VINAYAKA MISSION'S
RESEARCH FOUNDATION
(Deemed to be University under section 3 of the UGC Act 1956)

VINAYAKA MISSION'S RESEARCH FOUNDATION

(Deemed to be University under Section 3 of UGC Act, 1956),
SALEM, INDIA

REGULATIONS 2021

CHOICE BASED CREDIT SYSTEM (CBCS)

(FOR THE STUDENTS ADMITTED FROM 2021-22 ONWARDS)

BACHELOR OF ENGINEERING / TECHNOLOGY (B.E./B.Tech.)
Degree Programme – Part Time
Under
FACULTY OF ENGINEERING AND TECHNOLOGY

VINAYAKA MISSION'S RESEARCH FOUNDATION

(Deemed to be University under Section 3 of UGC Act, 1956) SALEM, INDIA

BACHELOR OF ENGINEERING / TECHNOLOGY (B.E./B.Tech.)

Part Time Degree Programme

UNDER

FACULTY OF ENGINEERING AND TECHNOLOGY

REGULATIONS 2021

(FOR THE STUDENTS ADMITTED FROM 2021-22 ONWARDS)

In exercise of the powers conferred by the Revised Memorandum of Association rules of the Vinayaka Mission's Research Foundation, Deemed to be University Salem, the Board of Management of the University hereby issues the following Regulations pertaining to the Undergraduate Programme and the award of the Degree of Bachelor of Engineering/Technology (B.E. / B.Tech.).

1. TITLE AND COMMENCEMENT

These regulations shall be called "**Bachelor of Engineering / Technology (B.E./B.Tech.) – Part Time Degree Programme – Regulations 2021"**. These Regulations **come into force with effect from Academic year 2021-22** and modifications if any may be approved by the Apex bodies of the University from time to time.

2. PREAMBLE

The Degree of Bachelor of Engineering/Technology (B.E/B.Tech.) in Faculty of Engineering and Technology shall be awarded to a Candidate who, as per these regulations, has successfully undergone the Programme, passed the prescribed Examinations and thereby qualified to receive the Degree.

3. DEFINITIONS AND NOMENCLATURE

In the Regulations, unless the context otherwise requires, certain terms used in the form of abbreviation and their meanings are as under.

3.1	AC	Academic Council, the highest academic body of the University, headed by the Vice Chancellor.
3.2	AB	Absent
3.3	AICTE	All India Council for Technical Education, New Delhi.

3.4	B.E. / B.Tech.	Bachelor of Engineering/Technology
3.5	BoM	Board of the Management- the highest governing body of the University.
3.6	BoS	Board of Studies of the University under the Faculty of Engineering and Technology.
3.7	Specialization	Discipline of B.E./B.Tech. Degree Programme, such as Mechanical Engineering, Civil Engineering, Electronics and Communication Engineering etc.
3.8	CBCS	Choice Based Credit System
3.9	CO	Course Outcomes
3.10	CoE	Controller of Examinations of the University.
3.11	Course	Subject of study offered by various departments.
3.12	Credit	Course work measured in units, based on hours conducted/week and content of course. 01 hour lecture/tutorial and 02 hour practical per week is equivalent to 01 credit.
3.13	Curriculum and Syllabus	Courses studied in each Programme that provides appropriate knowledge in the chosen branch. The curriculum and syllabus for study is as prescribed by the Board of Studies (BoS) with the approval of the concerned Academic Council (AC) based on the UGC / AICTE regulations.
3.14	Dean	Dean for the Faculty of Engineering and Technology of the University.
3.15	EA	External Assessment
3.16	HoD	Head of the Department of the Institution.
3.17	HoI	Head of the Institution or Principal of the Constituent Engineering College of the University.
3.18	Institution	Constituent Engineering College of the University
3.19	IA	Internal Assessment
3.20	MoE	Ministry of Education
3.21	MOOCs	Massive Open Online Courses
3.22	NCC	National Cadet Corps
3.23	NPTEL	National Programme on Technology Enhanced Learning
3.24	NSS	National Service Scheme
3.25	OBE	Outcome Based Education
3.26	PO	Programme Outcomes

