------|---|---|---|---|
| 1.      | MA8151      | Engineering Mathematics - I                   | BS       | 5               | 3 | 2 | 0 | 4 |
| 2.      | PH8151      | Engineering Physics                           | BS       | 3               | 3 | 0 | 0 | 3 |
| 3.      | CY8151      | Engineering Chemistry                         | BS       | 3               | 3 | 0 | 0 | 3 |
| 4.      | BS8161      | Physics and Chemistry Laboratory              | BS       | 4               | 0 | 0 | 4 | 2 |
| 5.      | MA8251      | Engineering Mathematics II                    | BS       | 4               | 4 | 0 | 0 | 4 |
| 6.      | PH8251      | Materials Science                             | BS       | 3               | 3 | 0 | 0 | 3 |
| 7.      | MA8353      | Transforms and Partial Differential Equations | BS       | 4               | 4 | 0 | 0 | 4 |
| 8.      | MA8452      | Statistics and Numerical Methods              | BS       | 4               | 4 | 0 | 0 | 4 |

### ENGINEERING SCIENCES (ES)

| SL. NO. | COURSE CODE | COURSE TITLE                                                             | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---------|-------------|--------------------------------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.      | GE8151      | Problem Solving and Python Programming                                   | ES       | 3               | 3 | 0 | 0 | 3 |
| 2.      | GE8152      | Engineering Graphics                                                     | ES       | 6               | 2 | 0 | 4 | 4 |
| 3.      | GE8161      | Problem Solving and Python Programming Laboratory                        | ES       | 4               | 0 | 0 | 4 | 2 |
| 4.      | BE8253      | Basic Electrical, Electronics and Instrumentation Engineering            | ES       | 3               | 3 | 0 | 0 | 3 |
| 5.      | GE8292      | Engineering Mechanics                                                    | ES       | 5               | 3 | 2 | 0 | 4 |
| 6.      | GE8261      | Engineering Practices Laboratory                                         | ES       | 4               | 0 | 0 | 4 | 2 |
| 7.      | BE8261      | Basic Electrical, Electronics and Instrumentation Engineering Laboratory | ES       | 4               | 0 | 0 | 4 | 2 |
| 8.      | CE8394      | Fluid Mechanics and Machinery                                            | ES       | 5               | 3 | 2 | 0 | 4 |
| 9.      | EE8353      | Electrical Drives and Controls                                           | ES       | 3               | 3 | 0 | 0 | 3 |
| 10.     | EE8361      | Electrical Engineering Laboratory                                        | ES       | 4               | 0 | 0 | 4 | 2 |
| 11.     | CE8395      | Strength of Materials for Mechanical Engineers                           | ES       | 3               | 3 | 0 | 0 | 3 |
| 12.     | CE8381      | Strength of Materials and Fluid Mechanics and Machinery Laboratory       | ES       | 4               | 0 | 0 | 4 | 2 |

**PROFESSIONAL CORE (PC)**

| SL. NO. | COURSE CODE | COURSE TITLE                            | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---------|-------------|-----------------------------------------|----------|-----------------|---|---|---|---|
| 1.      | ME8391      | Engineering Thermodynamics              | PC       | 5               | 3 | 2 | 0 | 4 |
| 2.      | ME8351      | Manufacturing Technology - I            | PC       | 3               | 3 | 0 | 0 | 3 |
| 3.      | ME8361      | Manufacturing Technology Laboratory - I | PC       | 4               | 0 | 0 | 4 | 2 |
| 4.      | ME8381      | Computer Aided Machine Drawing          | PC       | 4               | 0 | 0 | 4 | 2 |
| 5.      | ME8492      | Kinematics of Machinery                 | PC       | 3               | 3 | 0 | 0 | 3 |
| 6.      | ME8451      | Manufacturing Technology- II            | PC       | 3               | 3 | 0 | 0 | 3 |
| 7.      | ME8491      | Engineering Metallurgy                  | PC       | 3               | 3 | 0 | 0 | 3 |
| 8.      | ME8493      | Thermal Engineering- I                  | PC       | 3               | 3 | 0 | 0 | 3 |
| 9.      | ME8462      | Manufacturing Technology Laboratory-II  | PC       | 4               | 0 | 0 | 4 | 2 |
| 10.     | ME8595      | Thermal Engineering- II                 | PC       | 3               | 3 | 0 | 0 | 3 |
| 11.     | ME8593      | Design of Machine Elements              | PC       | 3               | 3 | 0 | 0 | 3 |
| 12.     | ME8501      | Metrology and Measurements              | PC       | 3               | 3 | 0 | 0 | 3 |
| 13.     | ME8594      | Dynamics of Machines                    | PC       | 4               | 4 | 0 | 0 | 4 |
| 14.     | ME8511      | Kinematics and Dynamics Laboratory      | PC       | 4               | 0 | 0 | 4 | 2 |
| 15.     | ME8512      | Thermal Engineering Laboratory          | PC       | 4               | 0 | 0 | 4 | 2 |
| 16.     | ME8513      | Metrology and Measurements Laboratory   | PC       | 4               | 0 | 0 | 4 | 2 |
| 17.     | ME8651      | Design of Transmission Systems          | PC       | 3               | 3 | 0 | 0 | 3 |
| 18.     | ME8691      | Computer Aided Design and Manufacturing | PC       | 3               | 3 | 0 | 0 | 3 |
| 19.     | ME8693      | Heat and Mass Transfer                  | PC       | 5               | 3 | 2 | 0 | 4 |
| 20.     | ME8692      | Finite Element Analysis                 | PC       | 3               | 3 | 0 | 0 | 3 |
| 21.     | ME8694      | Hydraulics and Pneumatics               | PC       | 3               | 3 | 0 | 0 | 3 |
| 22.     | ME8681      | C.A.D. / C.A.M. Laboratory              | PC       | 4               | 0 | 0 | 4 | 2 |
| 23.     | ME8682      | Design and Fabrication Project          | PC       | 4               | 0 | 0 | 4 | 2 |
| 24.     | ME8792      | Power Plant Engineering                 | PC       | 3               | 3 | 0 | 0 | 3 |
| 25.     | ME8791      | Mechatronics                            | PC       | 3               | 3 | 0 | 0 | 3 |
| 26.     | ME8793      | Process Planning and Cost Estimation    | PC       | 3               | 3 | 0 | 0 | 3 |
| 27.     | ME8711      | Simulation and Analysis Laboratory      | PC       | 4               | 0 | 0 | 4 | 2 |
| 28.     | ME8781      | Mechatronics Laboratory                 | PC       | 4               | 0 | 0 | 4 | 2 |

## PROFESSIONAL ELECTIVES FOR B.E. MECHANICAL ENGINEERING

### SEMESTER VI, ELECTIVE I

| SL. NO. | COURSE CODE | COURSE TITLE                    | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---------|-------------|---------------------------------|----------|-----------------|---|---|---|---|
| 1.      | ME8091      | Automobile Engineering          | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.      | PR8592      | Welding Technology              | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.      | ME8096      | Gas Dynamics and Jet Propulsion | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.      | GE8075      | Intellectual Property Rights    | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.      | GE8073      | Fundamentals of Nanoscience     | PE       | 3               | 3 | 0 | 0 | 3 |

### SEMESTER VII, ELECTIVE II

| SL. NO. | COURSE CODE | COURSE TITLE                                | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---------|-------------|---------------------------------------------|----------|-----------------|---|---|---|---|
| 1.      | ME8071      | Refrigeration and Air conditioning          | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.      | ME8072      | Renewable Sources of Energy                 | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.      | ME8098      | Quality Control and Reliability Engineering | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.      | ME8073      | Unconventional Machining Processes          | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.      | MG8491      | Operations Research                         | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.      | MF8071      | Additive Manufacturing                      | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.      | GE8077      | Total Quality Management                    | PE       | 3               | 3 | 0 | 0 | 3 |

### SEMESTER VII, ELECTIVE III

| SL. NO. | COURSE CODE | COURSE TITLE                                        | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---------|-------------|-----------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.      | ME8099      | Robotics                                            | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.      | ME8095      | Design of Jigs, Fixtures and Press Tools            | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.      | ME8093      | Computational Fluid Dynamics                        | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.      | ME8097      | Non Destructive Testing and Evaluation              | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.      | ME8092      | Composite Materials and Mechanics                   | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.      | GE8072      | Foundation Skills in Integrated Product Development | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.      | GE8074      | Human Rights                                        | PE       | 3               | 3 | 0 | 0 | 3 |
| 8.      | GE8071      | Disaster Management                                 | PE       | 3               | 3 | 0 | 0 | 3 |

### SEMESTER VIII, ELECTIVE IV

| SL. NO. | COURSE CODE | COURSE TITLE                              | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---------|-------------|-------------------------------------------|----------|-----------------|---|---|---|---|
| 1.      | IE8693      | Production Planning and Control           | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.      | MG8091      | Entrepreneurship Development              | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.      | ME8094      | Computer Integrated Manufacturing Systems | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.      | ME8074      | Vibration and Noise Control               | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.      | EE8091      | Micro Electro Mechanical Systems          | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.      | GE8076      | Professional Ethics in Engineering        | PE       | 3               | 3 | 0 | 0 | 3 |

### EMPLOYABILITY ENHANCEMENT COURSES (EEC)

| SL. NO. | COURSE CODE | COURSE TITLE                     | CATEGORY | CONTACT PERIODS | L | T | P  | C  |
|---------|-------------|----------------------------------|----------|-----------------|---|---|----|----|
| 1.      | HS8381      | Interpersonal Skills/Listening & | EEC      | 4               | 0 | 0 | 4  | 2  |
| 2.      | ME8712      | Technical Seminar                | EEC      | 2               | 0 | 0 | 2  | 1  |
| 3.      | ME8811      | Project Work                     | EEC      | 20              | 0 | 0 | 20 | 12 |
| 4.      | HS8461      | Advanced Reading and Writing     | EEC      | 2               | 0 | 0 | 2  | 1  |
| 5.      | ME8682      | Design and Fabrication Project   | EEC      | 4               | 0 | 0 | 4  | 2  |
| 6.      | HS8581      | Professional Communication       | EEC      | 2               | 0 | 0 | 2  | 1  |

### SUMMARY

| SL. NO. | SUBJECT AREA           | CREDITS PER SEMESTER |    |     |    |    |    |     |      | CREDITS TOTAL | Percentage % |
|---------|------------------------|----------------------|----|-----|----|----|----|-----|------|---------------|--------------|
|         |                        | I                    | II | III | IV | V  | VI | VII | VIII |               |              |
| 1.      | HS                     | 4                    | 7  | -   | -  | -  |    | -   | 3    | 14            | 7.61%        |
| 2.      | BS                     | 12                   | 7  | 4   | 4  | -  | -  | -   | -    | 27            | 14.67%       |
| 3.      | ES                     | 9                    | 11 | 9   | 5  | -  | -  | -   | -    | 33            | 17.80%       |
| 4.      | PC                     | -                    | -  | 11  | 14 | 19 | 18 | 13  | -    | 74            | 40.22%       |
| 5.      | PE                     | -                    | -  | -   | -  | -  | 3  | 6   | 3    | 15            | 8.15%        |
| 6.      | OE                     | -                    | -  | -   | -  | 3  | -  | 3   |      | 6             | 3.26%        |
| 7.      | EEC                    | -                    | -  | 1   | 1  | -  | 3  | 1   | 10   | 16            | 7.6%         |
|         | Total                  | 25                   | 25 | 25  | 24 | 22 | 24 | 23  | 16   | 184           |              |
| 8.      | Non Credit / Mandatory |                      |    |     |    |    |    |     |      |               |              |

  
**PRINCIPAL**  
**JKK MUNIRAJAH COLLEGE**  
**OF TECHNOLOGY**  
**T.N. PALAYAM (Po)-638 506.**  
**GOBI (Tk), ERODE (Dt).**

**ANNA UNIVERSITY, CHENNAI**  
**NON- AUTONOMOUS AFFILIATED COLLEGES**  
**REGULATIONS 2021**

**B. TECH. INFORMATION TECHNOLOGY**

**CHOICE BASED CREDIT SYSTEM**

**CURRICULA FOR AND SYLLABI FOR SEMESTERS I TO II**

**SEMESTER I**

| S. NO.            | COURSE CODE | COURSE TITLE                                      | CATE-GORY | PERIODS PER WEEK |          |           | TOTAL CONTACT PERIODS | CREDITS   |
|-------------------|-------------|---------------------------------------------------|-----------|------------------|----------|-----------|-----------------------|-----------|
|                   |             |                                                   |           | L                | T        | P         |                       |           |
| 1.                | IP3151      | Induction Programme                               | -         | -                | -        | -         | -                     | 0         |
| <b>THEORY</b>     |             |                                                   |           |                  |          |           |                       |           |
| 2.                | HS3151      | Professional English - I                          | HSMC      | 3                | 0        | 0         | 3                     | 3         |
| 3.                | MA3151      | Matrices and Calculus                             | BSC       | 3                | 1        | 0         | 4                     | 4         |
| 4.                | PH3151      | Engineering Physics                               | BSC       | 3                | 0        | 0         | 3                     | 3         |
| 5.                | CY3151      | Engineering Chemistry                             | BSC       | 3                | 0        | 0         | 3                     | 3         |
| 6.                | GE3151      | Problem Solving and Python Programming            | ESC       | 3                | 0        | 0         | 3                     | 3         |
| 7.                | GE3152      | தமிழர் மரபு /Heritage of Tamils                   | HSMC      | 1                | 0        | 0         | 1                     | 1         |
| <b>PRACTICALS</b> |             |                                                   |           |                  |          |           |                       |           |
| 8.                | GE3171      | Problem Solving and Python Programming Laboratory | ESC       | 0                | 0        | 4         | 4                     | 2         |
| 9.                | BS3171      | Physics and Chemistry Laboratory                  | BSC       | 0                | 0        | 4         | 4                     | 2         |
| 10.               | GE3172      | English Laboratory §                              | EEC       | 0                | 0        | 2         | 2                     | 1         |
| <b>TOTAL</b>      |             |                                                   |           | <b>16</b>        | <b>1</b> | <b>10</b> | <b>27</b>             | <b>22</b> |

§ Skill Based Course

**SEMESTER II**

| S. NO.     | COURSE CODE | COURSE TITLE                                              | CATE- GORY | PERIODS PER WEEK |   |    | TOTAL CONTACT PERIODS | CREDITS        |
|------------|-------------|-----------------------------------------------------------|------------|------------------|---|----|-----------------------|----------------|
|            |             |                                                           |            | L                | T | P  |                       |                |
| THEORY     |             |                                                           |            |                  |   |    |                       |                |
| 1.         | HS3251      | Professional English - II                                 | HSMC       | 2                | 0 | 0  | 2                     | 2              |
| 2.         | MA3251      | Statistics and Numerical Methods                          | BSC        | 3                | 1 | 0  | 4                     | 4              |
| 3.         | PH3256      | Physics for Information Science                           | BSC        | 3                | 0 | 0  | 3                     | 3              |
| 4.         | BE3251      | Basic Electrical and Electronics Engineering              | ESC        | 3                | 0 | 0  | 3                     | 3              |
| 5.         | GE3251      | Engineering Graphics                                      | ESC        | 2                | 0 | 4  | 6                     | 4              |
| 6.         | CS3251      | Programming in C                                          | PCC        | 3                | 0 | 0  | 3                     | 3              |
| 7.         | GE3252      | தமிழரும் தொழில்நுட்பமும் /Tamils and Technology           | HSMC       | 1                | 0 | 0  | 1                     | 1              |
| 8.         |             | NCC Credit Course Level 1 <sup>#</sup>                    | -          | 2                | 0 | 0  | 2                     | 2 <sup>#</sup> |
| PRACTICALS |             |                                                           |            |                  |   |    |                       |                |
| 9.         | GE3271      | Engineering Practices Laboratory                          | ESC        | 0                | 0 | 4  | 4                     | 2              |
| 10.        | CS3271      | Programming in C Laboratory                               | PCC        | 0                | 0 | 4  | 4                     | 2              |
| 11.        | GE3272      | Communication Laboratory / Foreign Language <sup>\$</sup> | EEC        | 0                | 0 | 4  | 4                     | 2              |
| TOTAL      |             |                                                           |            | 17               | 1 | 16 | 34                    | 26             |

# NCC Credit Course level 1 is offered for NCC students only. The grades earned by the students will be recorded in the Mark Sheet, however the same shall not be considered for the computation of CGPA.

