

HEAD OF THE INSTITUTION
DECLARATION FOR CBCS
PROGRAMME



J.K.K.MUNIRAJAH

COLLEGE OF TECHNOLOGY

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)

(AUTONOMOUS)

ISO 9001:2015 Certified Institution

Accredited by NAAC
"A" GRADE

☎ 02485 260754 / 55
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🌐 www.jkkmct.edu.in

Smt. VASANTHAKUMARI MUNIRAJAH
Chairman & Managing Trustee

Mrs. M.KASTHURIPRIYA MBA.,
Secretary

DR.K.SRIDHARAN Ph.D.,
Principal

17-12-2024

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)/Elective course system from the below mentioned year.

Programme Code	Programme Name	Year of implementation of CBCS/Elective course system
102	B.E. Automobile Engineering	2017
103	B.E. Civil Engineering	2017
104	B.E. Computer Science and Engineering	2017
105	B.E. Electrical and Electronics Engineering	2017
106	B.E. Electronics and Communication Engineering	2017
114	B.E. Mechanical Engineering	2017
149	B.E. Computer Science and Engineering (Cyber Security)	2021
205	B.Tech. Information Technology	2017
243	B.Tech. Artificial Intelligence and Data Science	2021
401	M.E. Applied Electronics	2017
405	M.E. Computer Science and Engineering	2017
410	M.E. Manufacturing Engineering	2017
415	M.E. Power Electronics and Drives	2017
622	Master of Computer Applications	2017
631	Master of Business Administration	2017


PRINCIPAL

Principal
J.K.K.Munirajah College of Technology
(Autonomous)
T.N.Palayam, Gobi (Tk),
Erode (Dt) - 638 506

📍 T.N.Palayam(Po), Gobichettipalayam(Tk), Erode(Dt)- 638 506, Tamilnadu.



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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.


PRINCIPAL

Principal
J.K.K.Munirajah College of Technology
(Autonomous)
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**ANNA UNIVERSITY LETTER
FOR UG-CBCS PROGRAMME
(REGULATIONS 2017)**

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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VELLAISAMY
Date: 2024.04.01 17:31:19 +05'30'

2 ADMISSION

2.1 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.

2.2 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

4.1 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.
- 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.
- viii. **Employability Enhancement Skill Based Courses** include Skill based experiential learning courses will be offered in two categories as purely Laboratory Based Courses and Theory Integrated Laboratory Courses.

Insertion
of New
Clause
4.1.viii

4.2 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.

4.3 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.

4.4 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.

4.6 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.

4.7 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.

4.8 Online Courses

4.8.1 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.

4.8.2 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.

4.9 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.

4.10 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.

4.11 Employability Enhancement Skill Based Courses

Skill based experiential learning courses will be offered in two categories as purely Laboratory Based Courses and Theory Integrated Laboratory Courses with the following credits. One such course will be offered in every semester from V to VII.

Insertion of
New
Clause 4.11

Category	L	T	P	C
Laboratory Courses	0	0	4	2
	0	0	2	1
Theory integrated Laboratory Course	1	0	2	2

A student may accumulate upto 6 credits through such courses, and such credits will be considered in lieu of the Professional Elective and/or Open Elective courses.

These courses may be offered with the support of the identified firms/companies and with one course coordinator per course and a mentor from the firm.

Evaluation Procedure:

The evaluation of the above mentioned courses are fully internal and shall be jointly done by the course coordinator from the institution and the mentor from the firm.

- (a) If the course involves certification from an identified firm/company, then 20% of the total marks will be included in the internal assessment marks, 30% will be included from the marks provided by the firm and 50% shall be evaluated by the respective Course Coordinators of the college by conducting appropriate theory and / or laboratory tests.
- (b) If there is no certification from the firm/company, then 50% will be included from the marks provided by the firm and 50% shall be evaluated by the respective Course Coordinators of the college by conducting appropriate theory and / or laboratory tests.

Procedure to drop Professional Elective / Open Elective course(s) and computation of Grade point

A student may accumulate up to 6 credits through such courses, and such credits will be considered in lieu of the Professional Elective and/or Open Elective courses.

In this regard, a student is permitted to drop either 1 or 2 Professional Elective / Open Elective course(s) as per the procedure given below.

Table: Procedure to drop Professional Elective / Open Elective course(s)

No. of courses	Total No. of credits earned	Courses to be printed in the grade sheet	No. of Professional elective/ open elective can be dropped	No. of credits considered for GPA/CGPA calculation
1	2	1	-	-
2	4	2	1	3
3	6	3	2	6

- The credits earned by the student of the successfully completed Skill Based Courses shall be recorded in the grade sheet.
- If a student has not successfully completed the skill based courses during the semesters V, VI and VII, then the same shall not be recorded in the grade sheet.
- If a student earns 2 credits in Semester V and then enrolls for another 2 credits in Semester VI, then he / she is permitted to drop one Professional elective/open elective course in Semester VI. Further, if the student earns 4 credits upto Semester VI and enrolls for another 2 credits in Semester VII, then he/she is permitted to drop an additional professional elective/open elective course in the VII semester.

If the student has enrolled for skill based courses but has not successfully earned 4 or 6 credits and also dropped 1 or 2 PE/OE courses in anticipation of pass, then he/she has to enrol the PE/OE (as the case may be) to meet the total credit requirements to earn the degree.

Method for computation of Grade point of dropped PE / OE courses

The method of Computation of Grade point for the dropped PE/OE courses is given below:

1. If a student has successfully completed two Skill Based Courses, then the computation of Grade point for one PE/OE course dropped in lieu of those two skill based courses is as follows.

Grade point = (2 credits * higher grade point obtained + 1 credit * lower grade point obtained) / 3 credits.

For example, for two courses of two credit each, if the grades obtained are,

Course 1– C grade – 5 points

Course 2– O grade – 10 points

Then, the grade point of the dropped course for the calculation of CGPA is obtained as: $(1 \times 5 + 2 \times 10) / 3 = 8.33$.

One PE/OE course shall be dropped for 3 credits with grade point computed as above.

2. If a student has successfully completed three Skill Based Courses, then the computation of Grade point for dropping two PE/OE in lieu of those three skill based courses is as follows.

For three courses of two credit each

Computation of Grade point of each of the two dropped PE/OE courses for the calculation of CGPA = Average grade point of three skill based courses.

Two PE/OE courses shall be dropped of 3 credits each, with grade point computed as above.

5. DURATION OF THE PROGRAMME

5.1 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.

5.1.1 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.

5.2 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.

5.3 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.

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

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.

5.4 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

- 6.1 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 6.5). The student can also register for courses for which the student has failed in the earlier semesters. In such cases the student shall do **reappearance registration** for those courses for which the attendance requirement is not compulsory. However, the student have the option to take up some other professional elective or open elective that he has failed to pass. **But, the total number of credits that a student is allowed to register per semester cannot exceed 36.** 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 course shall be offered by any department of any institution unless a minimum 10 students register for the course.

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)

6.2 Flexibility to Drop courses

- 6.2.1 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.
- 6.2.2 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.
- 6.2.3 The student shall register for the project work in the final semester only.

7. ATTENDANCE REQUIREMENTS FOR COMPLETION OF THE SEMESTER

- 7.1 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 atleast 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.

7.2 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.

7.3 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**

9.1 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.

9.2 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.

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

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

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

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

9.7 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.

9.8 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**

11.1 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.

11.2 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**.

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

- 11.4 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.
- 11.5 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.
- 11.6 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:

12.1 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).

12.2 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.

12.3 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.

12.4 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).

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

- 12.4.2 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.

12.5 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, 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.

12.6 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.

12.7 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

14.1 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).

14.2 If a student fails to secure a pass in a theory course / laboratory course (except electives), the student shall register and appear only for the end semester examination in the subsequent semester. In such case, the internal assessment marks obtained by the candidate in the first appearance shall be retained and considered valid for all subsequent attempts till the candidate secure a pass. However, from the third attempt onwards if a candidate fails to obtain pass marks (IA + End Semester Examination) as per clause 14.1, then the candidate shall be declared to have passed the examination if he/she secure a minimum of 50% marks prescribed for the university end semester examinations alone.

Amendment
of
Clause 14.2

14.3 **Omitted**

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

14.5 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.

14.6 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

15.1 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	
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.

15.2 For the Co-curricular activities such as National Cadet Corps (NCC)/ National Service Scheme (NSS) / NSO / YRC, every student shall put in a minimum of 75% attendance in the training and attend the camp. The training and camp shall be completed during

Amendment
of
Clause 15.2

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.

This co-curricular activity is not compulsory for the award of degree.

- 15.3 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 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.

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

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

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

- i. Successfully gained the required number of total credits as specified in the curriculum corresponding to the student's programme within the stipulated time.

- ii. 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.
- iii. Successfully passed any additional courses prescribed by the Director, Academic Courses whenever readmitted under regulations R-2017 (vide clause 18.3)
- iv. Successfully completed the NCC / NSS / NSO / YRC requirements.
- v. No disciplinary action pending against the student.
- vi. The award of Degree must have been approved by the Syndicate of the University.

16.2 CLASSIFICATION OF THE DEGREE AWARDED

16.2.1 FIRST CLASS WITH DISTINCTION

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

- Should have passed the examination in all the courses of all the eight semesters (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.

16.2.2 FIRST CLASS:

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

- Should have passed the examination in all the courses of all eight semesters (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**.

16.2.3 **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**.

16.3 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).

16.4 **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.

16.5 **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**

17.1 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.

- 17.2 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.
- 17.2.1 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.
- 17.3 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.
- 17.4 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

- 18.1 A student is permitted to go on break of study for a maximum period of one year as a single spell.
- 18.2 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.

18.3 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.

18.3.1 Total number of credits to be earned by the student shall be more than or equal to the total number of credits prescribed in the curriculum in force. If the credit assigned for L T P of the courses are not same in two Regulations under consideration, then equivalence shall be arrived as per the credit assignment followed in the Regulations in force.

**Insertion
of New
Clause 18.3.1**

18.4 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 16.1).

18.5 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.

18.6 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**

19.1 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.

19.2 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.

Digitally signed by KUMARESAN
VELLAISAMY

Date: 2024.04.01 17:26:23 +05'30'



Principal

**J.K.K.Munirajah College of Technology
(Autonomous)**

**T.N.Palayam, Gobi (Tk),
Erode (Dt) - 638 506.**

**ANNA UNIVERSITY LETTER
FOR UG-CBCS PROGRAMME
(REGULATIONS 2021)**

ANNA UNIVERSITY, CHENNAI - 600 025

AFFILIATED INSTITUTIONS

REGULATIONS 2021

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 Non-Autonomous Affiliated Institutions)

DEGREE OF BACHELOR OF ENGINEERING / BACHELOR OF TECHNOLOGY

This Regulation 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 2021-2022 onwards.

1 PRELIMINARY DEFINITIONS AND NOMENCLATURE

In this Regulation, unless the context otherwise specifies:

- 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, Centre for 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. **"Chairperson"** means the Head of the Faculty.
- VI. **"Head of the Institution"** means the Principal of the College.
- VII. **"Head of the Department (HOD)"** means the Head of the Department concerned.
- VIII. **"Controller of Examinations (COE)"** means the authority of the University who is responsible for all activities of the University Examinations.
- IX. **"University"** means ANNA UNIVERSITY, CHENNAI.

2 ADMISSION

- 2.1** Candidates seeking admission to the first semester of the eight semesters

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.

2.2 Lateral entry admission

(i) The candidates who possess the Diploma in Engineering / Technology awarded by the State Board of Technical Education, Tamil Nadu or its equivalent are eligible to apply for Lateral entry admission to the third semester of B.E. / B.Tech., as per the rules fixed by Government of Tamil Nadu.

(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 THE PROGRAMMES

4.1 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, Social Sciences and Management Courses (HSMC)** include Professional English, Communication skills etc.
- ii. **Basic Sciences Courses (BSC)** include Mathematics, Physics, Chemistry, Biology, Environmental Science etc.
- iii. **Engineering Sciences Courses (ESC)** include Engineering Practices, Engineering Graphics, Basics of Civil / Mechanical / Electrical / Electronics /

Instrumentation, Computer Engineering, etc.

- iv. **Professional Core Courses (PCC)** include the core courses relevant to the chosen specialization/branch.
- v. **Professional Elective Courses (PEC)** include the elective courses relevant to the chosen specialization/ branch. Professional Elective courses are offered under verticals (specialisation groups). Amendment of Clause 4.1 (v)
- vi. **Open Elective Courses (OEC)** include the courses offered by a branch to other branches, from the list specified in the respective curriculum of the B.E. / B. Tech. / B. Arch. Programmes.
- vii. **Employability Enhancement Courses (EEC)** include Project Work, Internship, Seminar, Professional Practices, Case Study and Industrial/Practical Training etc.
- viii. **Mandatory courses (MC)** include the courses such as Languages, Well being etc. Amendment of Clause 4.1.viii
- ix. **Employability Enhancement Skill Based Courses**
Skill based experiential learning courses will be offered in two categories as purely Laboratory Based Courses and Theory Integrated Laboratory Courses. Insertion of New Clause 4.1. ix

4.2 **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 / conduct activities 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. Alternately, activities of science, literature and arts also help for personality and character development. So, students shall conduct and participate actively in Science club/Literary Forum/Fine Arts activities for 80 hours and participate in at least ONE event.

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/Institution.

While the training activities will normally be during weekends, the camp will normally be during vacation period.

Science club shall organise activities of popularisation of science and scientific temper through activities related to astronomy, works of great scientists from India and abroad, observing National Science Day, etc.

Literary Club like 'Tamil Ilakkiya Mandram' shall be formed, which shall organise colourful literary events to propagate good humanist values, morals and ethics reflected in the literature.

Fine Arts Club like music, painting and documentary films with social themes shall be encouraged.

Students who enroll and take active participation in anyone of the above activities for 80 hours and participate at least one event/programme will be given a certificate by the Head of the Institution and the copy of the same shall be forwarded to the Controller of Examinations for the purpose of record and scrutiny.

No fee shall be charged for all these activities.

4.2 A Induction Programme

- Induction Programme is mandatory for the students pursuing the Undergraduate Programme.
- List of students who have successfully completed the Induction Programme shall be certified by the Head of the Institution.
- The completion of the Induction Programme shall be printed in the Grade Sheet as "**COMPLETED**".
- In the case of students who have got admitted later and those who have not attended the Induction Programme at the time of joining the degree programme, it shall be conducted later and on completion, it shall be recorded in the grade sheet.
- No fee will be charged towards the conduct of the Induction Programme and for including in the STATEMENT OF GRADES for the successful completion of the Induction Programme.

Insertion of
New
Clause
4.2 A

4.3 Number of courses per semester

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

4.4 Credit Assignment

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

Contact period per week	CREDITS
1 Lecture Period	1
1 Tutorial Period	1
1 Laboratory Period (also for EEC courses like Seminar / Project Work /Case study / etc.)	0.5

4.5. Industrial Training/ Internship

4.5.1 The students may undergo Industrial training for a period as specified in the Curriculum during the summer / winter vacation. In this case, the training has to be undergone continuously for a period of at least two weeks in an organization.

The students may undergo Internship at a Research organization / University/ Industry (after due approval from the Head of the Institution) for the period prescribed in the curriculum during the summer / winter vacation, in lieu of Industrial training. Attendance Certificate mentioning the period of Industrial Training / Internship and signed by the competent authority of the industry, as per the format provided by the Centre for Academic Courses shall be submitted to the Head of the Institution. The attendance certificate shall be forwarded to the COE, Anna University by the Head of the Institution for processing results.

4.5.2 If Industrial Training/ Internship is not prescribed in the curriculum, the student may undergo Industrial Training/ Internship optionally and the credits earned will be indicated in the Grade Sheet. If the student earns three credits in Industrial Training/ Internship, the student may drop one Professional Elective (only one professional elective can be dropped). In such cases, Industrial Training / Internship need to be undergone continuously from one organization or with a combination one two week and one four week from one/two organizations. However, if the number of credits earned is 1 or 2, then these credits shall not be considered for classification of the degree. Students shall get permission from the Head of the Institution for taking Industrial Training/Internship and the Certificate of completion of Industrial Training / Internship shall be forwarded to the COE.

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

*1 Week = 40 Internship Hours

4.6 Industrial Visit

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

4.7 Value Added Courses

- 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. Courses with two/ three credits shall be offered by a Department of an institution with the prior approval from the Director, Academic Courses.
- The details of the syllabus, timetable and faculty may be sent to the Centre for Academic Courses after approval from the Head of the Institution.
- Students shall be allowed to take these courses offered in other Departments also, but with the permission of the Head of the Institution of student and Head of the institution offering the course.
- The courses once approved by the University represented by any Department shall be made available in the University website and these courses can be offered by the University Departments / Constituent colleges / affiliated colleges (Non-Autonomous with information to Director Academic Courses).

**Amendment
of
Clause 4.7**

4.8 Off campus courses and Transfer of Credits

Students are permitted to optionally enroll and study a maximum of three off campus courses in physical/online/hybrid mode under each UG programme with the approval of Director, Centre for Academic courses as per the Regulations. The successful completion of these courses through any of the following modes shall be considered in lieu of professional elective / open elective courses of curriculum as approved by the Head of the Institution.

**Amendment
of
Clause 4.8**

- 4.8.1** Students are permitted to optionally enroll and study these courses through SWAYAM - NPTEL platforms and credit transfer is to be done based on the marks and certificate provided by the NPTEL. The number of credits and transfer of credits are based on the procedure explained in Table 3 and the Mapping of the marks with the grades is explained in Table 4. The mapping of marks with grades is applicable, only if the student passes the course as per the guidelines of NPTEL.

Table 3: Duration of the course and Number of credits

Sl. No.	No. of Weeks	No. of Credits
4	4	1
5	8	2
6	12	3
7	16	4

Table 4: Mapping of Marks scored in NPTEL course and Credits earned

Letter Grade	Marks
O	90-100
A+	80-89
A	70-79
B+	60-69
B	50-59
C	40-49

4.8.2. Students are permitted to optionally enroll and study the courses in physical / hybrid / online modes offered by reputed Central / State funded Universities / Institutions which are in the top 20 positions in the latest NIRF ranking and also conducting examination towards award of marks and grades. (NIRF Ranking of any of the last three years with respect to the year in which course is to be registered; NIRF ranking is based on respective stream for professional elective courses and based on any stream for open elective courses).

Students are also permitted to enroll and undergo such courses in Online mode at Universities abroad in top 500 in QS ranking in the last three years.

Students are also permitted to study courses of a particular semester in a University / Institution abroad based on MoU. A learning agreement shall be evolved to map all the courses offered in the programme and the courses offered in University abroad as per the procedure outlined by the Centre for Academic Courses. The credits earned by the students in the University abroad shall be transferred as per the learning agreement.

In the case of 4.8.2, the students can enroll for the courses with the approval of the Head of the institution only if the course is offered directly by Institution/University and not with the edutech platforms.

The marks/credits earned by the student shall be transferred based on the decision of a committee constituted by Director, Centre for Academic courses and approved by the University.

- 4.8.3 Students are also permitted to enroll and study the courses in physical/hybrid mode (not less than 50% in physical mode) that are offered by (i) National/State funded research institutions/laboratories and (ii) reputed companies (manufacturing or software) related to the programme, and (b) reputed companies involved in transfer of knowledge provided the knowledge transferring company is a spinoff from an Engineering/Technology practicing Industry and sharing the work experience of the respective industry. The companies mentioned in 4.8.3 (ii) (a) and the company with which the knowledge transfer company associated in the case of 4.8.3 (ii) (b) should have average annual turnover of more than 200 crores over a period of 5 years. However, the academic content and delivery shall be in consonance with the University academic standards and norms.

The minimum qualification of the course instructor from the company as mentioned in 4.8.3. (ii) shall be B.E./B.Tech with 10 years of research / industrial experience . Such courses shall be offered through MOU / MOA between Anna University and such institutions/organizations/ companies. The design of the courses with regard to the syllabus content, duration of each course and number of credits offered for each course shall be discussed and recommended by the Head of the Institution and approved by Director, Centre for Academic Courses as per the Regulations.

For the offer of each course under 4.8.3, a course coordinator shall be nominated from the Department who shall also attend such course and shall coordinate the question paper setting and answer script evaluation with the course instructor from research institution /laboratories /industry/ company for the continuous assessment and end semester examination conducted by the University. The passing requirements are as per regulations.

4.9 **Mandatory courses**

The student shall study the mandatory courses prescribed by the University and it will be mentioned in the Grade Sheet. However, it will not be considered for computation of CGPA.

**Amendment
of
Clause 4.9**

4.10 B.E. / B. Tech. (Hons) and B.E. / B. Tech. minor with specialisation in another discipline. **Amendment of Clause 4.10**

(i) B.E / B.Tech. (Hons.)

- a. The students should have taken additional courses from a specified group of Professional Electives (vertical) or from any of the verticals of the same programme and earned a minimum of 18 credits.
- b. Should have passed all the courses prescribed in the curriculum and additional courses in the first attempt.
- c. Should have earned a minimum of 7.50 CGPA taking into account of all the courses prescribed in the curriculum and additional courses.

(ii) B.E./B.Tech. Minor with specialisation in another discipline

The student should have earned additionally a minimum of 18 credits in any one of the verticals offered from Engineering Disciplines / Science and Humanities / Management

1. For these 18 credits students can optionally enroll and study a maximum of 6 credits in online mode from SWAYAM-NPTEL platform (in addition to the three online courses permitted for courses of curriculum), as approved by the Centre for Academic Courses.
2. B.E / B.Tech. (Hons.) and B.E./B.Tech. minor with specialisation in another discipline will be optional for students and the students shall be permitted to select any one of them only.
3. For the categories 4.10 (i), the students, including Lateral Entry, shall be permitted to register for the courses from Semester V onwards provided the students have earned a minimum CGPA of 7.50 until Semester III and have cleared all the courses in the first attempt.
4. For the category 4.10 (ii), the students, including Lateral Entry, will be permitted to register the courses from Semester V onwards provided the marks earned by the students until Semester III is CGPA 7.50 and above.
5. B.E/B.Tech. (Hons.) or B.E./ B.Tech. Minor shall be offered by the Department irrespective of the number of students enrolled.
6. If a student decides not to opt for Honours, after completing certain number of additional courses, such additional courses studied shall be considered instead of the Professional Elective courses which are part of the curriculum.

If the student has studied more number of such courses than the number of Professional Elective courses required as per the curriculum, the courses with higher grades shall be considered for the calculation of CGPA. Remaining courses shall be printed in the grade sheet however, they will not be considered for calculation of CGPA and the same shall be indicated in a foot note appropriately.

If the student has failed in the additional courses or faced shortage of attendance, they will not be printed in the grade sheet and will not be considered for CGPA calculation and classification of degree.

7. If a student decides not to opt for Minor, after completing certain number of courses, the additional courses studied shall be considered instead of Open Elective courses which are part of the curriculum.

If the student has studied more number of such courses than the number of open electives required as per the curriculum, the courses with higher grades shall be considered for calculation of CGPA. Remaining courses shall be printed in the grade sheet, however, they will not be considered for calculation of CGPA and the same shall be indicated in a foot note appropriately.

If the student has failed in the additional courses or faced shortage of attendance, they will not be printed in the grade sheet and will not be considered for CGPA calculation and classification of degree.

The student has to enroll for these additional courses separately and pay a tuition fee for studying these six additional courses and pay additional exam fee.

For the students who have joined the programme in the year 2020 are also permitted to Register for B.E./B.Tech. Hons. and minor with the condition that the student should have earned 7.50 CGPA till V semester. For Hons. the student should have passed all the courses in the first attempt. The student should complete the additional 18 credits within 4 ½ years.

4.11 Medium of Instruction

The medium of instruction is English for all courses, examinations, Seminar presentations and Project Work reports except for the programmes offered in Tamil Medium.

4.12 Employability Enhancement Skill Based Courses

Skill based experiential learning courses will be offered in two categories as purely Laboratory Based Courses and Theory Integrated Laboratory Courses with the following credits. One such course will be offered in every semester from V to VII.

**Insertion of
New Clause
4.12**

Category	L	T	P	C
Laboratory Courses	0	0	4	2
	0	0	2	1
Theory integrated Laboratory Course	1	0	2	2

A student may accumulate upto 6 credits through such courses, and such credits will be considered in lieu of the Professional Elective and/or Open Elective courses.

These courses may be offered with the support of the identified firms/companies and with one course coordinator per course and a mentor from the firm.

Evaluation Procedure:

The evaluation of the above mentioned courses are fully internal and shall be jointly done by the course coordinator from the institution and the mentor from the firm.

- (a) If the course involves certification from an identified firm/company, then 20% of the total marks will be included in the internal assessment marks, 30% will be included from the marks provided by the firm and 50% shall be evaluated by the respective Course Coordinators of the college by conducting appropriate theory and / or laboratory tests.
- (b) If there is no certification from the firm/company, then 50% will be included from the marks provided by the firm and 50% shall be evaluated by the respective Course Coordinators of the college by conducting appropriate theory and / or laboratory tests.

Procedure to drop Professional Elective / Open Elective course(s) and computation of Grade point

A student may accumulate up to 6 credits through such courses, and such credits will be considered in lieu of the Professional Elective and/or Open Elective courses. In this regard, a student is permitted to drop either 1 or 2 Professional Elective / Open Elective course(s) as per the procedure given below.

Table: Procedure to drop Professional Elective / Open Elective course(s)

No. of courses	Total No. of credits earned	Courses to be printed in the grade sheet	No. of Professional elective/ open elective can be dropped	No. of credits considered for GPA/CGPA calculation
1	2	1	-	-
2	4	2	1	3
3	6	3	2	6

- The credits earned by the student of the successfully completed Skill Based Courses shall be recorded in the grade sheet.
- If a student has not successfully completed the skill based courses during the semesters V, VI and VII, then the same shall not be recorded in the grade sheet.
- If a student earns 2 credits in Semester V and then enrolls for another 2 credits in Semester VI, then he / she is permitted to drop one Professional elective/ open elective course in Semester VI. Further, if the student earns 4 credits upto Semester VI and enrolls for another 2 credits in Semester VII, then he/she is permitted to drop an additional professional elective/open elective course in the VII semester.

If the student has enrolled for skill based courses but has not successfully earned 4 or 6 credits and also dropped 1 or 2 PE/OE courses in anticipation of pass, then he/she has to enroll the PE/OE (as the case may be) to meet the total credit requirements to earn the degree.

Method for computation of Grade point of dropped PE / OE courses

The method of Computation of Grade point for the dropped PE/OE courses is given below:

1. If a student has successfully completed two Skill Based Courses, then the computation of Grade point for one PE/OE course dropped in lieu of those two skill based courses is as follows.

Grade point = (2 credits * higher grade point obtained + 1 credit * lower grade point obtained) / 3 credits.

For example, for two courses of two credit each, if the grades obtained are,

Course 1– C grade – 5 points

Course 2– O grade – 10 points

Then, the grade point of the dropped course for the calculation of CGPA is obtained as: $(1 \times 5 + 2 \times 10) / 3 = 8.33$.

One PE/OE course shall be dropped for 3 credits with grade point computed as above.

2. If a student has successfully completed three Skill Based Courses, then the computation of Grade point for dropping two PE/OE in lieu of those three skill based courses is as follows.

For three courses of two credit each

Computation of Grade point of each of the two dropped PE/OE courses for the calculation of CGPA = Average grade point of three skill based courses.

Two PE/OE courses shall be dropped of 3 credits each, with grade point computed as above.

5 DURATION OF THE PROGRAMME

5.1 A student is ordinarily expected to complete the B.E. / B.Tech. Programme

in 8 semesters (for HSC students) and six semesters (for Lateral Entry students) but in any case not more than 14 Semesters for HSC (or equivalent) students and not more than 12 semesters for Lateral Entry students.

5.1.1 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) students.

5.2 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.

5.3 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.

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

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

5.4 The total period for completion of the programme reckoned from the commencement of the first semester to which the student was admitted shall not exceed the maximum period specified in clause 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

6.1 The institution is responsible for registration of 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 courses dropped in earlier semesters can be registered in the subsequent semesters when offered.

**Amendment
of
Clause 6.1**

The registration details of the student shall 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. Courses dropped in the lower semesters

The maximum number of credits that can be registered in a semester is 36. However, this does not include the number of Re-appearance (U) and Withdrawal (WD) courses registered by the student for the appearance of Examination.

6.2 Flexibility to Add or Drop courses

6.2.1 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.

6.2.2 From the second to final semesters, the student has the option of dropping existing courses in a semester during registration. Total number of credits of such courses shall not exceed 6 per semester. The student is permitted to drop the course(s) within 30 days of the commencement of the academic schedule.

6.2.3 From the V to VIII semesters, the student has the option of registering for additional courses in a semester. With regard to enrolling for B.E. / B. Tech. (Hons) or B.E. / B. Tech. Minor

**Insertion of
New Clause
6.2.3**

The total number of credits that a student can add in a semester is limited to 6, subject to a maximum of 2 courses. Maximum number of credits enrolled in a semester (Honours and Minor) shall not exceed 36. The online courses registered for B.E. / B. Tech. (Hons.) and B.E. / B. Tech. minor shall be over and above this 36 credits.

6.3 Choice of Professional Elective Courses

**Insertion of
New Clause
6.3**

The professional Elective Courses are listed in the Curriculum in Table format as verticals (Specialisation groups). A student can choose all the Professional Elective Courses either from one of the verticals or a combination of courses from all verticals in a semester. However, students irrespective of enrolling for additional

courses for B.E. / B. Tech. (Hons.) are not permitted to choose more than one course from a row. Students are permitted to enroll more than one elective course from the same vertical in a semester. In the subsequent semesters students are permitted to enroll one more course in a row, provided if he/she has cleared the earlier course of the same row. For a professional elective course and open elective course, minimum number of students enrolment permitted shall be 10. However, the minimum number is not applicable for students enrolling B.E. / B. Tech. (Hons) and B.E. / B. Tech. Minor. For the offer of each professional elective at least two choices shall be offered.

7. ATTENDANCE REQUIREMENTS FOR COMPLETION OF THE SEMESTER

7.1 A student 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.

7.2 However, a student 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 student 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.

7.3 Students who **secure less than 65% overall attendance** 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

9.1. 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).
- 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 slow-learners, if any, and requesting the teachers concerned to provide some additional help or guidance or coaching to such students.

9.2 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.

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

- 9.4 At least 4 student representatives (usually 2 boys and 2 girls) shall be included in the class committee, covering all the elective courses.
- 9.5 The chairperson of the class committee may invite the class adviser(s) and the Head of the Department to the class committee meeting.
- 9.6 The Head of the Institution may participate in any class committee meeting of the institution.
- 9.7 The chairperson 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 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.
- 9.8 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 Chairperson shall display the cumulative attendance particulars of each student on the Notice Board 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 the 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

- 11.1 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.
- 11.2 Each course, both theory and practical (including project work & viva voce examinations) shall be evaluated for a maximum of 100 marks.
- 11.2.1 For all theory courses, the continuous internal assessment will carry **40 marks** while the End Semester University examination will carry **60 marks**.
- 11.2.2 For all theory courses with laboratory component, the continuous internal assessment will carry **50 marks** while the End Semester University examination will carry **50 marks**.
- 11.2.3 For all laboratory courses, the continuous internal assessment will carry **60 marks** while the End Semester University examination will carry **40 marks**.
- 11.2.4 The continuous internal assessment for the project work will carry **60 marks** while the End Semester University examination will carry **40 marks**.
- 11.3 Industrial Training and Seminar shall carry 100 marks and shall be evaluated through internal assessment only.
- 11.4 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.
- 11.5 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.
- 11.6 For the University examination of practical courses including Project Work, the internal and external examiners shall be appointed by the Controller of Examinations.