3.27	Programme	Under Graduate Programme leading to the award of Degree B.E./B.Tech. approved by UGC, AICTE and the University
3.28	PSO	Programme Specific Outcomes
3.29	RRC	Red Ribbon Club of the Institution
3.30	RA	Reappear
3.31	SWAYAM	Study Webs of Active Learning for Young Aspiring Minds is a programme of the MHRD, Government of India.
3.32	Teacher	Professors, Associate Professors, Assistant Professors, Pro-term Lecturers and other persons engaged in teaching of the students and assisting the students in the conduct of studies and Research in the College/University
3.33	UGC	University Grants Commission
3.34	VMRF	Vinayaka Mission's Research Foundation, Deemed to be University, Salem, Tamil Nadu, India
3.35	VC	Vice - Chancellor of the University
3.36	YRC	Youth Red Cross of the Institution

4. DURATION OF THE PROGRAMME

4.1 B.E. / B.Tech. – PART TIME (1st Semester Onwards)

The duration for the Bachelor of Engineering/Technology (B.E. / B.Tech.) Part Time Degree Programmes is for **a period of 3 and Half Years (7 Semesters) for the Students admitted in First Semester and not more than 7 Years (14 Semesters).**

4.2 The Total duration for completion of the Programme starts from the commencement of the First Semester to which the Student was admitted and shall not exceed the maximum duration specified. In compliance with the UGC norms, no Student will be allowed to complete B.E./B.Tech in less than 7 Semesters. The above mentioned time duration is counted excluding the Semesters withdrawn on Medical grounds etc.

4.3 The academic year is divided into **Two Semesters**, **Odd Semester normally starts from July to December and the Even Semester from January to June.**

5. MEDIUM OF INSTRUCTION

The Medium of instruction for all academic activities is English, except for Language courses other than English.

6. FEE STRUCTURE

The Fee Structure for the Programmes shall be fixed by the Committee constituted for this purpose by the University from time to time.

7. ADMISSION ELIGIBILITY

7.1 **B.E. / B.Tech. (Part Time)** - All Programmes – 03 and Half Years Duration

The Candidate seeking Admission to the First Semester of B.E. / B.Tech. Part Time Degree Programme should have passed Diploma in the relevant Discipline/Field/Program as per AICTE Guidelines.

7.2 The Candidates seeking admission to the First Semester of B.E. / B.Tech. Part Time Degree Programme should have a Minimum of **1 Year Full Time Work Experience** in a Registered Firm/Company/Industry/Educational or Government or Autonomous Organization in the relevant field in which the Admission is sought.

8. PROGRAMMES OFFERED

The Programmes offered by the University in Faculty of Engineering and Technology are as mentioned below and are subjected to addition or removal of the Programmes depending on the decision taken by subsequent BoS and further approval of Vice Chancellor.

PROGRAMMES OF STUDY – B.E. / B.Tech. DEGREE

Sl. No.	UG Degree	Programme
1	B.E.	Computer Science and Engineering
2	B.E.	Civil Engineering
3	B.E.	Electronics and Communication Engineering
4	B.E.	Electrical and Electronics Engineering
5	B.E.	Mechanical Engineering

9. SELECTION OF STUDENTS

Guidelines issued from time to time for selection of Students for admission in Constituent Colleges of the University are followed for admitting eligible Students in various Under Graduate

Programmes. Applications received are checked for completeness and a Merit list based on the Marks obtained in Qualifying Examination is prepared. The Students are admitted as per the Merit List.

10. REGISTRATION

A Candidate admitted in the Under Graduate Programme in the Constituent Engineering Colleges of the University shall register with the University by remitting the prescribed Fees along with the Application form for registration duly filled in and forwarded to the University through the Head of the Institution within the stipulated date.

11. COMMENCEMENT OF THE PROGRAMME

The Academic Year for the Programme shall commence in the month of July every year except First Year. The First Year classes shall commence in the month of August or as decided by the regulatory bodies and the University.

12. WORKING DAYS IN A SEMESTER

Each semester normally consists of 90 Working Days or 270 Hours inclusive of End Semester Theory & Practical Examinations and 75 Teaching Days.

13. BREAK OF STUDY

13.1 Two Semesters or One Year break of Study may be allowed in the entire duration of the course for genuine reasons beyond the control of the Student like Natural calamity, serious Health problems etc. At a time only One Semester break will be admissible. If a Student is declared not eligible for appearing in Examination for lack of minimum attendance percentage or due to any misconduct, the period spent in that Semester will not be considered as Break of Study. If a Student does not have a minimum of 75 % attendance in at least 2 or more courses in the previous Semester he will not be allowed to enrol for current Semester and has to undergo a year of break in Studies.