§ Skill Based Course

**ANNA UNIVERSITY, CHENNAI  
AFFILIATED INSTITUTIONS**

**B.TECH INFORMATION TECHNOLOGY**

**REGULATIONS – 2017**

**CHOICE BASED CREDIT SYSTEM**

**III - VIII SEMESTERS CURRICULA AND SYLLABI**

**SEMESTER III**

| Sl. No            | COURSE CODE | COURSE TITLE                              | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|-------------------|-------------|-------------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                                           |          |                 |           |          |           |           |
| 1.                | MA8351      | Discrete Mathematics                      | BS       | 4               | 4         | 0        | 0         | 4         |
| 2.                | CS8351      | Digital Principles and System Design      | ES       | 4               | 4         | 0        | 0         | 4         |
| 3.                | CS8391      | Data Structures                           | PC       | 3               | 3         | 0        | 0         | 3         |
| 4.                | CS8392      | Object Oriented Programming               | PC       | 3               | 3         | 0        | 0         | 3         |
| 5.                | EC8394      | Analog and Digital Communication          | PC       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                                           |          |                 |           |          |           |           |
| 6.                | CS8381      | Data Structures Laboratory                | PC       | 4               | 0         | 0        | 4         | 2         |
| 7.                | CS8383      | Object Oriented Programming Laboratory    | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.                | CS8382      | Digital Systems Laboratory                | ES       | 4               | 0         | 0        | 4         | 2         |
| 9.                | HS8381      | Interpersonal Skills/Listening & Speaking | EEC      | 2               | 0         | 0        | 2         | 1         |
| <b>TOTAL</b>      |             |                                           |          | <b>31</b>       | <b>17</b> | <b>0</b> | <b>14</b> | <b>24</b> |

**SEMESTER IV**

| Sl. No            | COURSE CODE | COURSE TITLE                           | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|-------------------|-------------|----------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                                        |          |                 |           |          |           |           |
| 1.                | MA8391      | Probability and Statistics             | BS       | 4               | 4         | 0        | 0         | 4         |
| 2.                | CS8491      | Computer Architecture                  | PC       | 3               | 3         | 0        | 0         | 3         |
| 3.                | CS8492      | Database Management Systems            | PC       | 3               | 3         | 0        | 0         | 3         |
| 4.                | CS8451      | Design and Analysis of Algorithms      | PC       | 3               | 3         | 0        | 0         | 3         |
| 5.                | CS8493      | Operating Systems                      | PC       | 3               | 3         | 0        | 0         | 3         |
| 6.                | GE8291      | Environmental Science and Engineering  | HS       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                                        |          |                 |           |          |           |           |
| 7.                | CS8481      | Database Management Systems Laboratory | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.                | CS8461      | Operating Systems Laboratory           | PC       | 4               | 0         | 0        | 4         | 2         |
| 9.                | HS8461      | Advanced Reading and Writing           | EEC      | 2               | 0         | 0        | 2         | 1         |
| <b>TOTAL</b>      |             |                                        |          | <b>29</b>       | <b>19</b> | <b>0</b> | <b>10</b> | <b>24</b> |

### SEMESTER V

| Sl. No            | COURSE CODE | COURSE TITLE                                    | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|-------------------|-------------|-------------------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                                                 |          |                 |           |          |           |           |
| 1.                | MA8551      | Algebra and Number Theory                       | BS       | 4               | 4         | 0        | 0         | 4         |
| 2.                | CS8591      | Computer Networks                               | PC       | 3               | 3         | 0        | 0         | 3         |
| 3.                | EC8691      | Microprocessors and Microcontrollers            | PC       | 3               | 3         | 0        | 0         | 3         |
| 4.                | IT8501      | Web Technology                                  | PC       | 3               | 3         | 0        | 0         | 3         |
| 5.                | CS8494      | Software Engineering                            | PC       | 3               | 3         | 0        | 0         | 3         |
| 6.                |             | Open Elective I                                 | OE       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                                                 |          |                 |           |          |           |           |
| 7.                | EC8681      | Microprocessors and Microcontrollers Laboratory | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.                | CS8581      | Networks Laboratory                             | PC       | 4               | 0         | 0        | 4         | 2         |
| 9.                | IT8511      | Web Technology Laboratory                       | PC       | 4               | 0         | 0        | 4         | 2         |
| <b>TOTAL</b>      |             |                                                 |          | <b>31</b>       | <b>19</b> | <b>0</b> | <b>12</b> | <b>25</b> |

### SEMESTER VI

| Sl. No            | COURSE CODE | COURSE TITLE                                   | CATEGORY | CONTACT PERIODS | L         | T        | P         | C         |
|-------------------|-------------|------------------------------------------------|----------|-----------------|-----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                                                |          |                 |           |          |           |           |
| 1.                | IT8601      | Computational Intelligence                     | PC       | 3               | 3         | 0        | 0         | 3         |
| 2.                | CS8592      | Object Oriented Analysis and Design            | PC       | 3               | 3         | 0        | 0         | 3         |
| 3.                | IT8602      | Mobile Communication                           | PC       | 3               | 3         | 0        | 0         | 3         |
| 4.                | CS8091      | Big Data Analytics                             | PC       | 3               | 3         | 0        | 0         | 3         |
| 5.                | CS8092      | Computer Graphics and Multimedia               | PC       | 3               | 3         | 0        | 0         | 3         |
| 6.                |             | Professional Elective I                        | PE       | 3               | 3         | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                                                |          |                 |           |          |           |           |
| 7.                | CS8662      | Mobile Application Development Laboratory      | PC       | 4               | 0         | 0        | 4         | 2         |
| 8.                | CS8582      | Object Oriented Analysis and Design Laboratory | PC       | 4               | 0         | 0        | 4         | 2         |
| 9.                | IT8611      | Mini Project                                   | EEC      | 2               | 0         | 0        | 2         | 1         |
| 10.               | HS8581      | Professional Communication                     | EEC      | 2               | 0         | 0        | 2         | 1         |
| <b>TOTAL</b>      |             |                                                |          | <b>30</b>       | <b>18</b> | <b>0</b> | <b>12</b> | <b>24</b> |

### SEMESTER VII

| Sl.No             | COURSE CODE | COURSE TITLE                        | CATEGORY | CONTACT PERIODS | L         | T        | P        | C         |
|-------------------|-------------|-------------------------------------|----------|-----------------|-----------|----------|----------|-----------|
| <b>THEORY</b>     |             |                                     |          |                 |           |          |          |           |
| 1.                | MG8591      | Principles of Management            | HS       | 3               | 3         | 0        | 0        | 3         |
| 2.                | CS8792      | Cryptography and Network Security   | PC       | 3               | 3         | 0        | 0        | 3         |
| 3.                | CS8791      | Cloud Computing                     | PC       | 3               | 3         | 0        | 0        | 3         |
| 4.                |             | Open Elective II                    | OE       | 3               | 3         | 0        | 0        | 3         |
| 5.                |             | Professional Elective II            | PE       | 3               | 3         | 0        | 0        | 3         |
| 6.                |             | Professional Elective III           | PE       | 3               | 3         | 0        | 0        | 3         |
| <b>PRACTICALS</b> |             |                                     |          |                 |           |          |          |           |
| 7.                | IT8711      | FOSS and Cloud Computing Laboratory | PC       | 4               | 0         | 0        | 4        | 2         |
| 8.                | IT8761      | Security Laboratory                 | PC       | 4               | 0         | 0        | 4        | 2         |
| <b>TOTAL</b>      |             |                                     |          | <b>26</b>       | <b>18</b> | <b>0</b> | <b>8</b> | <b>22</b> |

### SEMESTER VIII

| Sl. No            | COURSE CODE | COURSE TITLE             | CATEGORY | CONTACT PERIODS | L        | T        | P         | C         |
|-------------------|-------------|--------------------------|----------|-----------------|----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                          |          |                 |          |          |           |           |
| 1.                |             | Professional Elective IV | PE       | 3               | 3        | 0        | 0         | 3         |
| 2.                |             | Professional Elective V  | PE       | 3               | 3        | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                          |          |                 |          |          |           |           |
| 3.                | IT8811      | Project Work             | EEC      | 20              | 0        | 0        | 20        | 10        |
| <b>TOTAL</b>      |             |                          |          | <b>26</b>       | <b>6</b> | <b>0</b> | <b>20</b> | <b>16</b> |

**TOTAL NO. OF CREDITS: 185**

### HUMANITIES AND SOCIAL SCIENCES (HS)

| SI. NO | COURSE CODE | COURSE TITLE                          | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|---------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | HS8151      | Communicative English                 | HS       | 4               | 4 | 0 | 0 | 4 |
| 2.     | HS8251      | Technical English                     | HS       | 4               | 4 | 0 | 0 | 4 |
| 3.     | GE8291      | Environmental Science and Engineering | HS       | 3               | 3 | 0 | 0 | 3 |
| 4.     | MG8591      | Principles of Management              | HS       | 3               | 3 | 0 | 0 | 3 |

### BASIC SCIENCES (BS)

| SI. NO | COURSE CODE | COURSE TITLE                     | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|----------------------------------|----------|-----------------|---|---|---|---|
| 1.     | MA8251      | Engineering Mathematics I        | BS       | 4               | 4 | 0 | 0 | 4 |
| 2.     | PH8151      | Engineering Physics              | BS       | 3               | 3 | 0 | 0 | 3 |
| 3.     | CY8151      | Engineering Chemistry            | BS       | 3               | 3 | 0 | 0 | 3 |
| 4.     | BS8161      | Physics and Chemistry Laboratory | BS       | 4               | 0 | 0 | 4 | 2 |
| 5.     | MA8251      | Engineering Mathematics II       | BS       | 4               | 4 | 0 | 0 | 4 |
| 6.     | PH8252      | Physics for Information Science  | BS       | 3               | 3 | 0 | 0 | 3 |
| 7.     | MA8351      | Discrete Mathematics             | BS       | 4               | 4 | 0 | 0 | 4 |
| 8.     | MA8391      | Probability and Statistics       | BS       | 4               | 4 | 0 | 0 | 4 |
| 9.     | MA8551      | Algebra and Number Theory        | BS       | 4               | 4 | 0 | 0 | 4 |

### ENGINEERING SCIENCES (ES)

| SI. NO | COURSE CODE | COURSE TITLE                                              | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|-----------------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | GE8151      | Problem Solving and Python Programming                    | ES       | 3               | 3 | 0 | 0 | 3 |
| 2.     | GE8152      | Engineering Graphics                                      | ES       | 6               | 2 | 0 | 4 | 4 |
| 3.     | GE8161      | Problem Solving and Python Programming Laboratory         | ES       | 4               | 0 | 0 | 4 | 2 |
| 4.     | BE8255      | Basic Electrical, Electronics and Measurement Engineering | ES       | 3               | 3 | 0 | 0 | 3 |
| 5.     | GE8261      | Engineering Practices Laboratory                          | ES       | 4               | 0 | 0 | 4 | 2 |
| 6.     | CS8351      | Digital Principles and System Design                      | ES       | 4               | 4 | 0 | 0 | 4 |
| 7.     | CS8382      | Digital Systems Laboratory                                | ES       | 4               | 0 | 0 | 4 | 2 |

**PROFESSIONAL CORE (PC)**

| SI. NO | COURSE CODE | COURSE TITLE                                    | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|-------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | IT8201      | Information Technology Essentials               | PC       | 3               | 3 | 0 | 0 | 3 |
| 2.     | IT8211      | Information Technology Essentials Laboratory    | PC       | 2               | 0 | 0 | 2 | 1 |
| 3.     | CS8251      | Programming in C                                | PC       | 3               | 3 | 0 | 0 | 3 |
| 4.     | CS8261      | C Programming Laboratory                        | PC       | 4               | 0 | 0 | 4 | 2 |
| 5.     | CS8391      | Data Structures                                 | PC       | 3               | 3 | 0 | 0 | 3 |
| 6.     | CS8392      | Object Oriented Programming                     | PC       | 3               | 3 | 0 | 0 | 3 |
| 7.     | EC8394      | Analog and Digital Communication                | PC       | 3               | 3 | 0 | 0 | 3 |
| 8.     | CS8381      | Data Structures Laboratory                      | PC       | 4               | 0 | 0 | 4 | 2 |
| 9.     | CS8383      | Object Oriented Programming Laboratory          | PC       | 4               | 0 | 0 | 4 | 2 |
| 10.    | CS8491      | Computer Architecture                           | PC       | 3               | 3 | 0 | 0 | 3 |
| 11.    | CS8492      | Database Management Systems                     | PC       | 3               | 3 | 0 | 0 | 3 |
| 12.    | CS8451      | Design and Analysis of Algorithms               | PC       | 3               | 3 | 0 | 0 | 3 |
| 13.    | CS8493      | Operating Systems                               | PC       | 3               | 3 | 0 | 0 | 3 |
| 14.    | CS8481      | Database Management Systems Laboratory          | PC       | 4               | 0 | 0 | 4 | 2 |
| 15.    | CS8461      | Operating Systems Laboratory                    | PC       | 4               | 0 | 0 | 4 | 2 |
| 16.    | CS8591      | Computer Networks                               | PC       | 3               | 3 | 0 | 0 | 3 |
| 17.    | EC8691      | Microprocessors and Microcontrollers            | PC       | 3               | 3 | 0 | 0 | 3 |
| 18.    | IT8501      | Web Technology                                  | PC       | 3               | 3 | 0 | 0 | 3 |
| 19.    | CS8494      | Software Engineering                            | PC       | 3               | 3 | 0 | 0 | 3 |
| 20.    | EC8681      | Microprocessors and Microcontrollers Laboratory | PC       | 4               | 0 | 0 | 4 | 2 |
| 21.    | CS8581      | Networks Laboratory                             | PC       | 4               | 0 | 0 | 4 | 2 |
| 22.    | IT8511      | Web Technology Laboratory                       | PC       | 4               | 0 | 0 | 4 | 2 |
| 23.    | IT8601      | Computational Intelligence                      | PC       | 3               | 3 | 0 | 0 | 3 |
| 24.    | CS8592      | Object Oriented Analysis and Design             | PC       | 3               | 3 | 0 | 0 | 3 |
| 25.    | IT8602      | Mobile Communication                            | PC       | 3               | 3 | 0 | 0 | 3 |
| 26.    | CS8091      | Big Data Analytics                              | PC       | 3               | 3 | 0 | 0 | 3 |
| 27.    | CS8092      | Computer Graphics and Multimedia                | PC       | 3               | 3 | 0 | 0 | 3 |
| 28.    | CS8662      | Mobile Application Development Laboratory       | PC       | 4               | 0 | 0 | 4 | 2 |

|     |        |                                                |    |   |   |   |   |   |
|-----|--------|------------------------------------------------|----|---|---|---|---|---|
| 29. | CS8582 | Object Oriented Analysis and Design Laboratory | PC | 4 | 0 | 0 | 4 | 2 |
| 30. | CS8792 | Cryptography and Network Security              | PC | 3 | 3 | 0 | 0 | 3 |
| 31. | CS8791 | Cloud Computing                                | PC | 3 | 3 | 0 | 0 | 3 |
| 32. | IT8711 | FOSS and Cloud Computing Laboratory            | PC | 4 | 0 | 0 | 4 | 2 |
| 33. | IT8761 | Security Laboratory                            | PC | 4 | 0 | 0 | 4 | 2 |