Amendment
of Clause
11.2.4

12. PROCEDURE FOR AWARDING MARKS FOR INTERNAL ASSESSMENT

12.1 THEORY COURSES

Two assessments each carrying 100 marks shall be conducted during the semester by the Department / College concerned. The total marks obtained in all assessments put together out of 200, shall be proportionately reduced for 40 marks and rounded to the nearest integer (This also implies equal weightage to the two assessments).

Amendment
of Clause
12.1

Assessment I (100 Marks)		Assessment II (100 Marks)		Total Internal Assessment
Individual Assignment / Case Study / Seminar / Mini Project / any other experiential Learning	Written Test	Individual Assignment / Case Study / Seminar / Mini Project / any other experiential Learning	Written Test	
40	60	40	60	200*

*The weighted average shall be converted into 40 marks for internal Assessment.

A minimum of two internal assessments will be conducted as a part of continuous assessment. Each internal assessment is to be conducted for 100 marks and will have to be distributed in two parts viz., Individual Assignment / Case study / Seminar / Mini project / any other experiential learning and Test with each having a weightage of 40% and 60% respectively. The tests shall be in written mode. The total internal assessment marks of 200 shall be converted into a maximum of 40 marks and rounded to the nearest integer.

12.2 LABORATORY COURSES

The maximum marks for Internal Assessment shall be 60 marks in case of practical courses. Every practical exercise / experiment shall be evaluated based on conduct of experiment / exercise and records to be maintained. There shall be at least one test. The criteria for arriving at the Internal Assessment marks of 60 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 converted into a maximum of 60 marks and rounded to the nearest integer.

Internal Assessment (100 Marks)*	
Evaluation of Laboratory Observation, Record	Test
75	25

* Internal assessment marks shall be converted into 60 marks

12.3 **THEORY COURSES WITH LABORATORY COMPONENT / LABORATORY COURSES WITH THEORY COMPONENT**

Amendment
of Clause
12.3

Weightage of internal assessment and end semester examination marks will be 50% each. The distribution of marks for the theory and laboratory components in the internal assessments and end semester examination for different types of courses are provided in the table.

L	T	P	C	Internal Assessment 1	Internal Assessment 2	End Semester Examination
1	0	4	3	Lab (25%)	Theory (25%)	Lab only (50%)
1	0	2	2	Lab (25%)	Theory (25%)	Lab only (50%)
2	0	2	3	Theory (25%)	Lab (25%)	Theory (25%) Lab (25%)
3	0	2	4	Theory (25%)	Lab (25%)	Theory (35%) Lab (15%)
2	0	4	4	Theory (25%)	Laboratory (25%)	Theory (15%) Lab(35%)

The procedure for the conduct of internal assessments for theory and laboratory components shall be as per the clause 12.1 and 12.2 respectively.

*The weighted average shall be converted into 50 marks for internal Assessment.

12.4 **PROJECT WORK / INTERNSHIP**

Amendment
of Clause
12.4

The student shall register for Project Work in final semester. Project work may be allotted to a single student or to a group of students not exceeding 4 per group. The student is also permitted to undergo a semester long internship in an industry / academic / research institution.

12.4.1 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 or (ii) Ph.D. degree.

12.4.2 The Project Work carried out in industry / academic/research institution shall be jointly supervised. The Project Work shall be jointly supervised by a supervisor of the department and an expert from the organization as a joint supervisor and the student shall be instructed to meet the supervisor periodically and to attend the review committee meetings for evaluating the progress. The review meetings, if necessary, may also be arranged in online mode with prior approval from the Head of the Institution and suitable record of the meetings shall be maintained.

Amendment
of Clause
12.4.2

12.4.3 The Head of the Institutions shall constitute a review committee for Project Work for each programme. The review committee consists of supervisor, an expert from the Department and a project coordinator from the Department. If the project coordinator/expert member happens to be the supervisor, then an alternate member shall be nominated. In the case of Industrial Project / Internship, the review committee shall consist of the supervisor, the coordinator from industry and the project coordinator from the Department.

Amendment
of Clause
12.4.3

There shall be three reviews conducted 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 60 marks** and rounded to the nearest integer (as per the scheme given in 12.4.4).

12.4.4 The project report shall carry a maximum of 10 marks. The project report shall be submitted as per the approved guidelines as given by the Director, Centre for Academic Courses. Same marks shall be awarded to every student within the project group for the project report. The viva-voce examination shall carry 30 marks. Marks awarded to each student of the project group is based on the individual performance in the viva-voce examination.

Amendment
of Clause
12.4.4

Continuous Assessment (60 Marks)			End Semester Examinations (40 Marks)			
Re view I	Re view II	Re view III	Project Report	Viva-Voce Examination		
20	20	20	External	Internal	External	Supervisor
			10	10	10	10

In the case of industrial projects, the marks allotted for supervisor will be shared equally by the supervisor from the Department and coordinator from Industry.

12.4.5 The last date for submission of the project report is on the last working day of the semester. If a student fails to submit the project report on or before the specified deadline, it will be considered as fail in the Project Work and the student shall re-register for the same in the subsequent semester.

Amendment
of Clause
12.4.5

12.4.6 Students shall also undertake a start-up activity for the development of products as part of project work. If the outcome of a start-up is a fully developed product and whose concept is tested and validated, then it shall be considered in lieu of the project work. Such students shall submit a start up report, which includes the concepts and process flow of the developed product, publications and patents, if any.

Insertion of
New Clause
12.4.6

The evaluation of the start-up report is as per the clause 12.4.4.

12.5 OTHER EMPLOYABILITY ENHANCEMENT COURSES

- (a) The Seminar / Case Study / Mini Project course 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 the Head of the Institution, consisting of the course coordinator and two experts from the Department, will evaluate the seminar and at the end of the semester, the marks shall 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, 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 student shall submit an attendance 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 consisting of the course coordinator and two experts from the Department. 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.
- (c) For all the courses under Employability Enhancement Courses Category, except the Project Work, the evaluation shall be done with 100% internal marks and as per the procedure described in clause 12.5 (a) / (b).

12.6 ASSESSMENT FOR VALUE ADDED COURSE

The value added 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 do the evaluation process. The list of students along with the marks and the grades earned shall be forwarded to the Controller of Examinations for appropriate action at least one month before the commencement of End Semester Examinations. The grades earned by the

Amendment
of Clause
12.6

students for Value Added Courses will be recorded in the Grade Sheet, however the same shall not be considered for the computation of CGPA.

12.7 **Omitted**

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/her 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.

12.10 **Conduct of Academic Audit by every Institution**

Every educational institution shall strive for a better performance of the students by conducting the internal assessments as mentioned in Clause 12.

In order to ensure the above, Academic Audit is to be done for every course taught during the semester. For the internal assessments conducted for each course as per details provided in Clause 12, the academic records shall be maintained in the form of documentation for the individual assignments / case study report / report of mini project submitted by each student and assessment test question paper and answer script. Report of industrial training / internship shall also be maintained, if applicable. For laboratory courses students' record shall be maintained. Further, the attendance of all students shall be maintained as a record.

The Head of the Institution shall arrange to conduct the Academic Audit for every course in a semester by forming the respective committees with an external course expert as one of the members drawn from a Technical institution of repute near the institute.

The University or any inspection team appointed by the University may verify the records of Academic Audit report of the courses of both current and previous semesters, as and when required.

13. REQUIREMENTS FOR APPEARING FOR UNIVERSITY EXAMINATIONS

A student 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 (as per clause 7).

Further, examination registration by a student is mandatory for all the courses in the current semester and all arrear(s) course(s) for the University examinations failing which, the student will not be permitted to move to the higher semester.

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

14. PASSING REQUIREMENTS

14.1 A student 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 laboratory courses (including project work).

14.2 If a student fails to secure a pass in a theory course / laboratory course (except electives), the student shall register and appear only for the end semester examination in the subsequent semester. In such case, the internal assessment marks obtained by the student in the first appearance shall be retained and considered valid for all subsequent attempts till the student secures a pass. However, from the third attempt onwards if a student fails to obtain pass marks (IA + End Semester Examination) as per clause 14.1, then the student shall be declared to have passed the examination if he/she secures a minimum of 50% marks prescribed for the University end semester examinations alone.

14.3 If the course, in which the student has failed, is a Professional Elective or an Open Elective course, the student may be permitted to complete the same course. In such case, the internal assessment marks obtained by the student in the first appearance shall be retained and considered valid for all subsequent attempts till the candidate secures a pass. However, from the third attempt onwards if a candidate fails to obtain pass marks (IA + End Semester Examination) as per clause 14.1, then the candidate shall be declared to have passed the examination if he/she secures a minimum of 50% marks prescribed for the University end semester examinations alone.

If any other Professional Elective or Open Elective course is opted by the student,

the previous registration is cancelled and henceforth it is to be considered as a new Professional Elective or Open Elective course. The student has to register and attend the classes, earn the continuous assessment marks, fulfil the attendance requirements as per clause 7 and appear for the end semester examination.

- 14.4 If a student has submitted the project report but absent in the end semester examination of project work, the student is deemed to be failed. In this case and also if a student attends and fails in the End semester examination of Project work of B.E. / B.Tech, he/she shall attend end semester examination again within 60 days from the date of declaration of the results. The subsequent viva-voce examination will be considered as reappearance with payment of exam fee. In case, the student fails in the subsequent viva-voce examination also, the student shall redo the course again, when offered next.
- 14.5 The passing requirement for the courses which are assessed only through purely internal assessments (EEC courses except Project Work and laboratory), is 50% of the internal assessment (continuous assessment) marks only.
- 14.6 A student can apply for revaluation of the student's semester examination answer paper in a theory course, as per the guidelines of the COE 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 EEC courses.

**Amendment
of Clause
14.4**

15. AWARD OF LETTER GRADES

- 15.1 The award of letter grades will be decided using relative grading principle except Laboratory Courses and Project Work. The performance of a student will be reported using letter grades, each carrying certain points as detailed below:

**Amendment
of Clause
15.1**

Letter Grade	Grade Points*
O (Outstanding)	10
A + (Excellent)	9
A (Very Good)	8
B + (Good)	7
B (Average)	6
C (Satisfactory)	5
U (Re-appearance)	0
SA (Shortage of Attendance)	0
WD (Withdrawal)	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", "C".

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

"U" denotes that the student has failed to pass in that course. "WD" denotes withdrawal from the exam for the particular course. The grades U and W will figure both in the Grade Sheet as well as in the Result Sheet. In both cases, the student has to appear for the End Semester Examinations as per the Regulations.

If the grade U is given to Theory Courses/ Laboratory Courses it is not required to satisfy the attendance requirements (vide clause 7), but has to appear for the end semester examination and fulfil the norms specified in clause 14 to earn a pass in the respective courses.

If the grade U is given to EEC course (except Project Work), which are evaluated only through internal assessment, the student shall register for the course again in the subsequent semester, fulfil the norms as specified in clause 14 to earn pass in the course. However, attendance requirement need not be satisfied.

15.1.1 **Relative Grading**

For those students who have passed the course (theory course / laboratory integrated courses / theory integrated courses / all other EEC except laboratory course / Project Work Courses), the relative grading shall be done. The marks of those students who have passed only shall be inputted in the software developed for relative grading. The evolved relative grading method normalizes the results data using the BOX-COX transformation method and computes the grade range for each course separately and awards the grade to each student. (theory course / laboratory integrated courses / theory integrated courses and all other EEC Courses). If the students' strength is greater than 30, the relative grading method shall be adopted.

**Insertion of
New Clause
15.1.1**

15.1.2 **Absolute Grading**

- In all the courses, if the number of students who have passed the course is less than or equal to 30 then absolute grading shall be followed with the grade range as specified in the Table.
- For the Project Work / Internship and Laboratory Courses, absolute grading procedure shall be followed as given in the Table below irrespective of the number of students who have passed the course.

**Insertion of
New Clause
15.1.2**

Table – Grade range for absolute grading

O	A+	A	B+	B	C	U
91 - 100	81 - 90	71 - 80	61 - 70	56 - 60	50 – 55	< 50

15.2 For the Co-curricular activities such as National Cadet Corps (NCC)/ National Service Scheme (NSS) / NSO / YRC / Science club / Literary Club/ Fine Arts Club, a 'completed' remark will appear in the Grade Sheet on successful completion of the same. Every student shall put in a minimum of 75% attendance in the training and attend the camp or events of the clubs compulsorily. The training and camp or club events 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 subsequent years.

Successful completion of any one of the above co-curricular activities is compulsory for the award of degree.

15.3 The grades O, A+, A, B+, B, C obtained for the one/two credit course (not the part of curriculum) shall figure in the Grade Sheet under the title '**Value Added Courses/Internship/Industrial training**'. The courses for which the grades obtained are RA, SA **will not figure in the Grade Sheet.**

15.4 For the students who complete the Mandatory Course satisfying attendance requirement, the title of the Mandatory Course will be mentioned in the Grade Sheet.

**Amendment
of Clause
15.4**

15.5 **GRADE SHEET**

**Amendment
of Clause
15.5**

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

- The college in which the student has studied
- List of courses studied for Hons., minor and any other additional courses in which the student has passed with the grades under the title additional courses.
- The Grade Point Average (GPA) for the semester considering only the courses of curriculum (not the additional courses) and
- The Cumulative Grade Point Average (CGPA) of all courses registered from first semester onwards considering only the courses of curriculum (not the additional courses). However, for the students who have successfully completed the requirements of B.E. / B. Tech. (Hons) and B.E. / B.Tech. Minor vide Clause 4.10, grades scored in the six additional courses shall be taken into account for the computation of CGPA.

During each semester, the list of curricular courses (not the additional courses) registered and the grades scored in each course are used to compute the Grade Point Average (GPA). GPA is the ratio of the sum of the products of the number of credits of curricular courses (not the additional courses) registered and the grade points corresponding to the grades scored in those courses, taken for all the courses, to the sum of the number of credits of all the courses in the semester. U grades will be excluded for calculating GPA and CGPA.

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

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.

- | | | |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| 15.5.1 | If a student studies more number of professional and open electives than required as per the student's programme curriculum, the calculation of final CGPA shall be as per 4.10.6 and 4.10.7. | Insertion of
New Clause
15.5.1 |
| 15.5.2 | If a student successfully completes all the requirements of the programme and also meets the requirements of B.E. / B. Tech. (Hons) or B.E. / B. Tech. Minor but desires not to opt for the additional qualification, then he/she has to submit a declaration with regard to the same 30 days before the completion of VIII semester. | Insertion of
New Clause
15.5.2 |
| 15.5.3 | In the consolidated grade sheet the CGPA earned shall be converted into percentage of marks as follows:
Percentage of Marks = CGPA × 10. | Insertion of
New Clause
15.5.3 |

16 ELIGIBILITY FOR THE AWARD OF THE DEGREE

- 16.1 A student shall be declared to be eligible for the award of the B.E. / B.Tech. Degree provided the student has
- i. Successfully gained the required number of total credits as specified in the curriculum corresponding to the student's programme within the stipulated time.
 - ii. Successfully completed the course requirements, appeared for the End -

Semester examinations and passed all the subjects within the period as prescribed in clause 5.1 and 5.1.1.

- iii. Successfully passed any additional courses prescribed by the Director, Centre for Academic Courses whenever the student is readmitted under Regulations R-2021 from the earlier Regulations.
- iv. Successfully completed the NCC / NSS / NSO / YRC / Science Club / Literature Club / Fine Arts Club requirements.
- v. No disciplinary action pending against the student.
- vi. The award of Degree must have been approved by the Syndicate of the University.

16.2 CLASSIFICATION OF THE DEGREE AWARDED

16.2.1 FIRST CLASS WITH DISTINCTION:

Amendment
of Clause
16.2.1

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

- Should have passed the examination in all the courses of all the eight semesters (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 in any of the courses of the Curriculum making up the total credit requirement.
- A student who satisfies norms given in clause 4.10 becomes eligible for classification of the degree with B.E./B.Tech. (Hons) and B.E./B.Tech. minor.

Details are provided in Table

Degree (i)	Duration of programme (ii)	Duration permitted (iii)	Additional credits above the requirement of curriculum (iv)	CGPA (v)	Pas s in (vi)	Break of study (vii)	Preven tion to write end semes ter exami nation	Withdra wal from writing end semester examinat ion (viii)

B.E./ B.Tech. (Regular)	4 years	5 years	-	8.50	First atte mpt	One year authoris ed break of study included in the Duration permitted (iii)	Not permitted	Will not be consider ed as an attempt
B.E./ B.Tech. (sandwich)	5 years	6 years	-	8.50	First atte mpt	One year authoris ed break of study included in the Duration permitted (iii)	Not permitted	Will not be consider ed as an attempt
B.E./ B.Tech. Lateral Entry	3 years	4 years	-	8.50	First atte mpt	One year authoris ed break of study included in the Duration permitted (iii)	Not permitted	Will not be consider ed as an attempt
B.E./ B.Tech. (Hons)	3/4/5 years (Lateral entry, Regular, Sandwich respecti vely)	4/5/6 years (Later al entry, Regul ar, Sand wich respe ctively)	18 credits from more than one vertical s of the same progra mme	8.50	First atte mpt	One year authoris ed break of study included in the Duration permitted (iii)	Not permitted	Will not be consider ed as an attempt
B.E./ B.Tech. minor	3/4/5 years (Lateral entry, Regular, Sandwich)	4/5/6 years (Later al entry, Regul ar,	18 credits from any one vertical of the	8.50	First atte mpt	One year authoris ed break of study included	Not permitted	Will not be consider ed as an attempt

	respectively)	Sandwich respectively)	other programme			in the Duration permitted (iii)		
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16.2.2 FIRST CLASS:

Amendment
of Clause
16.2.2

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 five years**. (Six years in case of Mechanical (Sandwich) and Four 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 five years (Six years in case of Mechanical (Sandwich) and four years in the case of lateral entry) for award of First class.
- Should have secured a CGPA of not less than **6.50**.
- A student who satisfies norms given in clause 4.10 becomes eligible for classification of the degree with B.E./B.Tech. (Honours) and B.E./B.Tech. minor.

Details are provided in Table

Degree (i)	Duration of programme (ii)	Duration permitted (iii)	Additional credits (iv)	CGPA (v)	Pas s in (vi)	Break of study (vii)	Prevention to write end semester examination	Withdrawal from writing end semester examination (viii)
B.E./ B.Tech. (Regular)	4 years	5 years	-	6.50	-	One year authorised break of study included in the Duration permitted (iii)	Included in the Duration permitted (iii)	-

B.E./ B.Tech. (sandwich)	5 years	6 years	-	6.50	-	One year authoris ed break of study include d in the Duratio n permitt ed (iii)	Included in the Duration permitted (iii)	-
B.E./ B.Tech. Lateral Entry	3 years	4 years	-	6.50	-	One year authorise d break of study included in the Duration permitted (iii)	Included in the Duration permitted (iii)	-
B.E./ B.Tech. (Hons)	3/4/5 years (Later al entry, Regul ar, Sand wich respe ctively)	4/5/6 years (Later al entry, Regul ar, Sand wich respe ctively)	18 credits from more than one vertical s of the same progra mme	7.50	First atte mpt	One year authoris ed break of study included in the Duration permitte d (iii)	Not permitted	Will not be considered as an attempt
B.E./ B.Tech. minor	3/4/5 years (Later al entry, Regula r, Sandwi ch respect ively)	4/5/6 years (Later al entry, Regul ar, Sandw ich respec tively)	18 credits from any one vertical of the other progra mme	6.50	-	One year authoris ed break of study included in the Duration permitte d (iii)	Included in the Duration permitte d (iii)	-

16.2.3 Students who pursue B.E./B.Tech. in Regular mode or lateral entry mode or B.E./B.Tech. minor in specialisation of another discipline and who are not covered in clauses 16.2.1 and 16.2.2 and who qualify for the award of the degree (vide Clause 16.1) shall be declared to have passed the examination in **Second Class**.

Amendment
of
Clause
16.2.3

- 16.2.4 A student who is absent in the 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 15) for the purpose of classification. Insertion of
New Clause
16.2.4
- 16.2.5 Student earned additional 18 credits as per Clause 4.10 (i) and (ii) but does not satisfy the conditions mentioned in 16.2.1 or 16.2.2 shall not be awarded B.E./B.Tech.(Hons.) In such case if the student becomes eligible for First Class, while computing CGPA with the Professional Elective / Open Elective courses with higher grades the student shall be awarded B.E. / B.Tech. in First Class only. Amendment
of Clause
16.2.4
- 16.3 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 for the purpose of classification. (subject to clause 17).
- 16.4 **Photocopy / Revaluation**
A student can apply for photocopy of his/her semester examination answer paper in a theory course, as per the guidelines of the COE, on payment of a prescribed fee through proper application to the Controller of Examinations through the Head of the Institutions. The answer script is to be valued and justified by a faculty member, who has handled the subject and recommend for revaluation with the breakup of marks for each question. Based on the recommendation, the student 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 student concerned through the Head of the Institutions. Revaluation is not permitted for practical courses and EEC courses.

A student can apply for revaluation of answer scripts for not exceeding 5 subjects at a time.
- 16.5 **Review**
Students 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 the Controller of Examinations through the Head of the Institution.

Students applying for Revaluation only are eligible to apply for Review.
17. **PROVISION FOR WITHDRAWAL FROM END-SEMESTER EXAMINATION**
- 17.1 A student may, for valid reasons, (medically unfit / unexpected family situations / sports approved by the Chairman, Sports Board and the 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 the COE through the Head of the Institutions with required documents.

17.2 Withdrawal application is valid if the student is otherwise eligible to write the examination (Clause 7) and if it is made within TEN days after the date of the examination(s) in that course or courses and recommended by the Head of the Institution and approved by the Controller of Examinations. For a student to withdraw from a course / courses, he/she should have registered for the course, fulfilled the attendance requirements (vide clause 7) and earned continuous assessment marks.

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

17.3 In case of withdrawal from a course / courses, the courses will figure both in the Grade Sheet as well as in the Result Sheet. However, withdrawal shall not be considered as an appearance for the eligibility of a student for First Class with Distinction.

17.4 If a student withdraws from writing end semester examinations for a course or courses, he/she shall register for the same in the subsequent semester and write the end semester examination(s).

17.5 If a student applies for withdrawal from Project Work, he/she will be permitted for the withdrawal only if the student has submitted the project report before the deadline. However, the student may appear for the viva-voce examination within 60 days after the declaration of results for Project Work and the same shall not be considered as reappearance.

Amendment
of
Clause 17.5

17.6 Withdrawal is permitted for the end semester examinations in the final semester, as per clause 16.2.1.

18. PROVISION FOR AUTHORISED BREAK OF STUDY

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

18.2 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 student may apply for additional break of study not exceeding another one year. If a student intends to temporarily discontinue the

programme in the middle of the semester for valid reasons, and to re-join 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 re-joining the programme.

18.3 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.

18.3.1 Total number of credits to be earned by the student shall be more than or equal to the total number of credits prescribed in the curriculum in force. If the credit assigned for L T P of the courses are not same in two Regulations under consideration, then equivalence shall be arrived as per the credit assignment followed in the Regulations in force.

**Insertion of
New Clause
18.3.1**

18.4 The authorized break of study is included in the duration specified for passing all the courses for the purpose of classification (vide Clause 16.2).

18.5 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.

18.6 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).

18.7 If a student in Full Time mode wants to take up a job / start-up / entrepreneurship during the period of study he/she shall apply for authorised break of study for one year. The student shall join the job / start-up / entrepreneurship only after getting approval of the same by the Director, Centre for Academic Courses with due proof to that effect.

18.8 No fee is applicable to students during the Break of Study period.


19. DISCIPLINE

- 19.1 Every student is required to observe disciplined and decorous behaviour 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 the Institution shall constitute a disciplinary committee consisting of the Head of the 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.
- 19.2 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 the Syndicate.

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Date: 2024.04.01 17:36:26 +05'30'


Principal
J.K.K.Munirajah College of Technology
(Autonomous)
T.N.Palayam, Gobi (Tk),
Erode (Dt) - 638 506.

**ANNA UNIVERSITY LETTER
FOR PG-CBCS PROGRAMME
(REGULATIONS 2017)**

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

2.1 P.G. PROGRAMMES OFFERED:

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

2.2 MODES OF STUDY:

2.2.1 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.

2.2.2 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.

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

2.3 ADMISSION REQUIREMENTS:

2.3.1 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.

- 2.3.2 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.
- 2.3.3 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.
- 2.3.4 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.
- 2.3.5 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

3.1 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.

3.2 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.

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 (Laboratory / Seminar / Project Work etc.)	1

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

3.4 Project Work

- 3.4.1 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.
- 3.4.2 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.
- 3.4.3 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.
- 3.4.4 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.
- 3.4.5 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.
- 3.6 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.

3.7 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.

3.8 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 at least 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.

3.9 Online Courses

3.9.1 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.

3.9.2 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.

3.10 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:

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

Amendment
of
Clause 4.1

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.C.A. Lateral Entry	4	8
M.B.A. (Full Time)	4	8
M.B.A. (Part Time)	6	12

4.2 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.

4.3 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.

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

Amendment
of
Clause 4.4

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

Programme	Prescribed Credit Range
M.C.A.	80 - 90
M.B.A.	86 - 90

5. COURSE REGISTRATION

- 5.1 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. In such cases the student shall do **reappearance registration** for those courses for which the attendance requirement is not compulsory. However, the student have the option to take up some other professional elective or open elective that he has failed to pass. **But, the total number of credits that a student is allowed to register per semester cannot exceed 36.** 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 course shall be offered by any department of any institution unless a minimum 5 students register for the course.

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)

5.2 Flexibility to Drop courses

- 5.2.1 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.
- 5.2.2 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.

- 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

- 6.2 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.
- 6.3 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.

- 6.3.1 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.
- 6.3.2 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.
- 6.3.3 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

8.1 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.

8.2 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.

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

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

- 8.5 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.
- 8.6 The Head of the Institution may participate in any class committee of the institution.
- 8.7 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.
- 8.8 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).

10. ATTENDANCE REQUIREMENTS FOR COMPLETION OF A SEMESTER

- 10.1 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.

10.2 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.

10.3 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.

11.1 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.

(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.

11.2 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

11.3 **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.**

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

11.5 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.

12. **REQUIREMENTS FOR APPEARING FOR SEMESTER EXAMINATION**

12.1 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.

12.2 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.

12.3 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

13.1 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.

13.2 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

14.1 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.

- 14.2 If a student fails to secure a pass in a theory course (except electives)/ laboratory courses, the student shall register and appear only for the end semester examination in the subsequent semester. In such case, the internal assessment marks obtained by the candidate in the first appearance shall be retained and considered valid for all subsequent attempts till the candidate secure a pass. However, from the third attempt onwards if a candidate fails to obtain pass marks (IA + End Semester Examination) as per clause 14.1, then the candidate shall be declared to have passed the examination if he/she secure a minimum of 50% marks prescribed for the university end semester examinations alone.

Amendment
of
Clause 14.2

In addition to the above for MCA programme, students undergoing bridge courses should complete all the bridge courses prescribed, in order to move to I semester of the two year MCA programme.

- 14.3 **Omitted**
- 14.4 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.
- 14.5 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.
- 14.6 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.
- 14.7 If a student has failed in the final semester examination he/ she may be allowed to register for the course in the next semester itself.
- 14.8 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

15.1 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	
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.

15.2 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.

15.3 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.

16. ELIGIBILITY FOR THE AWARD OF THE DEGREE

16.1 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

**Amendment
of
Clause 16.1**

- Successfully gained the required number of total credits as specified in the curriculum corresponding to the student's programme within the stipulated time.
- a. M.E./ M.Tech., M.C.A, 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 or 6 years from the commencement of the bridge course for the students admitted with bridge course requirement.

b. M.E./ M.Tech., M.B.A.(Part 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

17.1 FIRST CLASS WITH DISTINCTION:

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

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.

17.2 **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**

17.3 **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**.

- 17.4 A student who is absent in End Semester Examination in a course / project work after having registered for the same shall be considered to have appeared in that examination (except approved withdrawal from end semester examinations as per clause 18) for the purpose of classification.

17.5 **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.

17.6 **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:**

- 18.1 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.
- 18.2 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.
- 18.2.1 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.
- 18.3 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.

- 18.4 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

- 19.1 A student is permitted to go on break of study for a maximum period of one year as a single spell.
- 19.2 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.
- 19.3 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.
- 19.4 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).
- 19.5 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.

19.6 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


21.1 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.

21.2 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.

22. 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.

Digitally signed by KUMARESAN VELLAISAMY
Date: 2024.04.01 17:33:58 +05'30'


Principal
J.K.K.Munirajah College of Technology
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**ANNA UNIVERSITY LETTER
FOR PG-CBCS PROGRAMME
(REGULATIONS 2021)**

ANNA UNIVERSITY, CHENNAI – 600 025

AFFILIATED INSTITUTIONS

REGULATIONS 2021

CHOICE BASED CREDIT SYSTEM

COMMON TO M.E. / M.TECH. AND M.C.A. PROGRAMMES

The following Regulations are applicable to the students admitted to M.E. / M.Tech. and M.C.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 2021-2022.

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. **"Discipline"** means specialization or branch 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, Centre for 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. **"Chairperson"** means the Head of the Faculty.
- VI. **"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.
- VII. **"Head of the Department (HOD)"** means the Head of the Department concerned.
- VIII. **"Controller of Examinations (COE)"** 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

2.1 P.G. PROGRAMMES OFFERED

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

2.2 MODES OF STUDY

2.2.1 Full-Time Mode:

Students 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 students 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 P.G. programme. However, taking up of job is permitted with authorised break of study as explained in Clause 19.7.

2.2.2 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.

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

2.3 ADMISSION REQUIREMENTS

2.3.1 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. This is applicable for students admitted both under Single Window Counselling process and through the Management Quota.

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.

- 2.3.2 However, the University may decide to restrict admission in any particular year to candidates having a subset of qualifications prescribed at the time of admission.
- 2.3.3 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 University from time to time.
- 2.3.4 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 University from time to time.
- 2.3.5 All Part-Time candidates should satisfy other conditions regarding Experience Sponsorship etc. that may be prescribed by the University from time to time.

3 STRUCTURE OF THE PROGRAMMES

3.1 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 Courses (PCC)** include the core courses relevant to the chosen specialization/branch.
- iii. **Professional Elective Courses (PEC)** include the elective courses relevant to the chosen specialization/ branch.
- iv. **Research Methodology and IPR Course (RMC)** covers topics on the process of research and patenting.
- v. **Employability Enhancement Courses (EEC)** include Project Work and/or Internship, Seminar, Professional Practices, Summer Project, Case Study and Industrial / Practical Training.
- vi. **Open Elective Courses (OEC)** include the courses credited from other post graduate Programmes of M.E./M.Tech/ M. Arch. and online courses.
- vii. **Audit courses (AC)** include the courses such as Constitution of India, Natramizh Ilakiam, etc.

3.2 Courses per Semester

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

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
1 Tutorial Period	1
1 Practical Period (Laboratory / Seminar / Project Work etc.)	0.5

3.4 Project Work

- 3.4.1 The project work for M.E. / M.Tech. Programmes consist of Project Work-I and Project Work-II. The Project Work-I is to be undertaken during Semester III and Project Work-II, which is a continuation of Project Work-I, (except when project work II is carried out in the industry) is to be undertaken during Semester IV.
- 3.4.2 In case of students of M.E. / M.Tech. Programmes not completing Project Work-I of project work successfully, the students can undertake Project Work-I again in the subsequent semester. In such cases the students can enroll for Project Work-II, only after successful completion of Project Work-I.
- 3.4.3 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.
- 3.4.4 A student may, however, undergo Project Work-II (M.E./M.Tech. Programme) in industry/academic institution of repute offering PG programmes in Engineering/Technology (other than affiliated colleges of Anna University)/research institutions for a minimum of 16 weeks during the final semester. In such cases, the students shall undergo the Project Work-II with the approval obtained from the Head of the institution and Centre for Academic Courses preferably one month before the start of the industrial project.