13.2 During the Break of Study a Student:

a. Cannot attend any regular classes.

b. Will not be permitted to stay in the Hostel.

c. Will not be permitted to participate in any of the Institution's activities inside the Campus.

d. Can reappear for the 'End Semester Final Examination' for such courses in which he/she might have obtained 'RA' / 'AB' Grade.

14. DISCONTINUATION / READMISSION

A Student who undergoes a break in studies in the current Semester (Odd/Even) can get readmitted only in the subsequent corresponding (Odd/Even) Semester in the next academic year only. The Vice – Chancellor is vested with the power to permit the break or discontinuation and re-joining the course for which the candidate must apply in the prescribed form duly recommended by HoD and HoI with mapping of the Courses already passed before discontinuation and to be passed in the forthcoming Semesters along with necessary supporting documents.

15. PROGRAMME STRUCTURE

The structure of curriculum related to each Programme complying with the Choice Based Credit System (CBCS) and Outcome Based Education (OBE) framework shall be submitted to the Academic Council for approval based on the recommendation of Boards for different Programmes.

Each Programme shall have a Curriculum in accordance with OBE framework comprising of Theory, Theory cum Practical and Practical courses and Syllabus designed as per Blooms' Taxonomy Level for the achievement of POs as stated in **Annexure I** and PSOs.

Definition of Credit:

1 Hour Lecture (L) per week	1 Credit
1 Hour Tutorial (T) per week	1 Credit
2 Hours Practical (Lab) per week	1 Credit

15.1 Range of Credits – Respective Boards will decide for a **Credit of 105 for a Student** to be eligible to get awarded with Under Graduate Degree in Engineering.

STRUCTURE OF UNDERGRADUATE ENGINEERING PROGRAM – PART TIME STUDENTS

Sl. No.	Category of Courses	Types of Courses	Suggested Breakup of Credits (min – max)
	A.Foundation Courses		**18-24**
	Humanities and Social Sciences including Management courses		9-12
1.	Basic Science Courses (Maths, Physics and Chemistry)		9-12
2.	**B. Professional Core Courses**		**61**
3.	**C. Elective Courses**		**18-27**
	Professional Electives		12-15
	Open Electives	Innovation, Entrepreneurship, Skill Development etc.	3-6

		Emerging Areas like 3D Printing, Artificial Intelligence, Internet of Things etc.	3-6
4.	**D. Project work**		8
5.	**E. Mandatory/Audit Courses** Yoga and Meditation, Indian Constitution, Essence of Indian Traditional Knowledge, NCC/NSS/RRC/YRC/Student Clubs/Unnat Bharat Abhiyan/Swachh Bharat, Sports and Games, Gender Equity and Law		Zero Credit Course (Minimum 2 courses to be completed other than Yoga and Meditation)
	Minimum Credits to be earned		**105**

16. Components of Curriculum

16.1 Category A - Foundation Courses (FC)

The Courses in this Category belong to Humanities and Social Sciences including Management courses, Basic Science courses, Gender sensitization related courses and Design courses.

Universal Human Values (UHV) is a course covered on the basis of recommendation of AICTE which is a 3 Credit course and should be offered to the Students as decided by the respective Boards. The Credits earned in this category will be used for overall CGPA calculation.

16.2 Category B – Professional Core Courses (PCC)

The Courses related to the programme are called Professional Core Courses and the same has to be selected by the Students in every Semester in consultation and guidance of their Mentor / Faculty Advisor. A Student may also opt for Core Courses offered through MOOCs (Massive Open Online Courses), SWAYAM, NPTEL etc. and the Credits earned after successful completion of the Courses will be recommended by HoI for transfer of Credits and endorsement in Marks statement. The Credits earned in this category will be used for overall CGPA calculation.

16.3 Category C - Elective Courses (EC)

16.3.1 Professional Elective Courses relevant to chosen Specialization

Programme Specific Professional Electives are Courses which are not offered under Professional Core Courses. These Courses may not have any

Prerequisites and can be chosen as and when required by the Students. A Student may also opt for Programme Specific Professional Elective Courses offered through MOOCs (Massive Open Online Courses), SWAYAM, NPTEL etc. and the Credits earned after successful completion of the Courses will be recommended by HoI for transfer of Credits and endorsement in Marks statement. The Credits earned in this category will be used for overall CGPA calculation.

16.3.2 Open Electives

16.3.3.1 Courses on Innovation and Entrepreneurship

The Courses offered in this category include courses related to Innovation, Entrepreneurship, Skill Development, Startups and Intellectual Property Rights (IPR) etc.