**SEMESTER VIII  
ELECTIVE - IV**

| Sl. No | COURSE CODE | COURSE TITLE                       | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | CS8085      | Social Network Analysis            | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.     | CS8086      | Soft Computing                     | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.     | CS8074      | Cyber Forensics                    | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.     | IT8073      | Information Security               | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.     | EC8093      | Digital Image Processing           | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.     | IT8004      | Network Management                 | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.     | GE8076      | Professional Ethics in Engineering | PE       | 3               | 3 | 0 | 0 | 3 |

**SEMESTER VIII  
ELECTIVE - V**

| Sl.No | COURSE CODE | COURSE TITLE                     | CATEGORY | CONTACT PERIODS | L | T | P | C |
|-------|-------------|----------------------------------|----------|-----------------|---|---|---|---|
| 1.    | CS8080      | Information Retrieval Techniques | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.    | CS8078      | Green Computing                  | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.    | CS8084      | Natural Language Processing      | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.    | IT8077      | Speech Processing                | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.    | IT8078      | Web Design and Management        | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.    | IT8005      | Electronic Commerce              | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.    | GE8073      | Fundamentals of Nanoscience      | PE       | 3               | 3 | 0 | 0 | 3 |

\*Professional Electives are grouped according to elective number as was done previously.

**EMPLOYABILITY ENHANCEMENT COURSES (EEC)**

| Sl.NO | COURSE CODE | COURSE TITLE                               | CATEGORY | CONTACT PERIODS | L | T | P  | C  |
|-------|-------------|--------------------------------------------|----------|-----------------|---|---|----|----|
| 1.    | HS8381      | Interpersonal Skills/ Listening & Speaking | EEC      | 2               | 0 | 0 | 2  | 1  |
| 2.    | HS8461      | Advanced Reading and Writing               | EEC      | 2               | 0 | 0 | 2  | 1  |
| 3.    | IT8611      | Mini Project                               | EEC      | 2               | 0 | 0 | 2  | 1  |
| 4.    | HS8581      | Professional Communication                 | EEC      | 2               | 0 | 0 | 2  | 1  |
| 5.    | IT8811      | Project Work                               | EEC      | 20              | 0 | 0 | 20 | 10 |

**PROFESSIONAL ELECTIVES (PE)  
SEMESTER VI  
ELECTIVE - I**

| Sl. No | COURSE CODE | COURSE TITLE                       | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | IT8076      | Software Testing                   | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.     | CS8077      | Graph Theory and Applications      | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.     | IT8071      | Digital Signal Processing          | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.     | IT8001      | Information Storage and Management | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.     | CS8072      | Agile Methodologies                | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.     | IT8072      | Embedded Systems                   | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.     | GE8075      | Intellectual Property Rights       | PE       | 3               | 3 | 0 | 0 | 3 |

**SEMESTER VII  
ELECTIVE - II**

| Sl. No | COURSE CODE | COURSE TITLE                         | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|--------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | IT8002      | Web Development Frameworks           | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.     | CS8082      | Machine Learning Techniques          | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.     | IT8003      | Formal Languages and Automata Theory | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.     | CS8081      | Internet of Things                   | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.     | IT8075      | Software Project Management          | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.     | IT8074      | Service Oriented Architecture        | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.     | GE8077      | Total Quality Management             | PE       | 3               | 3 | 0 | 0 | 3 |

**SEMESTER VII  
ELECTIVE - III**

| Sl. No | COURSE CODE | COURSE TITLE                                        | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|-----------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | CS8079      | Human Computer Interaction                          | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.     | CS8073      | C# and .Net Programming                             | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.     | CS8088      | Wireless Adhoc and Sensor Networks                  | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.     | GE8072      | Foundation Skills in Integrated Product Development | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.     | CS8071      | Advanced Topics on Databases                        | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.     | GE8074      | Human Rights                                        | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.     | GE8071      | Disaster Management                                 | PE       | 3               | 3 | 0 | 0 | 3 |

### SUMMARY

| S.NO. | SUBJECT AREA           | CREDITS AS PER SEMESTER |           |           |           |           |           |           |           | CREDITS TOTAL | Percentage |
|-------|------------------------|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------------|------------|
|       |                        | I                       | II        | III       | IV        | V         | VI        | VII       | VIII      |               |            |
| 1.    | HS                     | 4                       | 4         |           | 3         |           |           | 3         |           | 14            | 8.6%       |
| 2.    | BS                     | 12                      | 7         | 4         | 4         | 4         |           |           |           | 31            | 16.84%     |
| 3.    | ES                     | 9                       | 5         | 6         |           |           |           |           |           | 20            | 11.41%     |
| 4.    | PC                     |                         | 9         | 13        | 16        | 18        | 19        | 10        |           | 85            | 45.56%     |
| 5.    | PE                     |                         |           |           |           | 3         | 3         | 6         | 6         | 18            | 8.15%      |
| 6.    | OE                     |                         |           |           |           |           |           | 3         |           | 3             | 3.26%      |
| 7.    | EEC                    |                         |           | 1         | 1         |           | 2         |           | 10        | 14            | 7.0%       |
|       | <b>Total</b>           | <b>25</b>               | <b>25</b> | <b>24</b> | <b>24</b> | <b>25</b> | <b>24</b> | <b>22</b> | <b>16</b> | <b>185</b>    |            |
| 8.    | Non Credit / Mandatory |                         |           |           |           |           |           |           |           |               |            |

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**ANNA UNIVERSITY, CHENNAI**  
**NON - AUTONOMOUS COLLEGES AFFILIATED ANNA UNIVERSITY**  
**M.E. APPLIED ELECTRONICS**  
**REGULATIONS – 2021**  
**CHOICE BASED CREDIT SYSTEM**  
**I TO II SEMESTERS CURRICULA AND SYLLABI**  
**SEMESTER I**

| S. NO.     | COURSE CODE | COURSE TITLE                                  | CATE- GORY | PERIODS PER WEEK |   |   | TOTAL CONTACT PERIODS | CREDITS |
|------------|-------------|-----------------------------------------------|------------|------------------|---|---|-----------------------|---------|
|            |             |                                               |            | L                | T | P |                       |         |
| THEORY     |             |                                               |            |                  |   |   |                       |         |
| 1.         | MA4101      | Applied Mathematics for Electronics Engineers | FC         | 3                | 1 | 0 | 4                     | 4       |
| 2.         | RM4151      | Research Methodology and IPR                  | RMC        | 2                | 0 | 0 | 2                     | 2       |
| 3.         | AP4151      | Advanced Digital Signal Processing            | PCC        | 3                | 0 | 0 | 3                     | 3       |
| 4.         | AP4152      | Advanced Digital System Design                | PCC        | 3                | 0 | 2 | 5                     | 4       |
| 5.         | AP4153      | Semiconductor Devices and Modeling            | PCC        | 3                | 0 | 0 | 3                     | 3       |
| 6.         | VL4152      | Digital CMOS VLSI Design                      | PCC        | 3                | 0 | 0 | 3                     | 3       |
| 7.         |             | Audit Course – I*                             | AC         | 2                | 0 | 0 | 2                     | 0       |
| PRACTICALS |             |                                               |            |                  |   |   |                       |         |
| 8.         | AP4111      | Electronics System Design Laboratory          | PCC        | 0                | 0 | 3 | 3                     | 1.5     |
| 9.         | AP4112      | Signal Processing Laboratory                  | PCC        | 0                | 0 | 3 | 3                     | 1.5     |
| TOTAL      |             |                                               |            | 19               | 1 | 8 | 28                    | 22      |

\*Audit course is optional

**SEMESTER II**

| S. NO.     | COURSE CODE | COURSE TITLE                              | CATE- GORY | PERIODS PER WEEK |   |   | TOTAL CONTACT PERIODS | CREDITS |
|------------|-------------|-------------------------------------------|------------|------------------|---|---|-----------------------|---------|
|            |             |                                           |            | L                | T | P |                       |         |
| THEORY     |             |                                           |            |                  |   |   |                       |         |
| 1.         | AP4201      | Analog and Mixed Signal IC Design         | PCC        | 3                | 0 | 0 | 3                     | 3       |
| 2.         | AP4251      | Industrial Internet of Things             | PCC        | 3                | 0 | 0 | 3                     | 3       |
| 3.         | AP4202      | Power Conversion Circuits for Electronics | PCC        | 3                | 0 | 0 | 3                     | 3       |
| 4.         | AP4203      | Embedded Systems                          | PCC        | 3                | 0 | 2 | 5                     | 4       |
| 5.         |             | Professional Elective I                   | PEC        | 3                | 0 | 0 | 3                     | 3       |
| 6.         |             | Professional Elective II                  | PEC        | 3                | 0 | 0 | 3                     | 3       |
| 7.         |             | Audit Course – II*                        | AC         | 2                | 0 | 0 | 2                     | 0       |
| PRACTICALS |             |                                           |            |                  |   |   |                       |         |
| 8.         | AP4211      | VLSI Design Laboratory                    | PCC        | 0                | 0 | 4 | 4                     | 2       |
| 9.         | AP4212      | Mini Project with seminar                 | EEC        | 0                | 0 | 2 | 2                     | 1       |
| TOTAL      |             |                                           |            | 20               | 0 | 8 | 28                    | 22      |

\*Audit course is optional

**PROFESSIONAL ELECTIVES  
SEMESTER II, ELECTIVE I**

| S. NO. | COURSE CODE | COURSE TITLE                                  | CATE-GORY | PERIODS PER WEEK |   |   | TOTAL CONTACT PERIODS | CREDITS |
|--------|-------------|-----------------------------------------------|-----------|------------------|---|---|-----------------------|---------|
|        |             |                                               |           | L                | T | P |                       |         |
| 1.     | AP4001      | Applications Specific Integrated Circuits     | PEC       | 3                | 0 | 0 | 3                     | 3       |
| 2.     | AP4071      | Computer Architecture and Parallel Processing | PEC       | 3                | 0 | 0 | 3                     | 3       |
| 3.     | AP4091      | Automotive Electronics                        | PEC       | 3                | 0 | 0 | 3                     | 3       |
| 4.     | AP4094      | Robotics                                      | PEC       | 3                | 0 | 0 | 3                     | 3       |
| 5.     | VL4092      | Soft Computing and Optimization Techniques    | PEC       | 3                | 0 | 0 | 3                     | 3       |

**SEMESTER II, ELECTIVE II**

| S. NO. | COURSE CODE | COURSE TITLE                                   | CATE-GORY | PERIODS PER WEEK |   |   | TOTAL CONTACT PERIODS | CREDITS |
|--------|-------------|------------------------------------------------|-----------|------------------|---|---|-----------------------|---------|
|        |             |                                                |           | L                | T | P |                       |         |
| 1.     | CU4251      | RF System Design                               | PEC       | 3                | 0 | 0 | 3                     | 3       |
| 2.     | EL4071      | Electromagnetic Interference and Compatibility | PEC       | 3                | 0 | 0 | 3                     | 3       |
| 3.     | AP4003      | VLSI Design Techniques                         | PEC       | 3                | 0 | 0 | 3                     | 3       |
| 4.     | AP4004      | Nano Technologies                              | PEC       | 3                | 0 | 0 | 3                     | 3       |
| 5.     | VL4252      | VLSI Testing                                   | PEC       | 3                | 0 | 0 | 3                     | 3       |
| 6.     | AP4092      | Edge Analytics and Internet of Things          | PEC       | 3                | 0 | 0 | 3                     | 3       |

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**REGULATIONS – 2017**  
**CHOICE BASED CREDIT SYSTEM**  
**CURRICULA AND SYLLABI**

**SEMESTER III**

| SL. NO            | COURSE CODE | COURSE TITLE                                                | CATEGORY | CONTACT PERIODS | L        | T        | P         | C         |
|-------------------|-------------|-------------------------------------------------------------|----------|-----------------|----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                                                             |          |                 |          |          |           |           |
| 1.                | AP5301      | Advanced Microprocessors and Microcontrollers Architectures | PC       | 3               | 3        | 0        | 0         | 3         |
| 2.                |             | Professional Elective IV                                    | PE       | 3               | 3        | 0        | 0         | 3         |
| 3.                |             | Professional Elective V                                     | PE       | 3               | 3        | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                                                             |          |                 |          |          |           |           |
| 4.                | AP5311      | Project Work Phase I                                        | EEC      | 12              | 0        | 0        | 12        | 6         |
| <b>TOTAL</b>      |             |                                                             |          | <b>21</b>       | <b>9</b> | <b>0</b> | <b>12</b> | <b>15</b> |

**SEMESTER IV**

| SL. NO            | COURSE CODE | COURSE TITLE          | CATEGORY | CONTACT PERIODS | L        | T        | P         | C         |
|-------------------|-------------|-----------------------|----------|-----------------|----------|----------|-----------|-----------|
| <b>PRACTICALS</b> |             |                       |          |                 |          |          |           |           |
| 1.                | AP5411      | Project Work Phase II | EEC      | 24              | 0        | 0        | 24        | 12        |
| <b>TOTAL</b>      |             |                       |          |                 | <b>0</b> | <b>0</b> | <b>24</b> | <b>12</b> |