The Project Work-II carried out in industry/academic institution of repute/research institutions need not be a continuation of Project Work-I. 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 review meetings, if

necessary, may also be arranged in online mode with prior approval from the Head of the Institution and suitable record of the meetings shall be maintained.

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

3.5 The deadline for submission of final Project Report (Project Work-II for M.E./M.Tech. programmes or final project work for M.C.A. programmes) is 60 calendar days from the last working day of the semester in which project work / thesis / dissertation is done. However, the Project Work-I in the case of M.E. / M.Tech. programmes shall be submitted within the last working day of the semester as per the academic calendar published by the University

Amendment
of
Clause 3.5

3.6 Industrial Training / Internship (Summer / Winter Vacation)

3.6.1 The students may undergo Industrial Training for a period as specified in the Curriculum during the summer / winter vacation. In this case, the training has to be undergone continuously for at least two weeks in an organisation.

The students may undergo Internship at a Research organization / University/ Industry (after due approval from the Head of the Institution and a copy of the same shall be forwarded to the Director, Centre for Academic Courses) for the period prescribed in the curriculum during the summer / winter vacation, in lieu of Industrial training. Attendance Certificate signed by the competent authority of the industry, as per the format provided by the Centre for Academic Courses shall be submitted to the Head of the Institution. The attendance certificate shall be forwarded to COE, Anna University by the Head of the Institution for processing results.

3.6.2 If Industrial Training/ Internship is not prescribed in the curriculum, the student may undergo Industrial Training/ Internship during Summer/Winter vacation optionally and the credits earned will be indicated in the Grade Sheet. If the student earns three credits in Industrial Training/ Internship, the student may drop one Professional Elective (only one professional elective can be dropped). In such cases, Industrial Training / Internship need to be undergone continuously from one organization or with a combination one two week and one four week programme, from one/two organizations. However, if the number of credits earned is 1 or 2, these credits shall not be considered for classification of the degree. Students shall get permission from the Head of the Institution for taking industrial training/internship and the Certificate of completion of Industrial Training / Internship shall be forwarded to COE.

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

***1 Week = 40 Internship Hours**

3.7 Instead of two electives (professional elective/open elective) 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.

3.8 Value Added Courses

**Amendment
of
Clause 3.8**

- 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. Courses with two/ three credits shall be offered by a Department of an institution with the prior approval from the Director, Academic Courses.
- The details of the syllabus, timetable and faculty may be sent to the Centre for Academic Courses after approval from the Head of the Institution.
- Students shall be allowed to take these courses offered in other Departments also, but with the permission of the Head of the Institution of student and Head of the Institution offering the course.
- The courses once approved by the University represented by any Department shall be made available in the University website and these courses can be offered by the University Departments / Constituent colleges / affiliated colleges (Non-Autonomous with information to Director Academic Courses.

3.9 Off campus courses and Transfer of Credits

**Amendment
of
Clause 3.9**

Students are permitted to optionally enroll and study a maximum of three off campus courses in physical/online/hybrid mode under each UG programme with the approval of Director, Centre for Academic courses as per the Regulations. The successful completion of these courses through any of the following modes shall be considered in lieu of professional elective / open elective courses of curriculum as approved by the Head of the Institution.

3.9.1 Students are permitted to optionally enroll and study these courses through SWAYAM / NPTEL platforms and credit transfer is to be done based on the marks and certificate provided by the NPTEL. The number of credits and transfer of credits are based on the procedure explained in Table 3 and the Mapping of the marks with the grades is explained in Table 4. The mapping of marks with grades is applicable, only if the student passes the course as per the guidelines of NPTEL.

Table 3: Duration of the course and Number of credits

Sl. No.	No. of Weeks	No. of Credits
4	4	1
5	8	2
6	12	3
7	16	4

Table 4: Mapping of Marks scored in NPTEL course and Credits earned

Letter Grade	Marks
O	90-100
A+	80-89
A	70-79
B+	60-69
B	50-59
C	40-49

3.9.2. Students are permitted to optionally enroll and study the courses in physical / hybrid / online modes offered by reputed Central / State funded Universities / Institutions which are in the top 20 positions in the latest NIRF ranking and also conducting examination towards award of marks and grades. . (NIRF Ranking of any of the last three years with respect to the year in which course is to be registered; NIRF ranking is based on respective stream for professional elective courses and based on any stream for open elective courses).

Students are also permitted to enroll and undergo such courses in Online mode at Universities abroad in top 500 in QS ranking in the last three years.

Students are also permitted to study courses of a particular semester in a University / Institution abroad based on MoU. A learning agreement shall be evolved to map all the courses offered in the programme and the courses offered in University abroad as per the procedure outlined by the Centre for Academic

Courses The credits earned by the students in the University abroad shall be transferred as per the learning agreement.

In the case of 3.9.2, the students can enroll for the courses with the approval of the Head of the Institution only if the course is offered directly by Institution/University and not with the edutech platforms.

The marks/credits earned by the student shall be transferred based on the decision of a committee constituted by Director, Centre for Academic courses and approved by the University.

- 3.9.3 Students are also permitted to enroll and study the courses in physical/hybrid mode (not less than 50% in physical mode) that are offered by (i) National/State funded research institutions/laboratories and (ii) (a) reputed companies (manufacturing or software) related to the programme, and (b) reputed companies involved in transfer of knowledge provided the knowledge transferring company is a spinoff from an Engineering/Technology practicing Industry and sharing the work experience of the respective industry. The companies mentioned in 3.9.3 (ii) (a) and the company with which the knowledge transfer company associated in the case of 3.9.3 (ii) (b) should have average annual turnover of more than 200 crores over a period of 5 years. However, the academic content and delivery shall be in consonance with the University academic standards and norms.

The minimum qualification of the course instructor from the company as mentioned in 3.9.3. (ii) shall be B.E./B.Tech with 10 years of research / industrial experience. Such courses shall be offered through MOU / MOA between Anna University and such institutions/organizations/ companies. The design of the courses with regard to the syllabus content, duration of each course and number of credits offered for each course shall be discussed and recommended by Head of the Institution and approved by Director, Centre for Academic Courses as per the Regulations.

For the offer of each course under 3.9.3, a course coordinator shall be nominated from the Department who shall also attend such course and shall coordinate the question paper setting and answer script evaluation with the course instructor from research institution/ laboratories/ industry/ company for the continuous assessment and end semester examination conducted by the University. The passing requirements are as per regulations.

- 3.10 A student is permitted to register a maximum of two courses in total from clause 3.7 and 3.9.

3.11 Audit courses

The student may optionally study audit courses prescribed by the University and it will be mentioned in the Grade Sheet. However, it will not be considered for computation of CGPA.

3.12 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

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

Programme	Minimum Number of Semesters	Maximum Number of Semesters
M.E. / M.Tech. (Full-Time)	4	8
M.E. / M.Tech. (Part Time)	6	12
M.C.A. (Full Time)*	4	8

* Bridge courses are to be conducted for students from non-computer science background.

4.2 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.

4.3 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 10) by students, following method shall be used.

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

taken together for all courses of the semester

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

- 4.4 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 - 75

Programme	Prescribed Credit Range
MCA	80 – 90

5. COURSE REGISTRATION

5.1 Flexibility to Drop courses

5.1.1 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.

5.1.2 From the first to pre-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 P.G. (Full Time) programmes and cannot exceed 3 for P.G. (Part Time) programmes. The student is permitted to drop the course(s) within 30 days of the commencement of the academic schedule.

5.2 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 5.1).

The registration details of the student shall 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 and
- ii. Courses dropped in the lower semesters.

The maximum number of credits that can be registered in a semester is 36. However, this does not include the number of Re-appearance (RA) and Withdrawal (W) courses registered by the student for the appearance of Examination.

6 EVALUATION OF PROJECT WORK

Amendment
of
Clause 6

The evaluation of Project Work for Project Work-I & Project Work-II in the case of M.E. / M.Tech. and Project Work of 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.

- 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 programme. The review committee consists of supervisor, expert from the Department and a project coordinator from the Department. If the project coordinator/expert member happens to be the Supervisor then an alternate member shall be nominated. In the case of project work II carried out in industry/academic/research institutions, the review committee shall have the supervisor, coordinator from industry / academic / research institutions and the project coordinator from the Department. The total marks obtained in the three assessments shall be reduced to 60 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:

Amendment
of
Clause 6.1

Internal Assessment (60 Marks)			End Semester Examinations (40 Marks)			
Review I	Review II	Review III	Thesis Submission	Viva-Voce Examination		
20	20	20	External Examiner	Internal Examiner	External Examiner	Supervisor Examiner
			10	10	10	10

- 6.2 The Project Report prepared according to approved guidelines as given by the Director, Centre for 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.
- 6.3 If the student fails to obtain 50% of the internal assessment marks in the Project Work-I and Project Work-II / final project, he/she will not be permitted to submit the project report and has to register for the same in the subsequent semester.
- If a student fails to submit the project report on or before the specified deadline as mentioned in clause 3.5, he/she is deemed to have failed in the Project Work

and shall register for the same in a subsequent semester. This applies to both for Project Work–I and Project Work–II in the case of M.E. / M.Tech. Project Work and the Final Project Work of M.C.A.

If a student fails in the end semester examinations of Project Work–I, he/she has to resubmit the Project Report within 30 days from the date of declaration of the results. If he / she fail in the End semester examination of Project Work–II of Project work of M.E. / M.Tech. or the Final Project Work of 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.

If a student has submitted the project report but did not appear for the viva-voce examination, it will be considered as fail and he/she will be permitted to resubmit the report within 30/60 days from the declaration of results and permitted for reappearance in viva-voce examination, for Project Work-I and II respectively.

- 6.3.1** 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.
- 6.3.2** 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.
- 6.3.3** At the end of Practical / Industrial Training, Summer Project, the student shall submit an Attendance 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. The attendance certificate 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 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 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

8.1 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 performance of the students.
- Identifying the slow learners, if any, in any specific subject and requesting the teachers concerned to provide some additional help or guidance or coaching to such students as frequently as possible.

8.2 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.

- 8.3 The class committee shall be constituted within the first week of each semester.
- 8.4 At least 2 student representatives (usually 1 boy and 1 girl) shall be included in the class committee.
- 8.5 The chairperson of the class committee shall invite the Class advisor(s) and the Head of the Department to the meeting of the class committee.
- 8.6 The Head of the Institution may participate in any class committee of the institution.
- 8.7 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.
- 8.8 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).

10 ATTENDANCE REQUIREMENTS FOR COMPLETION OF A SEMESTER

- 10.1 A student 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.

10.2 However, a student 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 student 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.

10.3 Students who could secure less than 65% overall attendance 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)

For all theory, laboratory courses, theory courses with laboratory component and project work the continuous assessment shall be awarded as per the procedure given below:

11.1 THEORY COURSES

Two assessments each carrying 100 marks shall be conducted during the semester by the Department / College concerned. The total marks obtained in all assessments put together out of 200, shall be proportionately reduced for 40 marks and rounded to the nearest integer (This also implies equal weightage to the two assessments).

Amendment
of
Clause 11.1

Assessment I (100 Marks)		Assessment II (100 Marks)		Total Internal Assessment
Individual Assignment / Case Study/ Seminar /Mini Project / any other experiential Learning	Written Test	Individual Assignment / Case Study / Seminar /Mini Project / any other experiential Learning	Written Test	
40	60	40	60	200*

*The weighted average shall be converted into 40 marks for internal Assessment.

A minimum of two internal assessments will be conducted as a part of continuous assessment. Each internal assessment is to be conducted for 100 marks and will have to be distributed in two parts viz., Individual Assignment/Case study/Seminar/Mini project / any other experiential learning and Test with each having a weightage of 40% and 60% respectively. The tests shall be in written mode. The total internal assessment marks of 200 shall be converted into a maximum of 40 marks and rounded to the nearest integer.

11.2 LABORATORY COURSES

The maximum marks for Internal Assessment shall be 60 in case of practical courses. Every practical exercise / experiment shall be evaluated based on conduct of experiment / exercise and records to be maintained. There shall be at least one test. The criteria for arriving at the Internal Assessment marks of 60 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 converted into a maximum of 60 marks and rounded to the nearest integer.

Internal Assessment (100 Marks)*	
Evaluation of Laboratory Observation and Record	Test
75	25

* Internal assessment marks shall be converted into 60 marks

11.3 THEORY COURSES WITH LABORATORY COMPONENT / LABORATORY COURSES WITH THEORY COMPONENT

Amendment
of
Clause 11.3

Weightage of internal assessment and end semester examination marks will be 50% each. The distribution of marks for the theory and laboratory components in the internal assessments and end semester examination for different types of courses are provided in the table.

L	T	P	C	Internal Assessment 1	Internal Assessment 2	End Semester Examination
1	0	4	3	Lab (25%)	Theory (25%)	Lab only (50%)
1	0	2	2	Lab (25%)	Theory (25%)	Lab only (50%)
2	0	2	3	Theory (25%)	Lab (25%)	Theory (25%) Lab (25%)
3	0	2	4	Theory (25%)	Lab (25%)	Theory (35%) Lab (15%)
2	0	4	4	Theory (25%)	Laboratory (25%)	Theory (15%) Lab(35%)

The procedure for the conduct of internal assessments for theory and laboratory components shall be as per the clause 11.1 and 11.2 respectively.

*The weighted average shall be converted into 50 marks for internal Assessment.

11.4 OTHER EMPLOYABILITY ENHANCEMENT COURSES

- (a) The Seminar / Case study / Mini project course 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. A three member committee appointed by Head of the Institution consisting of course coordinator and two experts from the Department, will evaluate the seminar and at the end of the semester the marks can be consolidated and taken as the final mark. The evaluation shall be based on the seminar paper (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 an attendance 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 consisting of course coordinator and two experts from the Department. The certificates submitted by the candidate shall be attached to the mark list sent by the Head of the Department.
- (c) For all the courses under Employability Enhancement Courses Category, except the Project Work, the evaluation shall be done with 100% internal marks and as per procedure described in 11.1 (iv) (a/b).

11.5 Assessment for Value Added Course

The value added 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 do the evaluation process. The list of students along with the marks and the grades earned shall be

Amendment
of
Clause 11.5

forwarded to the Controller of Examinations for appropriate action at least one month before the commencement of End Semester Examinations. The grades earned by the students for Value Added Courses will be recorded in the Grade Sheet, however the same shall not be considered for the computation of CGPA.

11.6 **Omitted**

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

11.8 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/her 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 inspect the records of attendance and assessments of both current and previous semesters.

11.9 **Conduct of Academic Audit by every Institution**

Every educational institution shall strive for a better performance of the students by conducting the internal assessments as mentioned in Clause 11.

In order to ensure the above, Academic Audit is to be done for every course taught during the semester. For the internal assessments conducted for each course as per details provided in Clause 11, the academic records shall be maintained in the form of documentation for the individual assignments / case study report / report of mini project submitted by each student and assessment test question paper and answer script. Report of industrial training / internship shall also be maintained, if applicable. For laboratory courses students' record shall be maintained. Further, the attendance of all students shall be maintained as a record.

The Head of the Institution shall arrange to conduct the Academic Audit for every course in a semester by forming the respective committees with an external course expert as one of the members drawn from a Technical institution of repute near the institute.

The University or any inspection team appointed by the University may verify the records of Academic Audit report of the courses of both current and previous semesters, as and when required.

12 REQUIREMENTS FOR APPEARING FOR SEMESTER EXAMINATION

- 12.1 A student 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.
- 12.2 Further, examination registration by a student is mandatory for all the courses in the current semester and all arrear(s) course(s) for the university examinations failing which, the student will not be permitted to move to the higher semester.
- 12.3 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

- 13.1 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.

13.2 WEIGHTAGE

The following will be the weightage for different courses:

i) Lecture or Lecture cum Tutorial based course:		
Internal Assessment	-	40%
End Semester Examination	-	60%
ii) Laboratory based courses		
Internal Assessment	-	60%
End Semester Examination	-	40%
iii) Project work		
Internal Assessment	-	60%
Evaluation of Project Report by external examiner	-	10%
Viva-Voce Examination	-	30%
iv) Industrial training/Internship/ Practical training / Summer project / Seminar (All Employability Enhancement Courses except Project Work)		
Internal Assessment	-	100%

Amendment
of
Clause
13.2

14 PASSING REQUIREMENTS

- 14.1 A student 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 laboratory courses (including project work).
- 14.2 If a student fails to secure a pass in a theory course (except electives)/ laboratory courses, the student shall register and appear only for the end semester examination in the subsequent semester. In such case, the internal assessment marks obtained by the student in the first appearance shall be retained and considered valid for all subsequent attempts till the student secures a pass. However, from the third attempt onwards if a student fails to obtain pass marks (IA + End Semester Examination) as per clause 14.1, then the student shall be declared to have passed the examination if he/she secures a minimum of 50% marks prescribed for the university end semester examinations alone.
- 14.3 If the course, in which the student has failed, is a professional elective or an open elective, the student may be permitted to complete the same course. In such case, the internal assessment marks obtained by the candidate in the first appearance shall be retained and considered valid for all subsequent attempts till the candidate secures a pass. However, from the third attempt onwards if a candidate fails to obtain pass marks (IA + End Semester Examination) as per clause 14.1, then the candidate shall be declared to have passed the examination if he/she secure a minimum of 50% marks prescribed for the university end semester examinations alone.

If any other professional elective or open elective course is opted by the student, the previous registration is cancelled and henceforth it is to be considered as a new professional elective or open elective course. The student has to register and attend the classes, earn the continuous assessment marks, fulfill the attendance requirements as per Clause 10 and appear for the end semester examination.

In addition to the above, for MCA programme, students undergoing bridge courses should complete all the bridge courses prescribed for the two year MCA programme.

- 14.4 If a student is absent during the viva voce examination, it would be considered as fail. 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.

14.5 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.

14.6 A student can apply for revaluation of his/her semester examination answer paper in a theory course as per the guidelines of COE, 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 EEC courses.

15 AWARD OF LETTER GRADES

15.1 The award of letter grades will be decided using relative grading principle except Laboratory Courses and Project Work. The performance of a student will be reported using letter grades, each carrying certain points as detailed below:

Amendment
of
Clause
15.1

Letter Grade	Grade Points*
O (Outstanding)	10
A + (Excellent)	9
A (Very Good)	8
B + (Good)	7
B (Average)	6
C (Satisfactory)	5
U (Re-appearance)	0
SA (Shortage of Attendance)	0
WD (Withdrawal)	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", "C".

'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.

"U" denotes that the student has failed to pass in that course. "WD" denotes withdrawal from the exam for the particular course. The grades U and W will figure both in the Grade Sheet as well as in the Result Sheet. In both cases, the

student has to appear for the End Semester Examinations as per the Regulations.

If the grade U is given to Theory Courses/ Laboratory Courses it is not required to satisfy the attendance requirements (vide clause 10), but has to appear for the end semester examination and fulfil the norms specified in clause 14 to earn a pass in the respective courses. If the grade U is given to Project work, the course has to be registered again and attendance requirement (vide clause 10) should be satisfied.

If the grade U is given to EEC course (except project work), which are evaluated only through internal assessment, the student shall register for the course again in the subsequent semester fulfill the norms as specified in Clause 14 to earn pass in the course. However, attendance requirement need not be satisfied.

15.1.1 Relative Grading

Insertion
of New
Clause
15.1.1

For those students who have passed the course (theory course / laboratory integrated courses / theory integrated courses / all other EEC except laboratory course / Project Work Courses), the relative grading shall be done. The marks of those students who have passed only shall be inputted in the software developed for relative grading. The evolved relative grading method normalizes the results data using the BOX-COX transformation method and computes the grade range for each course separately and awards the grade to each student. (theory course / laboratory integrated courses / theory integrated courses and all other EEC Courses). If the students' strength is greater than 30, the relative grading method shall be adopted.

15.1.2 Absolute Grading

Insertion of
New Clause
15.1.2

- In all the courses, for those students who have passed the course, if their strength is less than or equal to 30 then absolute grading shall be followed with the grade range as specified in the Table.
- For the Project Work / Internship and Laboratory Courses, absolute grading procedure shall be followed as given in the Table below irrespective of the number of students who have passed the course.

Table – Grade range for absolute grading

O	A+	A	B+	B	C	U
91 - 100	81 - 90	71 - 80	61 - 70	56 - 60	50 – 55	< 50

15.2 The grades O, A+, A, B+, B, C obtained for the one/two credit courses (not part of curriculum) under the title '**Value Added Courses**' and '**internship/industrial training**' (if not part of curriculum) shall figure in the Grade Sheet. For these courses if the grades obtained are RA, SA, it will **not figure in the Grade Sheet**.

15.3 For the MCA students admitted under non-computer-science background category, the grades obtained for the prescribed bridge courses will appear on the grade sheet, but will not be considered for GPA/CGPA calculation.

15.4 For the students who complete the Audit Course satisfying attendance requirement, the title of the Audit Course will be mentioned in the Grade Sheet. If the attendance requirement is not satisfied, it will not be shown in the **Grade Sheet**.

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

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

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

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**.

15.5.1 Grade Sheet

In the consolidated grade sheet the CGPA earned shall be converted into percentage of marks as follows:

$$\text{Percentage of Marks} = \text{CGPA} \times 10.$$

Insertion of
New Clause
15.5.1

16 ELIGIBILITY FOR THE AWARD OF THE DEGREE

16.1 A student shall be declared to be eligible for the award of the P.G. Degree (M.E./ M.Tech. and M.C.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. and M.C.A.**

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 student was admitted. In addition, for the MCA students admitted under non-computer-science background category, the prescribed bridge courses also have to be completed within the maximum duration mentioned above.

b. M.E./ M.Tech.(Part 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 student was admitted.

iii. Successfully passed any additional courses prescribed by the Director, Centre for Academic Courses whenever readmitted under regulations R-2021 (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

17.1 FIRST CLASS WITH DISTINCTION:

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

M.E. / M.Tech. and M.C.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. (Part 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.

17.2 FIRST CLASS:

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

M.E. / M.Tech. and M.C.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 **6.50**.

M.E. / M.Tech. (Part 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 **6.50**.

17.3 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**.

- 17.4** A student who is absent in End Semester Examination in a course / project work after having registered for the same shall be considered to have appeared in that examination (except approved withdrawal from end semester examinations as per clause 18) for the purpose of classification.

17.5 **Photocopy / Revaluation**

A student can apply for photocopy of his/her semester examination answer paper in a theory course, as per the guidelines of COE 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 student 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 student concerned through the Head of the Institutions. Revaluation is not permitted for practical courses and for EEC courses.

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

17.6 **Review**

Students 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 Examinations through the Head of the Institution.

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

18 **PROVISION FOR WITHDRAWAL FROM EXAMINATION:**

18.1 A student may, for valid reasons, (medically unfit / unexpected family situations / sports approved by Head of the Institution) 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 COE through the Head of the Institutions with required documents.

18.2 Withdrawal application is valid if the student is otherwise eligible to write the examination (Clause 10) and if it is made within TEN days after the date of the examination(s) in that course or courses and recommended by the Head of the Institution and approved by the Controller of Examinations. For a student to withdraw from a course / courses, he/she should have registered for the course, fulfilled the attendance requirements (vide clause 10) and earned continuous assessment marks.

18.2.1 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.

- 18.3 In case of withdrawal from a course / courses, it will figure both in Marks Sheet as well as in Result Sheet. However, withdrawal shall not be considered as an appearance for the eligibility of a student for First Class with Distinction.
- 18.4 If a student withdraws from writing end semester examinations for a course or courses, he/she shall register for the same in the subsequent semester and write the end semester examination(s).
- 18.5 If a student applies for withdrawal from Project work, he/she will be permitted for the withdrawal only after the submission of project report before the deadline. However, the student may appear for the viva voce examination within 30/60 days after the declaration of results for Project Work I and II respectively and the same is not considered as reappearance.
- 18.6 Withdrawal is permitted for the end semester examinations in the final semester, as per clause 17.1.

19 AUTHORIZED BREAK OF STUDY FROM A PROGRAMME

- 19.1 A student is permitted to avail authorised break of study for a maximum period of one year in a single spell.
- 19.2 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 student may apply for additional break of study not exceeding another one year. If a student 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.
- 19.3 The students permitted to rejoin the programme after break of study / prevention due to lack of attendance, shall be governed by the Curriculum and Regulations in force at the time of rejoining. The students rejoining in new regulations shall register for additional courses, if any, as notified by the Centre for Academic Courses under change of regulations. These courses may be from any of the semesters of the curriculum in force, so as to bridge the curriculum in force and the old curriculum. In such cases, the total number of credits to be earned by the student may be more than or equal to the total number of credits prescribed in the curriculum in force.

- 19.4 The authorized break of study of maximum of one year is included in the duration specified for passing all the courses for the purpose of classification (vide Clause 17.1).
- 19.5 The total period for completion of the Programme reckoned from, the commencement of the first semester to which the student was admitted shall not exceed the maximum period specified in clause 4.1 irrespective of the period of break of study in order that he/she may be eligible for the award of the degree.
- 19.6 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).
- 19.7 If a student in Full Time mode wants to take up job / start-up / entrepreneurship during the period of study he/she shall apply for authorised break of study for one year. The student shall undertake the job / start-up / entrepreneurship only after getting approval of the same by The Director, Centre for Academic Courses with due proof to that effect.
- 19.8 No fee is applicable to students during the Break of Study period.

20 DISCIPLINE

- 20.1 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.
- 20.2 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 the Syndicate.

Digitally signed by KUMARESAN VELLAISAMY
Date: 2024.04.01 17:38:01 +05'30'
Principal
JKK Munitaraj College of Technology
(Autonomous)
T.N.Palayam, Gobi (Tk),
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ANNA UNIVERSITY, CHENNAI – 600 025

AFFILIATED INSTITUTIONS

REGULATIONS 2021

CHOICE BASED CREDIT SYSTEM

M.B.A. PROGRAMMES

The following Regulations are applicable to the students admitted to M.B.A. Programmes at all Engineering Colleges and standalone B-Schools 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 2021-2022.

1 PRELIMINARY DEFINITIONS AND NOMENCLATURE

In these Regulations, unless the context otherwise requires:

- I. **“Programme”** means Post graduate Degree Programme e.g., M.B.A. Degree Programme.
- II. **“Specialisation”** means a domain in which a student has specialized based on the choice of elective courses.
- III. **“Course”** means Theory or Practical subject that is normally studied in a semester, like Business Research Methods, Marketing Management etc.
- IV. **“Director, Centre for 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. **“Chairperson”** means the Head of the Faculty.
- VI. **“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.
- VII. **“Head of the Department (HOD)”** means the Head of the Department concerned.
- VIII. **“Controller of Examinations (COE)”** means the Authority of the University who is responsible for all activities of the University Examinations.
- IX. **“University”** means ANNA UNIVERSITY, CHENNAI.

2 PROGRAMMES OFFERED, MODES OF STUDY AND ADMISSION REQUIREMENTS

2.1 P.G. PROGRAMMES OFFERED:

1. M.B.A.

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2.2 MODES OF STUDY:

2.2.1 Full-Time Mode:

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 enrol in (or) attend any other Full-Time/Part-time/Distance education programme(s) that may lead to the award of a degree or diploma during the period of the PG programme nor take up any Full-Time / Part-Time job(s) in any Institution or Company during the period of this Full-Time PG programme. Violation of the above rules will result in cancellation of admission to this PG programme. However, taking up of job is permitted with authorised break of study as explained in Clause 19.7.

2.2.2 Part-Time Mode:

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

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

2.3 ADMISSION REQUIREMENTS:

2.3.1 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 single window counselling process. The Govt of Tamil Nadu releases the updated eligibility criteria for the admission. Admission shall be offered only to candidates who possess the qualification prescribed and the eligibility criteria for the programme.

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

2.3.3 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 University from time to time.

2.3.4 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 University from time to time.

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

3 STRUCTURE OF THE PROGRAMMES

3.1 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 Courses (PCC)** include the core courses relevant to the chosen specialization/branch.
- iii. **Professional Elective Courses (PEC)** include the elective courses relevant to the chosen specialization.
- iv. **Non-Functional Elective Courses (NEC)** include elective courses outside of the area of specialization
- v. **Employability Enhancement Courses (EEC)** include Project Work and/or Internship, Seminar, Professional Practices, Summer Project, Case Study and Industrial / Practical Training.

3.2 Courses per Semester

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

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
1 Tutorial Period	1
1 Practical Period (Laboratory / Seminar / Project Work etc)	0.5

3.4 Project Work

The Project work is an important component of Post-Graduate programmes. The Project Work has to be undertaken in the final semester.

3.4.1 The Project work for M.B.A shall be pursued for a period of 16 weeks during the final semester, with an additional of maximum 4 weeks for report writing, the total project duration not exceeding 20 weeks.

3.4.2 The Project work shall be carried out under the supervision of a faculty member in the Department concerned. The faculty member must be possessing a M.B.A. degree (i) with a minimum of 2 years of teaching experience or (ii) Ph.D. degree.

3.4.3 A student shall be permitted to work on projects in an Industrial/Research Organization, on the recommendations of the Head of the Department. In such cases, the student shall be instructed to meet the supervisor periodically once every week and attend the review committee meetings for evaluating the progress. In case the student is undertaking the project work in the department the student has to report every day to the supervisor either in physical mode or online mode.

3.4.4 The review meetings, if necessary, may also be arranged in online mode with prior approval from the Head of the Institution and suitable record of the meetings shall be maintained.

3.5 The deadline for submission of final Project Report is 30 calendar days from the last working day of the semester in which project is done.

3.6 Internship

3.6.1 The students need to undergo Internship for a period of continuous 4 weeks in an organization/ Research organization / Educational institution / industry (after due approval from the Head of the Institution) after the completion of the second semester examination. Students shall get approval from the Head of the Institution and the Certificate of completion of Internship shall be forwarded to CoE.

Attendance Certificate signed by the competent authority of the industry, as per the format provided by Centre for Academic Courses shall be submitted to the Head of the Institution. The attendance certificate shall be forwarded to COE, Anna University by the Head of the Institution for processing results.

DURATION OF INTERNSHIP	CREDITS
4 Weeks	2

***1 Week = 40 Internship Hours**

3.7 Instead of Non-functional elective, the student may be permitted to choose ONE course from other PG programmes with the approval of the Head of the Department offering such courses.

3.8 Value Added Courses

The Students may optionally undergo Value Added Courses (VAC) over and above the topics covered in the curriculum to obtain practical and industry specific knowledge. The credits earned through the Value Added Courses shall be over and above the total credit requirements 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 and the**

Centre for Academic courses without any additional fee charged from the students. The details of the syllabus, time table and course coordinator may be sent to the Centre for Academic Courses at least one month before the course is offered for approval. **Students can take a maximum of two one credit courses / one two credit course** during the entire duration of the Programme.

3.9 **Online Courses**

Students may be permitted to credit a maximum of two online courses (in his/her chosen area of specialisation) subject to a maximum of six credits, with the approval of the Head of the Institution and the Director, Centre for Academic Courses, in lieu of two professional elective courses. The Head of the Institution shall form a three member committee with members as HOD and a faculty member from the Department of the student, HOD of any other branch of the Institution to ensure that the student has not studied such courses and would not repeat it again as Professional Core/Professional Elective courses. Suitable online courses shall be chosen from the SWAYAM platform.

3.10 A student is permitted to register a maximum of two courses in total from clause 3.7 and 3.9.

3.11 **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**

4.1 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.B.A. (Full Time)	4	8
M.B.A. (Part Time)	6	12

4.2 The Curriculum and Syllabi of 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 P.G. Programme.

4.3 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 10) 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.

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

Programme	Prescribed Credit Range
M.B.A	90-94

5. COURSE REGISTRATION

5.1 Flexibility to Drop courses

- 5.1.1 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.
- 5.1.2 From the first to pre-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 M.B.A (Full Time) programmes and cannot exceed 3 for M.B.A (Part Time) programmes. The student is permitted to drop the course(s) within 30 days of the commencement of the academic schedule.
- 5.2 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 5.1)).