16.3.3.2 Courses on Emerging Areas (Multi-Disciplinary)

The Courses offered in this category include Courses on Emerging Areas which are Multi-disciplinary in nature like 3D Printing, Artificial Intelligence, Internet of Things etc. University may offer Multi-disciplinary open Elective Courses which will be offered to all Students of the University irrespective of the Discipline he/she belongs. Ex. Students from Faculty of Engineering and Technology can take courses offered by the Faculty of Medicines, Faculty of Allied Health Sciences, Faculty of Pharmacy etc. and vice-versa.

These Courses do not have any Prerequisite condition and can be chosen as and when desired by the Students. A Student may also opt for Open Elective Courses offered through MOOCs (Massive Open Online Courses), SWAYAM, NPTEL etc. and the Credits earned after successful completion of the courses will be recommended by HoI for Credit transfer and endorsement in Marks statement. The Credits earned in this category will be used for overall CGPA calculation.

16.4 Category D – Project Work

The Student must represent his earned Knowledge in the Engineering Programme by doing a quality Project in his/her last Semester of the Programme of Study. This Project Work should be done under the Regular guidance of Faculty Supervisor. In case of an Industry Sponsored Project, a Co-Supervisor from the Industry will also be involved and there should be

a regular interaction between the Student and Supervisor and the proceedings should be recorded periodically. Once in a Month the Student must report to the Faculty Supervisor with attendance report from Co-Supervisor and present progress and latest status of his/her Project with the help of a Power Point presentation in the presence of HoD. The progress and presentations in the Semesters will be used for internal evaluation and allocating Internal Assessment Marks and End Semester Examination will be used for External Assessment Marks. The Credits earned in this Category will be used for overall CGPA calculation.

16.5 Category E – Mandatory Zero Credit Courses

The courses under this category do not have any credit and will not be Included for CGPA calculations. Courses like Yoga and Meditation, Indian Constitution, Essence of Indian Traditional Knowledge, NCC/NSS/RRC/YRC/Student Clubs/Unnat Bharat Abhiyan/Swachh Bharat, Sports and Games, Gender Equity and Law are included under this. The student should complete a minimum of two courses to be completed other than Yoga and Meditation under this category.

17. BLENDED MODE OF LEARNING & ADOPTION OF SWAYAM COURSES

Respective Boards will design contents of all courses in the Curriculum including the Laboratory courses so that 40% of the content can be taught Online in case of Emergency, where Students may not be in a position to attend Regular classes.

Students should also be allowed to take a maximum of 40% of the total number of courses in curriculum and which are offered through MOOCs like NPTEL/SWAYAM. The Credits earned should be transferred in Mark sheet on successful completion of the Courses and recommendation by the Equivalence Committee constituted for this purpose. The Credits earned for the Courses in Curriculum completed through MOOCs like NPTEL/SWAYAM will be used for overall CGPA calculation.

Over and above the Curriculum, the Students if interested can take any number of Courses offered through MOOCs like NPTEL/SWAYAM and Credits earned on successful completion of these Courses will also be transferred in Mark sheet, however will not be used for overall CGPA calculation.

18. COURSE REGISTRATION IN A SEMESTER

18.1 REGISTRATION OF COURSES

18.1.1 The Students will register courses to be studied in a Semester (Even / Odd) in their Department in First Week of commencement of Semester or whenever it is asked for. The selection of Courses should satisfy the minimum Credit requirement for each category of Courses. This may also be discussed during First Class Committee meeting in presence of Mentor and allotted Mentee. Faculty Advisor of the Class may also assist in planning and selection of the courses for registration in the Semester.

18.1.2 In a Semester, a Student can register new courses for *minimum 12 Credits and maximum 20 Credits* for Regular as well as Online classes (in case of Blended mode of learning) except in Final Semester. Registration of courses will not include courses registered in NPTEL/ SWAYAM.

The criteria for registration of courses for minimum 12 Credits will not be applicable for those students who are having less than 12 Credits to be earned for awarding of Degree. In such cases, the Students will be allowed to register for the remaining courses for less than 14 credits. The limit of Maximum 20 Credits will not include courses of Reappearance i.e. Courses could not be completed successfully in previous Semesters. The Students can register any number of courses for Reappearance.

18.1.3 The Students are at liberty to drop the course of Reappearance and can choose a new Course. The Student has to attend the Classes of the new Course and has to satisfy the requirement of Internal as well as External assessment.