**TOTAL NO. OF CREDITS: 70**

### FOUNDATION COURSES (FC)

| SL. NO | COURSE CODE | COURSE TITLE                                  | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|-----------------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | MA5152      | Applied Mathematics for Electronics Engineers | FC       | 4               | 4 | 0 | 0 | 4 |

### PROFESSIONAL CORE (PC)

| SL. NO | COURSE CODE | COURSE TITLE                                             | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|----------------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | AP5151      | Advanced Digital System Design                           | PC       | 3               | 3 | 0 | 0 | 3 |
| 2.     | AP5152      | Advanced Digital Signal Processing                       | PC       | 5               | 3 | 2 | 0 | 4 |
| 3.     | AP5191      | Embedded System Design                                   | PC       | 3               | 3 | 0 | 0 | 3 |
| 4.     | AP5101      | Sensors, Actuators and Interface Electronics             | PC       | 3               | 3 | 0 | 0 | 3 |
| 5.     | AP5111      | Electronic System Design Lab I                           | PC       | 4               | 0 | 0 | 4 | 2 |
| 6.     | AP5251      | Soft Computing and Optimization Techniques               | PC       | 3               | 3 | 0 | 0 | 3 |
| 7.     | AP5252      | ASIC and FPGA Design                                     | PC       | 3               | 3 | 0 | 0 | 3 |
| 8.     | AP5291      | Hardware – Software Co-design                            | PC       | 3               | 3 | 0 | 0 | 3 |
| 9.     | AP5292      | Digital Image Processing                                 | PC       | 3               | 3 | 0 | 0 | 3 |
| 10.    | AP5211      | Electronic System Design Lab II                          | PC       | 4               | 0 | 0 | 4 | 2 |
| 11.    | AP5301      | Advanced Microprocessor and Microcontroller Architecture | PC       | 3               | 3 | 0 | 0 | 3 |

### EMPLOYABILITY ENHANCEMENT COURSE (EEC)

| SL. NO | COURSE CODE | COURSE TITLE                   | CATEGORY | CONTACT PERIODS | L | T | P  | C  |
|--------|-------------|--------------------------------|----------|-----------------|---|---|----|----|
| 1.     | CP5281      | Term Paper Writing and Seminar | EEC      | 2               | 0 | 0 | 2  | 1  |
| 2.     | AP5311      | Project Work Phase – I         | EEC      | 12              | 0 | 0 | 12 | 6  |
| 3.     | AP5411      | Project Work Phase – II        | EEC      | 24              | 0 | 0 | 24 | 12 |

**PROFESSIONAL ELECTIVES (PE)\***  
**SEMESTER II**  
**ELECTIVE II**

| SL. NO | COURSE CODE | COURSE TITLE                       | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | AP5003      | VLSI Design Techniques             | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.     | AP5071      | Nano Electronics                   | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.     | CU5097      | Wireless Adhoc and Sensor Networks | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.     | AP5004      | High Performance Networks          | PE       | 3               | 3 | 0 | 0 | 3 |

**SEMESTER II**  
**ELECTIVE III**

| SL. NO | COURSE CODE | COURSE TITLE                               | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|--------------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | DS5191      | DSP Processor Architecture and Programming | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.     | AP5073      | RF System Design                           | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.     | AP5074      | Speech and Audio Signal Processing         | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.     | AP5092      | Solid State Device Modeling and Simulation | PE       | 3               | 3 | 0 | 0 | 3 |

**SEMESTER III  
ELECTIVE IV**

| SL. NO | COURSE CODE | COURSE TITLE                     | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|----------------------------------|----------|-----------------|---|---|---|---|
| 1.     | CP5292      | Internet of Things               | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.     | AP5005      | System on Chip Design            | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.     | AP5093      | Robotics                         | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.     | AP5006      | Physical Design of VLSI Circuits | PE       | 3               | 3 | 0 | 0 | 3 |

**SEMESTER III  
ELECTIVE V**

| SL. NO | COURSE CODE | COURSE TITLE                           | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|----------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | AP5094      | Signal Integrity for High Speed Design | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.     | VL5091      | MEMS and NEMS                          | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.     | AP5007      | Secure Computing Systems               | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.     | AP5008      | Pattern Recognition                    | PE       | 3               | 3 | 0 | 0 | 3 |



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**M.E. COMPUTER SCIENCE AND ENGINEERING**  
REGULATIONS – 2021  
CHOICE BASED CREDIT SYSTEM  
I TO II SEMESTERS CURRICULA AND SYLLABI  
SEMESTER I

| S. NO.     | COURSE CODE | COURSE TITLE                                                      | CATEGORY | PERIODS PER WEEK |   |   | TOTAL CONTACT PERIODS | CREDITS |
|------------|-------------|-------------------------------------------------------------------|----------|------------------|---|---|-----------------------|---------|
|            |             |                                                                   |          | L                | T | P |                       |         |
| THEORY     |             |                                                                   |          |                  |   |   |                       |         |
| 1.         | MA4151      | Applied Probability and Statistics for Computer Science Engineers | FC       | 3                | 1 | 0 | 4                     | 4       |
| 2.         | RM4151      | Research Methodology and IPR                                      | RMC      | 2                | 0 | 0 | 2                     | 2       |
| 3.         | CP4151      | Advanced Data Structures and Algorithms                           | PCC      | 3                | 0 | 0 | 3                     | 3       |
| 4.         | CP4152      | Database Practices                                                | PCC      | 3                | 0 | 2 | 5                     | 4       |
| 5.         | CP4153      | Network Technologies                                              | PCC      | 3                | 0 | 0 | 3                     | 3       |
| 6.         | CP4154      | Principles of Programming Languages                               | PCC      | 3                | 0 | 0 | 3                     | 3       |
| 7.         |             | Audit Course – I*                                                 | AC       | 2                | 0 | 0 | 2                     | 0       |
| PRACTICALS |             |                                                                   |          |                  |   |   |                       |         |
| 8.         | CP4161      | Advanced Data Structures and Algorithms Laboratory                | PCC      | 0                | 0 | 4 | 4                     | 2       |
| TOTAL      |             |                                                                   |          | 19               | 1 | 6 | 26                    | 21      |

\*Audit course is optional

**SEMESTER II**

| S. NO.     | COURSE CODE | COURSE TITLE                           | CATEGORY | PERIODS PER WEEK |   |    | TOTAL CONTACT PERIODS | CREDITS |
|------------|-------------|----------------------------------------|----------|------------------|---|----|-----------------------|---------|
|            |             |                                        |          | L                | T | P  |                       |         |
| THEORY     |             |                                        |          |                  |   |    |                       |         |
| 1.         | CP4291      | Internet of Things                     | PCC      | 3                | 0 | 2  | 5                     | 4       |
| 2.         | CP4292      | Multicore Architecture and Programming | PCC      | 3                | 0 | 2  | 5                     | 4       |
| 3.         | CP4252      | Machine Learning                       | PCC      | 3                | 0 | 2  | 5                     | 4       |
| 4.         | SE4151      | Advanced Software Engineering          | 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.         |             | Audit Course – II*                     | AC       | 2                | 0 | 0  | 2                     | 0       |
| PRACTICALS |             |                                        |          |                  |   |    |                       |         |
| 8.         | CP4211      | Term Paper Writing and seminar         | EEC      | 0                | 0 | 2  | 2                     | 1       |
| 9.         | CP4212      | Software Engineering Laboratory        | PCC      | 0                | 0 | 2  | 2                     | 1       |
| TOTAL      |             |                                        |          | 20               | 0 | 10 | 30                    | 23      |

\*Audit course is optional

**PROFESSIONAL ELECTIVES  
SEMESTER II, ELECTIVE I**

| S. NO. | COURSE CODE | COURSE TITLE                             | CATEGORY | PERIODS PER WEEK |   |   | TOTAL CONTACT PERIODS | CREDITS |
|--------|-------------|------------------------------------------|----------|------------------|---|---|-----------------------|---------|
|        |             |                                          |          | L                | T | P |                       |         |
| 1.     | MP4092      | Human Computer Interaction               | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 2.     | MP4251      | Cloud Computing Technologies             | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 3.     | BD4151      | Foundations of Data Science              | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 4.     | MP4152      | Wireless Communications                  | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 5.     | SE4071      | Agile Methodologies                      | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 6.     | CP4095      | Performance Analysis of Computer Systems | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 7.     | CP4001      | Advanced Operating System                | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 8.     | MU4251      | Digital Image Processing                 | PEC      | 3                | 0 | 0 | 3                     | 3       |

**SEMESTER II, ELECTIVE II**

| S. NO. | COURSE CODE | COURSE TITLE                            | CATEGORY | PERIODS PER WEEK |   |   | TOTAL CONTACT PERIODS | CREDITS |
|--------|-------------|-----------------------------------------|----------|------------------|---|---|-----------------------|---------|
|        |             |                                         |          | L                | T | P |                       |         |
| 1.     | BD4071      | High Performance Computing for Big Data | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 2.     | CP4093      | Information Retrieval Techniques        | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 3.     | CP4096      | Software Quality Assurance              | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 4.     | CP4091      | Autonomous Systems                      | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 5.     | CP4097      | Web Analytics                           | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 6.     | MP4091      | Cognitive Computing                     | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 7.     | AP4093      | Quantum Computing                       | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 8.     | BD4251      | Big Data Mining and Analytics           | PEC      | 3                | 0 | 0 | 3                     | 3       |

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**CURRICULA AND SYLLABI**

**SEMESTER III**

| SL. NO            | COURSE CODE | COURSE TITLE               | CATEGORY | CONTACT PERIODS | L        | T        | P         | C         |
|-------------------|-------------|----------------------------|----------|-----------------|----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                            |          |                 |          |          |           |           |
| 1.                |             | Professional Elective –III | PE       | 3               | 3        | 0        | 0         | 3         |
| 2.                |             | Professional Elective –IV  | PE       | 3               | 3        | 0        | 0         | 3         |
| 3.                |             | Professional Elective –V   | PE       | 3               | 3        | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                            |          |                 |          |          |           |           |
| 4.                | CP5311      | Project Work Phase – I     | EEC      | 12              | 0        | 0        | 12        | 6         |
| <b>TOTAL</b>      |             |                            |          | <b>21</b>       | <b>9</b> | <b>0</b> | <b>12</b> | <b>15</b> |

**SEMESTER IV**

| SL. NO            | COURSE CODE | COURSE TITLE            | CATEGORY | CONTACT PERIODS | L        | T        | P         | C         |
|-------------------|-------------|-------------------------|----------|-----------------|----------|----------|-----------|-----------|
| <b>PRACTICALS</b> |             |                         |          |                 |          |          |           |           |
| 1.                | CP5411      | Project Work Phase – II | EEC      | 24              | 0        | 0        | 24        | 12        |
| <b>TOTAL</b>      |             |                         |          | <b>24</b>       | <b>0</b> | <b>0</b> | <b>24</b> | <b>12</b> |

**TOTAL NO. OF CREDITS:70**

### FOUNDATION COURSES (FC)

| SL. NO | COURSE CODE | COURSE TITLE                       | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | MA5160      | Applied Probability and Statistics | FC       | 4               | 4 | 0 | 0 | 4 |

### PROFESSIONAL CORE (PC)

| SL. NO | COURSE CODE | COURSE TITLE                            | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|-----------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | CP5151      | Advanced Data Structures and Algorithms | PC       | 4               | 4 | 0 | 0 | 4 |
| 2.     | CP5152      | Advanced Computer Architecture          | PC       | 3               | 3 | 0 | 0 | 3 |
| 3.     | CP5153      | Operating System Internals              | PC       | 3               | 3 | 0 | 0 | 3 |
| 4.     | CP5154      | Advanced Software Engineering           | PC       | 3               | 3 | 0 | 0 | 3 |
| 5.     | CP5191      | Machine Learning Techniques             | PC       | 3               | 3 | 0 | 0 | 3 |
| 6.     | CP5161      | Data Structures Laboratory              | PC       | 4               | 0 | 0 | 4 | 2 |
| 7.     | CP5201      | Network Design and Technologies         | PC       | 3               | 3 | 0 | 0 | 3 |
| 8.     | CP5291      | Security Practices                      | PC       | 3               | 3 | 0 | 0 | 3 |
| 9.     | CP5292      | Internet of Things                      | PC       | 3               | 3 | 0 | 0 | 3 |
| 10.    | CP5293      | Big Data Analytics                      | PC       | 3               | 3 | 0 | 0 | 3 |
| 11.    | CP5261      | Data Analytics Laboratory               | PC       | 4               | 0 | 0 | 4 | 2 |

### EMPLOYABILITY ENHANCEMENT COURSE (EEC)

| SL. NO | COURSE CODE | COURSE TITLE            | CATEGORY | CONTACT PERIODS | L | T | P  | C  |
|--------|-------------|-------------------------|----------|-----------------|---|---|----|----|
| 1.     | CP5281      | Term Paper and Seminar  | EEC      | 2               | 0 | 0 | 2  | 1  |
| 2.     | CP5311      | Project Work Phase – I  | EEC      | 12              | 0 | 0 | 12 | 6  |
| 3.     | CP5411      | Project Work Phase – II | EEC      | 24              | 0 | 0 | 24 | 12 |

## LIST OF ELECTIVES

### SEMESTER III ELECTIVE III

| SL. NO. | COURSE CODE | COURSE TITLE                             | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---------|-------------|------------------------------------------|----------|-----------------|---|---|---|---|
| 1.      | CP5003      | Performance Analysis of Computer Systems | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.      | CP5004      | Language Technologies                    | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.      | CP5095      | Computer Vision                          | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.      | CP5096      | Speech Processing and Synthesis          | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.      | CP5005      | Software Quality Assurance and Testing   | PE       | 3               | 3 | 0 | 0 | 3 |

### SEMESTER III ELECTIVE IV

| SL. NO. | COURSE CODE | COURSE TITLE                      | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---------|-------------|-----------------------------------|----------|-----------------|---|---|---|---|
| 1.      | CP5006      | Formal models of software systems | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.      | CP5073      | Embedded Software Development     | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.      | CP5074      | Social Network Analysis           | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.      | CP5007      | Bio-inspired Computing            | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.      | CP5008      | Compiler Optimization Techniques  | PE       | 3               | 3 | 0 | 0 | 3 |

### SEMESTER III ELECTIVE V

| SL. NO | COURSE CODE | COURSE TITLE                   | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|--------------------------------|----------|-----------------|---|---|---|---|
| 1.     | CP5009      | Data Visualization Techniques  | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.     | CP5010      | Reconfigurable Computing       | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.     | CP5097      | Mobile Application Development | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.     | CP5075      | Bio Informatics                | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.     | CP5076      | Information Storage Management | PE       | 3               | 3 | 0 | 0 | 3 |