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. Courses dropped in the lower semesters.

The maximum number of credits that can be registered in a semester is 36. However,

this does not include the number of Re-appearance (RA) and Withdrawal (W) courses registered by the student for the appearance of Examination.

6 EVALUATION OF PROJECT WORK

6.1 The evaluation of project work shall be done as per the weightages given in Table. 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 programme. The review committee consists of supervisor, expert from the Department and a project coordinator from the Department. If the project coordinator/expert member happens to be the Supervisor then an alternate member shall be nominated.

Amendment
of
Clause 6.1

The total marks obtained in the three assessments shall be reduced to 60 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 (60 Marks)			End Semester Examinations (40 Marks)			
Review I	Review II	Review III	Thesis Submission	Viva-Voce Examination		
20	20	20	External Examiner	Internal Examiner	External Examiner	Supervisor Examiner
			10			

6.2 The Project Report prepared according to approved guidelines as given by the Director, Centre for 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.

6.3 If the student fails to obtain 50% of the internal assessment marks in the final project, he/she will not be permitted to submit the project report and has to register for the same in the subsequent semester.

If a student 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 register for the same in a subsequent semester.

If a student fails in the end semester examinations of the Final Project work of M.B.A., he/she shall resubmit the Project Report within 30 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.

If a student has submitted the project report but did not appear for the viva-voce examination it is considered as fail and he/she will be permitted to resubmit the report within 30 days from the declaration of results and permitted for reappearance in viva-voce examination.

6.3.1 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.

6.3.2 At the end of Summer Internship, the student shall submit an Attendance 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. The attendance certificate 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 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 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

8.1 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.
- Analysing the performance of the students of the class after each test and finding the ways and means of improving the performance of the students.
- Identifying the slow learners, 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.

8.2 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.

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

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

8.5 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.

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

8.7 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.

8.8 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).

10 ATTENDANCE REQUIREMENTS FOR COMPLETION OF A SEMESTER

10.1 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.

10.2 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.

10.3 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)

For all theory, laboratory courses, theory courses with laboratory component and project work the continuous assessment shall be awarded as per the procedure given below:

(i) Theory Courses:

Two assessments each carrying 100 marks shall be conducted during the semester by the Department / College concerned. The total marks obtained in all assessments put together out of 200, shall be proportionately reduced to 40 marks and rounded to the nearest integer (This also implies equal weightage to all the two assessments).

Assessment I (100 Marks)		Assessment II (100 Marks)		Total Internal Assessment
Assignment	Written Test	Assignment	Written Test	
40	60	40	60	200*

Note: Faculty members can choose a common method for evaluating all students under assignment such as case study / seminar / mini project / online certificate courses

*200 Marks is to be converted into 40 marks for internal Assessment.

Two internal assessments will be conducted as a part of continuous assessment. Each internal assessment is to be conducted for 100 marks and will have to be distributed in two parts viz., Assignment (such as case study/seminar/mini project/online certificate courses) and Written Test with each having a weightage of 40% and 60% respectively. The tests are in written mode. The total internal assessment marks of 200 shall be converted into a maximum of 40 marks and rounded to the nearest integer.

(ii) Laboratory Courses:

The maximum marks for Internal Assessment shall be 60 in case of practical courses. Every practical exercise / experiment shall be evaluated based on conduct of experiment / exercise and records to be maintained. There shall be at least one test. The criteria for arriving at the Internal Assessment marks of 60 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 converted into a maximum of 60 marks and rounded to the nearest integer.

(iii) Other Employability Enhancement Courses

(a) Evaluation of Seminar

The Seminar 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. A three member committee appointed by Head of the Institution consisting of course coordinator and two experts from the Department, will evaluate the seminar and at the end of the semester the marks can be consolidated and taken as the final mark. The evaluation shall be based on the seminar paper (40%), presentation (40%) and response to the questions asked during presentation (20%).

(b) Evaluation of Summer Internship

Summer internship will comprise of 4 weeks. The students will be working under a department appointed guide. The candidate shall submit an attendance certificate from the organization where he/she has undergone internship and 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. The evaluation will be done as follows: 20 marks for evaluation by the guide, 40 marks for the report and 40 marks for the viva voce examination. Certificates submitted by the students along with the report shall be sent by the Head of the Institution to the Controller of Examination.

(c) Evaluation of Creativity and Innovation Laboratory

The creativity and innovation laboratory course is an activity-based course with both theoretical and practical content and is to be considered as purely INTERNAL (with 100% internal marks only). Each student is expected to present seminars and to come out with innovative products or services. This will be evaluated by the faculty member(s) handling the course and the consolidated marks can be taken as the final mark. No end semester examination is required for this course.

11.2 **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 assessments 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 do the evaluation process. The list of students along with the marks and the grades earned shall be forwarded to the Controller of Examinations for appropriate action at least one month before the commencement of End Semester Examinations. The grades earned by the students for Value Added Courses will be recorded in the Grade Sheet, however the same shall not be considered for the computation of CGPA.

11.3 **Assessment for Online courses**

Students may be permitted to credit two online courses (which are provided with certificate), subject to a maximum of six credits. **The online course of 3 credits can be considered instead of one elective course**. These online courses shall be chosen from the SWAYAM platform, provided the offering organisation conducts regular examination and provides marks. The credits earned shall be transferred and the marks earned shall be converted into grades and transferred, provided the student has passed in the examination as per the norms of the offering organisation. The details regarding online courses taken up by the student and marks/credits earned and the approval for the course from Centre for Academic Courses shall be sent to the Controller of Examinations, Anna University in the subsequent semester(s) along with the details of the elective(s) to be dropped.

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

11.5 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/her 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 inspect the records of attendance and assessments of both current and previous semesters.

11.6 Conduct of Academic Audit by every Institution

Every educational institution shall strive for a better performance of the students by conducting the internal assessments as mentioned in Clause 11.

In order to ensure the above, Academic Audit is to be done for every course taught during the semester. For the internal assessments conducted for each course as per details provided in Clause 11, the academic records shall be maintained in the form of documentation for the individual assignments / case study report / report of mini project submitted by each student and assessment test question paper and answer script. Report of industrial training / internship shall also be maintained, if applicable. For laboratory courses students' record shall be maintained. Further, the attendance of all students shall be maintained as a record.

The Head of the Institution shall arrange to conduct the Academic Audit for every course in a semester by forming the respective committees with an external course expert as one of the members drawn from a Management / Technical institution of repute near the institute.

The University or any inspection team appointed by the University may verify the records of Academic Audit report of the courses of both current and previous semesters, as and when required.

12 REQUIREMENTS FOR APPEARING FOR SEMESTER EXAMINATION

12.1 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.

12.2 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.

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

13 UNIVERSITY EXAMINATIONS

13.1 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.

**Amendment
of Clause
13.2. (iii)**

13.2 **WEIGHTAGE**

The following will be the weightage for different courses:

i) Lecture or Lecture cum Tutorial based course:

Internal Assessment	-	40%
End Semester Examination	-	60%

ii) Laboratory based courses

Internal Assessment	-	60%
End Semester Examination	-	40%

iii) Project work

Internal Assessment	-	60%
Evaluation of Project Report by external examiner	-	10%
Viva-Voce Examination	-	30%

iv) Industrial training / Internship/ Practical training /
Summer project / Seminar

(All Employability Enhancement Courses except Project Work)

Internal Assessment	-	100%
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14 **PASSING REQUIREMENTS**

14.1 A student 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 laboratory courses (including project work).

14.2 If a student fails to secure a pass in a theory course (except electives)/ laboratory courses, the student shall register and appear only for the end semester examination in the subsequent semester. In such case, the internal assessment marks obtained by the student in the first appearance shall be retained and considered valid for all subsequent attempts till the student secures a pass. However, from the third attempt onwards if a student fails to obtain pass marks (IA + End Semester Examination) as per clause 14.1, then the student shall be declared to have passed the examination if he/she secures a minimum of 50% marks prescribed for the university end semester examinations alone.

14.3 If the course, in which the student has failed, is a professional elective or an open elective, the student may be permitted to complete the same course. In such case, the internal assessment marks obtained by the candidate in the first appearance shall

be retained and considered valid for all subsequent attempts till the candidate secures a pass. However, from the third attempt onwards if a candidate fails to obtain pass marks (IA + End Semester Examination) as per clause 14.1, then the candidate shall be declared to have passed the examination if he/she secure a minimum of 50% marks prescribed for the university end semester examinations alone.

If any other professional elective or open elective course is opted by the student, the previous registration is cancelled and henceforth it is to be considered as a new professional elective or open elective course. The student has to register and attend the classes, earn the continuous assessment marks, fulfill the attendance requirements as per Clause 10 and appear for the end semester examination.

- 14.4 If a student is absent during the viva voce examination, it would be considered as fail. 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.
- 14.5 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.
- 14.6 A student can apply for revaluation of his/her semester examination answer paper in a theory course as per the guidelines of COE, 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 EEC courses.

15 AWARD OF LETTER GRADES

- 15.1 The award of letter grades will be decided using relative grading principle except Laboratory Courses and Project Work. The performance of a student will be reported using letter grades, each carrying certain points as detailed below:

Amendment
of
Clause 15.1

Letter Grade	Grade Points*
O (Outstanding)	10
A + (Excellent)	9
A (Very Good)	8
B + (Good)	7
B (Average)	6
C (Satisfactory)	5
U (Re-appearance)	0
SA (Shortage of Attendance)	0
WD (Withdrawal)	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", "C".

'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.

"U" denotes that the student has failed to pass in that course. "WD" denotes withdrawal from the exam for the particular course. The grades U and W will figure both in the Grade Sheet as well as in the Result Sheet. In both cases, the student has to appear for the End Semester Examinations as per the Regulations.

If the grade U is given to **Theory Courses/ Laboratory Courses** it is not required to satisfy the attendance requirements (vide clause 10), but has to appear for the end semester examination and fulfil the norms specified in clause 14 to earn a pass in the respective courses. If the grade U is given to **Project work**, the course has to be registered again and attendance requirement (vide clause 10) should be satisfied.

If the grade U is given to **EEC course (except project work), which are evaluated only through internal assessment**, the student shall register for the course again in the subsequent semester fulfill the norms as specified in Clause 14 to earn pass in the course. However, attendance requirement need not be satisfied.

15.1.1 Relative Grading

For those students who have passed the course (theory course / laboratory integrated courses / theory integrated courses / all other EEC except laboratory course / Project Work Courses), the relative grading shall be done. The marks of those students who have passed only shall be inputted in the software developed for relative grading. The evolved relative grading method normalizes the results data using the BOX-COX transformation method and computes the grade range for each course separately and awards the grade to each student. (theory course / laboratory integrated courses / theory integrated courses and all other EEC Courses). If the students' strength is greater than 30, the relative grading method shall be adopted.

Insertion of
New Clause
15.1.1

15.1.2 Absolute Grading

- For all the courses, if the students' strength is less than or equal to 30 then the absolute grading shall be followed with the grade range as specified in the Table.
- For the Project Work / Internship and Laboratory Courses absolute grading procedure shall be followed as given in the Table.

Insertion of
New Clause
15.1.2

Table – Grade range for absolute grading

O	A+	A	B+	B	C	U
91 - 100	81 - 90	71 - 80	61 - 70	56 - 60	50 – 55	< 50

15.2 The grades O, A+, A, B+, B, C obtained for the one/two credit courses (not part of curriculum) under the title ‘**Value Added Courses**’ and ‘**internship/industrial training**’ (if not part of curriculum) shall figure in the Grade Sheet. For these courses if the grades obtained are RA, SA then it shall **not figure in the Grade Sheet**.

15.3 For the students who complete the Audit Course satisfying attendance requirement, the title of the Audit Course will be mentioned in the Grade Sheet. If the attendance requirement is not satisfied, it will not be shown in the **Grade Sheet**.

15.4 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 acquired for courses and the corresponding points to the sum of the number of credits acquired for the courses 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.

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

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**.

16 ELIGIBILITY FOR THE AWARD OF THE DEGREE

16.1 A student shall be declared to be eligible for the award of the 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.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.B.A. (Part 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, Centre for Academic Courses whenever readmitted under regulations other than R-2021 (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

17.1 FIRST CLASS WITH DISTINCTION:

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

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.B.A. (Part 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.

17.2 FIRST CLASS:

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

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 **6.50**.

M.B.A. (Part 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 **6.50**.

17.3 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**.

17.4 A student who is absent in End Semester Examination in a course / project work after having registered for the same shall be considered to have appeared in that examination (except approved withdrawal from end semester examinations as per clause 18) for the purpose of classification.

17.5 **Photocopy / Revaluation**

A student can apply for photocopy of his/her semester examination answer paper in a theory course, as per the guidelines of COE 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 student 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 student concerned through the Head of the Institutions. Revaluation is not permitted for practical courses and for EEC courses.

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

17.6 **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 Examinations through the Head of the Institution.

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

18 **PROVISIONS FOR WITHDRAWAL FROM EXAMINATION:**

18.1 A student may, for valid reasons, (medically unfit / unexpected family situations / sports approved by Head of the Institution) 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 COE through the Head of the Institutions with required documents.

18.2 Withdrawal application is valid if the student is otherwise eligible to write the examination (Clause 10) and if it is made within TEN days after the date of the examination(s) in that course or courses and recommended by the Head of the Institution and approved by the Controller of Examinations. For a student to withdraw from a course / courses, he/she should have registered for the course, fulfilled the attendance requirements (vide clause 10) and earned continuous assessment marks.

18.2.1 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.

- 18.3 In case of withdrawal from a course / courses, it will figure both in Marks Sheet as well as in Result Sheet. However, withdrawal shall not be considered as an appearance for the eligibility of a student for First Class with Distinction.
- 18.4 If a student withdraws from writing end semester examinations for a course or courses, he/she shall register for the same in the subsequent semester and write the end semester examination(s).
- 18.5 If a student applies for withdrawal from Project work, he/she will be permitted only after the submission of project report before the deadline. However, the candidate may appear for the viva voce examination within 30 days after the declaration of results and the same is not considered as reappearance.
- 18.6 Withdrawal is permitted for the end semester examinations in the final semester, as per clause 17.1.

19 AUTHORIZED BREAK OF STUDY FROM A PROGRAMME

- 19.1 A student is permitted to avail authorised break of study for a maximum period of one year in a single spell.
- 19.2 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 student may apply for additional break of study not exceeding another one year. If a student 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.
- 19.3 The students permitted to rejoin the programme after break of study / prevention due to lack of attendance, shall be governed by the Curriculum and Regulations in force at the time of rejoining. The students rejoining in new regulations shall register for additional courses, if any, as notified by the Centre for Academic Courses under change of regulations. These courses may be from any of the semesters of the curriculum in force, so as to bridge the curriculum in force and the old curriculum. In such cases, the total number of credits to be earned by the student may be more than or equal to the total number of credits prescribed in the curriculum in force.

- 19.4 The authorized break of study of maximum of one year is included in the duration specified for passing all the courses for the purpose of classification (vide Clause 17.1).
- 19.5 The total period for completion of the Programme reckoned from, the commencement of the first semester to which the student was admitted shall not exceed the maximum period specified in clause 4.1 irrespective of the period of break of study in order that he/she may be eligible for the award of the degree.
- 19.6 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).
- 19.7 If a student in Full Time mode wants to take up job / start-up / entrepreneurship during the period of study he/she shall apply for authorised break of study for one year. The student shall undertake the job / start-up / entrepreneurship only after getting approval of the same by The Director, Centre for Academic Courses with due proof to that effect.
- 19.8 No fee is applicable to students during the Break of Study period.

20 DISCIPLINE

- 20.1 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.
- 20.2 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 the Syndicate.

Digitally signed by KUMARESAN
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Date: 2024.04.01 17:39:08 +05'30'

J.K.K.Munirajah College of Technology
(Autonomous)

T.N.Palayam, Gobi (Tk),
Erode (Dt) - 639 506

**STRUCTURE OF THE PROGRAMME
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 VIII
SEMESTER I

Sl. No.	Course code	Course Title	Cate - Gory	Periods per week			Total Contact	Credits
				L	T	P		
1.	IP3151	Induction Programme	-	-	-	-	-	0
THEORY								
2.	HS3152	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
PRACTICAL								
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
TOTAL				16	1	10	27	22

[§] 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.	HS3252	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

(Signature)
Principal
J.K.K. Munirajah College of Technology
 (Autonomous)
 T.N. Palayam, Gobi (Tn)
 Erode (Dt) - 638 501

SEMESTER III

S. No.	Course Code	Course Title	Category	Periods per week			Total Contact Periods	Credits
				L	T	P		
THEORY								
1.	MA3351	Transforms and Partial Differential Equations	BSC	3	1	0	4	4
2.	ME3393	Manufacturing Processes	PCC	3	0	0	3	3
3.	AU3301	Thermodynamics and Heat Transfer	ESC	3	0	0	3	3
4.	ME3351	Engineering Mechanics	ESC	3	0	0	3	3
5.	AU3302	Automotive Hydraulics and Machinery	ESC	3	0	0	3	3
6.	AU3303	Automotive Engines	PCC	3	0	0	3	3
PRACTICALS								
7.	AU3311	Mechanical Sciences Laboratory	ESC	0	0	4	4	2
8.	ME3382	Manufacturing Technology Laboratory	PCC	0	0	4	4	2
9.	GE3361	Professional Development [§]	EEC	0	0	2	2	1
TOTAL				18	1	10	29	24

§ Skill Based Course

SEMESTER IV

S. No.	Course Code	Course Title	Category	Periods per week			Total Contact Periods	Credits
				L	T	P		
THEORY								
1.	AU3401	Fuels and Lubricants	PCC	3	0	0	3	3
2.	AU3402	Automotive Chassis	PCC	3	0	0	3	3
3.	AU3403	Vehicle Body Engineering	PCC	3	0	0	3	3
4.	ML3391	Mechanics of Solids	ESC	3	0	0	3	3
5.	AU3404	Automotive Transmission	PCC	3	0	0	3	3
6.	GE3451	Environmental Sciences and Sustainability	BSC	2	0	0	2	2
7.		NCC Credit Course Level 2 [#]		3	0	0	3	3 [#]
PRACTICALS								
8.	AU3411	Vehicle Components Laboratory	PCC	0	0	4	4	2
9.	AU3412	Fuels and Lubricants Laboratory	PCC	0	0	4	4	2
TOTAL				17	0	8	25	21

[#] NCC Credit Course level 2 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.

SEMESTER V

S. No.	Course Code	Course title	Category	Periods per week			Total Contact Periods	Credits
				L	T	P		
THEORY								
1.	AU3501	Mechanics of Machines	PCC	3	0	0	3	3
2.	AU3502	Automotive Electrical and Electronics	PCC	3	0	0	3	3
3.		Professional Elective I	PEC	-	-	-	-	3
4.		Professional Elective II	PEC	-	-	-	-	3
5.		Professional Elective III	PEC	-	-	-	-	3
6.		Professional Elective IV	PEC	-	-	-	-	3
7.		Mandatory Course-I*	MC	3	0	0	3	Non-Credit Course
PRACTICALS								
8.	AU3511	Automotive Electrical and Electronics Laboratory	PCC	0	0	4	4	2
TOTAL				-	-	-	-	20

*Mandatory Course-I is a Non-credit Course (Student shall select one course from the list given under MC-I)

SEMESTER VI

S. No.	Course Code	Course title	Category	Periods per week			Total Contact Periods	Credits
				L	T	P		
THEORY								
1.	AU3601	Automotive Pollution and Control	PCC	3	0	0	3	3
2.		Open Elective I*	OEC	3	0	0	3	3
3.		Professional Elective V	PEC	-	-	-	-	3
4.		Professional Elective VI	PEC	-	-	-	-	3
5.		Professional Elective VII	PEC	-	-	-	-	3
6.		Professional Elective VIII	PEC	-	-	-	-	3
7.		Mandatory Course-II*	AC	3	0	0	3	Non-Credit Course
8.		NCC Credit Course Level 3#		3	0	0	3	3#
PRACTICALS								
9.	AU3611	Computer Aided Vehicle Design and Analysis Laboratory	PCC	0	0	4	4	2
10.	AU3612	Engine Testing and Emission Measurement Laboratory	PCC	0	0	4	4	2
TOTAL				-	-	-	-	22

*Open Elective – I shall be chosen from the emerging technologies.

*Mandatory Course-II is a Non-credit Course (Student shall select one course from the list given under MC- II)

NCC Credit Course level 3 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

SEMESTER VII

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
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
PRACTICAL								
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
TOTAL				26	18	0	8	22

SEMESTER VIII

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
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
PRACTICAL								
4.	AT8811	Project Work	EEC	20	0	0	20	10
TOTAL				29	9	0	20	19

ELECTIVE – MANAGEMENT COURSES

Sl. No.	Course Code	Course Title	Cate Gory	Periods per week			Total Contact Periods	Credits
				L	T	P		
1.	GE3751	Principles of Management	HSMC	3	0	0	3	3
2.	GE3752	Total Quality Management	HSMC	3	0	0	3	3
3.	GE3753	Engineering Economics and Financial Accounting	HSMC	3	0	0	3	3
4.	GE3754	Human Resource Management	HSMC	3	0	0	3	3
5.	GE3755	Knowledge Management	HSMC	3	0	0	3	3
6.	GE3792	Industrial Management	HSMC	3	0	0	3	3

MANDATORY COURSES I*

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS
				L	T	P	
1.	MX3081	Introduction to Women and Gender Studies	MC	3	0	0	3
2.	MX3082	Elements of Literature	MC	3	0	0	3
3.	MX3083	Film Appreciation	MC	3	0	0	3
4.	MX3084	Disaster Risk Reduction and Management	MC	3	0	0	3

*Mandatory Courses are offered as Non-Credit courses

MANDATORY COURSES II*

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS
				L	T	P	
1.	MX3085	Well Being with Traditional Practices (Yoga, Ayurveda and Siddha)	MC	3	0	0	3
2.	MX3086	History of Science and Technology in India	MC	3	0	0	3
3.	MX3087	Political and Economic Thought for a Humane Society	MC	3	0	0	3
4.	MX3088	State, Nation Building and Politics in India	MC	3	0	0	3
5.	MX3089	Industrial Safety	MC	3	0	0	3

*Mandatory Courses are offered as Non-Credit courses

PROFESSIONAL ELECTIVE COURSES: VERTICALS

VERTICAL 1 : ELECTRIC VEHICLES

Sl. No.	Course code	Course title	Category	Periods Per week			Total Contact periods	Credits
				L	T	P		
1.	AU3001	Electric Two and Three Wheelers	PEC	3	0	0	3	3
2.	AU3002	Batteries and Management system	PEC	3	0	0	3	3
3.	AU3003	Traction Motors	PEC	3	0	0	3	3
4.	AU3004	Automotive Power Electronics	PEC	3	0	0	3	3
5.	AU3005	Automotive Functional Safety	PEC	3	0	0	3	3
6.	AU3006	Fuel Cell Technologies	PEC	3	0	0	3	3
7.	AU3007	Autonomous and Connected Vehicles	PEC	3	0	0	3	3
8.	AU3008	Sensors and Actuators	PEC	3	0	0	3	3

VERTICAL 2: COMPUTATIONAL DESIGN

Sl. No.	Course Code	Course title	Category	Periods Per week			Total contact periods	Credits
				L	T	P		
1.	AU3009	Computer Aided Design and Manufacturing	PEC	3	0	0	3	3
2.	AU3010	Integrated Computational Materials Engineering	PEC	3	0	0	3	3
3.	AU3011	Computational Theory on Solid Mechanics	PEC	3	0	0	3	3
4.	AU3012	Computational and Visualization Theory	PEC	3	0	0	3	3
5.	AU3013	Computer Integrated Manufacturing in Automotive Sector	PEC	3	0	0	3	3
6.	AU3014	Computational Aero Dynamics	PEC	3	0	0	3	3
7.	AU3015	CFD and Heat transfer	PEC	3	0	0	3	3
8.	AU3016	Digital Manufacturing of Automobiles	PEC	3	0	0	3	3

VERTICAL 3: VEHICLE RESEARCH AND VALIDATION

Sl. No.	Course code	Course title	Category	Periods Per week			Total Contact periods	Credits
				L	T	P		
1.	AU3017	Advanced Automotive Materials	PEC	3	0	0	3	3
2.	AU3018	Noise, Vibration and Harshness	PEC	3	0	0	3	3
3.	AU3019	Combustion Thermodynamics and Heat Transfer	PEC	3	0	0	3	3
4.	AU3020	Alternative Fuels and Energy Systems	PEC	3	0	0	3	3
5.	AU3021	Automotive Instrumentation	PEC	3	0	0	3	3
6.	AU3022	Testing and Measurement Systems	PEC	3	0	0	3	3
7.	AU3023	Homologation	PEC	3	0	0	3	3
8.	AU3024	IC Engine Process Modelling	PEC	3	0	0	3	3

VERTICAL 4: SPECIAL PURPOSE VEHICLES

Sl. No.	Course code	Course title	Category	Periods Per week			Total Contact Periods	Credits
				L	T	P		
1.	AU3025	Agricultural Vehicles	PEC	3	0	0	3	3
2.	AU3026	Defence Vehicles	PEC	3	0	0	3	3
3.	AU3027	Constructions Vehicles	PEC	3	0	0	3	3
4.	AU3028	Marine Vehicles	PEC	3	0	0	3	3
5.	AU3029	Space Vehicles	PEC	3	0	0	3	3
6.	CME386	Gas Dynamics and Jet Propulsion	PEC	3	0	0	3	3
7.	CRA332	Drone Technologies	PEC	3	0	0	3	3

VERTICAL 5 : PRODUCT AND PROCESS DEVELOPMENT

Sl. No.	Course Code	Course Title	Category	Periods Per week			Total Contact Periods	Credits
				L	T	P		
1.	AU3030	Automotive Product Design	PEC	3	0	0	3	3
2.	AU3031	Ergonomics in Automotive Design	PEC	3	0	0	3	3
3.	AU3032	Vehicle Control Systems	PEC	3	0	0	3	3
4.	CME339	Additive Manufacturing	PEC	2	0	2	4	3
5.	AU3033	Finite Element Analysis	PEC	3	0	0	3	3
6.	AU3034	New Product Development Process	PEC	3	0	0	3	3
7.	AU3035	Automotive Product Life Cycle Management	PEC	3	0	0	3	3
8.	CAU332	Dynamics of Ground Vehicles	PEC	3	0	0	3	3

VERTICAL 6: DIVERSIFIED COURSES GROUP 1

Sl. No.	Course Code	Course Title	Category	Periods Per week			Total Contact periods	Credits
				L	T	P		
1.	AU3041	Engine and Vehicle Management Systems	PEC	3	0	0	3	3
2.	AU3042	Transport Management	PEC	3	0	0	3	3
3.	AU3043	Vehicle Maintenance	PEC	3	0	0	3	3
4.	AU3044	Two and Three Wheelers	PEC	3	0	0	3	3
5.	CIE362	Entrepreneurship Development	PEC	3	0	0	3	3
6.	CSF331	Disaster Management	PEC	3	0	0	3	3
7.	AU3036	Advance Theory of IC Engines	PEC	3	0	0	3	3
8.	IE3491	Operations Research	PEC	3	0	0	3	3

VERTICAL 7: DIVERSIFIED COURSES GROUP 2

Sl. No.	Course code	Course Title	Category	Periods Per week			Total Contact periods	Credits
				L	T	P		
1.	ME3492	Hydraulics and Pneumatics	PEC	3	0	0	3	3
2.	CML331	Fundamentals of Nanoscience	PEC	3	0	0	3	3
3.	CAU331	Intellectual Property Rights	PEC	3	0	0	3	3
4.	AU3037	Road Vehicle Aerodynamics	PEC	3	0	0	3	3
5.	CIE350	Lean Six Sigma	PEC	3	0	0	3	3
6.	AU3038	Renewable Sources of Energy	PEC	3	0	0	3	3
7.	AU3039	Vehicle Air-Conditioning	PEC	3	0	0	3	3
8.	AU3040	Solar Energy Technology	PEC	3	0	0	3	3

PROGRESS THROUGH KNOWLEDGE

OPEN ELECTIVES

(Students shall choose the open elective courses, such that the course contents are not similar to any other course contents/title under other course categories).

