

Masters in Engineering Education

Programme Structure

Master's in Engineering Education (MEE) is designed for teachers of engineering, engineers and policy makers with engineering background to undertake the profession of teaching and to contribute in design, development, implementation and evaluation of need based engineering programs and curriculum. The program provides a foundational knowledge of engineering epistemology, pedagogy, assessment and use of technology in teaching learning scenario. It also focuses on application of engineering education research findings in engineering institutions.

As per AICTE guidelines, the PG course is spread over two years in four semesters. Along with core courses it includes IPR/Research methodology, Experiential Learning (mini project), audit courses, open electives and dissertation.

Audit courses, focus on development of desirable attitudes, values, ethics and personality and are to be taken through attending classes informally without allotment of any credit. The audit courses are can be Mandatory Audit Courses (MAC) & Elective audit Courses (EAC). MAC caters to the need of the hour to fulfill the Government guidelines .The aim of EAC course is to broaden the horizons.

Open electives are planned to be credit based courses, which include courses from Engineering stream that develop skills in high demand such as Data Analytics/Artificial Intelligence/IoT/Mobile Learning/Operation Research etc.

Master in Engineering Education

Semester 1 (20 Credit)

Core Courses CC

| Course Code | Course Title | L | T | P | C |
|-------------|---|---|---|---|---|
| CC1 | Education Technology | 3 | 1 | 0 | 4 |
| CC2 | Education Psychology or Cognitive Science | 2 | 1 | 0 | 3 |
| CC3 | Curriculum Design and Development | 3 | 0 | 0 | 3 |
| CC4 | Education Management | 2 | 1 | 0 | 3 |
| CC5 | Information and Communication Technology in Education | 3 | 0 | 2 | 4 |
| CC6 | Research Methodology and IPR | 3 | 0 | 0 | 3 |
| MAC | Professionalism and Ethics in Engineering Education | 2 | 0 | 0 | 0 |

Semester 2 (20 Credit)

| Course Code | Course Title | L | T | P | C |
|-------------|--|---|---|---|---|
| CC7 | Education Evaluation and Audit | 4 | 0 | 0 | 4 |
| CC8 | Entrepreneurship and Start up | 3 | 0 | 2 | 4 |
| PE1 | Institutional Building and Management of Change(or Organisational Behaviour and Development)/Outcome based Programme design/Instructional System Design/ Examination System Reforms | 4 | 0 | 0 | 4 |
| EE1 | Engineering Elective 1 | 3 | 0 | 2 | 4 |
| OE1 | Data Analytics/Artificial intelligence/IoT/Mobile Learning/ R programming/ Investment analysis and Portfolio Management/Operation research/Graphics and Animation Design | 3 | 0 | 2 | 4 |
| EAC | Elective Audit Course | 2 | 0 | 0 | 0 |

PE - Programme Elective, EE – Engineering Elective, OE – Open Elective, EAC - Elective Audit Course

Engineering Elective 1

Smart Grid/ Energy Management System/ Sustainable Energy System/ Digital Image Processing/Industrial Automation/Cloud Computing/ Mobile Computing/ Big Data Analytics/ Energy System Analysis and Modeling/Electrical Vehicles/Soft Computing/Data Science

Semester 3 (24 Credit)

| Course Code | Course Title | L | T | P | C |
|-------------|---|---|---|---|---|
| CC7 | Community and Skill Development- Policy and Issues | 4 | 0 | 0 | 4 |
| CC8 | Industry Based Experiential Learning Or Project Based Learning and Problem Based Learning Or Practicum and Supervised Teaching | 1 | 0 | 6 | 4 |
| PE2 | Project and Innovation Management/Accreditation and Academic Audit/E content and Video Development/ Evaluation of Programme, Projects and Institution/ NSQF Compliant Programme Design/MOOCs Development/Educational Data Mining and Learning Analytics | 4 | 0 | 0 | 4 |
| EE2 | Engineering Elective 2 | 3 | 0 | 2 | 4 |
| CC 9 | Research Proposal Preparation for Major Research/Dissertation Project work and Seminar | 1 | 6 | 0 | 4 |

Engineering Elective 2

Robotics and Automation/Computer aided Process Planning/ Industrial Networks and Communication/Machine learning/Finite element analysis/ Energy and fire audit/Crypto system/ Text, Web and Social Media Analytic/ Cloud Security and Analytics/ Mobile Application Development/ Cloud Application Development and Management/ Open Source Programming/ Industrial Sensors

Fourth Semester (20 Credits)

CC 10 : Major Research/Dissertation Project work

List of Elective Audit Courses (EAC)

1. Soft Skills and Interpersonal Communication
2. Indian Constitution
3. Indian Music System
4. Introduction to Art and Aesthetics
5. Economic Policies in India
6. Sociology
7. Indian History
8. Academic Writing
9. Yoga and Meditation
10. Public policy
11. Student Counseling
12. E governance
13. Photography