ANNA UNIVERSITY, CHENNAI  
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**M.E. MANUFACTURING ENGINEERING**  
REGULATIONS 2021  
CHOICE BASED CREDIT SYSTEM  
I TO II SEMESTERS CURRICULA AND SYLLABUS

**SEMESTER I**

| SL. NO.    | COURSE CODE | COURSE TITLE                                                     | CATE GORY | PERIODS PER WEEK |   |   | TOTAL CONTACT PERIODS | CREDITS |
|------------|-------------|------------------------------------------------------------------|-----------|------------------|---|---|-----------------------|---------|
|            |             |                                                                  |           | L                | T | P |                       |         |
| THEORY     |             |                                                                  |           |                  |   |   |                       |         |
| 1.         | MA4155      | Applied Probability and Statistics for Manufacturing Engineering | FC        | 3                | 1 | 0 | 4                     | 4       |
| 2.         | MF4101      | Advances in Manufacturing Processes                              | PCC       | 3                | 0 | 0 | 3                     | 3       |
| 3.         | MF4102      | Advances in Casting and Welding                                  | PCC       | 3                | 0 | 0 | 3                     | 3       |
| 4.         | MF4103      | Theory of Metal Cutting                                          | PCC       | 3                | 0 | 0 | 3                     | 3       |
| 5.         | CM4151      | Computer Aided Manufacturing                                     | PCC       | 3                | 0 | 0 | 3                     | 3       |
| 6.         | RM4151      | Research Methodology and IPR                                     | RMC       | 2                | 0 | 0 | 2                     | 2       |
| 7.         |             | Audit Course – I*                                                | AC        | 2                | 0 | 0 | 2                     | 0       |
| PRACTICALS |             |                                                                  |           |                  |   |   |                       |         |
| 8.         | MF4111      | CAD/CAM Laboratory                                               | PCC       | 0                | 0 | 4 | 4                     | 2       |
| 9.         | MF4112      | Technical Seminar                                                | EEC       | 0                | 0 | 2 | 2                     | 1       |
| TOTAL      |             |                                                                  |           | 19               | 1 | 6 | 26                    | 21      |

\* Audit Course is optional

**SEMESTER II**

| SL. NO.    | COURSE CODE | COURSE TITLE                                | CATE GORY | PERIODS PER WEEK |   |   | TOTAL CONTACT PERIODS | CREDITS |
|------------|-------------|---------------------------------------------|-----------|------------------|---|---|-----------------------|---------|
|            |             |                                             |           | L                | T | P |                       |         |
| THEORY     |             |                                             |           |                  |   |   |                       |         |
| 1.         | MF4201      | Optimization Techniques in Manufacturing    | PCC       | 3                | 0 | 0 | 3                     | 3       |
| 2.         | MF4202      | Advances in Metrology and Inspection        | PCC       | 3                | 0 | 0 | 3                     | 3       |
| 3.         | MF4203      | Theory of Metal Forming                     | PCC       | 3                | 0 | 0 | 3                     | 3       |
| 4.         | MF4204      | Additive Manufacturing                      | PCC       | 3                | 0 | 0 | 3                     | 3       |
| 5.         | MF4205      | Fluid Power Automation                      | PCC       | 3                | 0 | 0 | 3                     | 3       |
| 6.         |             | Professional Elective I                     | PEC       | 3                | 0 | 0 | 3                     | 3       |
| 7.         |             | Professional Elective II                    | PEC       | 3                | 0 | 0 | 3                     | 3       |
| 8.         |             | Audit Course II*                            | AC        | 2                | 0 | 0 | 2                     | 0       |
| PRACTICALS |             |                                             |           |                  |   |   |                       |         |
| 9.         | MF4211      | Automation and Metal Forming Laboratory     | PCC       | 0                | 0 | 3 | 3                     | 1.5     |
| 10.        | MF4212      | Advanced Manufacturing Processes Laboratory | PCC       | 0                | 0 | 3 | 3                     | 1.5     |
| TOTAL      |             |                                             |           | 23               | 0 | 6 | 29                    | 24      |

\* Audit Course is optional

# PROFESSIONAL ELECTIVES FOR M.E. MANUFACTURING ENGINEERING

## SEMESTER II, ELECTIVES - I & II

| SL. NO. | COURSE CODE | COURSE TITLE                                         | CATEGORY | PERIODS PER WEEK |   |   | TOTAL CONTACT PERIODS | CREDITS |
|---------|-------------|------------------------------------------------------|----------|------------------|---|---|-----------------------|---------|
|         |             |                                                      |          | L                | T | P |                       |         |
| 1.      | MF4071      | Design for Manufacture and Assembly                  | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 2.      | MF4001      | Micro Manufacturing                                  | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 3.      | MF4002      | Quality and Reliability Engineering                  | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 4.      | MF4003      | Finite Element Methods for Manufacturing Engineering | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 5.      | MF4004      | Materials Management                                 | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 6.      | MF4005      | Industrial Ergonomics                                | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 7.      | MF4006      | Polymers and Composite Materials                     | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 8.      | MF4092      | Non-Destructive Testing                              | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 9.      | MF4007      | Lean Manufacturing                                   | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 10.     | MF4008      | Robot Design and Programming                         | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 11.     | MF4009      | MEMS and Nanotechnology                              | PEC      | 3                | 0 | 0 | 3                     | 3       |
| 12.     | CM4091      | Green Manufacturing                                  | PEC      | 3                | 0 | 0 | 3                     | 3       |

PROGRESS THROUGH KNOWLEDGE

**ANNA UNIVERSITY, CHENNAI**

**AFFILIATED INSTITUTIONS**

**REGULATIONS 2017**

**M.E. MANUFACTURING ENGINEERING**

**CHOICE BASED CREDIT SYSTEM**

**III TO IV SEMESTERS (FULL TIME) CURRICULUM AND  
SYLLABUS**

**SEMESTER III**

| SL. NO.          | COURSE CODE | COURSE TITLE             | CATEGORY | CONTACT PERIODS | L        | T        | P         | C         |
|------------------|-------------|--------------------------|----------|-----------------|----------|----------|-----------|-----------|
| <b>THEORY</b>    |             |                          |          |                 |          |          |           |           |
| 1                |             | Professional Elective IV | PE       | 3               | 3        | 0        | 0         | 3         |
| 2                |             | Professional Elective V  | PE       | 3               | 3        | 0        | 0         | 3         |
| 3                |             | Professional Elective VI | PE       | 3               | 3        | 0        | 0         | 3         |
| <b>PRACTICAL</b> |             |                          |          |                 |          |          |           |           |
| 4                | MF5311      | Project Work Phase I     | EEC      | 12              | 0        | 0        | 12        | 6         |
| <b>TOTAL</b>     |             |                          |          | <b>21</b>       | <b>9</b> | <b>0</b> | <b>12</b> | <b>15</b> |

**SEMESTER IV**

| SL. NO.          | COURSE CODE | COURSE TITLE          | CATEGORY | CONTACT PERIODS | L        | T        | P         | C         |
|------------------|-------------|-----------------------|----------|-----------------|----------|----------|-----------|-----------|
| <b>PRACTICAL</b> |             |                       |          |                 |          |          |           |           |
| 1                | MF5411      | Project Work Phase II | EEC      | 24              | 0        | 0        | 24        | 12        |
| <b>TOTAL</b>     |             |                       |          | <b>24</b>       | <b>0</b> | <b>0</b> | <b>24</b> | <b>12</b> |

**TOTAL CREDITS TO BE EARNED FOR THE AWARD OF THE DEGREE = 72**

## LIST OF ELECTIVES FOR M.E. MANUFACTURING ENGINEERING

### SEMESTER III (Elective IV, V & VI)

| SL. NO | COURSE CODE | COURSE TITLE                                      | CATEGORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|---------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.     | MF5012      | Computer Aided Product Design                     | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.     | MF5013      | Process Planning and Cost Estimation              | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.     | MF5014      | Manufacturing Management                          | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.     | MF5072      | Research Methodology                              | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.     | MF5015      | Nanotechnology                                    | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.     | MF5016      | Materials Testing and Characterization Techniques | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.     | MF5017      | Mechatronics                                      | PE       | 3               | 3 | 0 | 0 | 3 |
| 8.     | MF5073      | Internet of Things for Manufacturing              | PE       | 3               | 3 | 0 | 0 | 3 |
| 9.     | IL5091      | Data Analytics                                    | PE       | 3               | 3 | 0 | 0 | 3 |
| 10.    | CM5093      | Manufacturing System Simulation                   | PE       | 3               | 3 | 0 | 0 | 3 |
| 11.    | PD5091      | Product Lifecycle Management                      | PE       | 3               | 3 | 0 | 0 | 3 |
| 12.    | CM5091      | Additive Manufacturing                            | PE       | 3               | 3 | 0 | 0 | 3 |
| 13.    | MF5018      | Product Design and Development                    | PE       | 3               | 3 | 0 | 0 | 3 |
| 14.    | MF5074      | Entrepreneurship Development                      | PE       | 3               | 3 | 0 | 0 | 3 |
| 15.    | MF5075      | Industrial Safety                                 | PE       | 3               | 3 | 0 | 0 | 3 |

  
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**REGULATIONS – 2021**

**CHOICE BASED CREDIT SYSTEM**  
**M.E. POWER ELECTRONICS AND DRIVES (FULL TIME)**  
**I TO II SEMESTERS CURRICULUM AND SYLLABUS**

**SEMESTER I**

| S.NO       | COURSE CODE | COURSE TITLE                                                | CATE-GORY | PERIODS PER WEEK |   |   | TOTAL CONTACT PERIODS | CREDITS |
|------------|-------------|-------------------------------------------------------------|-----------|------------------|---|---|-----------------------|---------|
|            |             |                                                             |           | L                | T | P |                       |         |
| THEORY     |             |                                                             |           |                  |   |   |                       |         |
| 1.         | MA4106      | Applied Mathematics for Power Electronics Engineers         | FC        | 3                | 1 | 0 | 4                     | 4       |
| 2.         | PX4101      | Analysis of Electrical Machines                             | PCC       | 3                | 1 | 0 | 4                     | 4       |
| 3.         | PX4151      | Analysis of Power Converters                                | PCC       | 3                | 1 | 0 | 4                     | 4       |
| 4.         | PX4102      | Modeling and Design of SMPS                                 | PCC       | 3                | 0 | 0 | 3                     | 3       |
| 5.         | RM4151      | Research Methodology and IPR                                | RMC       | 2                | 0 | 0 | 2                     | 2       |
| 6.         |             | Professional Elective I                                     | PEC       | 3                | 0 | 0 | 3                     | 3       |
| 7.         |             | Audit Course I*                                             | AC        | 2                | 0 | 0 | 2                     | 0       |
| PRACTICALS |             |                                                             |           |                  |   |   |                       |         |
| 8.         | PX4161      | Power Converters Laboratory                                 | PCC       | 0                | 0 | 3 | 3                     | 1.5     |
| 9.         | PX4111      | Analog and Digital Controllers for PE Converters Laboratory | PCC       | 1                | 0 | 3 | 4                     | 2.5     |
| TOTAL      |             |                                                             |           | 20               | 3 | 6 | 29                    | 24      |

\* Audit Course is optional

**SEMESTER II**

| S.NO       | COURSE CODE | COURSE TITLE                                    | CATE- GORY | PERIODS PER WEEK |   |   | TOTAL CONTACT PERIODS | CREDITS |
|------------|-------------|-------------------------------------------------|------------|------------------|---|---|-----------------------|---------|
|            |             |                                                 |            | L                | T | P |                       |         |
| THEORY     |             |                                                 |            |                  |   |   |                       |         |
| 1.         | PX4201      | Analysis of Electrical Drives                   | PCC        | 3                | 1 | 0 | 4                     | 4       |
| 2.         | PX4202      | Special Electrical Machines                     | PCC        | 3                | 0 | 0 | 3                     | 3       |
| 3.         | PX4291      | Electric Vehicles and Power Management          | PCC        | 3                | 1 | 0 | 4                     | 4       |
| 4.         |             | Professional Elective II                        | PEC        | 3                | 0 | 0 | 3                     | 3       |
| 5.         |             | Professional Elective III                       | PEC        | 3                | 0 | 0 | 3                     | 3       |
| 6.         |             | Audit course II*                                | AC         | 2                | 0 | 0 | 2                     | 0       |
| PRACTICALS |             |                                                 |            |                  |   |   |                       |         |
| 7.         | PX4211      | Power Electronics and Drives Laboratory         | PCC        | 0                | 0 | 3 | 3                     | 1.5     |
| 8.         | PX4212      | Design Laboratory for Power Electronics Systems | PCC        | 0                | 0 | 3 | 3                     | 1.5     |
| TOTAL      |             |                                                 |            | 17               | 2 | 6 | 25                    | 20      |

\* Audit Course is optional

## PROFESSIONAL ELECTIVES

### SEMESTER I ELECTIVE I

| S. NO. | COURS ECODE | COURSE TITLE                                    | CATE- GORY | PERIODS PER WEEK |   |   | TOTAL CONTACT PERIODS | CREDITS |
|--------|-------------|-------------------------------------------------|------------|------------------|---|---|-----------------------|---------|
|        |             |                                                 |            | L                | T | P |                       |         |
| 1      | PX4001      | Power Semiconductor Devices                     | PEC        | 3                | 0 | 0 | 3                     | 3       |
| 2      | PX4002      | System Design Using Microcontroller             | PEC        | 3                | 0 | 0 | 3                     | 3       |
| 3      | PX4003      | Electromagnetic Field Computation and Modelling | PEC        | 3                | 0 | 0 | 3                     | 3       |
| 4      | PX4004      | Soft Computing Techniques                       | PEC        | 3                | 0 | 0 | 3                     | 3       |
| 5      | PS4151      | System Theory                                   | PEC        | 3                | 0 | 0 | 3                     | 3       |

### SEMESTER II ELECTIVE II & III

| S. NO. | COURS ECODE | COURSE TITLE                                   | CATE- GORY | PERIODS PER WEEK |   |   | TOTAL CONTACT PERIODS | CREDITS |
|--------|-------------|------------------------------------------------|------------|------------------|---|---|-----------------------|---------|
|        |             |                                                |            | L                | T | P |                       |         |
| 1      | PX4005      | Power Electronics for Renewable Energy Systems | PEC        | 3                | 0 | 0 | 3                     | 3       |
| 2      | PX4006      | Modern Rectifiers and Resonant Converters      | PEC        | 3                | 0 | 0 | 3                     | 3       |
| 3      | PX4007      | Advanced Power Converters                      | PEC        | 3                | 0 | 0 | 3                     | 3       |
| 4      | PX4009      | Control of Power Electronic Circuits           | PEC        | 3                | 0 | 0 | 3                     | 3       |
| 5      | PS4072      | Energy Storage Technologies                    | PEC        | 3                | 0 | 0 | 3                     | 3       |
| 6      | PX4071      | Power Quality                                  | PEC        | 3                | 0 | 0 | 3                     | 3       |
| 7      | ET4071      | DSP Based System Design                        | PEC        | 3                | 0 | 0 | 3                     | 3       |
| 8      | ET4072      | Machine Learning and Deep Learning             | PEC        | 3                | 0 | 0 | 3                     | 3       |
| 9      | ET4251      | IoT for Smart Systems                          | PEC        | 3                | 0 | 0 | 3                     | 3       |
| 10     | ET4018      | MEMS Design: Sensors and Actuators             | PEC        | 3                | 0 | 0 | 3                     | 3       |