**OPEN ELECTIVE I AND II
(EMERGING TECHNOLOGIES)**

To be offered other than Faculty of Information and Communication Engineering

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	OCS351	Artificial Intelligence and Machine Learning Fundamentals	OEC	2	0	2	4	3
2.	OCS352	IoT Concepts and Applications	OEC	2	0	2	4	3
3.	OCS353	Data Science Fundamentals	OEC	2	0	2	4	3
4.	CCS333	Augmented Reality /Virtual Reality	OEC	2	0	2	4	3

OPEN ELECTIVES – III

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	OHS351	English for Competitive Examinations	OEC	3	0	0	3	3
2.	OMG352	NGOs and Sustainable Development	OEC	3	0	0	3	3
3.	OMG353	Democracy and Good Governance	OEC	3	0	0	3	3
4.	OCE353	Lean Concepts, Tools And Practices	OEC	3	0	0	3	3
5.	CME365	Renewable Energy Technologies	OEC	3	0	0	3	3
6.	OME354	Applied Design Thinking	OEC	3	0	0	3	3
7.	MF3003	Reverse Engineering	OEC	3	0	0	3	3
8.	OPR351	Sustainable Manufacturing	OEC	3	0	0	3	3
9.	OAS352	Space Engineering	OEC	3	0	0	3	3
10.	OIM351	Industrial Management	OEC	3	0	0	3	3
11.	OIE354	Quality Engineering	OEC	3	0	0	3	3
12.	OSF351	Fire Safety Engineering	OEC	3	0	0	3	3
13.	OML351	Introduction to Non-Destructive Testing	OEC	3	0	0	3	3
14.	OMR351	Mechatronics	OEC	3	0	0	3	3
15.	ORA351	Foundation of Robotics	OEC	3	0	0	3	3
16.	OAE352	Fundamentals of Aeronautical Engineering	OEC	3	0	0	3	3
17.	OGI351	Remote Sensing Concepts	OEC	3	0	0	3	3
18.	OAI351	Urban Agriculture	OEC	3	0	0	3	3
19.	OEN351	Drinking Water Supply and Treatment	OEC	3	0	0	3	3
20.	OEE352	Electric Vehicle Technology	OEC	3	0	0	3	3
21.	OEI353	Introduction to PLC Programming	OEC	3	0	0	3	3
22.	OCH351	Nano Technology	OEC	3	0	0	3	3
23.	OCH352	Functional Materials	OEC	3	0	0	3	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 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.	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.	GE8072	Foundation Skills in Integrated Product Development	PE	3	3	0	0	3
6.	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										


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CHOICE BASED CREDIT SYSTEM
B. E. CIVIL ENGINEERING
CURRICULUM AND SYLLABI FOR SEMESTERS I TO VIII

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
THEORY								
2.	HS3152	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
PRACTICALS								
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
TOTAL				16	1	10	27	22

[§] 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.	HS3252	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 [#]	-	2	0	0	2	2 [#]
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 [§]	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

(Signature)
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SEMESTER III

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	MA3351	Transforms and Partial Differential Equations	BSC	3	1	0	4	4
2.	ME3351	Engineering Mechanics	ESC	3	0	0	3	3
3.	CE3301	Fluid Mechanics	PCC	3	0	0	3	3
4.	CE3302	Construction Materials and Technology	PCC	3	0	0	3	3
5.	CE3303	Water Supply and Wastewater Engineering	PCC	4	0	0	4	4
6.	CE3351	Surveying and Levelling	PCC	3	0	0	3	3
PRACTICALS								
7.	CE3361	Surveying and Levelling Laboratory	PCC	0	0	3	3	1.5
8.	CE3311	Water and Wastewater Analysis Laboratory	PCC	0	0	3	3	1.5
9.	GE3361	Professional Development [§]	EEC	0	0	2	2	1
TOTAL				19	1	8	28	24

[§] Skill Based Course

SEMESTER IV

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	CE3401	Applied Hydraulics Engineering	PCC	3	1	0	4	4
2.	CE3402	Strength of Materials	PCC	3	0	0	3	3
3.	CE3403	Concrete Technology	PCC	3	0	0	3	3
4.	CE3404	Soil Mechanics	PCC	3	0	0	3	3
5.	CE3405	Highway and Railway Engineering	PCC	3	0	0	3	3
6.	GE3451	Environmental Sciences and Sustainability	BSC	2	0	0	2	2
7.		NCC Credit Course Level 2 [#]		3	0	0	3	3 [#]
PRACTICALS								
8.	CE3411	Hydraulic Engineering Laboratory	PCC	0	0	3	3	1.5
9.	CE3412	Materials Testing Laboratory	PCC	0	0	4	4	2
10.	CE3413	Soil Mechanics Laboratory	PCC	0	0	3	3	1.5
TOTAL				17	1	10	28	23

[#] NCC Credit Course level 2 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

SEMESTER V

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	CE3501	Design of Reinforced Concrete Structural Elements	PCC	3	0	0	3	3
2.	CE3502	Structural Analysis I	PCC	3	0	0	3	3
3.	CE3503	Foundation Engineering	PCC	3	0	0	3	3
4.		Professional Elective I	PEC	3	0	0	3	3
5.		Professional Elective II	PEC	3	0	0	3	3
6.		Professional Elective III	PEC	3	0	0	3	3
7.		Mandatory Course-I ^{&}	MC	3	0	0	3	Non-credit course
PRACTICALS								
8.	CE3511	Highway Engineering Laboratory	PCC	0	0	4	4	2
9.	CE3512	Survey Camp (2 weeks)	EEC	0	0	0	0	1
TOTAL				21	0	4	25	21

[&] Mandatory Course-I is a Non-credit Course (Student shall select one course from the list given under MC-I)

SEMESTER VI

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	CE3601	Design of Steel Structural Elements	PCC	3	0	0	3	3
2.	CE3602	Structural Analysis II	PCC	3	0	0	3	3
3.	AG3601	Engineering Geology	PCC	3	0	0	3	3
4.		Professional Elective IV	PEC	3	0	0	3	3
5.		Professional Elective V	PEC	3	0	0	3	3
6.		Professional Elective VI	PEC	3	0	0	3	3
7.		Open Elective – I [*]	OEC	3	0	0	3	3
8.		Mandatory Course-II ^{&}	MC	3	0	0	3	Non-credit course
9.		NCC Credit Course Level 3 [#]		3	0	0	3	3 [#]
PRACTICALS								
10.	CE3611	Building Drawing and Detailing Laboratory	PCC	0	0	4	4	2
TOTAL				24	0	4	28	23

^{*}Open Elective – I shall be chosen from the emerging technologies

[&] Mandatory Course-II is a Non-credit Course (Student shall select one course from the list given under MC-II)

[#] NCC Credit Course level 3 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

MANDATORY COURSES II*

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS
				L	T	P	
1.	MX3085	Well Being with Traditional Practices - Yoga, Ayurveda and Siddha	MC	3	0	0	3
2.	MX3086	History of Science and Technology in India	MC	3	0	0	3
3.	MX3087	Political and Economic Thought for a Humane Society	MC	3	0	0	3
4.	MX3088	State, Nation Building and Politics in India	MC	3	0	0	3
5.	MX3089	Industrial Safety	MC	3	0	0	3

*Mandatory Courses are offered as Non-Credit Courses

PROGRESS THROUGH KNOWLEDGE

SEMESTER VII

S.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
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
PRACTICALS								
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
TOTAL				21	15	0	6	20

SEMESTER VIII

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

PROFESSIONAL ELECTIVE COURSES : VERTICALS

VERTICAL I: STRUCTURES

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CE3001	Concrete Structures	PEC	3	0	0	3	3
2.	CE3002	Steel Structures	PEC	3	0	0	3	3
3.	CE3003	Prefabricated Structures	PEC	3	0	0	3	3
4.	CE3004	Prestressed Concrete Structures	PEC	3	0	0	3	3
5.	CE3005	Rehabilitation/Heritage Restoration	PEC	3	0	0	3	3
6.	CE3006	Dynamics and Earthquake Resistant Structures	PEC	3	0	0	3	3
7.	CE3007	Introduction to Finite Element Method	PEC	3	0	0	3	3

VERTICAL II: CONSTRUCTION TECHNIQUES AND PRACTICES

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CE3008	Formwork Engineering	PEC	3	0	0	3	3
2.	CE3009	Construction Equipment and Machinery	PEC	3	0	0	3	3
3.	CE3010	Sustainable Construction And Lean Construction	PEC	3	0	0	3	3
4.	CE3011	Digitalized Construction Lab	PEC	0	0	6	6	3
5.	CE3012	Construction Management and Safety	PEC	2	0	2	4	3
6.	CE3013	Advanced Construction Techniques	PEC	3	0	0	3	3
7.	CE3014	Energy Efficient Buildings	PEC	3	0	0	3	3

VERTICAL III: GEOTECHNICAL

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CE3015	Geoenvironmental Engineering	PEC	3	0	0	3	3
2.	CE3016	Ground Improvement Techniques	PEC	3	0	0	3	3
3.	CE3017	Soil Dynamics and Machine Foundations	PEC	3	0	0	3	3
4.	CE3018	Rock Mechanics	PEC	3	0	0	3	3
5.	CE3019	Earth and Earth Retaining Structures	PEC	3	0	0	3	3
6.	CE3020	Pile Foundation	PEC	3	0	0	3	3
7.	CE3021	Tunneling Engineering	PEC	3	0	0	3	3

VERTICAL IV: GEO-INFORMATICS

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	GI3492	Total Station and GPS Surveying	PEC	3	0	0	3	3
2.	CE3022	Remote Sensing Concepts	PEC	3	0	0	3	3
3.	CE3023	Satellite Image Processing	PEC	3	0	0	3	3
4.	GI3491	Cartography and GIS	PEC	3	0	0	3	3
5.	GI3391	Photogrammetry	PEC	3	0	0	3	3
6.	GI3691	Airborne and Terrestrial Laser Mapping	PEC	3	0	0	3	3
7.	CE3024	Hydrographic Surveying	PEC	3	0	0	3	3

VERTICAL V: TRANSPORTATION INFRASTRUCTURE

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CE3025	Airports and Harbours	PEC	3	0	0	3	3
2.	CE3026	Traffic Engineering and Management	PEC	3	0	0	3	3
3.	CE3027	Urban Planning and Development	PEC	3	0	0	3	3
4.	CE3028	Smart Cities	PEC	3	0	0	3	3
5.	CE3029	Intelligent Transportation Systems	PEC	3	0	0	3	3
6.	CE3030	Pavement Engineering	PEC	3	0	0	3	3
7.	CE3031	Transportation Planning Process	PEC	3	0	0	3	3

VERTICAL VI: ENVIRONMENT

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CE3032	Climate Change Adaptation and Mitigation	PEC	3	0	0	3	3
2.	CCE331	Air and Noise Pollution Control Engineering	PEC	3	0	0	3	3
3.	CCE333	Environmental Impact Assessment	PEC	3	0	0	3	3
4.	CCE334	Industrial Wastewater Management	PEC	3	0	0	3	3
5.	CE3033	Solid and Hazardous Waste Management	PEC	3	0	0	3	3
6.	CE3034	Environmental Policy and Legislations	PEC	3	0	0	3	3
7.	CCE332	Environmental Health and Safety	PEC	3	0	0	3	3

VERTICAL VII: WATER RESOURCES

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CE3035	Irrigation Engineering and Drawing	PEC	2	0	2	4	3
2.	CE3036	Ground Water Engineering	PEC	3	0	0	3	3
3.	CE3037	Water Resources Systems Engineering	PEC	3	0	0	3	3
4.	CE3038	Watershed Conservation and Management	PEC	3	0	0	3	3
5.	CE3039	Integrated Water Resources Management	PEC	3	0	0	3	3
6.	CE3040	Urban Water Infrastructure	PEC	3	0	0	3	3
7.	CE3041	Water Quality and Management	PEC	3	0	0	3	3

VERTICAL VIII: OCEAN ENGINEERING

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CE3042	Ocean Wave Dynamics	PEC	3	0	0	3	3
2.	CE3043	Marine Geotechnical Engineering	PEC	3	0	0	3	3
3.	CE3044	Coastal Engineering	PEC	3	0	0	3	3
4.	CE3045	Offshore Structures	PEC	3	0	0	3	3
5.	CE3046	Port and Harbour Engineering	PEC	3	0	0	3	3
6.	CE3047	Coastal Hazards and Mitigation	PEC	3	0	0	3	3
7.	CE3048	Coastal Zone Management and Remote Sensing	PEC	3	0	0	3	3

VERTICAL IX: DIVERSIFIED COURSES

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CE3049	Steel Concrete Composite Structures	PEC	3	0	0	3	3
2.	CE3050	Finance for Engineers	PEC	3	0	0	3	3
3.	CE3051	Earth and Rockfill Dams	PEC	3	0	0	3	3
4.	CE3052	Computational Fluid Dynamics	PEC	3	0	0	3	3
5.	CE3053	Rainwater Harvesting	PEC	3	0	0	3	3
6.	CE3054	Transport and Environment	PEC	3	0	0	3	3
7.	CE3055	Environmental Quality Monitoring	PEC	3	0	0	3	3

OPEN ELECTIVES

(Students shall choose the open elective courses, such that the course contents are not similar to any other course contents/title under other course categories)

OPEN ELECTIVE I AND II (EMERGING TECHNOLOGIES)

To be offered other than Faculty of Information and Communication Engineering

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	OCS351	Artificial Intelligence and Machine Learning Fundamentals	OEC	2	0	2	4	3
2.	OCS352	IoT Concepts and Applications	OEC	2	0	2	4	3
3.	OCS353	Data Science Fundamentals	OEC	2	0	2	4	3
4.	CCS333	Augmented Reality /Virtual Reality	OEC	2	0	2	4	3

OPEN ELECTIVES – III

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	OHS351	English for Competitive Examinations	OEC	3	0	0	3	3
2.	OMG352	NGOs and Sustainable Development	OEC	3	0	0	3	3
3.	OMG353	Democracy and Good Governance	OEC	3	0	0	3	3
4.	CME365	Renewable Energy Technologies	OEC	3	0	0	3	3
5.	OME354	Applied Design Thinking	OEC	3	0	0	3	3
6.	MF3003	Reverse Engineering	OEC	3	0	0	3	3
7.	OPR351	Sustainable Manufacturing	OEC	3	0	0	3	3
8.	AU3791	Electric and Hybrid Vehicles	OEC	3	0	0	3	3
9.	OAS352	Space Engineering	OEC	3	0	0	3	3
10.	OIM351	Industrial Management	OEC	3	0	0	3	3
11.	OIE354	Quality Engineering	OEC	3	0	0	3	3
12.	OSF351	Fire Safety Engineering	OEC	3	0	0	3	3
13.	OML351	Introduction to Non-Destructive Testing	OEC	3	0	0	3	3
14.	OMR351	Mechatronics	OEC	3	0	0	3	3
15.	ORA351	Foundation of Robotics	OEC	3	0	0	3	3
16.	OAE352	Fundamentals of Aeronautical Engineering	OEC	3	0	0	3	3
17.	OGI351	Remote Sensing Concepts	OEC	3	0	0	3	3
18.	OAI351	Urban Agriculture	OEC	3	0	0	3	3
19.	OEN351	Drinking Water Supply and Treatment	OEC	3	0	0	3	3
20.	OEE352	Electric Vehicle Technology	OEC	3	0	0	3	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									


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CURRICULUM AND SYLLABI FOR SEMESTERS I TO VIII
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
THEORY								
2.	HS3152	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
PRACTICALS								
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
TOTAL				16	1	10	27	22

\$ 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.	HS3252	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#	-	2	0	0	2	2#
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 \$	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

(Signature)
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(Autonomous)
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Erode (Dt) - 638 506.

SEMESTER III

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	MA3354	Discrete Mathematics	BSC	3	1	0	4	4
2.	CS3351	Digital Principles and Computer Organization	ESC	3	0	2	5	4
3.	CS3352	Foundations of Data Science	PCC	3	0	0	3	3
4.	CS3301	Data Structures	PCC	3	0	0	3	3
5.	CS3391	Object Oriented Programming	PCC	3	0	0	3	3
PRACTICALS								
6.	CS3311	Data Structures Laboratory	PCC	0	0	3	3	1.5
7.	CS3381	Object Oriented Programming Laboratory	PCC	0	0	3	3	1.5
8.	CS3361	Data Science Laboratory	PCC	0	0	4	4	2
9.	GE3361	Professional Development [§]	EEC	0	0	2	2	1
TOTAL				15	1	14	30	23

[§] Skill Based Course

SEMESTER IV

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	CS3452	Theory of Computation	PCC	3	0	0	3	3
2.	CS3491	Artificial Intelligence and Machine Learning	PCC	3	0	2	5	4
3.	CS3492	Database Management Systems	PCC	3	0	0	3	3
4.	CS3401	Algorithms	PCC	3	0	2	5	4
5.	CS3451	Introduction to Operating Systems	PCC	3	0	0	3	3
6.	GE3451	Environmental Sciences and Sustainability	BSC	2	0	0	2	2
7.		NCC Credit Course Level 2 [#]		3	0	0	3	3 [#]
PRACTICALS								
8.	CS3461	Operating Systems Laboratory	PCC	0	0	3	3	1.5
9.	CS3481	Database Management Systems Laboratory	PCC	0	0	3	3	1.5
TOTAL				20	0	10	30	22

[#] NCC Credit Course level 2 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.

SEMESTER V

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	CS3591	Computer Networks	PCC	3	0	2	5	4
2.	CS3501	Compiler Design	PCC	3	0	2	5	4
3.	CB3491	Cryptography and Cyber Security	PCC	3	0	0	3	3
4.	CS3551	Distributed Computing	PCC	3	0	0	3	3
5.		Professional Elective I	PEC	-	-	-	-	3
6.		Professional Elective II	PEC	-	-	-	-	3
7.		Mandatory Course-I ^{&}	MC	3	0	0	3	Non-credit course
TOTAL				-	-	-	-	20

[&] Mandatory Course-I is a Non-credit Course (Student shall select one course from the list given under Mandatory Course-I)

SEMESTER VI

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	CCS356	Object Oriented Software Engineering	PCC	3	0	2	5	4
2.	CS3691	Embedded Systems and IoT	PCC	3	0	2	5	4
3.		Open Elective – I [*]	OEC	3	0	0	3	3
4.		Professional Elective III	PEC	-	-	-	-	3
5.		Professional Elective IV	PEC	-	-	-	-	3
6.		Professional Elective V	PEC	-	-	-	-	3
7.		Professional Elective VI	PEC	-	-	-	-	3
8.		Mandatory Course-II ^{&}	MC	3	0	0	3	Non-credit course
9.		NCC Credit Course Level 3 [#]		3	0	0	3	3 [#]
TOTAL				-	-	-	-	23

^{*}Open Elective – I Shall be chosen from the list of open electives offered by other Programmes

[&] Mandatory Course-II is a Non-credit Course (Student shall select one course from the list given under Mandatory Course-II)

[#] NCC Credit Course level 3 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

SEMESTER VII

SI. No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
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
PRACTICALS								
7.	CS8711	Cloud Computing Laboratory	PC	4	0	0	4	2
8.	IT8761	Security Laboratory	PC	4	0	0	4	2
TOTAL				26	18	0	8	22

SEMESTER VIII

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

PROFESSIONAL ELECTIVE COURSES: VERTICALS

VERTICAL 1: DATA SCIENCE

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CCS346	Exploratory Data Analysis	PEC	2	0	2	4	3
2.	CCS360	Recommender Systems	PEC	2	0	2	4	3
3.	CCS355	Neural Networks and Deep Learning	PEC	2	0	2	4	3
4.	CCS369	Text and Speech Analysis	PEC	2	0	2	4	3
5.	CCW331	Business Analytics	PEC	2	0	2	4	3
6.	CCS349	Image and Video Analytics	PEC	2	0	2	4	3
7.	CCS338	Computer Vision	PEC	2	0	2	4	3
8.	CCS334	Big Data Analytics	PEC	2	0	2	4	3

VERTICAL 2: FULL STACK DEVELOPMENT

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CCS375	Web Technologies	PEC	2	0	2	4	3
2.	CCS332	App Development	PEC	2	0	2	4	3
3.	CCS336	Cloud Services Management	PEC	2	0	2	4	3
4.	CCS370	UI and UX Design	PEC	2	0	2	4	3
5.	CCS366	Software Testing and Automation	PEC	2	0	2	4	3
6.	CCS374	Web Application Security	PEC	2	0	2	4	3
7.	CCS342	DevOps	PEC	2	0	2	4	3
8.	CCS358	Principles of Programming Languages	PEC	3	0	0	3	3

VERTICAL 3: CLOUD COMPUTING AND DATA CENTER TECHNOLOGIES

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CCS335	Cloud Computing	PEC	2	0	2	4	3
2.	CCS372	Virtualization	PEC	2	0	2	4	3
3.	CCS336	Cloud Services Management	PEC	2	0	2	4	3
4.	CCS341	Data Warehousing	PEC	2	0	2	4	3
5.	CCS367	Storage Technologies	PEC	3	0	0	3	3
6.	CCS365	Software Defined Networks	PEC	2	0	2	4	3
7.	CCS368	Stream Processing	PEC	2	0	2	4	3
8.	CCS362	Security and Privacy in Cloud	PEC	2	0	2	4	3

VERTICAL 4: CYBER SECURITY AND DATA PRIVACY

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CCS344	Ethical Hacking	PEC	2	0	2	4	3
2.	CCS343	Digital and Mobile Forensics	PEC	2	0	2	4	3
3.	CCS363	Social Network Security	PEC	2	0	2	4	3
4.	CCS351	Modern Cryptography	PEC	2	0	2	4	3
5.	CB3591	Engineering Secure Software Systems	PEC	2	0	2	4	3
6.	CCS339	Cryptocurrency and Blockchain Technologies	PEC	2	0	2	4	3
7.	CCS354	Network Security	PEC	2	0	2	4	3
8.	CCS362	Security and Privacy in Cloud	PEC	2	0	2	4	3

VERTICAL 5: CREATIVE MEDIA

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CCS333	Augmented Reality/Virtual Reality	PEC	2	0	2	4	3
2.	CCS352	Multimedia and Animation	PEC	2	0	2	4	3
3.	CCS371	Video Creation and Editing	PEC	2	0	2	4	3
4.	CCS370	UI and UX Design	PEC	2	0	2	4	3
5.	CCW332	Digital marketing	PEC	2	0	2	4	3
6.	CCS373	Visual Effects	PEC	2	0	2	4	3
7.	CCS347	Game Development	PEC	2	0	2	4	3
8.	CCS353	Multimedia Data Compression and Storage	PEC	2	0	2	4	3

VERTICAL 6: EMERGING TECHNOLOGIES

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CCS333	Augmented Reality/Virtual Reality	PEC	2	0	2	4	3
2.	CCS361	Robotic Process Automation	PEC	2	0	2	4	3
3.	CCS355	Neural Networks and Deep Learning	PEC	2	0	2	4	3
4.	CCS340	Cyber security	PEC	2	0	2	4	3
5.	CCS359	Quantum Computing	PEC	2	0	2	4	3
6.	CCS339	Cryptocurrency and Blockchain Technologies	PEC	2	0	2	4	3
7.	CCS347	Game Development	PEC	2	0	2	4	3
8.	CCS331	3D Printing and Design	PEC	2	0	2	4	3

VERTICAL 7: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CCS350	Knowledge Engineering	PEC	2	0	2	4	3
2.	CCS364	Soft Computing	PEC	2	0	2	4	3
3.	CCS355	Neural Networks and Deep Learning	PEC	2	0	2	4	3
4.	CCS369	Text and Speech Analysis	PEC	2	0	2	4	3
5.	CCS357	Optimization Techniques	PEC	2	0	2	4	3
6.	CCS348	Game Theory	PEC	2	0	2	4	3
7.	CCS337	Cognitive Science	PEC	2	0	2	4	3
8.	CCS345	Ethics And AI	PEC	2	0	2	4	3

OPEN ELECTIVES

(Students shall choose the open elective courses, such that the course contents are not similar to any other course contents/title under other course categories).

OPEN ELECTIVES – I

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	OAS351	Space Science	OEC	3	0	0	3	3
2.	OIE351	Introduction to Industrial Engineering	OEC	3	0	0	3	3
3.	OBT351	Food, Nutrition and Health	OEC	3	0	0	3	3
4.	OCE351	Environment and Social Impact Assessment	OEC	3	0	0	3	3
5.	OEE351	Renewable Energy System	OEC	3	0	0	3	3
6.	OEI351	Introduction to Industrial Instrumentation and Control	OEC	3	0	0	3	3
7.	OMA351	Graph Theory	OEC	3	0	0	3	3

MANDATORY COURSES I

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	MX3081	Introduction to Women and Gender Studies	MC	3	0	0	3	0
2.	MX3082	Elements of Literature	MC	3	0	0	3	0
3.	MX3083	Film Appreciation	MC	3	0	0	3	0
4.	MX3084	Disaster Risk Reduction and Management	MC	3	0	0	3	0

***Mandatory Courses are offered as Non-Credit Courses**

MANDATORY COURSES II

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	MX3085	Well Being with Traditional Practices - Yoga, Ayurveda and Siddha	MC	3	0	0	3	0
2.	MX3086	History of Science and Technology in India	MC	3	0	0	3	0
3.	MX3087	Political and Economic Thought for a Humane Society	MC	3	0	0	3	0
4.	MX3088	State, Nation Building and Politics in India	MC	3	0	0	3	0
5.	MX3089	Industrial Safety	MC	3	0	0	3	0

***Mandatory Courses are offered as Non-Credit Courses**

PROGRESS THROUGH KNOWLEDGE

PROFESSIONAL ELECTIVES (PE)

**SEMESTER VI
ELECTIVE - I**

SI. 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**

SI. 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**

SI. 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**

SI. 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**


SI. 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)

SI. 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										


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NON-AUTONOMOUS AFFILIATED COLLEGES
REGULATIONS 2021
CHOICE BASED CREDIT SYSTEM
B.E. ELECTRICAL AND ELECTRONICS ENGINEERING
CURRICULUM AND SYLLABI FOR SEMESTERS I TO VIII
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
THEORY								
2.	HS3152	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
PRACTICALS								
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
TOTAL				16	1	10	27	22

[§] 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.	HS3252	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 [#]	-	2	0	0	2	2 [#]
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 [§]	EEC	0	0	4	4	2
TOTAL				17	2	16	35	27

[#] 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

(Signature)
Principal
J.K.K.Munirajsh College of Technology
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Erode (Dt) - 638 505.

SEMESTER III

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	MA3303	Probability and Complex Functions	BSC	3	1	0	4	4
2.	EE3301	Electromagnetic Fields	PCC	3	1	0	4	4
3.	EE3302	Digital Logic Circuits	PCC	3	0	0	3	3
4.	EC3301	Electron Devices and Circuits	PCC	3	0	0	3	3
5.	EE3303	Electrical Machines - I	PCC	3	0	0	3	3
6.	CS3353	C Programming and Data Structures	PCC	3	0	0	3	3
PRACTICALS								
7.	EC3311	Electronic Devices and Circuits Laboratory	PCC	0	0	3	3	1.5
8.	EE3311	Electrical Machines Laboratory – I	PCC	0	0	3	3	1.5
9.	CS3362	C Programming and Data Structures Laboratory	PCC	0	0	3	3	1.5
10.	GE3361	Professional Development ^{\$}	EEC	0	0	2	2	1
TOTAL				18	2	11	31	25.5

\$ Skill Based Course

SEMESTER IV

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	GE3451	Environmental Sciences and Sustainability	BSC	2	0	0	2	2
2.	EE3401	Transmission and Distribution	PCC	3	0	0	3	3
3.	EE3402	Linear Integrated Circuits	PCC	3	0	0	3	3
4.	EE3403	Measurements and Instrumentation	PCC	3	0	0	3	3
5.	EE3404	Microprocessor and Microcontroller	PCC	3	0	0	3	3
6.	EE3405	Electrical Machines - II	PCC	3	0	0	3	3
7.		NCC Credit Course Level 2 [#]		3	0	0	3	3 [#]
PRACTICALS								
8.	EE3411	Electrical Machines Laboratory - II	PCC	0	0	3	3	1.5
9.	EE3412	Linear and Digital Circuits Laboratory	PCC	0	0	3	3	1.5
10.	EE3413	Microprocessor and Microcontroller laboratory	PCC	0	0	3	3	1.5
TOTAL				17	0	9	26	21.5

NCC Credit Course level 2 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.

SEMESTER V

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	EE3501	Power System Analysis	PCC	3	0	0	3	3
2.	EE3591	Power Electronics	PCC	3	0	0	3	3
3.	EE3503	Control Systems	PCC	3	0	0	3	3
4.		Professional Elective I	PEC	3	0	0	3	3
5.		Professional Elective II	PEC	3	0	0	3	3
6.		Professional Elective III	PEC	3	0	0	3	3
7.		Mandatory Course-I ^{&}	MC	3	0	0	3	Non-Credit Course
PRACTICALS								
8.	EE3511	Power Electronics Laboratory	PCC	0	0	3	3	1.5
9.	EE3512	Control and Instrumentation Laboratory	PCC	0	0	4	4	2
TOTAL				21	0	7	28	21.5

[&] Mandatory Course-I is a Non-credit Course (Student shall select one course from the list given under MC-I)

SEMESTER VI

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	EE3601	Protection and Switchgear	PCC	3	0	0	3	3
2.	EE3602	Power System Operation and Control	PCC	3	0	0	3	3
3.		Open Elective – I*	OEC	3	0	0	3	3
4.		Professional Elective IV	PEC	3	0	0	3	3
5.		Professional Elective V	PEC	3	0	0	3	3
6.		Professional Elective VI	PEC	3	0	0	3	3
7.		Mandatory Course-II ^{&}	MC	3	0	0	3	Non-Credit Course
8.		NCC Credit Course Level 3 [#]		3	0	0	3	3 [#]
PRACTICALS								
9.	EE3611	Power System Laboratory	PCC	0	0	3	3	1.5
TOTAL				21	0	3	24	19.5

* Open Elective – I shall be chosen from the emerging technologies

[&] Mandatory Course-II is a Non-credit Course (Student Shall select one course from the list given under MC-II)

[#] NCC Credit Course level 3 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

SEMESTER VII

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
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
PRACTICALS								
7.	EE8711	Power System Simulation Laboratory	PC	4	0	0	4	2
8.	EE8712	Renewable Energy Systems Laboratory	PC	4	0	0	4	2
TOTAL				26	18	0	8	22

SEMESTER VIII

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

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.

MANDATORY COURSES I*

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS
				L	T	P	
1.	MX3081	Introduction to Women and Gender Studies	MC	3	0	0	3
2.	MX3082	Elements of Literature	MC	3	0	0	3
3.	MX3083	Film Appreciation	MC	3	0	0	3
4.	MX3084	Disaster Risk Reduction and Management	MC	3	0	0	3

*Mandatory courses are offered as Non-Credit courses

MANDATORY COURSES II*

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS
				L	T	P	
1.	MX3085	Well Being with Traditional Practices - Yoga, Ayurveda and Siddha	MC	3	0	0	3
2.	MX3086	History of Science and Technology in India	MC	3	0	0	3
3.	MX3087	Political and Economic Thought for a Humane Society	MC	3	0	0	3
4.	MX3088	State, Nation Building and Politics in India	MC	3	0	0	3
5.	MX3089	Industrial Safety	MC	3	0	0	3

*Mandatory courses are offered as Non-Credit courses

ELECTIVE - MANAGEMENT COURSES

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	GE3751	Principles of Management	HSMC	3	0	0	3	3
2.	GE3752	Total Quality Management	HSMC	3	0	0	3	3
3.	GE3753	Engineering Economics and Financial Accounting	HSMC	3	0	0	3	3
4.	GE3754	Human Resource Management	HSMC	3	0	0	3	3
5.	GE3755	Knowledge Management	HSMC	3	0	0	3	3
6.	GE3792	Industrial Management	HSMC	3	0	0	3	3

PROFESSIONAL ELECTIVE COURSES : VERTICALS

VERTICAL I : POWER ENGINEERING

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	EE3001	Utilization and Conservation of Electrical Energy	PEC	3	0	0	3	3
2.	EE3002	Under Ground Cable Engineering	PEC	3	0	0	3	3
3.	EE3003	Substation Engineering and Automation	PEC	3	0	0	3	3
4.	EE3004	HVDC and FACTS	PEC	3	0	0	3	3
5.	EE3005	Energy Management and Auditing	PEC	3	0	0	3	3
6.	EE3006	Power Quality	PEC	3	0	0	3	3
7.	EE3007	Smart Grid	PEC	3	0	0	3	3
8.	EE3008	Restructured Power Market	PEC	3	0	0	3	3

VERTICAL II : CONVERTERS AND DRIVES

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	EE3009	Special Electrical Machines	PEC	2	0	2	4	3
2.	EE3010	Analysis of Electrical Machines	PEC	2	0	2	4	3
3.	EE3011	Multilevel Power Converters	PEC	2	0	2	4	3
4.	EE3012	Electrical Drives	PEC	2	0	2	4	3
5.	EE3013	SMPS and UPS	PEC	2	0	2	4	3
6.	EE3014	Power Electronics for Renewable Energy Systems	PEC	2	0	2	4	3
7.	EE3015	Control of Power Electronics Circuits	PEC	2	0	2	4	3

VERTICAL III : EMBEDDED SYSTEMS

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	EE3016	Embedded System Design	PEC	2	0	2	4	3
2.	EE3017	Embedded C-programming	PEC	2	0	2	4	3
3.	EE3018	Embedded Processors	PEC	2	0	2	4	3
4.	EE3019	Embedded Control for Electric Drives	PEC	2	0	2	4	3
5.	EE3020	Smart System Automation	PEC	2	0	2	4	3
6.	EE3021	Embedded System for Automotive Applications	PEC	2	0	2	4	3
7.	EE3022	VLSI Design	PEC	2	0	2	4	3
8.	EE3023	MEMS and NEMS	PEC	2	0	2	4	3
9.	EE3024	Digital Signal Processing System Design	PEC	2	0	2	4	3

VERTICAL IV : ELECTRIC VEHICLE TECHNOLOGY

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	EE3025	Electric Vehicle Architecture	PEC	3	0	0	3	3
2.	EE3026	Design of Motor and Power Converters for Electric Vehicles	PEC	2	0	2	4	3
3.	EE3027	Electric Vehicle Design, Mechanics and Control	PEC	2	0	2	4	3
4.	EE3028	Design of Electric Vehicle Charging System	PEC	2	0	2	4	3
5.	EE3029	Testing of Electric Vehicles	PEC	2	0	2	4	3
6.	EE3030	Grid Integration of Electric Vehicles	PEC	3	0	0	3	3
7.	EE3031	Intelligent Control of Electric Vehicles	PEC	2	0	2	4	3

VERTICAL V : ADVANCED CONTROL

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CIC331	Process Modeling and Simulation	PEC	3	0	0	3	3
2.	CIC332	Computer Control of Processes	PEC	3	0	0	3	3
3.	CIC333	System Identification	PEC	3	0	0	3	3
4.	CIC336	Model Based Control	PEC	3	0	0	3	3
5.	CIC334	Non Linear Control	PEC	3	0	0	3	3
6.	CIC337	Optimal Control	PEC	3	0	0	3	3
7.	CIC335	Adaptive Control	PEC	3	0	0	3	3
8.	CIC338	Machine Monitoring System	PEC	3	0	0	3	3

VERTICAL VI - DIVERSIFIED COURSES

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	EE3032	Energy Storage Systems	PEC	3	0	0	3	3
2.	EE3033	Hybrid Energy Technology	PEC	3	0	0	3	3
3.	EE3034	Design and Modeling of Renewable Energy Systems	PEC	3	0	0	3	3
4.	EE3035	Grid integrating Techniques and Challenges	PEC	2	0	2	4	3
5.	EE3036	Sustainable and Environmental Friendly HV Insulation System	PEC	3	0	0	3	3
6.	EE3037	Power System Transients	PEC	3	0	0	3	3
7.	CEI331	PLC Programming	PEC	3	0	0	3	3
8.	CCS334	Big Data Analytics	PEC	2	0	2	4	3

OPEN ELECTIVES

(Students shall choose the open elective courses, such that the course contents are not similar to any other course contents/title under other course categories).