19. ASSESSMENT

19.1 Learning Assessment Procedure

All Assessments are designed based on Revised Bloom's Taxonomy levels of Thinking and Learning. The Learning of a Student is assessed and evaluated twice in an academic year at the end of Odd /Even Semester respectively, and shall have learning assessments from the following perspectives with respect to all courses:

(a) Evaluation with respect to Knowledge.

(b) Evaluation with respect to Understanding.

(c) Evaluation with respect to Skill.

(d) Evaluation with respect to Applications.

(e) Higher Order Thinking Skills Registration for End-Semester Final Examination for all courses enrolled in that Semester is mandatory.

The Student's learning in each course, in general, is assessed (Formative) and evaluated (Summative) based on In-Semester continuous learning assessment (Internal assessment) and End-Semester Final Examination.

19.2 Internal Assessment (IA)

60% Weightage of the Total Marks will be used for Internal Assessment of the Students by the Faculty in charge / Course handler in Theory as well as Practical courses. An In-Semester continuous learning assessment (also known as Internal Assessment Test) is spread through the duration of course and is done by the Faculty Member facilitating the course. The Internal Assessment Marks will be calculated based on the following guidelines.

S. No.	Description	Marks
01	Internal Assessment Test – 01 & 02 and Model Exam (10 Marks each)	30
02	Seminar/Technical Quiz	20
03	Assignment/Project	10
	Total Marks	**60**

19.3 External Assessment (EA)

40% Weightage of the Total Marks will be used for External assessment of the Students and it will be mandatory for the Student to appear in the Exam. The Examination may be conducted Online/Offline depending on the prevailing situation.

19.4 Eligibility for End Semester Examinations

The Student maintaining minimum 75% attendance percentage in each Course will only be eligible for appearing in Internal as well as External assessment Tests/Examinations. In exceptional emergency cases, HoI may permit the Students with attendance percentage 65% and above but below 75% to appear in the Tests/Examinations with Condonation Fee as decided by the Fee Fixation Committee of the University.

20. PASSING REQUIREMENTS – THEORY & PRACTICAL COURSES

A Candidate securing not less than 50% of total marks (IA + EA) prescribed for the Course in both Theory and Practical Courses will be declared to have passed the Examination. A Minimum a 40% need to be scored in both IA and EA for Passing.

For Lab Embedded Theory courses Student should compulsorily appear for both Theory and Practical Examination and secure a total of 50% to pass the Examination. If a Student fails to meet the minimum passing requirement he/she need to reappear for the course (Theory and Practice).

21. ELIGIBILITY FOR AWARD OF DEGREE

A Student shall be declared to be eligible for the award of the B.E. / B.Tech. Degree if he/she has

a) Registered and successfully completed the Courses and has earned the minimum Credit requirements for the respective Engineering Programme.

b) Successfully acquired the required learning Credits as specified in the Curriculum corresponding to the Branch of his/her study within the stipulated time duration.

c) No disciplinary action is pending against him/her.

22. CLASSIFICATION OF PERFORMANCE

Classification of performance of Students in the Examinations pertaining to the Courses in a Programme is done on the basis of numerical value of Cumulative Grade Point Average (CGPA). The concept of CGPA is based on Marks, Credits, Grade and Grade points assigned.

22.1 Mapping of Marks to Grades

Each Course (Theory/Practical) is to be assigned 100 Marks, irrespective of the number of Credits, and the mapping of Marks to grades may be done as given in the following table.

Assigned Grade	Grade Points(GP)	Range of Marks
O++	10	95-100
O+	9.5	90-94
O	9	85-89
A++	8.5	80-84
A+	8	70-79
A	7	60-69
B+	6	55-59
B	5.5	51-54
C	5	40-50
AB	ABSENT (Failure due to nonappearance in examination)	
RA	REAPPEAR (Failure due to insufficient marks in the course)	

22.2 Semester Grade Point Average (SGPA)

Each Student is assigned a Semester Grade Point Average (SGPA) on completion and declaration of result of a Semester.

$$SGPA = \frac{\sum(Ci * Gi)}{\sum Ci}$$

Where C_i is the credit for a course in that Semester and G_i is the Grade Point earned by the student for that course. The SGPA is rounded off to two decimal numbers and calculated on all courses appeared including courses in which 'RA' grade is obtained.