**ANNA UNIVERSITY, CHENNAI  
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REGULATIONS – 2017**

**CHOICE BASED CREDIT SYSTEM**

**M.E. POWER ELECTRONICS AND DRIVES (FULL TIME)  
CURRICULUM AND SYLLABUS III TO IV SEMESTERS**

**SEMESTER III**

| S.No              | COURSE CODE | COURSE TITLE             | CATEGORY | CONTACT PERIODS | L        | T        | P         | C         |
|-------------------|-------------|--------------------------|----------|-----------------|----------|----------|-----------|-----------|
| <b>THEORY</b>     |             |                          |          |                 |          |          |           |           |
| 1.                |             | Professional Elective IV | PE       | 3               | 3        | 0        | 0         | 3         |
| 2.                |             | Professional Elective V  | PE       | 3               | 3        | 0        | 0         | 3         |
| 3.                |             | Professional Elective VI | PE       | 3               | 3        | 0        | 0         | 3         |
| <b>PRACTICALS</b> |             |                          |          |                 |          |          |           |           |
| 4.                | PX5311      | Project Work Phase I     | EEC      | 12              | 0        | 0        | 12        | 6         |
| <b>TOTAL</b>      |             |                          |          | <b>21</b>       | <b>9</b> | <b>0</b> | <b>12</b> | <b>15</b> |

**SEMESTER IV**

| Sl.No             | COURSE CODE | COURSE TITLE          | CATEGORY | CONTACT PERIODS | L        | T        | P         | C         |
|-------------------|-------------|-----------------------|----------|-----------------|----------|----------|-----------|-----------|
| <b>PRACTICALS</b> |             |                       |          |                 |          |          |           |           |
| 1.                | PX5411      | Project Work Phase II | EEC      | 24              | 0        | 0        | 24        | 12        |
| <b>TOTAL</b>      |             |                       |          | <b>24</b>       | <b>0</b> | <b>0</b> | <b>24</b> | <b>12</b> |

**TOTAL NO. OF CREDITS: 72**

### FOUNDATION COURSES(FC)

| S.No | COURSE CODE | COURSE TITLE                                   | CATEGORY | CONTACT PERIODS | L | T | P | C |
|------|-------------|------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.   | MA5155      | Applied Mathematics for Electrical Engineering | FC       | 4               | 4 | 0 | 0 | 4 |

### PROFESSIONAL CORE(PC)

| S.No | COURSE CODE | COURSE TITLE                            | CATEGORY | CONTACT PERIODS | L | T | P | C |
|------|-------------|-----------------------------------------|----------|-----------------|---|---|---|---|
| 1.   | PX5101      | Power Semiconductor Devices             | PC       | 3               | 3 | 0 | 0 | 3 |
| 2.   | PX5151      | Analysis of Electrical Machines         | PC       | 3               | 3 | 0 | 0 | 3 |
| 3.   | PX5152      | Analysis and Design of Power Converters | PC       | 3               | 3 | 0 | 0 | 3 |
| 4.   | PX5201      | Analysis and Design of Inverters        | PC       | 3               | 3 | 0 | 0 | 3 |
| 5.   | IN5152      | System Theory                           | PC       | 5               | 3 | 2 | 0 | 4 |
| 6.   | PX5202      | Solid State Drives                      | PC       | 5               | 3 | 2 | 0 | 4 |
| 7.   | PX5251      | Special Electrical Machines             | PC       | 3               | 3 | 0 | 0 | 3 |
| 8.   | PX5252      | Power Quality                           | PC       | 3               | 3 | 0 | 0 | 3 |
| 9.   | PX5111      | Power Electronics Circuits Lab          | PC       | 4               | 0 | 0 | 4 | 2 |
| 10.  | PX5211      | Electrical Drives Laboratory            | PC       | 4               | 0 | 0 | 4 | 2 |

### PROFESSIONAL ELECTIVES(PE)\*

#### Semester II

#### Elective II and III

| S.No | COURSE CODE | COURSE TITLE                   | CATEGORY | CONTACT PERIODS | L | T | P | C |
|------|-------------|--------------------------------|----------|-----------------|---|---|---|---|
| 1.   | PX5002      | Analog and Digital Controllers | PE       | 3               | 3 | 0 | 0 | 3 |

|    |        |                                                |    |   |   |   |   |   |
|----|--------|------------------------------------------------|----|---|---|---|---|---|
| 2. | PX5003 | Flexible AC Transmission Systems               | PE | 3 | 3 | 0 | 0 | 3 |
| 3. | PX5004 | Modern Rectifiers and Resonant Converters      | PE | 3 | 3 | 0 | 0 | 3 |
| 4. | PX5092 | Electromagnetic Interference and Compatibility | PE | 3 | 3 | 0 | 0 | 3 |
| 5. | ET5091 | MEMS Technology                                | PE | 3 | 3 | 0 | 0 | 3 |
| 6. | PS5071 | Distributed Generation and Microgrid           | PE | 3 | 3 | 0 | 0 | 3 |

**Semester III**  
**Elective IV, V and VI**

| S.No | COURSE CODE | COURSE TITLE                                       | CATEGORY | CONTACT PERIODS | L | T | P | C |
|------|-------------|----------------------------------------------------|----------|-----------------|---|---|---|---|
| 1.   | PX5005      | High Voltage Direct Current Transmission           | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.   | PS5092      | Solar and Energy Storage Systems                   | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.   | PX5071      | Wind Energy Conversion Systems                     | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.   | PS5072      | Energy Management and Auditing                     | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.   | PS5073      | Electric Vehicles and Power Management             | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.   | PX5006      | Non Linear Dynamics for Power Electronics Circuits | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.   | PS5091      | Smart Grid                                         | PE       | 3               | 3 | 0 | 0 | 3 |
| 8.   | PX5072      | Power Electronics for Renewable Energy Systems     | PE       | 3               | 3 | 0 | 0 | 3 |
| 9.   | IN5079      | Robotics and Control                               | PE       | 3               | 3 | 0 | 0 | 3 |
| 10.  | PX5007      | Non Linear Control                                 | PE       | 3               | 3 | 0 | 0 | 3 |

Professional Electives are grouped according to elective number as was done previously.

**EMPLOYABILITY ENHANCEMENT COURSES(EEC)**

| S.No | COURSE CODE | COURSE TITLE          | CATEGORY | CONTACT PERIODS | L | T | P  | C  |
|------|-------------|-----------------------|----------|-----------------|---|---|----|----|
| 1.   | PX5212      | Mini Project          | EEC      | 4               | 0 | 0 | 4  | 2  |
| 2.   | PX5311      | Project Work Phase I  | EEC      | 12              | 0 | 0 | 12 | 6  |
| 3.   | PX5411      | Project Work Phase II | EEC      | 24              | 0 | 0 | 24 | 12 |



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**ANNA UNIVERSITY, CHENNAI**  
**NON - AUTONOMOUS AFFILIATED COLLEGES**  
**MASTER OF COMPUTER APPLICATIONS (2 YEARS)**  
**REGULATIONS – 2021**  
**CHOICE BASED CREDIT SYSTEM**  
**I TO II SEMESTERS CURRICULA AND SYLLABI**  
**SEMESTER I**

| S. NO.     | COURSE CODE | COURSE TITLE                                                      | CATE-GORY | PERIODS PER WEEK |   |    | TOTAL CONTACT PERIODS | CREDITS |
|------------|-------------|-------------------------------------------------------------------|-----------|------------------|---|----|-----------------------|---------|
|            |             |                                                                   |           | L                | T | P  |                       |         |
| THEORY     |             |                                                                   |           |                  |   |    |                       |         |
| 1.         | MA4151      | Applied Probability and Statistics for Computer Science Engineers | FC        | 3                | 1 | 0  | 4                     | 4       |
| 2.         | RM4151      | Research Methodology and IPR                                      | RMC       | 2                | 0 | 0  | 2                     | 2       |
| 3.         | MC4101      | Advanced Data Structures and Algorithms                           | PCC       | 3                | 0 | 0  | 3                     | 3       |
| 4.         | MC4102      | Object Oriented Software Engineering                              | PCC       | 3                | 0 | 0  | 3                     | 3       |
| 5.         | MC4103      | Python Programming                                                | PCC       | 3                | 0 | 0  | 3                     | 3       |
| 6.         | MC4104      | Fundamentals of Accounting                                        | PCC       | 3                | 0 | 2  | 5                     | 4       |
| 7.         |             | Audit Course – I*                                                 | AC        | 2                | 0 | 0  | 2                     | 0       |
| PRACTICALS |             |                                                                   |           |                  |   |    |                       |         |
| 8.         | MC4111      | Advanced Data Structures and Algorithms Laboratory                | PCC       | 0                | 0 | 4  | 4                     | 2       |
| 9.         | MC4112      | Python Programming Laboratory                                     | PCC       | 0                | 0 | 4  | 4                     | 2       |
| 10.        | MC4113      | Communication Skills Enhancement – I                              | EEC       | 0                | 0 | 2  | 2                     | 1       |
| TOTAL      |             |                                                                   |           | 19               | 1 | 12 | 32                    | 24      |

\*Audit course is optional

**SEMESTER II**

| S. NO.     | COURSE CODE | COURSE TITLE                            | CATE-GORY | PERIODS PER WEEK |   |    | TOTAL CONTACT PERIODS | CREDITS |
|------------|-------------|-----------------------------------------|-----------|------------------|---|----|-----------------------|---------|
|            |             |                                         |           | L                | T | P  |                       |         |
| THEORY     |             |                                         |           |                  |   |    |                       |         |
| 1.         | MC4201      | Full Stack Web Development              | PCC       | 3                | 0 | 0  | 3                     | 3       |
| 2.         | MC4202      | Advanced Database Technology            | PCC       | 3                | 0 | 0  | 3                     | 3       |
| 3.         | MC4203      | Cloud Computing Technologies            | PCC       | 3                | 0 | 0  | 3                     | 3       |
| 4.         | MC4204      | Mobile Application Development          | PCC       | 3                | 0 | 2  | 5                     | 4       |
| 5.         | MC4205      | Cyber Security                          | PCC       | 3                | 0 | 0  | 3                     | 3       |
| 6.         |             | Professional Elective I                 | PEC       | 3                | 0 | 0  | 3                     | 3       |
| 7.         |             | Audit Course – II*                      | AC        | 2                | 0 | 0  | 2                     | 0       |
| PRACTICALS |             |                                         |           |                  |   |    |                       |         |
| 8.         | MC4211      | Advanced Database Technology Laboratory | PCC       | 0                | 0 | 4  | 4                     | 2       |
| 9.         | MC4212      | Full Stack Web Development Laboratory   | PCC       | 0                | 0 | 4  | 4                     | 2       |
| 10.        | MC4213      | Communication Skills Enhancement– II    | EEC       | 0                | 0 | 2  | 2                     | 1       |
| TOTAL      |             |                                         |           | 20               | 0 | 12 | 32                    | 24      |

\*Audit course is optional

**PROFESSIONAL ELECTIVES  
SEMESTER II, ELECTIVE I**

| S.No. | COURSE<br>CODE | COURSE TITLE                     | CATE<br>-<br>GORY | CONTACT<br>PERIODS | L | T | P | C |
|-------|----------------|----------------------------------|-------------------|--------------------|---|---|---|---|
| 1.    | MC4001         | Software Project Management      | PEC               | 3                  | 3 | 0 | 0 | 3 |
| 2.    | MC4002         | Professional Ethics in IT        | PEC               | 3                  | 3 | 0 | 0 | 3 |
| 3.    | MC4003         | E - Learning                     | PEC               | 3                  | 3 | 0 | 0 | 3 |
| 4.    | MC4004         | Advances in Operating System     | PEC               | 3                  | 3 | 0 | 0 | 3 |
| 5.    | MC4005         | Information Retrieval Techniques | PEC               | 3                  | 3 | 0 | 0 | 3 |
| 6.    | MC4006         | Soft Computing Techniques        | PEC               | 3                  | 3 | 0 | 0 | 3 |
| 7.    | MC4007         | Operations Research              | PEC               | 3                  | 3 | 0 | 0 | 3 |
| 8.    | MC4008         | Business Data Analytics          | PEC               | 3                  | 3 | 0 | 0 | 3 |

**ANNA UNIVERSITY, CHENNAI**  
**REGULATIONS – 2017**  
**AFFILIATED INSTITUTIONS**  
**CHOICE BASED CREDIT SYSTEM**  
**MASTER OF COMPUTER APPLICATIONS**

**SEMESTER III**

| SL. NO.           | COURSE CODE | COURSE TITLE                                                    | CATEGORY | CONTACT HOURS | L         | T        | P        | C         |
|-------------------|-------------|-----------------------------------------------------------------|----------|---------------|-----------|----------|----------|-----------|
| <b>THEORY</b>     |             |                                                                 |          |               |           |          |          |           |
| 1.                | MC5306      | Data Science                                                    | PC       | 3             | 3         | 0        | 0        | 3         |
| 2.                | MC5307      | Embedded Systems and Internet of Things                         | PC       | 3             | 3         | 0        | 0        | 3         |
| 3.                | MC5308      | Accounting and Financial Management for Application Development | PC       | 3             | 3         | 0        | 0        | 3         |
| 4.                |             | Professional Elective II                                        | PE       | 3             | 3         | 0        | 0        | 3         |
| 5.                |             | Professional Elective III                                       | PE       | 3             | 3         | 0        | 0        | 3         |
| 6.                |             | Professional Elective IV                                        | PE       | 3             | 3         | 0        | 0        | 3         |
| 7.                |             | Professional Elective V:                                        | PE       | 3             | 3         | 0        | 0        | 3         |
| <b>PRACTICALS</b> |             |                                                                 |          |               |           |          |          |           |
| 1.                | MC5314      | Data Science Laboratory                                         | PC       | 4             | 0         | 0        | 4        | 2         |
| 2.                | MC5315      | Internet of Things Laboratory                                   | PC       | 4             | 0         | 0        | 4        | 2         |
| <b>TOTAL</b>      |             |                                                                 |          | <b>29</b>     | <b>21</b> | <b>0</b> | <b>8</b> | <b>25</b> |