OPEN ELECTIVE I AND II**(EMERGING TECHNOLOGIES)**

To be offered other than Faculty of Information and Communication Engineering

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	OCS351	Artificial Intelligence and Machine Learning Fundamentals	OEC	2	0	2	4	3
2.	OCS352	IoT Concepts and Applications	OEC	2	0	2	4	3
3.	OCS353	Data Science Fundamentals	OEC	2	0	2	4	3
4.	CCS333	Augmented Reality /Virtual Reality	OEC	2	0	2	4	3

OPEN ELECTIVES - III

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	OHS351	English for Competitive Examinations	OEC	3	0	0	3	3
2.	OMG352	NGOs and Sustainable Development	OEC	3	0	0	3	3
3.	OMG353	Democracy and Good Governance	OEC	3	0	0	3	3
4.	CME365	Renewable Energy Technologies	OEC	3	0	0	3	3
5.	OME354	Applied Design Thinking	OEC	3	0	0	3	3
6.	MF3003	Reverse Engineering	OEC	3	0	0	3	3
7.	OPR351	Sustainable Manufacturing	OEC	3	0	0	3	3
8.	AU3791	Electric and Hybrid Vehicles	OEC	3	0	0	3	3
9.	OAS352	Space Engineering	OEC	3	0	0	3	3
10.	OIM351	Industrial Management	OEC	3	0	0	3	3
11.	OIE354	Quality Engineering	OEC	3	0	0	3	3
12.	OSF351	Fire Safety Engineering	OEC	3	0	0	3	3
13.	OML351	Introduction to Non-Destructive Testing	OEC	3	0	0	3	3
14.	OMR351	Mechatronics	OEC	3	0	0	3	3
15.	ORA351	Foundation of Robotics	OEC	3	0	0	3	3
16.	OAE352	Fundamentals of Aeronautical Engineering	OEC	3	0	0	3	3
17.	OGI351	Remote Sensing Concepts	OEC	3	0	0	3	3
18.	OAI351	Urban Agriculture	OEC	3	0	0	3	3
19.	OEN351	Drinking Water Supply and Treatment	OEC	3	0	0	3	3

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
	Total	25	25	23	25	23	21	22	16	180
	Non Credit / Mandatory	-	-	-	-	-	-	-	-	0


Principal

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T.N.Palayam, Gobi (Tk),
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**ANNA UNIVERSITY, CHENNAI
NON- AUTONOMOUS AFFILIATED COLLEGES
REGULATIONS 2021**

**B. E. ELECTRONICS AND COMMUNICATION ENGINEERING
CHOICE BASED CREDIT SYSTEM
CURRICULUM AND SYLLABI FOR SEMESTERS I TO VIII
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
THEORY								
2.	HS3152	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
PRACTICALS								
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
TOTAL				16	1	10	27	22

§ 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.	HS3252	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.

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SEMESTER III

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	MA3355	Random Processes and Linear Algebra	BSC	3	1	0	4	4
2.	CS3353	C Programming and Data Structures	ESC	3	0	0	3	3
3.	EC3354	Signals and Systems	PCC	3	1	0	4	4
4.	EC3353	Electronic Devices and Circuits	PCC	3	0	0	3	3
5.	EC3351	Control Systems	PCC	3	0	0	3	3
6.	EC3352	Digital Systems Design	PCC	3	0	2	5	4
PRACTICALS								
7.	EC3361	Electronic Devices and Circuits Laboratory	PCC	0	0	3	3	1.5
8.	CS3362	C Programming and Data Structures Laboratory	PCC	0	0	3	3	1.5
9.	GE3361	Professional Development [§]	EEC	0	0	2	2	1
TOTAL				18	2	10	30	25

[§] Skill Based Course

SEMESTER IV

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	EC3452	Electromagnetic Fields	PCC	3	0	0	3	3
2.	EC3401	Networks and Security	PCC	3	0	2	5	4
3.	EC3451	Linear Integrated Circuits	PCC	3	0	0	3	3
4.	EC3492	Digital Signal Processing	PCC	3	0	2	5	4
5.	EC3491	Communication Systems	PCC	3	0	0	3	3
6.	GE3451	Environmental Sciences and Sustainability	BSC	2	0	0	2	2
7.		NCC Credit Course Level 2 [#]		3	0	0	3	3 [#]
PRACTICALS								
8.	EC3461	Communication Systems Laboratory	PCC	0	0	3	3	1.5
9.	EC3462	Linear Integrated Circuits Laboratory	PCC	0	0	3	3	1.5
TOTAL				17	0	10	27	22

[#] NCC Credit Course level 2 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.

SEMESTER V

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	EC3501	Wireless Communication	PCC	3	0	2	5	4
2.	EC3552	VLSI and Chip Design	PCC	3	0	0	3	3
3.	EC3551	Transmission lines and RF Systems	PCC	3	0	0	3	3
4.		Professional Elective I	PEC	-	-	-	-	3
5.		Professional Elective II	PEC	-	-	-	-	3
6.		Professional Elective III	PEC	-	-	-	-	3
7.		Mandatory Course-I ^{&}	MC	3	0	0	3	Non-credit course
PRACTICALS								
8.	EC3561	VLSI Laboratory	PCC	0	0	4	4	2
TOTAL				-	-	-	-	21

[&] Mandatory Course-I is a Non-credit Course (Student shall select one course from the list given under Mandatory Course-I)

SEMESTER VI

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	ET3491	Embedded Systems and IOT Design	PCC	3	0	2	5	4
2.	CS3491	Artificial Intelligence and Machine Learning	ESC	3	0	2	5	4
3.		Open Elective- I*	OEC	3	0	0	3	3
4.		Professional Elective IV	PEC	-	-	-	-	3
5.		Professional Elective V	PEC	-	-	-	-	3
6.		Professional Elective VI	PEC	-	-	-	-	3
7.		Mandatory Course-II ^{&}	MC	3	0	0	3	Non-credit course
8.		NCC Credit Course Level 3 [#]		3	0	0	3	3 [#]
TOTAL				-	-	-	-	20

*Open Elective – I Shall be chosen from the list of open electives offered by other Programmes

[&] Mandatory Course-II is a Non-credit Course (Student shall select one course from the list given under Mandatory Course-II)

[#] NCC Credit Course level 3 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

SEMESTER VII

Sl.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
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
PRACTICALS								
7.	EC8711	Embedded Laboratory	PC	4	0	0	4	2
8.	EC8761	Advanced Communication Laboratory	PC	4	0	0	4	2
TOTAL				26	18	0	8	22

SEMESTER VIII

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

MANDATORY COURSES I'

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	MX3081	Introduction to Women and Gender Studies	MC	3	0	0	3	0
2.	MX3082	Elements of Literature	MC	3	0	0	3	0
3.	MX3083	Film Appreciation	MC	3	0	0	3	0
4.	MX3084	Disaster Risk Reduction and Management	MC	3	0	0	3	0

*Mandatory Courses are offered as Non-Credit Courses

MANDATORY COURSES II'

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	MX3085	Well Being with Traditional Practices - Yoga, Ayurveda and Siddha	MC	3	0	0	3	0
2.	MX3086	History of Science and Technology in India	MC	3	0	0	3	0
3.	MX3087	Political and Economic Thought for a Humane Society	MC	3	0	0	3	0
4.	MX3088	State, Nation Building and Politics in India	MC	3	0	0	3	0
5.	MX3089	Industrial Safety	MC	3	0	0	3	0

*Mandatory Courses are offered as Non-Credit Courses

PROGRESS THROUGH KNOWLEDGE

PROFESSIONAL ELECTIVE COURSES: VERTICALS

VERTICAL 1: SEMICONDUCTOR CHIP DESIGN AND TESTING

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CEC363	Wide Bandgap Devices	PEC	2	0	2	4	3
2.	CEC361	Validation and Testing Technology	PEC	2	0	2	4	3
3.	CEC370	Low Power IC Design	PEC	2	0	2	4	3
4.	CEC362	VLSI Testing and Design For Testability	PEC	3	0	0	3	3
5.	CEC342	Mixed Signal IC Design Testing	PEC	2	0	2	4	3
6.	CEC334	Analog IC Design	PEC	2	0	2	4	3

VERTICAL 2: SIGNAL PROCESSING

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CEC332	Advanced Digital Signal Processing	PEC	2	0	2	4	3
2.	CEC366	Image Processing	PEC	3	0	0	3	3
3.	CEC356	Speech Processing	PEC	2	0	2	4	3
4.	CEC355	Software Defined Radio	PEC	2	0	2	4	3
5.	CEC337	DSP Architecture and Programming	PEC	2	0	2	4	3
6.	CCS338	Computer Vision	PEC	2	0	2	4	3

VERTICAL 3: RF TECHNOLOGIES

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CEC350	RF Transceivers	PEC	2	0	2	4	3
2.	CEC353	Signal Integrity	PEC	2	0	2	4	3
3.	CEC335	Antenna Design	PEC	2	0	2	4	3
4.	CEC341	MICs and RF System Design	PEC	2	0	2	4	3
5.	CEC338	EMI/EMC Pre Compliance Testing	PEC	2	0	2	4	3
6.	CEC349	RFID System Design and Testing	PEC	2	0	2	4	3

VERTICAL 4: BIO MEDICAL TECHNOLOGIES

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CBM370	Wearable Devices	PEC	3	0	0	3	3
2.	CBM352	Human Assist Devices	PEC	3	0	0	3	3
3.	CBM368	Therapeutic Equipment	PEC	3	0	0	3	3
4.	CBM355	Medical Imaging Systems	PEC	3	0	0	3	3
5.	CBM342	Brain Computer Interface and Applications	PEC	3	0	0	3	3
6.	CBM341	Body Area Networks	PEC	3	0	0	3	3

PROGRESS THROUGH KNOWLEDGE

VERTICAL 5: UNDERWATER TECHNOLOGIES

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CEC359	Underwater Instrumentation System	PEC	3	0	0	3	3
2.	CEC358	Underwater Imaging Systems and Image Processing	PEC	2	0	2	4	3
3.	CEC357	Underwater Communication	PEC	2	0	2	4	3
4.	CEC344	Ocean Observation Systems	PEC	2	0	2	4	3
5.	CEC360	Underwater Navigation Systems	PEC	3	0	0	3	3
6.	CEC343	Ocean Acoustics	PEC	2	0	2	4	3

VERTICAL 6: SENSOR TECHNOLOGIES AND IOT

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CEC369	IoT Processors	PEC	2	0	2	4	3
2.	CEC368	IoT Based Systems Design	PEC	3	0	0	3	3
3.	CEC365	Wireless Sensor Network Design	PEC	3	0	0	3	3
4.	CEC367	Industrial IoT and Industry 4.0	PEC	2	0	2	4	3
5.	CEC340	MEMS Design	PEC	2	0	2	4	3
6.	CEC339	Fundamentals of Nanoelectronics	PEC	2	0	2	4	3

VERTICAL 7: SPACE TECHNOLOGIES

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CEC347	Radar Technologies	PEC	3	0	0	3	3
2.	CEC336	Avionics Systems	PEC	3	0	0	3	3
3.	CEC346	Positioning and Navigation Systems	PEC	3	0	0	3	3
4.	CEC352	Satellite Communication	PEC	3	0	0	3	3
5.	CEC348	Remote Sensing	PEC	3	0	0	3	3
6.	CEC351	Rocketry and Space Mechanics	PEC	3	0	0	3	3

VERTICAL 8: HIGH SPEED COMMUNICATIONS

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CEC345	Optical Communication & Networks	PEC	3	0	0	3	3
2.	CEC364	Wireless Broad Band Networks	PEC	3	0	0	3	3
3.	CEC331	4G/5G Communication Networks	PEC	2	0	2	4	3
4.	CEC354	Software Defined Networks	PEC	2	0	2	4	3
5.	CEC371	Massive MIMO Networks	PEC	2	0	2	4	3
6.	CEC333	Advanced Wireless Communication Techniques	PEC	3	0	0	3	3

OPEN ELECTIVES

(Students shall choose the open elective courses, such that the course contents are not similar to any other course contents/title under other course categories).

OPEN ELECTIVES – I

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	OAS351	Space Science	OEC	3	0	0	3	3
2.	OIE351	Introduction to Industrial Engineering	OEC	3	0	0	3	3
3.	OBT351	Food, Nutrition and Health	OEC	3	0	0	3	3
4.	OCE351	Environmental and Social Impact Assessment	OEC	3	0	0	3	3
5.	OEE351	Renewable Energy System	OEC	3	0	0	3	3
6.	OEI351	Introduction to Industrial Instrumentation and Control	OEC	3	0	0	3	3
7.	OMA351	Graph Theory	OEC	3	0	0	3	3
8.	CCS355	Neural Networks and Deep Learning	OEC	2	0	2	4	3
9.	CCW332	Digital Marketing	OEC	2	0	2	4	3

OPEN ELECTIVES – II

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	OIE352	Resource Management Techniques	OEC	3	0	0	3	3
2.	OMG351	Fintech Regulation	OEC	3	0	0	3	3
3.	OFD351	Holistic Nutrition	OEC	3	0	0	3	3
4.	AI3021	IT in Agricultural System	OEC	3	0	0	3	3
5.	OEI352	Introduction to Control Engineering	OEC	3	0	0	3	3
6.	OPY351	Pharmaceutical Nanotechnology	OEC	3	0	0	3	3
7.	OAE351	Aviation Management	OEC	3	0	0	3	3
8.	CCS342	DevOps	OEC	2	0	2	4	3
9.	CCS361	Robotic Process Automation	OEC	2	0	2	4	3

**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

SI.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

SI.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%
	Total	25	25	25	24	25	24	22	16	186	
8.	Non Credit / Mandatory										



Principal

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 T.N.Palayam, Gobl (Tk),
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ANNA UNIVERSITY, CHENNAI
NON-AUTONOMOUS AFFILIATED COLLEGES
REGULATIONS 2021
CHOICE BASED CREDIT SYSTEM
B. E. MECHANICAL ENGINEERING
CURRICULUM AND SYLLABI FOR I TO VIII SEMESTERS
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
THEORY								
2.	HS3152	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
PRACTICAL								
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
TOTAL				16	1	10	27	22


§ 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.	HS3252	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


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SEMESTER III

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	MA3351	Transforms and Partial Differential Equations	BSC	3	1	0	4	4
2.	ME3351	Engineering Mechanics	ESC	3	0	0	3	3
3.	ME3391	Engineering Thermodynamics	PCC	3	0	0	3	3
4.	CE3391	Fluid Mechanics and Machinery	ESC	3	1	0	4	4
5.	ME3392	Engineering Materials and Metallurgy	PCC	3	0	0	3	3
6.	ME3393	Manufacturing Processes	PCC	3	0	0	3	3
PRACTICALS								
7.	ME3381	Computer Aided Machine Drawing	ESC	0	0	4	4	2
8.	ME3382	Manufacturing Technology Laboratory	PCC	0	0	4	4	2
9.	GE3361	Professional Development [§]	EEC	0	0	2	2	1
TOTAL				18	2	10	30	25

§ Skill Based Course

SEMESTER IV

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	ME3491	Theory of Machines	PCC	3	0	0	3	3
2.	ME3451	Thermal Engineering	PCC	4	0	0	4	4
3.	ME3492	Hydraulics and Pneumatics	PCC	3	0	0	3	3
4.	ME3493	Manufacturing Technology	PCC	3	0	0	3	3
5.	CE3491	Strength of Materials	PCC	3	0	0	3	3
6.	GE3451	Environmental Sciences and Sustainability	BSC	2	0	0	2	2
7.		NCC Credit Course Level 2 [#]		3	0	0	3	3 [#]
PRACTICALS								
8.	CE3481	Strength of Materials and Fluid Machinery Laboratory	PCC	0	0	4	4	2
9.	ME3461	Thermal Engineering Laboratory	PCC	0	0	4	4	2
TOTAL				18	0	8	26	22

NCC Credit Course level 2 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.

SEMESTER V

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	ME3591	Design of Machine Elements	PCC	4	0	0	4	4
2.	ME3592	Metrology and Measurements	PCC	3	0	0	3	3
3.		Professional Elective I	PEC	-	-	-	-	3
4.		Professional Elective II	PEC	-	-	-	-	3
5.		Professional Elective III	PEC	-	-	-	-	3
6.		Mandatory Course-I ^{&}	MC	3	0	0	3	Non-Credit Course
PRACTICALS								
7.	ME3511	Summer Internship*	EEC	0	0	0	0	1
8.	ME3581	Metrology and Dynamics Laboratory	PCC	0	0	4	4	2
TOTAL				-	-	-	-	19

*Two weeks Summer Internship carries one credit and it will be done during IV semester summer vacation and same will be evaluated in V semester.

[&] Mandatory Course-I is a Non-credit Course (Student shall select one course from the list given under MC- I)

SEMESTER VI

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	ME3691	Heat and Mass Transfer	PCC	3	1	0	4	4
2.		Professional Elective IV	PEC	-	-	-	-	3
3.		Professional Elective V	PEC	-	-	-	-	3
4.		Professional Elective VI	PEC	-	-	-	-	3
5.		Professional Elective VII	PEC	-	-	-	-	3
6.		Open Elective - I*	OEC	3	0	0	3	3
7.		Mandatory Course-II ^{&}	MC	3	0	0	3	Non-Credit Course
8.		NCC Credit Course Level 3 [#]		3	0	0	3	3 [#]
PRACTICALS								
9.	ME3681	CAD/CAM Laboratory	PCC	0	0	4	4	2
10.	ME3682	Heat Transfer Laboratory	PCC	0	0	4	4	2
TOTAL				-	-	-	-	23

*Open Elective - I shall be chosen from the emerging technologies.

[&] Mandatory Course-II is a Non-credit Course (Student shall select one course from the list given under MC- II)

[#] NCC Credit Course level 3 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

SEMESTER VII

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
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
PRACTICAL								
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
TOTAL				28	18	0	10	23

SEMESTER VIII

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

MANDATORY COURSES I*

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS
				L	T	P	
1.	MX3081	Introduction to Women and Gender Studies	MC	3	0	0	3
2.	MX3082	Elements of Literature	MC	3	0	0	3
3.	MX3083	Film Appreciation	MC	3	0	0	3
4.	MX3084	Disaster Risk Reduction and Management	MC	3	0	0	3

*Mandatory Courses are offered as Non-Credit courses

MANDATORY COURSES II*

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS
				L	T	P	
1.	MX3085	Well Being with Traditional Practices - Yoga, Ayurveda and Siddha	MC	3	0	0	3
2.	MX3086	History of Science and Technology in India	MC	3	0	0	3
3.	MX3087	Political and Economic Thought for a Humane Society	MC	3	0	0	3
4.	MX3088	State, Nation Building and Politics in India	MC	3	0	0	3
5.	MX3089	Industrial Safety	MC	3	0	0	3

*Mandatory Courses are offered as Non-Credit courses

PROFESSIONAL ELECTIVE COURSES : VERTICALS

VERTICAL 1 : MODERN MOBILITY SYSTEMS

Sl. No.	Course Code	Course Title	Category	Periods Per week			Total Contact period	Credits
				L	T	P		
1.	CME331	Automotive Materials, Components, Design and Testing	PEC	2	0	2	4	3
2.	CME332	Conventional and Futuristic Vehicle Technology	PEC	3	0	0	3	3
3.	CME333	Renewable Powered Off Highway Vehicles and Emission Control Technology	PEC	3	0	0	3	3
4.	CME334	Vehicle Health Monitoring, Maintenance and Safety	PEC	3	0	0	3	3
5.	CME335	CAE and CFD Approach in Future Mobility	PEC	2	0	2	4	3
6.	CME336	Hybrid and Electric Vehicle Technology	PEC	3	0	0	3	3
7.	CME337	Thermal Management of Batteries and Fuel Cells	PEC	3	0	0	3	3

VERTICAL 2 : PRODUCT AND PROCESS DEVELOPMENT

Sl. No.	Course Code	Course Title	Category	Periods Per week			Total Contact period	Credits
				L	T	P		
1.	CME338	Value Engineering	PEC	3	0	0	3	3
2.	CME339	Additive Manufacturing	PEC	2	0	2	4	3
3.	CME340	CAD/CAM	PEC	3	0	0	3	3
4.	CME341	Design For X	PEC	3	0	0	3	3
5.	CME342	Ergonomics in Design	PEC	3	0	0	3	3
6.	CME343	New Product Development	PEC	3	0	0	3	3
7.	CME344	Product Life Cycle Management	PEC	3	0	0	3	3

VERTICAL 3: ROBOTICS AND AUTOMATION

Sl. No.	Course Code	Course Title	Category	Periods Per week			Total Contact Period	Credits
				L	T	P		
1.	MR3491	Sensors and Instrumentation	PEC	3	0	0	3	3
2.	MR3392	Electrical Drives and Actuators	PEC	3	0	0	3	3
3.	MR3492	Embedded Systems and Programming	PEC	2	0	2	4	3
4.	MR3691	Robotics	PEC	3	0	0	3	3
5.	CMR338	Smart Mobility and Intelligent Vehicles	PEC	3	0	0	3	3
6.	CME345	Haptics and Immersive Technologies	PEC	3	0	0	3	3
7.	CRA332	Drone Technologies	PEC	3	0	0	3	3

VERTICAL 4: DIGITAL AND GREEN MANUFACTURING

Sl. No.	Course Code	Course Title	Category	Periods Per week			Total Contact Period	Credits
				L	T	P		
1.	CME346	Digital Manufacturing and IoT	PEC	2	0	2	4	3
2.	CME347	Lean Manufacturing	PEC	3	0	0	3	3
3.	CME348	Modern Robotics	PEC	2	0	2	4	3
4.	CME349	Green Manufacturing Design and Practices	PEC	3	0	0	3	3
5.	CME350	Environment Sustainability and Impact Assessment	PEC	3	0	0	3	3
6.	CME351	Energy Saving Machinery and Components	PEC	3	0	0	3	3
7.	CME352	Green Supply Chain Management	PEC	3	0	0	3	3

VERTICAL 5: PROCESS EQUIPMENT AND PIPING DESIGN

Sl. No.	Course Code	Course Title	Category	Periods Per week			Total Contact Period	Credits
				L	T	P		
1.	CME353	Design of Pressure Vessels	PEC	3	0	0	3	3
2.	CME354	Failure Analysis and NDT Techniques	PEC	2	0	2	4	3
3.	CME355	Material Handling and Solid Processing Equipment	PEC	3	0	0	3	3
4.	CME356	Rotating Machinery Design	PEC	3	0	0	3	3
5.	CME357	Thermal and Fired Equipment Design	PEC	3	0	0	3	3
6.	CME358	Industrial Layout Design and Safety	PEC	2	0	2	4	3
7.	CME359	Design Codes and Standards	PEC	3	0	0	3	3

VERTICAL 6: CLEAN AND GREEN ENERGY TECHNOLOGIES

Sl. No.	Course Code	Course Title	Category	Periods Per week			Total contact Periods	Credits
				L	T	P		
1.	CME360	Bioenergy Conversion Technologies	PEC	3	0	0	3	3
2.	CME361	Carbon Footprint Estimation and Reduction Techniques	PEC	3	0	0	3	3
3.	CME362	Energy Conservation in Industries	PEC	3	0	0	3	3
4.	CME363	Energy Efficient Buildings	PEC	3	0	0	3	3
5.	CME364	Energy Storage Devices	PEC	3	0	0	3	3
6.	CME365	Renewable Energy Technologies	PEC	3	0	0	3	3
7.	CME366	Equipment for Pollution Control	PEC	3	0	0	3	3

VERTICAL 7: COMPUTATIONAL ENGINEERING

Sl. No.	Course Code	Course Title	Category	Periods Per week			Total contact periods	Credits
				L	T	P		
1.	CME367	Computational Solid Mechanics	PEC	3	0	0	3	3
2.	CME368	Computational Fluid Dynamics and Heat transfer	PEC	3	0	0	3	3
3.	CME369	Theory on Computation and Visualization	PEC	3	0	0	3	3
4.	CME370	Computational Bio-Mechanics	PEC	3	0	0	3	3
5.	CME371	Advanced Statistics and Data Analytics	PEC	3	0	0	3	3
6.	CME372	CAD and CAE	PEC	2	0	2	4	3
7.	CRA342	Machine Learning for Intelligent Systems	PEC	3	0	0	3	3

VERTICAL 8: DIVERSIFIED COURSES GROUP 1

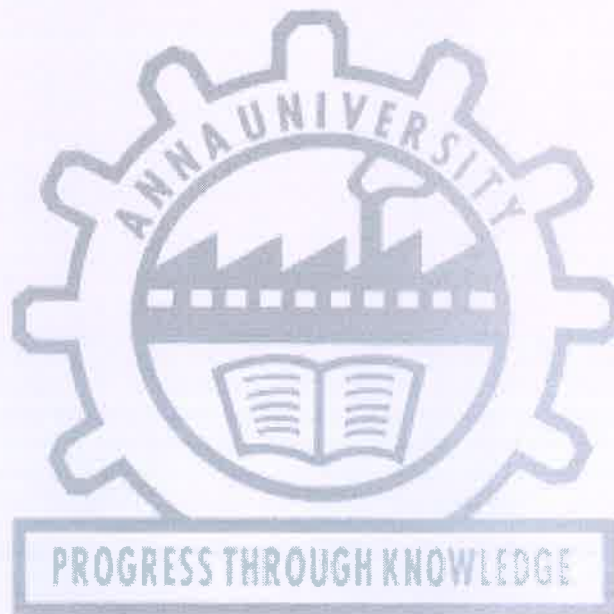
Sl. No.	Course Code	Course Title	Category	Periods Per week			Total Contact Periods	Credits
				L	T	P		
1.	CME380	Automobile Engineering	PEC	3	0	0	3	3
2.	ME3001	Measurements and Controls	PEC	3	0	0	3	3
3.	CME381	Design Concepts in Engineering	PEC	3	0	0	3	3
4.	CME382	Composite Materials and Mechanics	PEC	3	0	0	3	3
5.	CME383	Electrical Drives and Control	PEC	3	0	0	3	3
6.	CME384	Power Plant Engineering	PEC	3	0	0	3	3
7.	CME385	Refrigeration and Air Conditioning	PEC	3	0	0	3	3
8.	CAU332	Dynamics of Ground Vehicles	PEC	3	0	0	3	3

PROGRESS THROUGH KNOWLEDGE
VERTICAL 9: DIVERSIFIED COURSES GROUP 2

Sl. No.	Course Code	Course Title	Category	Periods Per week			Total Contact Periods	Credits
				L	T	P		
1.	CAE353	Turbo Machines	PEC	3	0	0	3	3
2.	CME387	Non-traditional Machining Processes	PEC	3	0	0	3	3
3.	CME388	Industrial safety	PEC	3	0	0	3	3
4.	CME389	Design of Transmission System	PEC	3	0	0	3	3
5.	CME390	Thermal Power Engineering	PEC	3	0	0	3	3
6.	CME391	Design for Manufacturing	PEC	3	0	0	3	3
7.	CME392	Power Generation Equipment Design	PEC	3	0	0	3	3

VERTICAL 10: DIVERSIFIED COURSES GROUP 3

Sl. No.	Course Code	Course Title	Category	Periods Per week			Total Contact periods	Credits
				L	T	P		
1.	CME393	Advanced Vehicle Engineering	PEC	3	0	0	3	3
2.	CME394	Advanced Internal Combustion Engineering	PEC	3	0	0	3	3
3.	CME395	Casting and Welding Processes	PEC	3	0	0	3	3
4.	CME396	Process Planning and Cost Estimation	PEC	3	0	0	3	3
5.	CME397	Surface Engineering	PEC	3	0	0	3	3
6.	CME398	Precision Manufacturing	PEC	3	0	0	3	3
7.	CME386	Gas Dynamics and Jet Propulsion	PEC	3	0	0	3	3
8.	CME399	Operational Research	PEC	3	0	0	3	3



OPEN ELECTIVES

(Students shall choose the open elective courses, such that the course contents are not similar to any other course contents/title under other course categories)

OPEN ELECTIVE I AND II (EMERGING TECHNOLOGIES)

To be offered other than Faculty of Information and Communication Engineering

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	OCS351	Artificial Intelligence and Machine Learning Fundamentals	OEC	2	0	2	4	3
2.	OCS352	IoT Concepts and Applications	OEC	2	0	2	4	3
3.	OCS353	Data Science Fundamentals	OEC	2	0	2	4	3
4.	CCS333	Augmented Reality / Virtual Reality	OEC	2	0	2	4	3

OPEN ELECTIVES – III

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	OCE353	Lean Concepts, Tools And Practices	OEC	3	0	0	3	3
2.	OHS351	English for Competitive Examinations	OEC	3	0	0	3	3
3.	OMG352	NGOs and Sustainable Development	OEC	3	0	0	3	3
4.	OMG353	Democracy and Good Governance	OEC	3	0	0	3	3
5.	OME354	Applied Design Thinking	OEC	3	0	0	3	3
6.	MF3003	Reverse Engineering	OEC	3	0	0	3	3
7.	OPR351	Sustainable Manufacturing	OEC	3	0	0	3	3
8.	AU3791	Electric and Hybrid Vehicles	OEC	3	0	0	3	3
9.	OAS352	Space Engineering	OEC	3	0	0	3	3
10.	OIM351	Industrial Management	OEC	3	0	0	3	3
11.	OIE354	Quality Engineering	OEC	3	0	0	3	3
12.	OSF351	Fire Safety Engineering	OEC	3	0	0	3	3
13.	OAE352	Fundamentals of Aeronautical engineering	OEC	3	0	0	3	3
14.	OML351	Introduction to non-destructive testing	OEC	3	0	0	3	3
15.	OMR351	Mechatronics	OEC	3	0	0	3	3
16.	ORA351	Foundation of Robotics	OEC	3	0	0	3	3

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

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ANNA UNIVERSITY, CHENNAI
NON- AUTONOMOUS AFFILIATED COLLEGES
REGULATIONS 2021
CHOICE BASED CREDIT SYSTEM
B. E. COMPUTER SCIENCE AND ENGINEERING (CYBER SECURITY),
CURRICULUM 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
THEORY								
2.	HS3152	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
PRACTICALS								
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
TOTAL				16	1	10	27	22

§ 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.	HS3252	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#	-	2	0	0	2	2
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 §	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.