22.3 Cumulative Grade Point Average (CGPA)

The overall performance of a Student at any stage of the Degree Programme is evaluated by the Cumulative Grade Point Average (CGPA) up to that point of time and is calculated on the courses which are successfully completed.

$$\text{CGPA} = \sum_j \left\{ \frac{\sum_i (C_{ij} * G_{ij}}{\sum_i C_{ij}} \right\}$$

23. CLASSIFICATION OF SUCCESSFUL CANDIDATES FOR AWARD OF DEGREE

23.1 First Class with Distinction

23.1.1 A Student who qualifies for the award of Degree and passed the Examination in all registered courses in his / her first appearance within Three and Half Years for Students admitted in First Year securing a CGPA of not less than 8.00 shall be declared to have passed in First Class with Distinction.

23.1.2 A Student who qualifies for the award of Degree and passed the Examination in all registered courses in his / her first appearance within Four and Half Years for Students admitted in First Year including the authorized Break of Study of One year and securing a CGPA of not less than 8.00 shall be declared to have passed in First Class with Distinction.

23.2 First Class

23.2.1 A Student who qualifies for the award of Degree and passed the Examination in all registered courses within Three and Half Years for Students admitted in First Year and securing a CGPA of not less than 6.5 shall be declared to have passed in First Class.

23.2.2 A Student who qualifies for the award of Degree and passed the Examination in all registered courses within Four and Half Years for Students admitted in First year including the authorized Break of Study of One year and securing a CGPA of not less than 6.5 shall be declared to have passed in First Class.

23.3 Second Class

All other Students not covered above and who qualifies for the award of B.E. / B.Tech. Degree and passed the Examination in all the registered courses shall be declared to have passed in Second Class.

24. RANKING

Students obtaining Top 3 Positions in CGPA ranking in a Programme at the University level will be considered as a Rank Holder.They should have passed all the prescribed Courses in the First appearance and should have obtained a CGPA of 8.0 and above. The Student should also have a

clean record of discipline during the period of Study. Special Certificates will be given to Rank Holders.

25. MODIFICATIONS OF REGULATIONS

These Regulations are subject to modifications from time to time as per the decisions of the apex bodies of the University.

ANNEXURE I

PROGRAMME OUTCOMES (POs)

On completion of a Programme of Engineering, Graduates will be able to:

Sl. No.	Outcome	Description
PO 1	**Engineering Knowledge**	Apply the Knowledge of Mathematics, Science, Engineering fundamentals, and an Engineering specialization to the solution of Complex Engineering problems.

PO 2	**Problem Analysis**	Identify, Formulate, Review Research literature, and analyze Complex Engineering problems reaching substantiated conclusions using first principles of Mathematics, Natural Sciences, and Engineering Sciences.
PO 3	**Design / Development of Solutions**	Design Solutions for Complex Engineering problems and Design System components or processes that meet the specified needs with appropriate consideration for the Public Health and Safety, and the Cultural, Societal, and Environmental considerations.
PO 4	**Conduct Investigations of Complex problems**	Use Research-based Knowledge and Research methods including Design of Experiments, Analysis and Interpretation of Data, and Synthesis of the information to provide valid conclusions.
PO 5	**Modern Tool Usage**	Create, Select, and Apply appropriate techniques, Resources, and Modern Engineering and IT Tools including Prediction and Modeling to Complex Engineering activities with an understanding of the limitations.
PO 6	**The Engineer and Society**	Apply Reasoning informed by the contextual Knowledge to assess **S**ocietal, Health, Safety, Legal and Cultural issues and the consequent responsibilities relevant to the Professional Engineering practice.
PO 7	**Environment and Sustainability**	Understand the impact of the Professional Engineering solutions in Societal and Environmental contexts, and demonstrate the Knowledge of, and need for Sustainable development.
PO 8	**Ethics**	Apply Ethical Principles and commit to Professional Ethics and responsibilities and norms of the Engineering Practice.
PO 9	**Individual and Team Work**	Function effectively as an Individual, and as a Member or Leader in diverse Teams, and in Multidisciplinary settings.
PO 10	**Communication**	Communicate effectively on Complex Engineering activities with the Engineering Community and with Society at large, such as, being able to comprehend and write effective reports and Design Documentation, make Effective Presentations, and give and receive clear instructions.
PO 11	**Project Management and Finance**	Demonstrate Knowledge and Understanding of the Engineering and Management Principles and apply these to one's own work, as a Member and leader in a Team, to manage Projects and in Multidisciplinary Environments.
PO 12	**Life-Long Learning**	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of Technological change.