

St. Peter's University

Chennai – 600 054.

M.E. (INSTRUMENTATION ENGINEERING) PROGRAMME

Regulations and Syllabi

(Effective from 2008 – 2009)

- 1. Eligibility:** Candidates who passed B.E / B.Tech. (Electrical and Electronics Engineering / Electronics Communication Engineering / Electronics Instrumentation Engineering / Instrumentation & Control Engineering / Electronics Engineering / Instrumentation Engineering / Mechatronics Engineering / Biomedical Engineering / Biomedical Instrumentation Engineering / Applied Electronics and Instrumentation Engineering / Electronics and Control Engineering) of the University or any other equivalent examination thereto are eligible for admission to Two Year M.E. (Instrumentation Engineering) 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					
108IEPT01	Applied Mathematics	3	25	75	100
108IEPT02	Process Control	3	25	75	100
108IEPT03	Transducers and Smart Instruments	3	25	75	100
108IEPT04	Real Time Embedded System	3	25	75	100
ELECTIVES					
108IEPE02	Fiber Optic and Laser Instrumentation	2	25	75	100
108IEPE04	Power Plant Instrumentation	2	25	75	100
PRACTICAL					
108IEPP01	Process Control and Instrumentation Laboratory	2	25	75	100
TOTAL		18	175	525	700

II Semester

COURSE CODE	COURSE TITLE	CREDIT	MARKS		
			CA	EA	TOTAL
THEORY					
208IEPT01	Industrial Instrumentation	3	25	75	100
208IEPT02	Logic and Computer Control	3	25	75	100
208IEPT03	Computer Networks and DCS	3	25	75	100
208IEPT04	Neural and Fuzzy Logic Control Systems	3	25	75	100
ELECTIVES					
208IEPE**	Elective – III	2	25	75	100
208IEPE**	Elective – IV	2	25	75	100
PRACTICAL					
208IEPP01	Modeling and simulation Laboratory	2	25	75	100
TOTAL		18	200	600	800

III Semester

COURSE CODE	COURSE TITLE	CREDIT	MARKS		
			CA	EA	TOTAL
ELECTIVES					
308IEPE**	Elective – V	2	25	75	100
308IEPE**	Elective – VI	2	25	75	100
308IEPE**	Elective – VII	2	25	75	100
308IEPP01	Project Work (Phase – I)	12	50	150	200
TOTAL		18	125	375	500

IV Semester

COURSE CODE	COURSE TITLE	CREDIT	MARKS		
PROJECT			CA	EA	TOTAL
408IEPP01	Project Work (Phase - II)	18	100	300	400
TOTAL		18	100	300	400

LIST OF ELECTIVES:

Course Code	Electives
I Semester	
108IEPE01	System Identification and Adaptive Control
108IEPE02	Fiber Optic and Laser Instrumentation
108IEPE03	Java and Visual Programming
108IEPE04	Power Plant Instrumentation
108IEPE05	System Theory
108IEPE06	Digital Signal Processing
108IEPE07	Image Processing & Pattern Recognition
II Semester	
208IEPE01	Analytical Instrumentation
208IEPE02	Optimal Control
208IEPE03	Bio-Medical Instrumentation
208IEPE04	Multivariable Control
208IEPE05	Operating Systems
208IEPE06	Advanced Digital Signal Processing
III Semester	
308IEPE01	Robust Control
308IEPE02	Virtual Instrumentation
308IEPE03	Instrumentation in Pulp and Paper Industry
308IEPE04	Physiological Control Systems
308IEPE05	Industrial Drives and Control
308IEPE06	Data Security and Cryptography
308IEPE07	VLSI System Design
308IEPE08	Wireless Networks
308IEPE09	Fault Tolerant Control

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
0	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