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REGULATIONS 2021

B. TECH. INFORMATION TECHNOLOGY
CHOICE BASED CREDIT SYSTEM

CURRICULUM AND SYLLABI FOR SEMESTERS I TO VIII
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
THEORY								
2.	HS3152	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
PRACTICALS								
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
TOTAL				16	1	10	27	22


[§] 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.	HS3252	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 [#]	-	2	0	0	2	2 [#]
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 [§]	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


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SEMESTER III

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	MA3354	Discrete Mathematics	BSC	3	1	0	4	4
2.	CS3351	Digital Principles and Computer Organization	ESC	3	0	2	5	4
3.	CS3352	Foundations of Data Science	PCC	3	0	0	3	3
4.	CD3291	Data Structures and Algorithms	PCC	3	0	0	3	3
5.	CS3391	Object Oriented Programming	PCC	3	0	0	3	3
PRACTICALS								
6.	CD3281	Data Structures and Algorithms Laboratory	PCC	0	0	4	4	2
7.	CS3381	Object Oriented Programming Laboratory	PCC	0	0	3	3	1.5
8.	CS3361	Data Science Laboratory	PCC	0	0	4	4	2
9.	GE3361	Professional Development [§]	EEC	0	0	2	2	1
TOTAL				15	1	15	31	23.5

[§] Skill Based Course

SEMESTER IV

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	CS3452	Theory of Computation	PCC	3	0	0	3	3
2.	CS3491	Artificial Intelligence and Machine Learning	PCC	3	0	2	5	4
3.	CS3492	Database Management Systems	PCC	3	0	0	3	3
4.	IT3401	Web Essentials	PCC	3	0	2	5	4
5.	CS3451	Introduction to Operating Systems	PCC	3	0	0	3	3
6.	GE3451	Environmental Sciences and Sustainability	BSC	2	0	0	2	2
7.		NCC Credit Course Level 2 [#]	-	3	0	0	3	3 [#]
PRACTICALS								
8.	CS3461	Operating Systems Laboratory	PCC	0	0	3	3	1.5
9.	CS3481	Database Management Systems Laboratory	PCC	0	0	3	3	1.5
TOTAL				20	0	10	30	22

[#] NCC Credit Course level 2 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.

SEMESTER V

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	CS3591	Computer Networks	PCC	3	0	2	5	4
2.	IT3501	Full Stack Web Development	PCC	3	0	0	3	3
3.	CS3551	Distributed Computing	PCC	3	0	0	3	3
4.	CS3691	Embedded Systems and IoT	PCC	3	0	2	5	4
5.		Professional Elective I	PEC	-	-	-	-	3
6.		Professional Elective II	PEC	-	-	-	-	3
7.		Mandatory Course- I ^{&}	MC	3	0	0	3	Non-credit course
PRACTICALS								
8.	IT3511	Full Stack Web Development Laboratory	PCC	0	0	4	4	2
TOTAL				-	-	-	-	22

[&] Mandatory Course-I is a Non-credit Course (Student shall select one course from the list given under Mandatory Course-I)

SEMESTER VI

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	CCS356	Object Oriented Software Engineering	PCC	3	0	2	5	4
2.		Open Elective – I [*]	OEC	3	0	0	3	3
3.		Professional Elective III	PEC	-	-	-	-	3
4.		Professional Elective IV	PEC	-	-	-	-	3
5.		Professional Elective V	PEC	-	-	-	-	3
6.		Professional Elective VI	PEC	-	-	-	-	3
7.		Mandatory Course-II ^{&}	MC	3	0	0	3	Non-credit course
8.		NCC Credit Course Level 3 [#]	-	3	0	0	3	3 [#]
PRACTICALS								
9.	IT3681	Mobile Applications Development Laboratory	PCC	0	0	3	3	1.5
TOTAL				-	-	-	-	20.5

^{*}Open Elective – I Shall be chosen from the list of open electives offered by other Programmes

[&] Mandatory Course-II is a Non-credit Course (Student shall select one course from the list given under Mandatory Course-II)

[#] NCC Credit Course level 3 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

SEMESTER VII

SI.No	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
THEORY								
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
PRACTICALS								
7.	IT8711	FOSS and Cloud Computing Laboratory	PC	4	0	0	4	2
8.	IT8761	Security Laboratory	PC	4	0	0	4	2
TOTAL				26	18	0	8	22

SEMESTER VIII

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

MANDATORY COURSES I'

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	MX3081	Introduction to Women and Gender Studies	MC	3	0	0	3	0
2.	MX3082	Elements of Literature	MC	3	0	0	3	0
3.	MX3083	Film Appreciation	MC	3	0	0	3	0
4.	MX3084	Disaster Risk Reduction and Management	MC	3	0	0	3	0

***Mandatory Courses are offered as Non-Credit Courses**

MANDATORY COURSES II'

S. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	MX3085	Well Being with Traditional Practices - Yoga, Ayurveda and Siddha	MC	3	0	0	3	0
2.	MX3086	History of Science and Technology in India	MC	3	0	0	3	0
3.	MX3087	Political and Economic Thought for a Humane Society	MC	3	0	0	3	0
4.	MX3088	State, Nation Building and Politics in India	MC	3	0	0	3	0
5.	MX3089	Industrial Safety	MC	3	0	0	3	0

***Mandatory Courses are offered as Non-Credit Courses**

PROGRESS THROUGH KNOWLEDGE

**PROFESSIONAL ELECTIVE COURSES
VERTICALS**

VERTICAL 1: DATA SCIENCE

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CCS346	Exploratory Data Analysis	PEC	2	0	2	4	3
2.	CCS360	Recommender Systems	PEC	2	0	2	4	3
3.	CCS355	Neural Networks and Deep Learning	PEC	2	0	2	4	3
4.	CCS369	Text and Speech Analysis	PEC	2	0	2	4	3
5.	CCW331	Business Analytics	PEC	2	0	2	4	3
6.	CCS349	Image and Video Analytics	PEC	2	0	2	4	3
7.	CCS338	Computer Vision	PEC	2	0	2	4	3
8.	CCS334	Big Data Analytics	PEC	2	0	2	4	3

VERTICAL 2: FULL STACK DEVELOPMENT FOR IT

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CCS335	Cloud Computing	PEC	2	0	2	4	3
2.	CCS332	App Development	PEC	2	0	2	4	3
3.	CCS336	Cloud Services Management	PEC	2	0	2	4	3
4.	CCS370	UI and UX Design	PEC	2	0	2	4	3
5.	CCS366	Software Testing and Automation	PEC	2	0	2	4	3
6.	CCS374	Web Application Security	PEC	2	0	2	4	3
7.	CCS342	DevOps	PEC	2	0	2	4	3
8.	CCS358	Principles of Programming Languages	PEC	3	0	0	3	3

VERTICAL 3: CLOUD COMPUTING AND DATA CENTER TECHNOLOGIES

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CCS335	Cloud Computing	PEC	2	0	2	4	3
2.	CCS372	Virtualization	PEC	2	0	2	4	3
3.	CCS336	Cloud Services Management	PEC	2	0	2	4	3
4.	CCS341	Data Warehousing	PEC	2	0	2	4	3
5.	CCS367	Storage Technologies	PEC	3	0	0	3	3
6.	CCS365	Software Defined Networks	PEC	2	0	2	4	3
7.	CCS368	Stream Processing	PEC	2	0	2	4	3
8.	CCS362	Security and Privacy in Cloud	PEC	2	0	2	4	3

VERTICAL 4: CYBER SECURITY AND DATA PRIVACY

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CCS344	Ethical Hacking	PEC	2	0	2	4	3
2.	CCS343	Digital and Mobile Forensics	PEC	2	0	2	4	3
3.	CCS363	Social Network Security	PEC	2	0	2	4	3
4.	CCS351	Modern Cryptography	PEC	2	0	2	4	3
5.	CB3591	Engineering Secure Software Systems	PEC	2	0	2	4	3
6.	CCS339	Cryptocurrency and Blockchain Technologies	PEC	2	0	2	4	3
7.	CCS354	Network Security	PEC	2	0	2	4	3
8.	CCS362	Security and Privacy in Cloud	PEC	2	0	2	4	3

VERTICAL 5: CREATIVE MEDIA

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CCS333	Augmented Reality/Virtual Reality	PEC	2	0	2	4	3
2.	CCS352	Multimedia and Animation	PEC	2	0	2	4	3
3.	CCS371	Video Creation and Editing	PEC	2	0	2	4	3
4.	CCS370	UI and UX Design	PEC	2	0	2	4	3
5.	CCW332	Digital marketing	PEC	2	0	2	4	3
6.	CCS373	Visual Effects	PEC	2	0	2	4	3
7.	CCS347	Game Development	PEC	2	0	2	4	3
8.	CCS353	Multimedia Data Compression and Storage	PEC	2	0	2	4	3

VERTICAL 6: EMERGING TECHNOLOGIES

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CCS333	Augmented Reality/Virtual Reality	PEC	2	0	2	4	3
2.	CCS361	Robotic Process Automation	PEC	2	0	2	4	3
3.	CCS355	Neural Networks and Deep Learning	PEC	2	0	2	4	3
4.	CCS340	Cyber Security	PEC	2	0	2	4	3
5.	CCS359	Quantum Computing	PEC	2	0	2	4	3
6.	CCS339	Cryptocurrency and Blockchain Technologies	PEC	2	0	2	4	3
7.	CCS347	Game Development	PEC	2	0	2	4	3
8.	CCS331	3D Printing and Design	PEC	2	0	2	4	3

VERTICAL 7: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CCS350	Knowledge Engineering	PEC	2	0	2	4	3
2.	CCS364	Soft Computing	PEC	2	0	2	4	3
3.	CCS355	Neural Networks and Deep Learning	PEC	2	0	2	4	3
4.	CCS369	Text and Speech Analysis	PEC	2	0	2	4	3
5.	CCS357	Optimization Techniques	PEC	2	0	2	4	3
6.	CCS348	Game Theory	PEC	2	0	2	4	3
7.	CCS337	Cognitive Science	PEC	2	0	2	4	3
8.	CCS345	Ethics and AI	PEC	2	0	2	4	3

OPEN ELECTIVES

(Students shall choose the open elective courses, such that the course contents are not similar to any other course contents/title under other course categories).

OPEN ELECTIVES - I

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	OAS351	Space Science	OEC	3	0	0	3	3
2.	OIE351	Introduction to Industrial Engineering	OEC	3	0	0	3	3
3.	OBT351	Food, Nutrition and Health	OEC	3	0	0	3	3
4.	OCE351	Environment and Social Impact Assessment	OEC	3	0	0	3	3
5.	OEE351	Renewable Energy System	OEC	3	0	0	3	3
6.	OEI351	Introduction to Industrial Instrumentation and Control	OEC	3	0	0	3	3
7.	OMA351	Graph Theory	OEC	3	0	0	3	3

PROFESSIONAL ELECTIVES (PE)
SEMESTER VI
ELECTIVE - I

SI. 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

SI. 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

SI. 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

**SEMESTER VIII
ELECTIVE - IV**

SI. 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**

SI.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)

SI.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

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%
	Total	25	25	24	24	25	24	22	16	185	
8.	Non Credit / Mandatory										


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REGULATIONS 2021

CHOICE BASED CREDIT SYSTEM

B.TECH. ARTIFICIAL INTELLIGENCE AND DATA SCIENCE
CURRICULUM 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
THEORY								
2.	HS3152	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
PRACTICALS								
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
TOTAL				16	1	10	27	22

[§] 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.	HS3252	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.	AD3251	Data Structures Design	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 [#]	-	2	0	0	2	2 [#]
PRACTICALS								
9.	GE3271	Engineering Practices Laboratory	ESC	0	0	4	4	2
10.	AD3271	Data Structures Design Laboratory	PCC	0	0	4	4	2
11.	GE3272	Communication Laboratory / Foreign Language [§]	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

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M.E. APPLIED ELECTRONICS
REGULATIONS – 2021
CHOICE BASED CREDIT SYSTEM
I TO IV 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.	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	CATEGORY	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

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SEMESTER III

S. NO.	COURSE CODE	COURSE TITLE	CATE-GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Professional Elective III	PEC	3	0	0	3	3
2.		Professional Elective IV	PEC	3	0	0	3	3
3.		Professional Elective V	PEC	3	0	2	5	4
4.		Open Elective	OEC	3	0	0	3	3
PRACTICALS								
5.	AP4311	Project Work I	EEC	0	0	12	12	6
TOTAL				12	0	14	26	19

SEMESTER IV

S. NO.	COURSE CODE	COURSE TITLE	CATE-GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
PRACTICALS								
1.	AP4411	Project Work II	EEC	0	0	24	24	12
TOTAL				0	0	24	24	12

TOTAL NO. OF CREDITS:75

**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

SEMESTER III, ELECTIVE III

S. NO.	COURSE CODE	COURSE TITLE	CATE-GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	AP4093	Quantum Computing	PEC	3	0	0	3	3
2.	CU4076	VLSI for Wireless Communication	PEC	3	0	0	3	3
3.	AP4005	Micro Electro Mechanical Systems	PEC	3	0	0	3	3
4.	AP4006	Hardware Secure Computing	PEC	3	0	0	3	3
5.	VL4072	CAD for VLSI Design	PEC	3	0	0	3	3

SEMESTER III, ELECTIVE IV

S. NO.	COURSE CODE	COURSE TITLE	CATE-GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	AP4073	Sensors and Actuators	PEC	3	0	0	3	3
2.	AP4095	Signal Integrity for High Speed Design	PEC	3	0	0	3	3
3.	AP4007	Consumer Electronics	PEC	3	0	0	3	3
4.	AP4008	Advanced Microprocessors and Microcontrollers Architectures	PEC	3	0	0	3	3
5.	AP4009	Biomedical Signal Processing	PEC	3	0	0	3	3

SEMESTER III, ELECTIVE V

S. NO.	COURSE CODE	COURSE TITLE	CATE-GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	AP4010	Modeling and Synthesis with HDL	PEC	3	0	2	5	4
2.	IF4071	Deep Learning	PEC	3	0	2	5	4
3.	AP4011	Advanced Digital Image Processing	PEC	3	0	2	5	4
4.	AP4072	PCB Design	PEC	3	0	2	5	4

AUDIT COURSES (AC)

Registration for any of these courses is optional to students

SL. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS
			L	T	P	
1.	AX4091	English for Research Paper Writing	2	0	0	0
2.	AX4092	Disaster Management	2	0	0	0
3.	AX4093	Constitution of India	2	0	0	0
4.	AX4094	நற்றமிழ் இலக்கியம்	2	0	0	0

LIST OF OPEN ELECTIVES FOR PG PROGRAMMES

SL. NO.	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS
			L	T	P	
1.	OCE431	Integrated Water Resources Management	3	0	0	3
2.	OCE432	Water, Sanitation and Health	3	0	0	3
3.	OCE433	Principles of Sustainable Development	3	0	0	3
4.	OCE434	Environmental Impact Assessment	3	0	0	3
5.	OIC431	Blockchain Technologies	3	0	0	3
6.	OIC432	Deep Learning	3	0	0	3
7.	OME431	Vibration and Noise Control Strategies	3	0	0	3
8.	OME432	Energy Conservation and Management in Domestic Sectors	3	0	0	3
9.	OME433	Additive Manufacturing	3	0	0	3
10.	OME434	Electric Vehicle Technology	3	0	0	3
11.	OME435	New Product Development	3	0	0	3
12.	OBA431	Sustainable Management	3	0	0	3

13.	OBA432	Micro and Small Business Management	3	0	0	3
14.	OBA433	Intellectual Property Rights	3	0	0	3
15.	OBA434	Ethical Management	3	0	0	3
16.	ET4251	IoT for Smart Systems	3	0	0	3
17.	ET4072	Machine Learning and Deep Learning	3	0	0	3
18.	PX4012	Renewable Energy Technology	3	0	0	3
19.	PS4093	Smart Grid	3	0	0	3
20.	CP4391	Security Practices	3	0	0	3
21.	MP4251	Cloud Computing Technologies	3	0	0	3
22.	IF4072	Design Thinking	3	0	0	3
23.	MU4153	Principles of Multimedia	3	0	0	3
24.	CX4016	Environmental Sustainability	3	0	0	3
25.	TX4092	Textile Reinforced Composites	3	0	0	3
26.	NT4002	Nanocomposite Materials	3	0	0	3
27.	BY4016	IPR, Biosafety and Entrepreneurship	3	0	0	3

FOUNDATION COURSES (FC)

S. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEMESTER
			Lecture	Tutorial	Practical		
1.	MA4101	Applied Mathematics for Electronics Engineers	3	1	0	4	I

PROFESSIONAL CORE COURSES (PCC)

S. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEMESTER
			Lecture	Tutorial	Practical		
1.	AP4151	Advanced Digital Signal Processing	3	0	0	3	I
2.	AP4152	Advanced Digital System Design	3	0	2	4	I
3.	AP4153	Semiconductor Devices and	3	0	0	3	I
4.	VL4152	Digital CMOS VLSI Design	3	0	0	3	I
5.	AP4111	Electronics System Design Laboratory	0	0	3	1 . 5	I
6.	AP4112	Signal Processing Laboratory	0	0	3	1 . 5	I
7.	AP4201	Analog and Mixed Signal IC Design	3	0	0	3	II
8.	AP4251	Industrial Internet of Things	3	0	0	3	II
9.	AP4202	Power Conversion Circuits for Electronics	3	0	0	3	II
10.	AP4203	Embedded Systems	3	0	2	4	II

11.	AP4211	VLSI Design Laboratory	0	0	4	2	II
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RESEARCH METHODOLOGY AND IPR COURSES (RMC)


S. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEMESTER
			Lecture	Tutorial	Practical		
1.	RM4151	Research Methodology and IPR	2	0	0	2	1

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEMESTER
			Lecture	Tutorial	Practical		
1.	AP4212	Mini Project with seminar	0	0	2	1	II
2.	AP4311	Project Work I	0	0	12	6	III
3.	AP4411	Project Work II	0	0	24	12	IV

SUMMARY

Sl. No.	NAME OF THE PROGRAMME: M.E. APPLIED ELECTRONICS						CREDITS TOTAL
	SUBJECT AREA	CREDITS PER SEMESTER					
		I	II	III	IV		
1.	FC	04	00	00	00	04	
2.	PCC	16	15	00	00	31	
3.	PEC	00	06	10	00	16	
4.	RMC	02	00	00	00	02	
5.	OEC	00	00	03	00	03	
6.	EEC	00	01	06	12	19	
7.	Non Credit/Audit Course	✓	✓	00	00		
8.	TOTAL CREDIT	22	22	19	12	75	


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M.E. COMPUTER SCIENCE AND ENGINEERING

REGULATIONS – 2021

CHOICE BASED CREDIT SYSTEM

I TO IV 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

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SEMESTER III

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	CP4391	Security Practices	PCC	3	0	0	3	3
2.		Professional Elective III	PEC	3	0	0	3	3
3.		Professional Elective IV	PEC	3	0	2	5	4
4.		Open Elective	OEC	3	0	0	3	3
PRACTICALS								
5.	CP4311	Project Work I	EEC	0	0	12	12	6
TOTAL				12	0	14	26	19

SEMESTER IV

S. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
PRACTICALS								
1.	CP4411	Project Work II	EEC	0	0	24	24	12
TOTAL				0	0	24	24	12

TOTAL NO. OF CREDITS: 75

**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	CATE-GORY	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

SEMESTER III, ELECTIVE III

S. NO.	COURSE CODE	COURSE TITLE	CATE-GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	CP4094	Mobile and Pervasive Computing	PEC	3	0	0	3	3
2.	MP4094	Web Services and API Design	PEC	3	0	0	3	3
3.	CP4092	Data Visualization Techniques	PEC	3	0	0	3	3
4.	IF4091	Compiler Optimization Techniques	PEC	3	0	0	3	3
5.	CP4002	Formal Models of Software Systems	PEC	3	0	0	3	3
6.	AP4094	Robotics	PEC	3	0	0	3	3
7.	ML4291	Natural Language Processing	PEC	2	0	2	4	3
8.	IF4093	GPU Computing	PEC	3	0	0	3	3

SEMESTER III, ELECTIVE IV

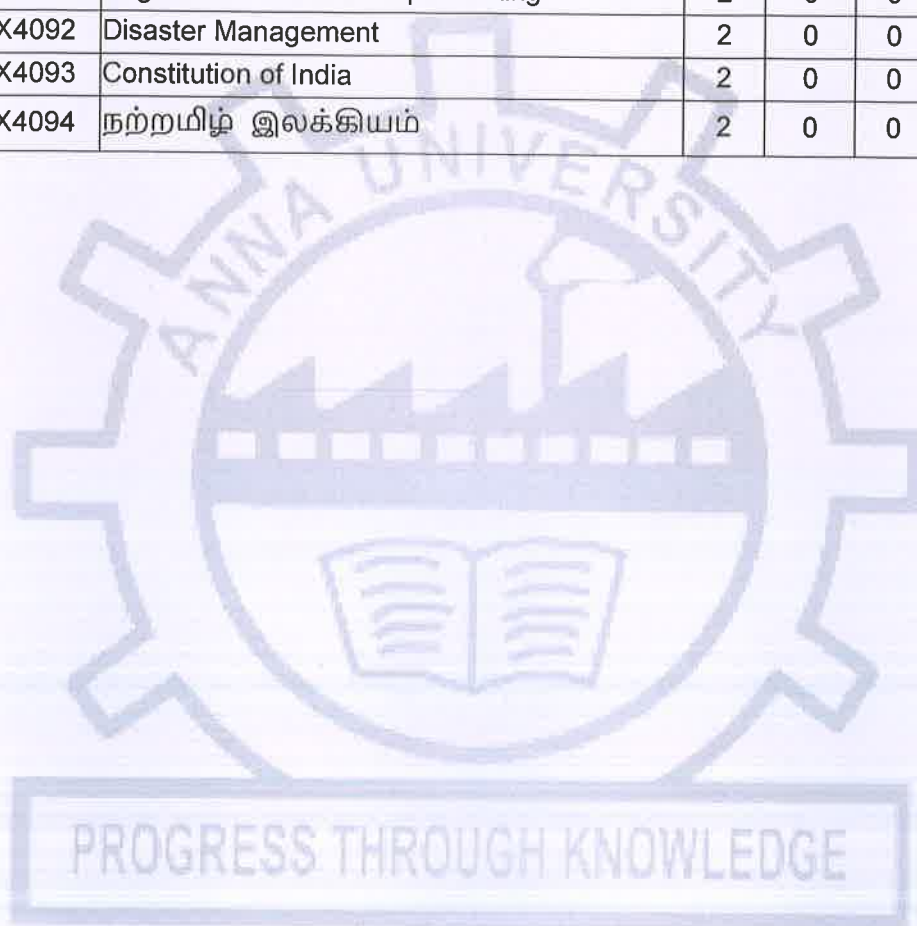
S. NO.	COURSE CODE	COURSE TITLE	CATE-GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	IF4073	Devops and Microservices	PEC	3	0	2	5	4
2.	MP4292	Mobile Application Development	PEC	3	0	2	5	4
3.	IF4071	Deep Learning	PEC	3	0	2	5	4
4.	CP4072	Blockchain Technologies	PEC	3	0	2	5	4
5.	SE4073	Embedded Software Development	PEC	3	0	2	5	4
6.	IF4291	Full Stack Web Application Development	PEC	3	0	2	5	4

7.	CP4071	Bioinformatics	PEC	3	0	2	5	4
8.	MP4291	Cyber Physical Systems	PEC	3	0	2	5	4
9.	MU4291	Mixed Reality	PEC	3	0	2	5	4

AUDIT COURSES (AC)

Registration for any of these courses is optional to students

SL. NO.	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS
			L	T	P	
1.	AX4091	English for Research Paper Writing	2	0	0	0
2.	AX4092	Disaster Management	2	0	0	0
3.	AX4093	Constitution of India	2	0	0	0
4.	AX4094	நற்றமிழ் இலக்கியம்	2	0	0	0



LIST OF OPEN ELECTIVES FOR PG PROGRAMMES

SL. NO.	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS
			L	T	P	
1.	OCE431	Integrated Water Resources Management	3	0	0	3
2.	OCE432	Water, Sanitation and Health	3	0	0	3
3.	OCE433	Principles of Sustainable Development	3	0	0	3
4.	OCE434	Environmental Impact Assessment	3	0	0	3
5.	OME431	Vibration and Noise Control Strategies	3	0	0	3
6.	OME432	Energy Conservation and Management in Domestic Sectors	3	0	0	3
7.	OME433	Additive Manufacturing	3	0	0	3
8.	OME434	Electric Vehicle Technology	3	0	0	3
9.	OME435	New Product Development	3	0	0	3
10.	OBA431	Sustainable Management	3	0	0	3
11.	OBA432	Micro and Small Business Management	3	0	0	3
12.	OBA433	Intellectual Property Rights	3	0	0	3
13.	OBA434	Ethical Management	3	0	0	3
14.	ET4251	IoT for Smart Systems	3	0	0	3
15.	ET4072	Machine Learning and Deep Learning	3	0	0	3
16.	PX4012	Renewable Energy Technology	3	0	0	3
17.	PS4093	Smart Grid	3	0	0	3
18.	DS4015	Big Data Analytics	3	0	0	3
19.	NC4201	Internet of Things and Cloud	3	0	0	3
20.	MX4073	Medical Robotics	3	0	0	3
21.	VE4202	Embedded Automation	3	0	0	3
22.	CX4016	Environmental Sustainability	3	0	0	3
23.	TX4092	Textile Reinforced Composites	3	0	0	3
24.	NT4002	Nanocomposite Materials	3	0	0	3
25.	BY4016	IPR, Biosafety and Entrepreneurship	3	0	0	3

PROGRESS THROUGH KNOWLEDGE

FOUNDATION COURSES (FC)

S. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	Sem
			Lecture	Tutorial	Practical		
1.	MA4153	Advanced Mathematical Methods	3	1	0	4	1

PROFESSIONAL CORE COURSES (PCC)

S. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEM 1
			Lecture	Tutorial	Practical		
1.	CP4151	Advanced Data Structures and Algorithms	3	0	0	3	I
2.	CP4152	Database Practices	3	0	2	4	I
3.	CP4153	Network Technologies	3	0	0	3	I
4.	CP4154	Principles of Programming	3	0	0	3	I
5.	CP4161	Advanced Data Structures and Algorithms Laboratory	0	0	4	2	I
6.	CP4291	Internet of Things	3	0	2	4	II
7.	CP4292	Multicore Architecture and Programming	3	0	2	4	II
8.	CP4252	Machine Learning	3	0	2	4	II
9.	SE4151	Advanced Software Engineering	3	0	0	3	II
10.	CP4212	Software Engineering Laboratory	0	0	2	1	II
11.	CP4391	Security Practices	3	0	0	3	III

RESEARCH METHODOLOGY AND IPR COURSES (RMC)

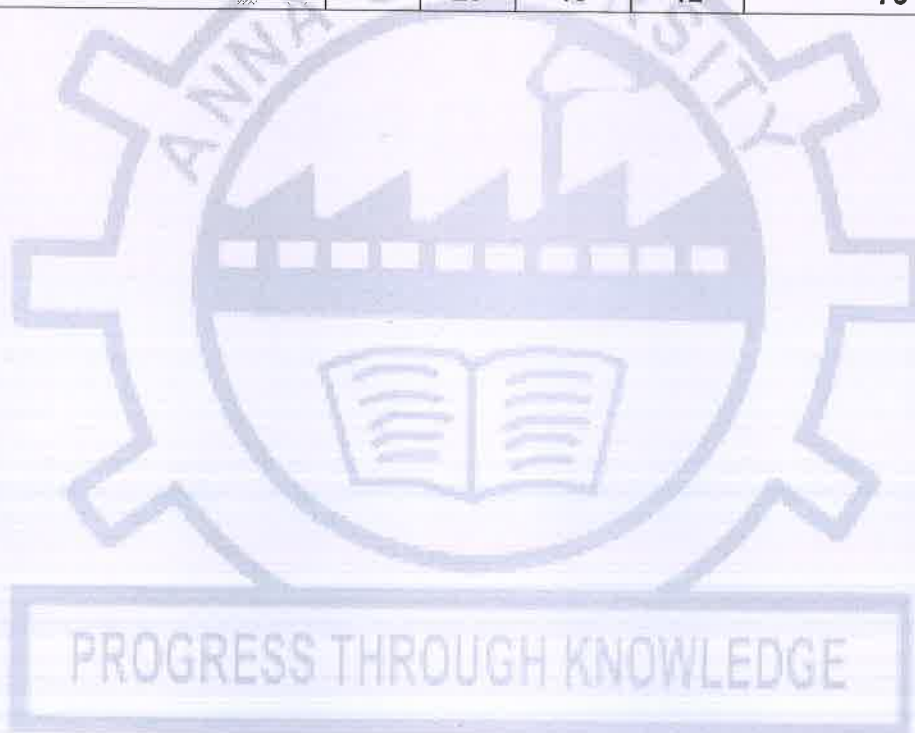
S. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEMESTER
			Lecture	Tutorial	Practical		
1.	RM4151	Research Methodology and IPR	2	0	0	2	I


EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEMESTER
			Lecture	Tutorial	Practical		
1.	CP4211	Technical Seminar	0	0	2	1	1
2.	CP4311	Project Work I	0	0	12	6	3
3.	CP4411	Project Work II	0	0	24	12	4

SUMMARY

Sl. No.	NAME OF THE PROGRAMME: M.E COMPUTER SCIENCE AND ENGINEERING					
	SUBJECT AREA	CREDITS PER SEMESTER				CREDITS TOTAL
		I	II	III	IV	
1.	FC	04	00	00	00	04
2.	PCC	15	16	03	00	34
3.	PEC	00	06	07	00	13
4.	RMC	02	00	00	00	02
5.	OEC	00	00	03	00	03
6.	EEC	00	01	06	12	19
7.	Non Credit/Audit Course	✓	✓	00	00	
8.	TOTAL CREDIT	21	23	19	12	75




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CHOICE BASED CREDIT SYSTEM
I TO IV 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

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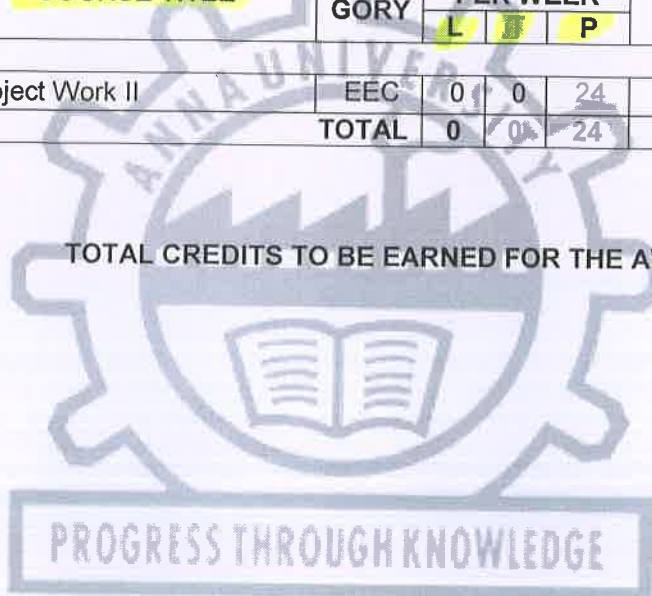
SEMESTER III

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Professional Elective III	PEC	3	0	0	3	3
2.		Professional Elective IV	PEC	3	0	0	3	3
3.		Professional Elective V	PEC	3	0	0	3	3
4.		Open Elective	OEC	3	0	0	3	3
PRACTICALS								
5.	MF4311	Project Work I	EEC	0	0	12	12	6
TOTAL				12	0	12	24	18

SEMESTER IV

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
PRACTICALS								
1.	MF4411	Project Work II	EEC	0	0	24	24	12
TOTAL				0	0	24	24	12

TOTAL CREDITS TO BE EARNED FOR THE AWARD OF THE DEGREE = 75



FOUNDATION COURSES (FC)

SL. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEMESTER
			Lecture	Tutorial	Practical		
1.	MA4155	Applied Probability and Statistics for Manufacturing	3	1	0	4	1

PROFESSIONAL CORE COURSES (PCC)

