

St. Peter's University

Chennai – 600 054.

M.E. (ENGINEERING DESIGN) PROGRAMME

Regulations and Syllabi

(Effective from 2008 – 2009)

- 1. Eligibility:** Candidates who passed B.E. / B.Tech. (Mechanical / Automobile / Production / Manufacturing / Industrial Engineering / Mechatronics Engineering) of the University or any other equivalent examination thereto are eligible for admission to Two Year M.E. (Engineering Design) Programme.
- 2. Duration:** Two Years Comprising 4 Semesters. Each semester has a minimum 90 working days with a minimum of 5 hours a day.
- 3. Medium:** English is the medium of instruction and examination.
- 4. Weightage for Continuous and End Assessment:** The weightage for Continuous Assessment (CA) and End Assessment (EA) be 25:75 unless the ratio is specifically mentioned in the scheme of Examinations.
- 5. Credit System:** Credit system be followed with 18 credits for each semester and each credit is equivalent to 25-30 hours of effective study provided in the Time Table.

6. Scheme of Examinations (for I to IV Semesters)

I Semester

COURSE CODE	COURSE TITLE	CREDIT	MARKS		
			CA	EA	TOTAL
THEORY					
108EDPT01	Applied Mathematics for Engineering Design	2	25	75	100
108EDPT02	Concepts of Engineering Design	3	25	75	100
108EDPT03	Computer Applications in Design	2	25	75	100
108EDPT04	Quality Concepts in Design3	3	25	75	100
ELECTIVES					
108EDPE03	Tribology in Design	3	25	75	100
108EDPE05	Composite Materials and Mechanics	3	25	75	100
PRACTICAL					
108EDPP01	CAD Lab	2	25	75	100
TOTAL		18	175	525	700

II Semester

COURSE CODE	COURSE TITLE	CREDIT	MARKS		
			CA	EA	TOTAL
THEORY					
208EDPT01	Finite Element Methods in Mechanical Design	2	25	75	100
208EDPT02	Vibration Analysis and Control	2	25	75	100
208EDPT03	Mechanisms Design and Simulation	3	25	75	100
208EDPT04	Mechanical Behavior of Materials	3	25	75	100
ELECTIVES					
208EDPE02	Productivity Management and Re-Engineering	3	25	75	100
208EDPE03	Industrial Robotics and Expert systems	3	25	75	100
PRACTICAL					
208EDPP01	Analysis and Simulation Lab	1	25	75	100
208EDPP02	Seminar	1	25	75	100
TOTAL		18	200	600	800

III Semester

COURSE CODE	COURSE TITLE	CREDIT	MARKS		
			CA	EA	TOTAL
ELECTIVES					
308EDPE10	Creativity in Design	3	25	75	100
308EDPE13	Supply Chain Management	3	25	75	100
308EDPE16	Integrated Manufacturing Systems	3	25	75	100
PROJECT					
308EDPP01	Project Work – Phase – I	9	50	150	200
TOTAL		18	125	375	500

IV Semester

COURSE CODE	COURSE TITLE	CREDIT	MARKS		
			CA	EA	TOTAL
408EDPP01	Project Work (Phase - II)	18	100	300	400
TOTAL		18	100	300	400

LIST OF ELECTIVES:

COURSE CODE	ELECTIVES
I Semester	
108EDPE01	Optimization Techniques in Design
108EDPE02	Engineering Fracture Mechanics
108EDPE03	Tribology in Design
108EDPE04	Advanced Mechanics of Materials
108EDPE05	Composite Materials and Mechanics
108EDPE06	Applied Engineering Acoustics
II Semester	
208EDPE01	Advanced Tool Design
208EDPE02	Productivity Management and Re-Engineering
208EDPE03	Industrial Robotics and Expert systems
208EDPE04	Design of Material Handling Equipments
208EDPE05	Plasticity and Metal Forming
208EDPE06	Plates and Shells
III Semester	
308EDPE01	Design of Pressure Vessel and Piping
308EDPE02	Modal Analysis of Mechanical Systems
308EDPE03	Design of Hydraulic and Pneumatic systems
308EDPE04	Experimental Stress Analysis
308EDPE05	Maintenance Engineering
308EDPE06	Bearing Design and Rotor Dynamics
308EDPE07	Mini Project
308EDPE08	Design Paradigm
308EDPE09	Micro Electro Mechanical Systems
308EDPE10	Creativity in Design
308EDPE11	Reverse Engineering
308EDPE12	Enterprise Resource Planning
308EDPE13	Supply Chain Management
308EDPE14	Computational Fluid Dynamics
308EDPE15	Design for Manufacture Assembly & Environments
308EDPE16	Integrated Manufacturing Systems
308EDPE17	Design of Heat Exchangers
308EDPE18	Rapid Prototyping and Tooling
308EDPE19	Mechatronics in Manufacturing systems

7. Passing Requirements: The minimum pass mark (raw score) be 50% in End Assessment (EA) and 50% in Continuous Assessment (CA) and End Assessment (EA) put together. No minimum mark (raw score) in Continuous Assessment (CA) be prescribed unless it specifically mentioned in the scheme of Examination.

8. Grading System: Grading System on a 10 Point Scale be followed with 1 mark = 0.1 Grade point to successful candidates as given below.

$$\begin{aligned}
 \text{(a) Overall weighted Average Marks} &= \frac{\text{Sum of Weighted Marks}}{\text{Total Credits}} \\
 &= \frac{\sum (CA+EA)C}{\sum C}
 \end{aligned}$$

$$\begin{aligned}
 \text{Where Weighted Marks in each course} &= \text{Total Marks (CA and EA) multiplied by number of Credit} \\
 &= (CA+EA)C
 \end{aligned}$$

$$\begin{aligned}
 \text{(b) Overall Grade Point Average (OGPA)} &= \frac{\text{Sum of Weighted Grade Points}}{\text{Total Credits}} \\
 &= \frac{\sum (CA+EA)C}{\sum C}
 \end{aligned}$$

$$\begin{aligned}
 \text{Where Weighted Grade Points in each course} &= \text{Grade Points (CA and EA) multiplied by Credits} \\
 &= (CA+EA)C
 \end{aligned}$$

The Overall Grade: The Overall Grade and Classification of all successful candidates be arrived at from the Overall Grade Point Average as stipulated in the following conversion Table.

(1 mark = 0.1 Grade Point on a 10 Point Scale)

Grade	Over all Grade Point Average(OGPA)	Over all weighted Average marks	Classification
O	9.00 to 10.00	90.00 to 100	First Class
A	8.00 to 8.99	80.00 to 89.99	First Class
B	7.00 to 7.99	70.00 to 79.99	First Class
C	6.00 to 6.99	60.00 to 69.99	First Class
D	5.00 to 5.99	50.00 to 59.99	Second Class
F	0.00 to 4.99	0.00 to 49.99	Fail

The Grade Sheets of successful candidates provide particulars such as (1) Overall weighted Average Marks, (2) Overall Grade Point Average, (3) Overall Grade and (4) Overall classification.

9. Pattern of the Question Paper: The question paper for End Assessment will be set for three hours and for the maximum of 100 marks with following divisions and details.

Part A: 10 questions (with equal distribution to all units in the syllabus). Each question carries 2 marks.

Part B: 5 question with either or type (with equal distribution to all units in the syllabus). Each question carries 16 marks.

The total marks scored by the candidates will be reduced to the maximum prescribed in the Regulations.

10. Syllabus

Registrar