**SEMESTER IV**

| SL. NO.           | COURSE CODE | COURSE TITLE | CATEGORY | CONTACT HOURS | L        | T        | P         | C         |
|-------------------|-------------|--------------|----------|---------------|----------|----------|-----------|-----------|
| <b>PRACTICALS</b> |             |              |          |               |          |          |           |           |
| 1.                | MC5414      | Project Work | PC       | 24            | 0        | 0        | 24        | 12        |
| <b>TOTAL</b>      |             |              |          | <b>24</b>     | <b>0</b> | <b>0</b> | <b>24</b> | <b>12</b> |

**TOTAL CREDITS: 83**

## PROFESSIONAL ELECTIVES

| Sl. No                                         | COURSE CODE | COURSE TITLE                                | CATEGORY | CONTACT PERIODS | L | T | P | C |
|------------------------------------------------|-------------|---------------------------------------------|----------|-----------------|---|---|---|---|
| <b>PROFESSIONAL ELECTIVE – II, Semester 3</b>  |             |                                             |          |                 |   |   |   |   |
| 1.                                             | MC5021      | Compiler Optimization Techniques            | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.                                             | MC5022      | C# and .NET programming                     | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.                                             | MC5023      | Wireless Networking                         | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.                                             | MC5024      | Web Design                                  | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.                                             | MC5025      | Network Programming and Security            | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.                                             | MC5026      | Microservices and Devops                    | PE       | 3               | 3 | 0 | 0 | 3 |
| <b>PROFESSIONAL ELECTIVE – III, Semester 3</b> |             |                                             |          |                 |   |   |   |   |
| 1.                                             | MC5027      | Social Network Analytics                    | PE       |                 | 3 | 0 | 0 | 3 |
| 2.                                             | MC5028      | Bio Inspired Computing                      | PE       |                 | 3 | 0 | 0 | 3 |
| 3.                                             | MC5029      | Information Retrieval Techniques            | PE       |                 | 3 | 0 | 0 | 3 |
| 4.                                             | MC5030      | Software Architecture                       | PE       |                 | 3 | 0 | 0 | 3 |
| 5.                                             | MC5031      | Digital Forensics                           | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.                                             | MC5032      | Data Mining and Data Warehousing Techniques | PE       | 3               | 3 | 0 | 0 | 3 |
| <b>PROFESSIONAL ELECTIVE – IV, Semester 3</b>  |             |                                             |          |                 |   |   |   |   |
| 1.                                             | MC5033      | Data Visualization Techniques               | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.                                             | MC5034      | Operations Research                         | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.                                             | MC5035      | Professional Ethics in IT                   | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.                                             | MC5036      | Marketing Management                        | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.                                             | MC5037      | Organizational Behavior                     | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.                                             | MC5038      | Business Data Analytics                     | PE       | 3               | 3 | 0 | 0 | 3 |

| PROFESSIONAL ELECTIVE – V, Semester 3 |        |                                            |    |   |   |   |   |   |
|---------------------------------------|--------|--------------------------------------------|----|---|---|---|---|---|
| 1.                                    | MC5039 | Cryptocurrency and Blockchain Technologies | PE | 3 | 3 | 0 | 0 | 3 |
| 2.                                    | MC5040 | Advances in Networking                     | PE | 3 | 3 | 0 | 0 | 3 |
| 3.                                    | MC5041 | Soft Computing Techniques                  | PE | 3 | 3 | 0 | 0 | 3 |
| 4.                                    | MC5042 | Deep Learning                              | PE | 3 | 3 | 0 | 0 | 3 |
| 5.                                    | MC5043 | Big Data Processing                        | PE | 3 | 3 | 0 | 0 | 3 |
| 6.                                    | MC5044 | Natural Language Processing                | PE | 3 | 3 | 0 | 0 | 3 |

#### FOUNDATION COURSES (FC)

| SL. NO | COURSE CODE | COURSE TITLE                         | CATE GORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|--------------------------------------|-----------|-----------------|---|---|---|---|
| 1.     | MA5101      | Matrices, Probability and Statistics | FC        | 5               | 3 | 2 | 0 | 4 |

#### PROFESSIONAL CORE (PC)

| SL. NO | COURSE CODE | COURSE TITLE                                            | CATE GORY | CONTACT PERIODS | L | T | P | C |
|--------|-------------|---------------------------------------------------------|-----------|-----------------|---|---|---|---|
| 1.     | MC5301      | Advanced Data Structures and Algorithms                 | PC        | 3               | 3 | 0 | 0 | 3 |
| 2.     | MC5105      | Advanced Database Technology                            | PC        | 3               | 3 | 0 | 0 | 3 |
| 3.     | MC5106      | Object Oriented Software Engineering                    | PC        | 3               | 3 | 0 | 0 | 3 |
| 4.     | MC5107      | Python Programming                                      | PC        | 3               | 3 | 0 | 0 | 3 |
| 5.     | MC5108      | Research Methodology and Intellectual Property Rights   | PC        | 2               | 2 | 0 | 0 | 2 |
| 6.     | MC5114      | Advanced Database Technology Lab                        | PC        | 4               | 0 | 0 | 4 | 2 |
| 7.     | MC5115      | Advanced Data Structures and Python Programming Lab     | PC        | 4               | 0 | 0 | 4 | 2 |
| 8.     | MC5206      | Internet Programming                                    | PC        | 3               | 3 | 0 | 0 | 3 |
| 9.     | MC5207      | Cloud Computing Technologies                            | PC        | 3               | 3 | 0 | 0 | 3 |
| 10.    | MC5208      | Artificial Intelligence and Machine Learning            | PC        | 3               | 3 | 0 | 0 | 3 |
| 11.    | MC5209      | Mobile Application Development                          | PC        | 4               | 2 | 0 | 2 | 3 |
| 12.    | MC5210      | Cyber Security                                          | PC        | 3               | 3 | 0 | 0 | 3 |
| 13.    | MC5214      | Internet Programming Laboratory                         | PC        | 4               | 0 | 0 | 4 | 2 |
| 14.    | MC5215      | Artificial Intelligence and Machine Learning Laboratory | PC        | 4               | 0 | 0 | 4 | 2 |

|    |        |                                                                 |    |   |   |   |   |   |
|----|--------|-----------------------------------------------------------------|----|---|---|---|---|---|
| 15 | MC5306 | Data Science                                                    | PC | 3 | 3 | 0 | 0 | 3 |
| 16 | MC5307 | Embedded Systems and Internet of Things                         | PC | 3 | 3 | 0 | 0 | 3 |
| 17 | MC5308 | Accounting and Financial Management for Application Development | PC | 3 | 3 | 0 | 0 | 3 |
| 18 | MC5314 | Data Science Laboratory                                         | PC | 4 | 0 | 0 | 4 | 2 |
| 19 | MC5315 | Internet of Things Laboratory                                   | PC | 4 | 0 | 0 | 4 | 2 |

#### EMPLOYABILITY ENHANCEMENT COURSE (EEC)

| SL. NO | COURSE CODE | COURSE TITLE                         | CATE GORY | CONTACT PERIODS | L | T | P  | C  |
|--------|-------------|--------------------------------------|-----------|-----------------|---|---|----|----|
| 1.     | MC5116      | Communication Skills Enhancement – I | EEC       | 2               | 0 | 0 | 2  | 1  |
| 2.     | MC5216      | Communication Skills Enhancement– II | EEC       | 2               | 0 | 0 | 2  | 1  |
| 3.     | MC5414      | Project Work                         | EEC       | 24              | 0 | 0 | 24 | 12 |

#### BRIDGE COURSES

| SL. NO.            | COURSE CODE | COURSE TITLE                                 | CONTACT PERIODS | L | T | P | C |
|--------------------|-------------|----------------------------------------------|-----------------|---|---|---|---|
| <b>Semester I</b>  |             |                                              |                 |   |   |   |   |
| 1.                 | MA5102      | Mathematical Foundations of Computer Science | 3               | 3 | 0 | 0 | 3 |
| 2.                 | BX5001      | Problem Solving And Programming In C         | 5               | 3 | 0 | 2 | 4 |
| 3.                 | BX5002      | Digital logic and Computer Organization      | 3               | 3 | 0 | 0 | 3 |
| 4.                 | BX5003      | Operating Systems                            | 3               | 3 | 0 | 0 | 3 |
| 5.                 | BX5004      | Data Structures and Algorithms               | 3               | 3 | 0 | 0 | 3 |
| 6.                 | BX5005      | Programming and Data structures using C lab  | 4               | 0 | 0 | 4 | 2 |
| <b>Semester II</b> |             |                                              |                 |   |   |   |   |
| 7.                 | BX5006      | Data Base Management Systems                 | 3               | 3 | 0 | 0 | 3 |
| 8.                 | BX5007      | Java Programming                             | 3               | 3 | 0 | 0 | 3 |
| 9.                 | BX5008      | Software Engineering                         | 3               | 3 | 0 | 0 | 3 |
| 10.                | BX5009      | Basics of Computer Networks                  | 3               | 3 | 0 | 0 | 3 |
| 11.                | BX5010      | Java Programming Lab                         | 4               | 0 | 0 | 4 | 2 |
| 12.                | BX5011      | Data Base Management Systems Lab             | 4               | 0 | 0 | 4 | 2 |

**ANNA UNIVERSITY, CHENNAI**  
**NON-AUTONOMOUS COLLEGES AFFILIATED TO ANNA UNIVERSITY**  
**REGULATIONS – 2021**  
**MASTER OF BUSINESS ADMINISTRATION (FULL – TIME)**  
**CHOICE BASED CREDIT SYSTEM**  
**CURRICULA AND SYLLABI FOR I TO II SEMESTERS**

**SEMESTER - I**

| SEMESTER I |             |                                                 |          |                  |   |   |                       |         |
|------------|-------------|-------------------------------------------------|----------|------------------|---|---|-----------------------|---------|
| SL. NO.    | COURSE CODE | COURSE TITLE                                    | CATEGORY | PERIODS PER WEEK |   |   | TOTAL CONTACT PERIODS | CREDITS |
|            |             |                                                 |          | L                | T | P |                       |         |
| THEORY     |             |                                                 |          |                  |   |   |                       |         |
| 1.         | BA4101      | Statistics for Management                       | PCC      | 3                | 0 | 0 | 3                     | 3       |
| 2.         | BA4102      | Management Concepts and Organizational Behavior | PCC      | 3                | 0 | 0 | 3                     | 3       |
| 3.         | BA4103      | Managerial Economics                            | PCC      | 3                | 0 | 0 | 3                     | 3       |
| 4.         | BA4104      | Accounting for Decision Making                  | PCC      | 3                | 0 | 0 | 3                     | 3       |
| 5.         | BA4105      | Legal Aspects of Business                       | PCC      | 3                | 0 | 0 | 3                     | 3       |
| 6.         | BA4106      | Information Management                          | PCC      | 3                | 0 | 0 | 3                     | 3       |
| 7.         |             | Non-Functional Elective                         | NEC      | 3                | 0 | 0 | 3                     | 3       |
| PRACTICAL  |             |                                                 |          |                  |   |   |                       |         |
| 8.         | BA4111      | Indian ethos (Seminar)                          | EEC      | 0                | 0 | 4 | 4                     | 2       |
| 9.         | BA4112      | Business Communication (Laboratory)             | EEC      | 0                | 0 | 4 | 4                     | 2       |
| TOTAL      |             |                                                 |          | 21               | 0 | 8 | 29                    | 25      |

**NOTE:** In the first semester students need to choose one elective from the Non-Functional stream

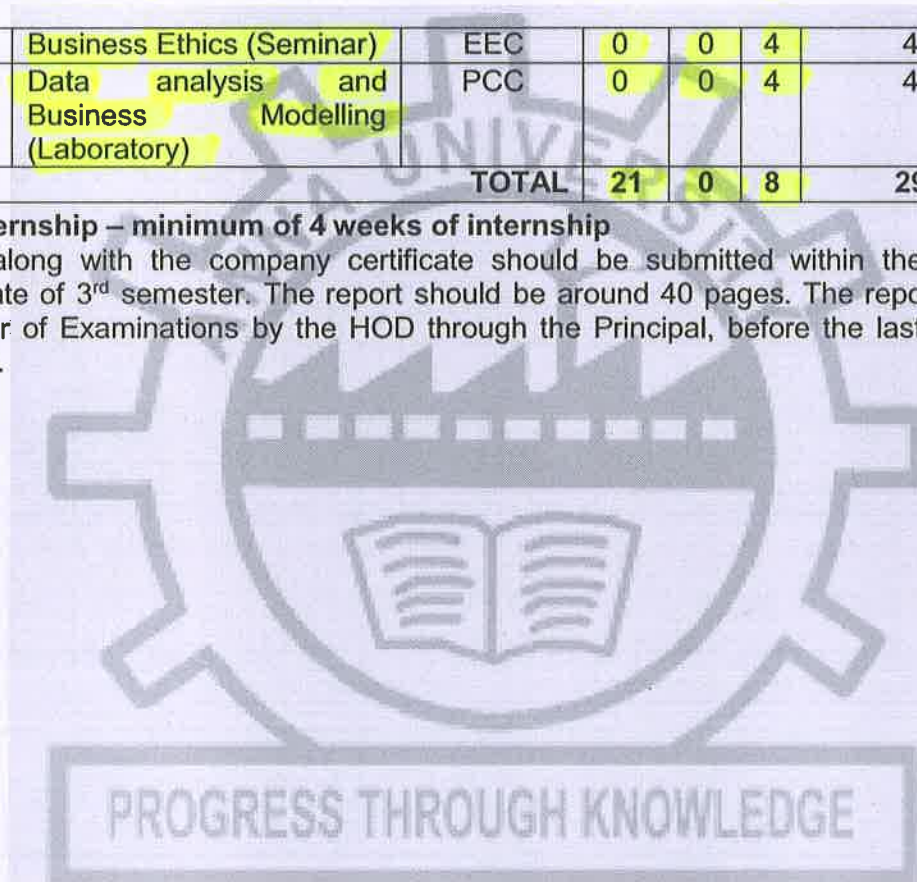
PROGRESS THROUGH KNOWLEDGE

**SEMESTER – II**

| SEMESTER II |             |                                                   |          |                  |   |   |                       |         |
|-------------|-------------|---------------------------------------------------|----------|------------------|---|---|-----------------------|---------|
| SL. NO.     | COURSE CODE | COURSE TITLE                                      | CATEGORY | PERIODS PER WEEK |   |   | TOTAL CONTACT PERIODS | CREDITS |
|             |             |                                                   |          | L                | T | P |                       |         |
| THEORY      |             |                                                   |          |                  |   |   |                       |         |
| 1.          | BA4201      | Quantitative Techniques for Decision Making       | PCC      | 3                | 0 | 0 | 3                     | 3       |
| 2.          | BA4202      | Financial Management                              | PCC      | 3                | 0 | 0 | 3                     | 3       |
| 3.          | BA4203      | Human Resource Management                         | PCC      | 3                | 0 | 0 | 3                     | 3       |
| 4.          | BA4204      | Operations Management                             | PCC      | 3                | 0 | 0 | 3                     | 3       |
| 5.          | BA4205      | Business Research Methods                         | PCC      | 3                | 0 | 0 | 3                     | 3       |
| 6.          | BA4206      | Business Analytics                                | PCC      | 3                | 0 | 0 | 3                     | 3       |
| 7.          | BA4207      | Marketing Management                              | PCC      | 3                | 0 | 0 | 3                     | 3       |
| PRACTICAL   |             |                                                   |          |                  |   |   |                       |         |
| 8.          | BA4211      | Business Ethics (Seminar)                         | EEC      | 0                | 0 | 4 | 4                     | 2       |
| 9.          | BA4212      | Data analysis and Business Modelling (Laboratory) | PCC      | 0                | 0 | 4 | 4                     | 2       |
| TOTAL       |             |                                                   |          | 21               | 0 | 8 | 29                    | 25      |

**Summer internship – minimum of 4 weeks of internship**

The report along with the company certificate should be submitted within the two weeks of the reopening date of 3<sup>rd</sup> semester. The report should be around 40 pages. The report should be sent to the Controller of Examinations by the HOD through the Principal, before the last working day of the 3<sup>rd</sup> Semester.