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	MF4101	Advances in Manufacturing Processes	PCC	3	0	0	3	3
2.	MF4102	Advances in Casting and Welding	PCC	3	0	0	3	3
3.	MF4103	Theory of Metal Cutting	PCC	3	0	0	3	3
4.	CM4151	Computer Aided Manufacturing	PCC	3	0	0	3	3
5.	MF4111	CAD/CAM Laboratory	PCC	0	0	4	4	2
6.	MF4201	Optimization Techniques in Manufacturing	PCC	3	0	0	3	3
7.	MF4202	Advances in Metrology and Inspection	PCC	3	0	0	3	3
8.	MF4203	Theory of Metal Forming	PCC	3	0	0	3	3
9.	MF4204	Additive Manufacturing	PCC	3	0	0	3	3
10.	MF4205	Fluid Power Automation	PCC	3	0	0	3	3
11.	MF4211	Automation and Metal Forming Laboratory	PCC	0	0	3	3	1.5
12.	MF4212	Advanced Manufacturing Processes Laboratory	PCC	0	0	3	3	1.5

PROGRESS THROUGH KNOWLEDGE

RESEARCH METHODOLOGY AND IPR COURSES (RMC)

S. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEMESTER
			Lecture	Tutorial	Practical		
1.	RM4151	Research Methodology and IPR	2	0	0	2	1
TOTAL CREDITS						2	

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

SEMESTER III, ELECTIVES - III, IV & V

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	MF4010	Computer Aided Product Design	PEC	3	0	0	3	3
2.	MF4011	Process Planning and Cost Estimation	PEC	3	0	0	3	3
3.	MF4091	Manufacturing Management	PEC	3	0	0	3	3
4.	MF4012	Nanotechnology	PEC	3	0	0	3	3
5.	MF4013	Materials Testing and Characterization Techniques	PEC	3	0	0	3	3
6.	MF4014	Mechatronics	PEC	3	0	0	3	3
7.	MR4071	Internet of Things for Manufacturing	PEC	3	0	0	3	3
8.	IS4071	Data Analytics	PEC	3	0	0	3	3
9.	CM4071	Manufacturing System Simulation	PEC	3	0	0	3	3
10.	PD4391	Product Lifecycle Management	PEC	3	0	0	3	3
11.	MF4015	Product Design and Development	PEC	3	0	0	3	3
12.	MF4016	Entrepreneurship Development	PEC	3	0	0	3	3
13.	MF4020	Industrial Safety	PEC	3	0	0	3	3
14.	MF4017	Advances in Materials	PEC	3	0	0	3	3
15.	MF4018	Artificial Intelligence	PEC	3	0	0	3	3
16.	MF4019	Smart Manufacturing	PEC	3	0	0	3	3

PROGRESS THROUGH KNOWLEDGE

AUDIT COURSES (AC)

Registration for any of these courses is optional to students

SL. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS
			L	T	P	
1.	AX4091	English for Research Paper Writing	2	0	0	0
2.	AX4092	Disaster Management	2	0	0	0
3.	AX4093	Constitution of India	2	0	0	0
4.	AX4094	நற்றமிழ் இலக்கியம்	2	0	0	0

EMPLOYABILITY ENHANCEMENT COURSES (EEC)


S. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEMESTER
			Lecture	Tutorial	Practical		
	MF4112	Technical Seminar	0	0	2	1	1
1.	MF4311	Project Work - I	0	0	12	6	3
2.	MF4411	Project Work-II	0	0	24	12	4

LIST OF OPEN ELECTIVES FOR PG PROGRAMMES

SL. NO.	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS
			L	T	P	
1.	OCE431	Integrated Water Resources Management	3	0	0	3
2.	OCE432	Water, Sanitation and Health	3	0	0	3
3.	OCE433	Principles of Sustainable Development	3	0	0	3
4.	OCE434	Environmental Impact Assessment	3	0	0	3
5.	OIC431	Blockchain Technologies	3	0	0	3
6.	OIC432	Deep Learning	3	0	0	3
7.	OBA431	Sustainable Management	3	0	0	3
8.	OBA432	Micro and Small Business Management	3	0	0	3
9.	OBA433	Intellectual Property Rights	3	0	0	3
10.	OBA434	Ethical Management	3	0	0	3
11.	ET4251	IoT for Smart Systems	3	0	0	3
12.	ET4072	Machine Learning and Deep Learning	3	0	0	3
13.	PX4012	Renewable Energy Technology	3	0	0	3
14.	PS4093	Smart Grid	3	0	0	3
15.	CP4391	Security Practices	3	0	0	3
16.	MP4251	Cloud Computing Technologies	3	0	0	3
17.	IF4072	Design Thinking	3	0	0	3
18.	MU4153	Principles of Multimedia	3	0	0	3

19.	DS4015	Big Data Analytics	3	0	0	3
20.	NC4201	Internet of Things and Cloud	3	0	0	3
21.	MX4073	Medical Robotics	3	0	0	3
22.	VE4202	Embedded Automation	3	0	0	3
23.	CX4016	Environmental Sustainability	3	0	0	3
24.	TX4092	Textile Reinforced Composites	3	0	0	3
25.	NT4002	Nanocomposite Materials	3	0	0	3
26.	BY4016	IPR, Biosafety and Entrepreneurship	3	0	0	3




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

SEMESTER I

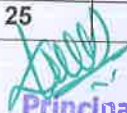
S.NO	COURSE CODE	COURSE TITLE	CATE-GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	MA4106	Applied Mathematics for Power Electronics Engineers	FC	3	1	0	4	4
2.	PX4101	Analysis of Electrical Machines	PCC	3	1	0	4	4
3.	PX4151	Analysis of Power Converters	PCC	3	1	0	4	4
4.	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


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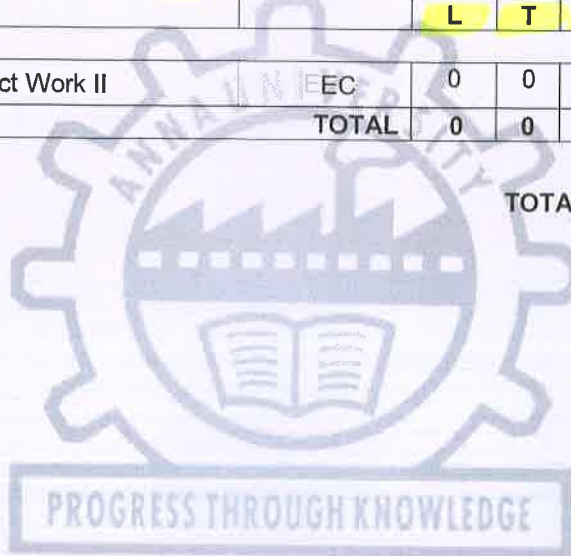
SEMESTER III

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.		Professional Elective IV	PEC	3	0	0	3	3
2.		Professional Elective V	PEC	3	0	0	3	3
3.		Open Elective	OEC	3	0	0	3	3
PRACTICALS								
4.	PX4311	Project Work I	EEC	0	0	12	12	6
TOTAL				9	0	12	21	15

SEMESTER IV

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
PRACTICALS								
1.	PX4411	Project Work II	EEC	0	0	24	24	12
TOTAL				0	0	24	24	12

TOTAL NO. OF CREDITS: 71



FOUNDATION COURSES (FC)

S. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEMESTER
			LECTURE	TUTORIAL	PRACTICAL		
1.	MA4106	Applied Mathematics for Power Electronics Engineers	3	1	0	4	I

PROFESSIONAL CORE COURSES (PCC)

S. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEMESTER
			LECTURE	TUTORIAL	PRACTICAL		
1	PX4101	Analysis of Electrical Machines	3	1	0	4	I
2	PX4151	Analysis of Power Converters	3	1	0	4	I
3	PX4102	Modeling and Design of SMPS	3	0	0	3	I
4	PX4161	Power Converters Laboratory	0	0	3	1.5	I
5	PX4111	Analog and Digital Controllers for PE Converters Laboratory	1	0	3	2.5	I
6	PX4201	Analysis of Electrical Drives	3	1	0	4	II
7	PX4202	Special Electrical Machines	3	0	0	3	II
8	PX4291	Electric Vehicles and Power Management	3	1	0	4	II
9	PX4211	Power Electronics and Drives Laboratory	0	0	3	1.5	II
10	PX4212	Design Laboratory for Power Electronics Systems	1	0	3	1.5	II
TOTAL CREDITS						29	

RESEARCH METHODOLOGY AND IPR COURSES (RMC)

S. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEMESTER
			LECTURE	TUTORIAL	PRACTICAL		
1.	RM4151	Research Methodology and IPR	2	0	0	2	I

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S.NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEMESTER
			LECTURE	TUTORIAL	PRACTICAL		
1.	PX4311	Project Work I	0	0	12	6	III
2.	PX4411	Project Work II	0	0	24	12	IV
TOTAL CREDITS						18	

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

**SEMESTER III
ELECTIVE IV & V**

S. NO.	COURS ECODE	COURSE TITLE	CATE- GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1	PX4010	Nonlinear Dynamics for Power Electronics Circuits	PEC	3	0	0	3	3
2	PX4011	Grid Integration of Renewable Energy Sources	PEC	3	0	0	3	3
3	PX4012	Renewable Energy Technology	PEC	3	0	0	3	3
4	PX4013	Wind Energy Conversion System	PEC	3	0	0	3	3
5	PX4014	Optimization Techniques	PEC	3	0	0	3	3
6	PS4091	Distributed Generation and Micro Grid	PEC	3	0	0	3	3
7	PS4071	Energy Management and Auditing	PEC	3	0	0	3	3
8	PS4093	Smart Grid	PEC	3	0	0	3	3
9	PS4351	HVDC and FACTS	PEC	3	0	0	3	3
10	ET4073	Python Programming for Machine Learning	PEC	3	0	0	3	3

AUDIT COURSES - I

REGISTRATION FOR ANY OF THESE COURSES IS OPTIONAL TO STUDENTS

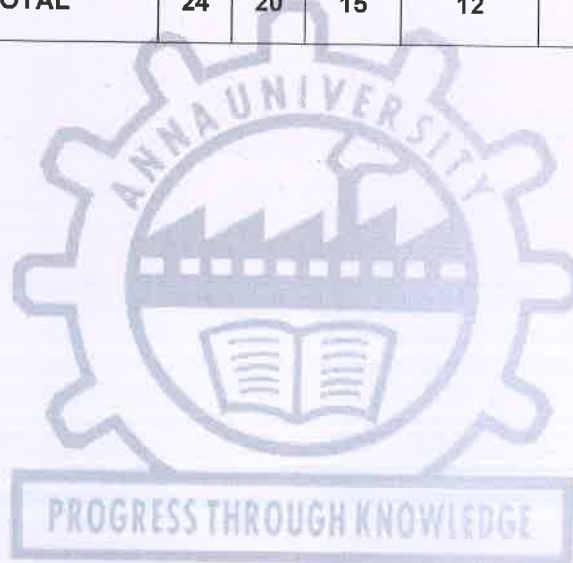
SL. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS
			L	T	P	
1.	AX4091	English for Research Paper Writing	2	0	0	0
2.	AX4092	Disaster Management	2	0	0	0
3.	AX4093	Constitution of India	2	0	0	0
4.	AX4094	நற்றமிழ்இலக்கியம்	2	0	0	0


LIST OF OPEN ELECTIVES FOR PG PROGRAMMES

SL. NO.	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS
			L	T	P	
1.	OCE431	Integrated Water Resources Management	3	0	0	3
2.	OCE432	Water, Sanitation and Health	3	0	0	3
3.	OCE433	Principles of Sustainable Development	3	0	0	3
4.	OCE434	Environmental Impact Assessment	3	0	0	3
5.	OIC431	Blockchain Technologies	3	0	0	3
6.	OIC432	Deep Learning	3	0	0	3
7.	OME431	Vibration and Noise Control Strategies	3	0	0	3
8.	OME432	Energy Conservation and Management in Domestic Sectors	3	0	0	3
9.	OME433	Additive Manufacturing	3	0	0	3
10.	OME434	Electric Vehicle Technology	3	0	0	3
11.	OME435	New Product Development	3	0	0	3
12.	OBA431	Sustainable Management	3	0	0	3
13.	OBA432	Micro and Small Business Management	3	0	0	3
14.	OBA433	Intellectual Property Rights	3	0	0	3
15.	OBA434	Ethical Management	3	0	0	3
16.	CP4391	Security Practices	3	0	0	3
17.	MP4251	Cloud Computing Technologies	3	0	0	3
18.	IF4072	Design Thinking	3	0	0	3
19.	MU4153	Principles of Multimedia	3	0	0	3
20.	DS4015	Big Data Analytics	3	0	0	3
21.	NC4201	Internet of Things and Cloud	3	0	0	3
22.	MX4073	Medical Robotics	3	0	0	3
23.	VE4202	Embedded Automation	3	0	0	3
24.	CX4016	Environmental Sustainability	3	0	0	3
25.	TX4092	Textile Reinforced Composites	3	0	0	3
26.	NT4002	Nanocomposite Materials	3	0	0	3
27.	BY4016	IPR, Biosafety and Entrepreneurship	3	0	0	3

SUMMARY

Name of the Programme: M.E POWER ELECTRONICS AND DRIVES						
	SUBJECT AREA	CREDITS PER SEMESTER				CREDITS TOTAL
		I	II	III	IV	
1.	FC	4	0	0	0	4
2.	PCC	15	14	0	0	29
3.	PEC	3	6	6	0	15
4.	OEC	0	0	3	0	3
5.	EEC	0	0	6	12	18
6.	RMC	2	0	0	0	2
7.	Non Credit/Audit Course	√	√	0	0	0
	TOTAL	24	20	15	12	71




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MASTER OF COMPUTER APPLICATIONS (2 YEARS)
REGULATIONS – 2021
CHOICE BASED CREDIT SYSTEM
I TO IV 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

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SEMESTER III

S. NO.	COURSE CODE	COURSE TITLE	CATE-GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	MC4301	Machine Learning	PCC	3	0	0	3	3
2.	MC4302	Internet of Things	PCC	3	0	0	3	3
3.		Professional Elective II	PEC	3	0	0	3	3
4.		Professional Elective III	PEC	3	0	0	3	3
5.		Professional Elective IV	PEC	3	0	2	5	4
6.		Open Elective	OEC	3	0	0	3	3
PRACTICALS								
7.	MC4311	Machine Learning Laboratory	PCC	0	0	4	4	2
8.	MC4312	Internet of Things Laboratory	PCC	0	0	4	4	2
TOTAL				18	0	10	28	23

SEMESTER IV

S. NO.	COURSE CODE	COURSE TITLE	CATE-GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
PRACTICALS								
1.	MC4411	Project Work	EEC	0	0	24	24	12
TOTAL				0	0	24	24	12

TOTAL NO. OF CREDITS: 83

PROFESSIONAL ELECTIVES

SEMESTER II, ELECTIVE I

S.No.	COURSE CODE	COURSE TITLE	CATE - GORY	CONTACT 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

SEMESTER III, ELECTIVE II

S.No.	COURSE CODE	COURSE TITLE	CATE-GORY	CONTACT PERIODS	L	T	P	C
1.	MC4009	DevOps and Microservices	PEC	3	3	0	0	3
2.	MC4010	Advances in Networking	PEC	3	3	0	0	3
3.	MC4011	Digital Image Processing	PEC	3	3	0	0	3
4.	MC4012	Social Network Analytics	PEC	3	3	0	0	3
5.	MC4013	Cryptocurrency and Blockchain Technologies	PEC	3	3	0	0	3
6.	MC4014	Bio Inspired learning	PEC	3	3	0	0	3
7.	MC4015	Digital Marketing	PEC	3	3	0	0	3

SEMESTER III, ELECTIVE III

S.No.	COURSE CODE	COURSE TITLE	CATE-GORY	CONTACT PERIODS	L	T	P	C
1.	MC4016	Software Architecture	PEC	3	3	0	0	3
2.	MC4017	Digital Forensics	PEC	3	3	0	0	3
3.	MC4018	Wireless Networking	PEC	3	3	0	0	3
4.	MC4019	Data Visualization Techniques	PEC	3	3	0	0	3
5.	MC4020	Data Mining and Data Warehousing Techniques	PEC	3	3	0	0	3
6.	MC4021	Agile Methodologies	PEC	3	3	0	0	3
7.	MC4022	Organizational Behavior	PEC	3	3	0	0	3

SEMESTER III, ELECTIVE IV

S.No.	COURSE CODE	COURSE TITLE	CATE-GORY	CONTACT PERIODS	L	T	P	C
1.	MC4023	Web Design	PEC	5	3	0	2	4
2.	MC4024	C# and .NET	PEC	5	3	0	2	4
3.	MC4025	Big Data Analytics	PEC	5	3	0	2	4
4.	MC4026	Software Quality and Testing	PEC	5	3	0	2	4
5.	MC4027	Advanced Java Programming	PEC	5	3	0	2	4
6.	MC4028	Network Programming and Security	PEC	5	3	0	2	4

AUDIT COURSES (AC)

Registration for any of these courses is optional to students

SL. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS
			L	T	P	
1.	AX4091	English for Research Paper Writing	2	0	0	0
2.	AX4092	Disaster Management	2	0	0	0
3.	AX4093	Constitution of India	2	0	0	0
4.	AX4094	நற்றமிழ் இலக்கியம்	2	0	0	0

BRIDGE COURSES

(For the M.C.A students admitted under non-computer-science background category)

SL. NO.	COURSE CODE	COURSE TITLE	CONTACT PERIODS	L	T	P	C
Classes are to be conducted and completed before the start of the class of first semester, Examinations will be conducted along with first semester							
1.	BX4001	Data Structures and Algorithms	5	3	0	2	4
2.	BX4002	Problem Solving and Programming in C	5	3	0	2	4
Classes are to be conducted and completed before the start of the class of second semester, Examinations will be conducted along with second semester							
3.	BX4003	Introduction to Computer Organization and Operating Systems	3	3	0	0	3
4.	BX4004	Database Management Systems	5	3	0	2	4
Classes are to be conducted and completed before the start of the class of third semester, Examinations will be conducted along with third semester							
5.	BX4005	Mathematical Foundations of Computer Science	3	3	0	0	3
6.	BX4006	Basics of Computer Networks	3	3	0	0	3

LIST OF OPEN ELECTIVES FOR PG PROGRAMMES

SL. NO.	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS
			L	T	P	
1.	OCE431	Integrated Water Resources Management	3	0	0	3
2.	OCE432	Water, Sanitation and Health	3	0	0	3
3.	OCE433	Principles of Sustainable Development	3	0	0	3
4.	OCE434	Environmental Impact Assessment	3	0	0	3
5.	OME431	Vibration and Noise Control Strategies	3	0	0	3
6.	OME432	Energy Conservation and Management in Domestic Sectors	3	0	0	3
7.	OME433	Additive Manufacturing	3	0	0	3
8.	OME434	Electric Vehicle Technology	3	0	0	3
9.	OME435	New Product Development	3	0	0	3
10.	OBA431	Sustainable Management	3	0	0	3
11.	OBA432	Micro and Small Business Management	3	0	0	3
12.	OBA433	Intellectual Property Rights	3	0	0	3
13.	OBA434	Ethical Management	3	0	0	3
14.	ET4251	IoT for Smart Systems	3	0	0	3
15.	ET4072	Machine Learning and Deep Learning	3	0	0	3
16.	PX4012	Renewable Energy Technology	3	0	0	3
17.	PS4093	Smart Grid	3	0	0	3
18.	DS4015	Big Data Analytics	3	0	0	3

19.	NC4201	Internet of Things and Cloud	3	0	0	3
20.	MX4073	Medical Robotics	3	0	0	3
21.	VE4202	Embedded Automation	3	0	0	3
22.	CX4016	Environmental Sustainability	3	0	0	3
23.	TX4092	Textile Reinforced Composites	3	0	0	3
24.	NT4002	Nanocomposite Materials	3	0	0	3
25.	BY4016	IPR, Biosafety and Entrepreneurship	3	0	0	3

FOUNDATION COURSES (FC)

S. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEMESTER
			Lecture	Tutorial	Practical		
1.	MA4151	Applied Probability and Statistics for Computer Science Engineers	3	1	0	4	I

PROFESSIONAL CORE COURSES (PCC)

S. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEMESTER
			Lecture	Tutorial	Practical		
1.	MC4101	Advanced Data Structures and Algorithms	3	0	0	3	I
2.	MC4102	Object Oriented Software Engineering	3	0	0	3	I
3.	MC4103	Python Programming	3	0	0	3	I
4.	MC4104	Fundamentals of Accounting	3	0	2	4	I
5.	MC4111	Advanced Data Structures and Algorithms Laboratory	0	0	4	2	I
6.	MC4112	Python Programming Laboratory	0	0	4	2	I
7.	MC4201	Full Stack Web Development	3	0	0	3	II
8.	MC4202	Advanced Database Technology	3	0	0	3	II
9.	MC4203	Cloud Computing Technologies	3	0	0	3	II
10.	MC4204	Mobile Application Development	3	0	2	4	II
11.	MC4205	Cyber Security	3	0	0	3	II
12.	MC4211	Advanced Database	0	0	4	2	II
13.	MC4212	Full Stack Web Development Laboratory	0	0	4	2	II
14.	MC4301	Machine Learning	3	0	0	3	III

15.	MC4302	Internet of Things	3	0	0	3	III
16.	MC4311	Machine Learning Laboratory	0	0	4	2	III
17.	MC4312	Internet of Things Laboratory	0	0	4	2	III

RESEARCH METHODOLOGY AND IPR COURSES (RMC)


S. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEMESTER
			Lecture	Tutorial	Practical		
1.	RM4151	Research Methodology and IPR	2	0	0	2	1

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S. NO	COURSE CODE	COURSE TITLE	PERIODS PER WEEK			CREDITS	SEMESTER
			Lecture	Tutorial	Practical		
1.	MC 4411	Project Work II	0	0	24	12	IV

SUMMARY

Sl. No.	NAME OF THE PROGRAMME: M.CA						CREDITS TOTAL
	SUBJECT AREA	CREDITS PER SEMESTER					
		I	II	III	IV		
1.	FC	04	00	00	00	04	
2.	PCC	17	20	10	00	49	
3.	PEC	00	03	10	00	13	
4.	RMC	02	00	00	00	02	
5.	OEC	00	00	03	00	03	
6.	EEC	01	01	00	12	12	
7.	Non Credit/Audit Course	✓	✓	00	00		
8.	TOTAL CREDIT	24	24	23	12	83	


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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 IV SEMESTERS

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



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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 3rd 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 3rd Semester.

SEMESTER - III

SL. NO.	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
THEORY								
1.	BA4301	Strategic Management	PCC	3	0	0	3	3
2.	BA4302	International Business	PCC	3	0	0	3	3
3.		Professional Elective I	PEC	3	0	0	3	3
4.		Professional Elective II	PEC	3	0	0	3	3
5.		Professional Elective III	PEC	3	0	0	3	3
6.		Professional Elective IV	PEC	3	0	0	3	3
7.		Professional Elective V	PEC	3	0	0	3	3
8.		Professional Elective VI	PEC	3	0	0	3	3
PRACTICAL								
9.	BA4311	Creativity and Innovation Laboratory	EEC	0	0	4	4	2
10.	BA4312	Summer Internship	EEC	0	0	4	4	2
TOTAL				24	0	8	32	28

SEMESTER - IV

SI. NO	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
PRACTICAL								
1.	BA4411	Project Work	EEC	0	0	24	24	12
TOTAL				0	0	24	24	12

TOTAL :90 CREDITS

NON FUNCTIONAL ELECTIVES (2 electives)

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
1.	BA4032	Entrepreneurship Development	NEC	3	0	0	3	3
2.	BA4033	Event Management	NEC	3	0	0	3	3

PROFESSIONAL ELECTIVES (PEC)

FUNCTIONAL SPECIALISATIONS

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

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P		
Stream/ Specialization : Financial Management [7]								
1.	BA4001	Security Analysis and Portfolio Management	PEC	3	0	0	3	3
2.	BA4002	Financial Markets	PEC	3	0	0	3	3
3.	BA4003	Banking and Financial Services	PEC	3	0	0	3	3
4.	BA4004	Financial Derivatives	PEC	3	0	0	3	3
5.	BA4005	Financial Modelling	PEC	3	0	0	3	3
6.	BA4006	International Finance	PEC	3	0	0	3	3
7.	BA4007	Behavioral Finance	PEC	3	0	0	3	3
Stream/ Specialization : Marketing Management [7]								
8.	BA4008	Retail Marketing	PEC	3	0	0	3	3
9.	BA4009	Consumer Behavior	PEC	3	0	0	3	3
10.	BA4010	Integrated Marketing Communication	PEC	3	0	0	3	3
11.	BA4011	Services Marketing	PEC	3	0	0	3	3
12.	BA4012	Sales and Distribution Management	PEC	3	0	0	3	3
13.	BA4013	Product and Brand Management	PEC	3	0	0	3	3
14.	BA4014	Digital Marketing	PEC	3	0	0	3	3

Stream/ Specialization : Human Resource Management [6]								
15.	BA4015	Strategic Human Resource Management	PEC	3	0	0	3	3
16.	BA4016	Industrial relations and labour legislations	PEC	3	0	0	3	3
17.	BA4017	Organizational, design, change and development	PEC	3	0	0	3	3
18.	BA4018	Negotiation and conflict management	PEC	3	0	0	3	3
19.	BA4019	Reward and Compensation management	PEC	3	0	0	3	3
20.	BA4020	International Human Resource Management	PEC	3	0	0	3	3
Stream/ Specialization : Operations Management [6]								
21.	BA4021	Supply Chain Management	PEC	3	0	0	3	3
22.	BA4022	Quality Management	PEC	3	0	0	3	3
23.	BA4023	Materials Management	PEC	3	0	0	3	3
24.	BA4024	Services Operations Management	PEC	3	0	0	3	3
25.	BA4025	Supply Chain Analytics	PEC	3	0	0	3	3
26.	BA4026	Project Management	PEC	3	0	0	3	3
Stream/ Specialization : Business Analytics [5]								
27.	BA4027	Data Mining for Business Intelligence	PEC	3	0	0	3	3
28.	BA4028	Deep Learning and Artificial Intelligence	PEC	3	0	0	3	3
29.	BA4029	Social media web Analytics	PEC	3	0	0	3	3
30.	BA4030	E-Business Management	PEC	3	0	0	3	3
31.	BA4031	Enterprise Resource Planning	PEC	3	0	0	3	3

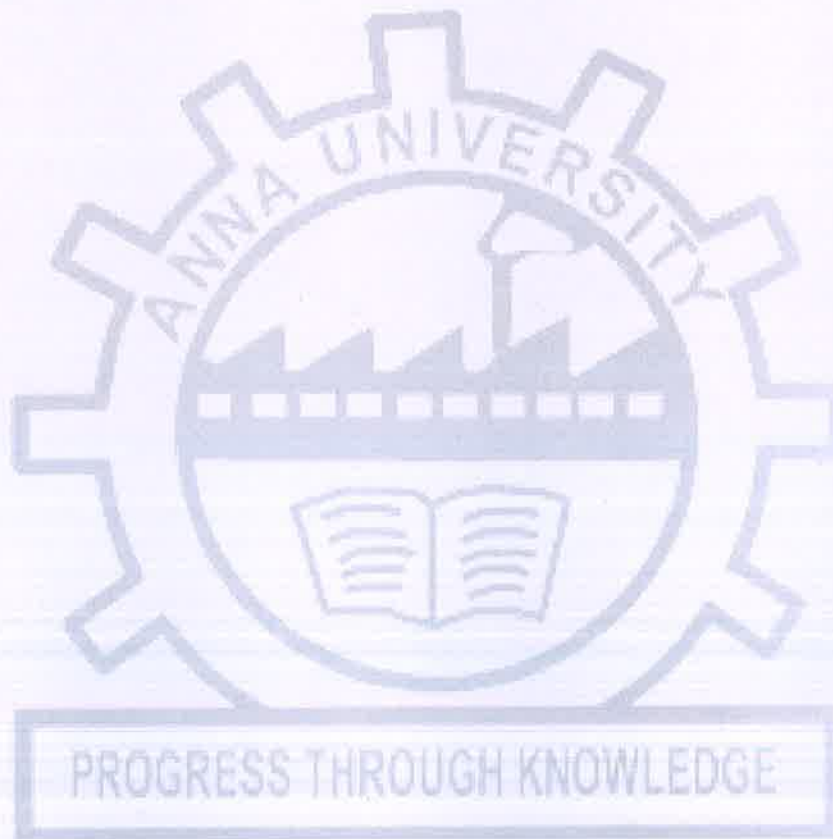
SECTORAL SPECIALIZATIONS

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

- (a) Logistics and Supply Chain Management
- (b) Infrastructure and Real Estate Management
- (c) Tourism Management

SL. NO	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C
Sectoral Specialization: Logistics and Supply Chain Management								
1.	BA4051	Supply Chain Concepts and Planning	PEC	3	3	0	0	3
2.	BA4052	Sourcing and Supply Management	PEC	3	3	0	0	3
3.	BA4053	Supply Chain Inventory Management	PEC	3	3	0	0	3
4.	BA4054	Supply Chain Information System	PEC	3	3	0	0	3
5.	BA4055	Warehouse Management	PEC	3	3	0	0	3
6.	BA4056	Transportation and Distribution Management	PEC	3	3	0	0	3
7.	BA4057	Reverse and Contract Logistics	PEC	3	3	0	0	3
8.	BA4058	Air Cargo Management	PEC	3	3	0	0	3
9.	BA4059	Containerization and Allied Business	PEC	3	3	0	0	3
10.	BA4060	Exim Management	PEC	3	3	0	0	3
11.	BA4061	Fundamentals of Shipping	PEC	3	3	0	0	3
12.	BA4062	Port and Terminal Management	PEC	3	3	0	0	3
Sectoral Specialization :Infrastructure and Real Estate Management								
13.	BA4063	Infrastructure Planning Scheduling and Control	PEC	3	3	0	0	3
14.	BA4064	Contracts and Arbitration	PEC	3	3	0	0	3
15.	BA4065	Project Management for Infrastructure	PEC	3	3	0	0	3
16.	BA4066	Management of Human Resources, Safety and Quality	PEC	3	3	0	0	3
17.	BA4067	Disaster Mitigation and Management	PEC	3	3	0	0	3
18.	BA4068	Economics and Financial Management in Construction	PEC	3	3	0	0	3
19.	BA4069	Urban Environmental Management	PEC	3	3	0	0	3
20.	BA4070	Smart Materials, Techniques and Equipments for Infrastructure	PEC	3	3	0	0	3
21.	BA4071	Strategic Airport Infrastructure Management	PEC	3	3	0	0	3
22.	BA4072	Real Estate Marketing and Management	PEC	3	3	0	0	3
23.	BA4073	Infrastructure and Real Estate Entrepreneurship	PEC	3	3	0	0	3
24.	BA4074	Valuation of Real Estate and Infrastructure Assets	PEC	3	3	0	0	3
Sectoral Specialization : Tourism Management								
25.	BA4075	Tourism Principles and Practices	PEC	3	3	0	0	3
26.	BA4076	Travel Management	PEC	3	3	0	0	3
27.	BA4077	International Tourism	PEC	3	3	0	0	3

28.	BA4078	Tourism Geography	PEC	3	3	0	0	3
29.	BA4079	Culture and Heritage	PEC	3	3	0	0	3
30.	BA4080	Tourism Products in India	PEC	3	3	0	0	3
31.	BA4081	Accommodation and House Keeping Management	PEC	3	3	0	0	3
32.	BA4082	Travel Media and Public Relations	PEC	3	3	0	0	3
33.	BA4083	Destination Planning and Management	PEC	3	3	0	0	3
34.	BA4084	Tour Operations	PEC	3	3	0	0	3
35.	BA4085	Leisure and Recreation Management	PEC	3	3	0	0	3
36.	BA4086	Medical Tourism	PEC	3	3	0	0	3



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