**ANNA UNIVERSITY, CHENNAI  
AFFILIATED INSTITUTIONS  
REGULATIONS – 2017**

**CHOICE BASED CREDIT SYSTEM**

**MASTER OF BUSINESS ADMINISTRATION (FULL TIME)  
CURRICULA AND SYLLABI III TO IV SEMESTERS**

**SEMESTER - III**

| SL. NO.           | COURSE CODE | COURSE TITLE                      | CATEGORY | CONTACT PERIODS | L         | T        | P        | C         |
|-------------------|-------------|-----------------------------------|----------|-----------------|-----------|----------|----------|-----------|
| <b>THEORY</b>     |             |                                   |          |                 |           |          |          |           |
| 1.                | BA5301      | International Business Management | PC       | 3               | 3         | 0        | 0        | 3         |
| 2                 | BA5302      | Strategic Management              | PC       | 3               | 3         | 0        | 0        | 3         |
| 3                 |             | Professional Elective I ***       | PE       | 3               | 3         | 0        | 0        | 3         |
| 4                 |             | Professional Elective II***       | PE       | 3               | 3         | 0        | 0        | 3         |
| 5                 |             | Professional Elective III***      | PE       | 3               | 3         | 0        | 0        | 3         |
| 6                 |             | Professional Elective IV***       | PE       | 3               | 3         | 0        | 0        | 3         |
| 7                 |             | Professional Elective V***        | PE       | 3               | 3         | 0        | 0        | 3         |
| 8                 |             | Professional Elective VI***       | PE       | 3               | 3         | 0        | 0        | 3         |
| <b>PRACTICALS</b> |             |                                   |          |                 |           |          |          |           |
| 9                 | BA5311      | Summer Training                   | EEC      | 2               | 0         | 0        | 2        | 1         |
| <b>TOTAL</b>      |             |                                   |          | <b>26</b>       | <b>24</b> | <b>0</b> | <b>2</b> | <b>25</b> |

\*\*\* Chosen electives should be from two streams of management of three electives each.

**SEMESTER - IV**

| SI. NO            | COURSE CODE | COURSE TITLE | CATEGORY | CONTACT PERIODS | L        | T        | P         | C         |
|-------------------|-------------|--------------|----------|-----------------|----------|----------|-----------|-----------|
| <b>PRACTICALS</b> |             |              |          |                 |          |          |           |           |
| 1.                | BA5411      | Project Work | EEC      | 24              | 0        | 0        | 24        | 12        |
| <b>TOTAL</b>      |             |              |          |                 | <b>0</b> | <b>0</b> | <b>24</b> | <b>12</b> |

**TOTAL NO. OF CREDITS:86**

### PROFESSIONAL CORE (PC)

| SL. NO. | COURSE CODE | COURSE TITLE                      | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---------|-------------|-----------------------------------|----------|-----------------|---|---|---|---|
| 1.      |             | Principles of Management          | PC       | 3               | 3 | 0 | 0 | 3 |
| 2.      |             | Accounting for Management         | PC       | 4               | 4 | 0 | 0 | 4 |
| 3.      |             | Economic Analysis for Business    | PC       | 4               | 4 | 0 | 0 | 4 |
| 4.      |             | Legal Aspects of Business         | PC       | 3               | 3 | 0 | 0 | 3 |
| 5.      |             | Organizational Behaviour          | PC       | 3               | 3 | 0 | 0 | 3 |
| 6.      |             | Statistics for Management         | PC       | 3               | 3 | 0 | 0 | 3 |
| 7.      |             | Marketing Management              | PC       | 4               | 4 | 0 | 0 | 4 |
| 8.      |             | Spoken and Written Communication  | PC       | 4               | 0 | 0 | 4 | 2 |
| 9.      |             | Applied Operations Research       | PC       | 3               | 3 | 0 | 0 | 3 |
| 10.     |             | Business Research Methods         | PC       | 3               | 3 | 0 | 0 | 3 |
| 11.     |             | Strategic Management              | PC       | 3               | 3 | 0 | 0 | 3 |
| 12.     |             | Financial Management              | PC       | 3               | 3 | 0 | 0 | 3 |
| 13.     |             | Human Resource Management         | PC       | 3               | 3 | 0 | 0 | 3 |
| 14.     |             | Information Management            | PC       | 3               | 3 | 0 | 0 | 3 |
| 15.     |             | Operations Management             | PC       | 3               | 3 | 0 | 0 | 3 |
| 16.     |             | International Business Management | PC       | 3               | 3 | 0 | 0 | 3 |
| 17.     |             | Total Quality Management          | PC       | 3               | 3 | 0 | 0 | 3 |

**PROFESSIONAL ELECTIVES (PE)**

**FUNCTIONAL SPECIALIZATIONS**

1. Students can take three elective subjects from two functional specializations  
Or
2. Students can take six elective subjects from any one sectoral specializations

| SL. NO                                             | COURSE CODE | COURSE TITLE                                 | CATEGORY | CONTACT PERIODS | L | T | P | C |
|----------------------------------------------------|-------------|----------------------------------------------|----------|-----------------|---|---|---|---|
| Stream/ Specialization : Marketing Management      |             |                                              |          |                 |   |   |   |   |
| 1.                                                 | BA5001      | Brand Management                             | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.                                                 | BA5002      | Consumer Behaviour                           | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.                                                 | BA5003      | Customer Relationship Management             | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.                                                 | BA5004      | Integrated Marketing Communication           | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.                                                 | BA5005      | Retail Marketing                             | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.                                                 | BA5006      | Services Marketing                           | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.                                                 | BA5007      | Social Marketing                             | PE       | 3               | 3 | 0 | 0 | 3 |
| Stream/ Specialization : Financial Management      |             |                                              |          |                 |   |   |   |   |
| 8.                                                 | BA5008      | Banking Financial Services Management        | PE       | 3               | 3 | 0 | 0 | 3 |
| 9.                                                 | BA5009      | Corporate Finance                            | PE       | 3               | 3 | 0 | 0 | 3 |
| 10.                                                | BA5010      | Derivatives Management                       | PE       | 3               | 3 | 0 | 0 | 3 |
| 11.                                                | BA5011      | Merchant Banking and Financial Services      | PE       | 3               | 3 | 0 | 0 | 3 |
| 12.                                                | BA5012      | Security Analysis and Portfolio Management   | PE       | 3               | 3 | 0 | 0 | 3 |
| 13.                                                | BA5013      | Strategic Investment and Financing Decisions | PE       | 3               | 3 | 0 | 0 | 3 |
| 14.                                                | BA5031      | International Trade Finance                  | PE       | 3               | 3 | 0 | 0 | 3 |
| Stream/ Specialization : Human Resource Management |             |                                              |          |                 |   |   |   |   |
| 15.                                                | BA5014      | Entrepreneurship Development                 | PE       | 3               | 3 | 0 | 0 | 3 |
| 16.                                                | BA5015      | Industrial Relations and Labour Welfare      | PE       | 3               | 3 | 0 | 0 | 3 |
| 17.                                                | BA5016      | Labour Legislations                          | PE       | 3               | 3 | 0 | 0 | 3 |
| 18.                                                | BA5017      | Managerial                                   | PE       | 3               | 3 | 0 | 0 | 3 |

|                                                       |        |                                               |    |   |   |   |   |   |
|-------------------------------------------------------|--------|-----------------------------------------------|----|---|---|---|---|---|
|                                                       |        | Behaviour and Effectiveness                   |    |   |   |   |   |   |
| 19.                                                   | BA5018 | Organizational Theory, Design and Development | PE | 3 | 3 | 0 | 0 | 3 |
| 20.                                                   | BA5019 | Strategic Human Resource Management           | PE | 3 | 3 | 0 | 0 | 3 |
| <b>Stream/ Specialization : Systems Management</b>    |        |                                               |    |   |   |   |   |   |
| 21.                                                   | BA5020 | Advanced Database Management System           | PE | 3 | 3 | 0 | 0 | 3 |
| 22.                                                   | BA5021 | Datamining for Business Intelligence          | PE | 3 | 3 | 0 | 0 | 3 |
| 23.                                                   | BA5022 | Enterprise Resource Planning                  | PE | 3 | 3 | 0 | 0 | 3 |
| 24.                                                   | BA5023 | Software Project Management and Quality       | PE | 3 | 3 | 0 | 0 | 3 |
| 25.                                                   | BA5024 | E-Business Management                         | PE | 3 | 3 | 0 | 0 | 3 |
| <b>Stream/ Specialization : Operations Management</b> |        |                                               |    |   |   |   |   |   |
| 26.                                                   | BA5025 | Logistics Management                          | PE | 3 | 3 | 0 | 0 | 3 |
| 27.                                                   | BA5026 | Materials Management                          | PE | 3 | 3 | 0 | 0 | 3 |
| 28.                                                   | BA5027 | Product Design                                | PE | 3 | 3 | 0 | 0 | 3 |
| 29.                                                   | BA5028 | Project Management                            | PE | 3 | 3 | 0 | 0 | 3 |
| 30.                                                   | BA5029 | Services Operations Management                | PE | 3 | 3 | 0 | 0 | 3 |
| 31.                                                   | BA5030 | Supply Chain Management                       | PE | 3 | 3 | 0 | 0 | 3 |

## SECTORAL SPECIALIZATIONS

1. Students can take three electives subjects from two functional specializations  
or
2. Students can take six elective subjects from any one sectoral specializations

| SL. NO                                                                    | COURSE CODE | COURSE TITLE                                                  | CATEGORY | CONTACT PERIODS | L | T | P | C |
|---------------------------------------------------------------------------|-------------|---------------------------------------------------------------|----------|-----------------|---|---|---|---|
| <b>Sectoral Specialization : Logistics and Supply Chain Management</b>    |             |                                                               |          |                 |   |   |   |   |
| 1.                                                                        | BA5051      | Supply Chain Concepts and Planning                            | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.                                                                        | BA5052      | Sourcing and Supply Management                                | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.                                                                        | BA5053      | Supply Chain Inventory Management                             | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.                                                                        | BA5054      | Supply Chain Information System                               | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.                                                                        | BA5055      | Warehouse Management                                          | PE       | 3               | 3 | 0 | 0 | 3 |
| 6.                                                                        | BA5056      | Transportation and Distribution Management                    | PE       | 3               | 3 | 0 | 0 | 3 |
| 7.                                                                        | BA5057      | Reverse and Contract Logistics                                | PE       | 3               | 3 | 0 | 0 | 3 |
| 8.                                                                        | BA5058      | Air Cargo Management                                          | PE       | 3               | 3 | 0 | 0 | 3 |
| 9.                                                                        | BA5059      | Containerization and Allied Business                          | PE       | 3               | 3 | 0 | 0 | 3 |
| 10.                                                                       | BA5060      | Exim Management                                               | PE       | 3               | 3 | 0 | 0 | 3 |
| 11.                                                                       | BA5061      | Fundamentals of Shipping                                      | PE       | 3               | 3 | 0 | 0 | 3 |
| 12.                                                                       | BA5062      | Port and Terminal Management                                  | PE       | 3               | 3 | 0 | 0 | 3 |
| <b>Sectoral Specialization :Infrastructure and Real Estate Management</b> |             |                                                               |          |                 |   |   |   |   |
| 13.                                                                       | BA5063      | Infrastructure Planning Scheduling and Control                | PE       | 3               | 3 | 0 | 0 | 3 |
| 14.                                                                       | BA5064      | Contracts and Arbitration                                     | PE       | 3               | 3 | 0 | 0 | 3 |
| 15.                                                                       | BA5065      | Project Management for Infrastructure                         | PE       | 3               | 3 | 0 | 0 | 3 |
| 16.                                                                       | BA5066      | Management of Human Resources, Safety and Quality             | PE       | 3               | 3 | 0 | 0 | 3 |
| 17.                                                                       | BA5067      | Disaster Mitigation and Management                            | PE       | 3               | 3 | 0 | 0 | 3 |
| 18.                                                                       | BA5068      | Economics and Financial Management in Construction            | PE       | 3               | 3 | 0 | 0 | 3 |
| 19.                                                                       | BA5069      | Urban Environmental Management                                | PE       | 3               | 3 | 0 | 0 | 3 |
| 20.                                                                       | BA5070      | Smart Materials, Techniques and Equipments for Infrastructure | PE       | 3               | 3 | 0 | 0 | 3 |
| 21.                                                                       | BA5071      | Strategic Airport Infrastructure Management                   | PE       | 3               | 3 | 0 | 0 | 3 |
| 22.                                                                       | BA5072      | Real Estate Marketing and Management                          | PE       | 3               | 3 | 0 | 0 | 3 |
| 23.                                                                       | BA5073      | Infrastructure and Real Estate Entrepreneurship               | PE       | 3               | 3 | 0 | 0 | 3 |
| 24.                                                                       | BA5074      | Valuation of Real Estate and Infrastructure Assets            | PE       | 3               | 3 | 0 | 0 | 3 |

### EMPLOYABILITY ENHANCEMENT COURSES (EEC)

| SL. NO. | COURSE CODE | COURSE TITLE                        | CATEGORY | CONTACT PERIODS | L | T | P  | C  |
|---------|-------------|-------------------------------------|----------|-----------------|---|---|----|----|
| 1.      | BA5111      | Spoken and Written Communication #  | EEC      | 4               | 0 | 0 | 4  | 2  |
| 2.      | BA5211      | Data Analysis and Business Modeling | EEC      | 4               | 0 | 0 | 4  | 2  |
| 3.      | BA5311      | Summer Training                     | EEC      | 2               | 0 | 0 | 2  | 1  |
| 4.      | BA5411      | Project Work                        | EEC      | 24              | 0 | 0 | 24 | 12 |



**PRINCIPAL**  
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**OF TECHNOLOGY**  
**T.N. PALAYAM (Po)-638 506.**  
**GOBI (Tk), ERODE (Dt).**