

UNIVERSITY OF KERALA
SCHEME -2013
APPLIED ELECTRONICS and INSTRUMENTATION ENGINEERING (A)

Combined I and II Semesters

Course No	Name of subject	Credits	Weekly load, hours			C A Marks	Exam Duration Hrs	U E Max Marks	Total Marks
			L	T	D/P				
13.101	Engineering Mathematics - I (ABCEFHMNPRSTU)	6	2	1	-	50	3	100	150
13.102	Engineering Physics (ABCEFHMNPRSTU)	6	2	1	-	50	3	100	150
13.103	Engineering Chemistry (ABCEFHMNPRSTU)	6	2	1	-	50	3	100	150
13.104	Engineering Graphics (ABCEFHMNPRSTU)	6	1	0	2	50	3	100	150
13.105	Engineering Mechanics (ABCEFHMNPRSTU)	6	2	1	-	50	3	100	150
13.106	Basic Civil Engineering (ABEFHMNPRSTU)	6	2	1	-	50	3	100	150
13.107	Basic Mechanical Engineering (ACEFRT)	6	2	1	-	50	3	100	150
13.108	Basic Electrical Engineering (ABCHMNPSTU)	6	2	1	-	50	3	100	150
13.109	Semiconductor Devices (AT)	6	2	1	-	50	3	100	150
13.110	Mechanical Engineering Workshop (ABCEFHMNPRSTU)	2	-	-	1	25	3	50	75
13.111	Electrical & Electronics Engineering Workshop (ABCEFHMNPRSTU)	2	-	-	1	25	3	50	75
Total		58	17	8	4	500		1000	1500

Third Semester

Course No	Name of subject	Credits	Weekly load, hours			C A Marks	Exam Duration Hrs	U E Max Marks	Total Marks
			L	T	D/P				
13.301	Engineering Mathematics-II (ABCEFHMNPRSTU)	4	3	1	-	50	3	100	150
13.302	Signals & Systems (AT)	4	3	1	-	50	3	100	150
13.303	Network Analysis (AT)	4	3	1	-	50	3	100	150
13.304	Basic Instrumentation (A)	3	2	1	-	50	3	100	150
13.305	Functional Electronics (A)	4	3	1	-	50	3	100	150
13.306	Digital Circuit Design (A)	4	3	1	-	50	3	100	150
13.307	Electronic Devices Lab (AT)	3	-	-	3	50	3	100	150
13.308	Electronics Circuits & Simulation Lab (A)	3	-	-	3	50	3	100	150
Total		29	17	6	6	400		800	1200

Fourth Semester

Course No	Name of subject	Credits	Weekly load, hours			C A Marks	Exam Duration Hrs	U E Max Marks	Total Marks
			L	T	D/P				
13.401	Engineering Mathematics III -Probability & Random Processes (AT)	4	3	1	-	50	3	100	150
13.402	Humanities (ACHPT)	3	3	-	-	50	3	100	150
13.403	Computer Organisation & Architecture (AT)	3	2	1	-	50	3	100	150
13.404	Digital Signal Processing (AT)	4	3	1	-	50	3	100	150
13.405	Control System Theory (A)	4	3	1	-	50	3	100	150
13.406	Linear Integrated Circuits (A)	3	2	1	-	50	3	100	150
13.407	Digital ICs & HDL Lab (A)	4	-	-	4	50	3	100	150
13.408	Measurements & Instrumentation Lab (A)	4	-	-	4	50	3	100	150
Total		29	16	5	8	400		800	1200

Fifth Semester

Course No	Name of subject	Credits	Weekly load, hours			C A Marks	Exam Duration Hrs	U E Max Marks	Total Marks
			L	T	D/P				
13.501	Engineering Mathematics IV - Complex Analysis & Linear Algebra (ABHT)	4	3	1	-	50	3	100	150
13.502	Engineering Management for Electronics Engineers (AT)	3	2	1	-	50	3	100	150
13.503	Microprocessors & Microcontrollers (AT)	4	3	1	-	50	3	100	150
13.504	Electrical Machines & Drives (A)	3	2	1	-	50	3	100	150
13.505	Power Electronics (A)	4	3	1	-	50	3	100	150
13.506	Elective I	3	2	1	-	50	3	100	150
13.507	Signal Processing Lab (A)	4	-	-	4	50	3	100	150
13.508	Control System Lab (A)	4	-	-	4	50	3	100	150
Total		29	15	6	8	400		800	1200

Sixth Semester

Course No	Name of subject	Credits	Weekly load, hours			C A Marks	Exam Duration Hrs	U E Max Marks	Total Marks
			L	T	D/P				
13.601	Image Processing (AT)	3	2	1	-	50	3	100	150
13.602	Programming in C++ and Data Structures (A)	4	3	1	-	50	3	100	150
13.603	Process Dynamics & Control (A)	4	3	1	-	50	3	100	150
13.604	Industrial Instrumentation (A)	4	3	1	-	50	3	100	150
13.605	Analog & Digital Communication (A)	3	2	1	-	50	3	100	150
13.606	Elective II	3	2	1	-	50	3	100	150
13.607	Microcontroller & Embedded Systems Lab (A)	4	-	-	4	50	3	100	150
13.608	Electronic Product Design & Mini Project (AT)	4	1	-	3	50	3	100	150
Total		29	16	6	7	400		800	1200

Seventh Semester

Course No	Name of subject	Credits	Weekly load, hours			C A Marks	Exam Duration Hrs	U E Max Marks	Total Marks
			L	T	D/P				
13.701	Nanoelectronics (AT)	3	2	1	-	50	3	100	150
13.702	CMOS Circuits Design (A)	4	3	1	-	50	3	100	150
13.703	Discrete-Time Control Systems (A)	4	3	1	-	50	3	100	150
13.704	Biomedical Instrumentation (A)	4	3	1	-	50	3	100	150
13.705	Elective III	3	2	1	-	50	3	100	150
13.706	Elective IV	3	2	1	-	50	3	100	150
13.707	Power Electronics & Drives Lab (A)	3	-	-	3	50	3	100	150
13.708	Process Control Lab (A)	3	-	-	3	50	3	100	150
13.709	Seminar (AT)	1	-	-	1	50	-	-	50
13.710	Project Design (AT)	1	-	-	1	50	-	-	50
Total		29	15	6	8	500		800	1300

Eighth Semester

Course No	Name of subject	Credits	Weekly load, hours			C A Marks	Exam Duration Hrs	U E Max Marks	Total Marks
			L	T	D/P				
13.801	Robotics & Industrial Automation (A)	4	3	1	-	50	3	100	150
13.802	Non Linear & Adaptive Control (A)	4	3	1	-	50	3	100	150
13.803	Optical Instrumentation (A)	4	3	1	-	50	3	100	150
13.804	Data Networks (A)	4	3	1	-	50	3	100	150
13.805	Elective V	4	3	1	-	50	3	100	150
13.806	Elective VI	4	3	1	-	50	3	100	150
13.807	Project & Viva – Voce (AT)	5	-	-	5	200	-	100	300
Total		29	18	6	5	500		700	1200

13. 506 Elective I

13.506.1	Professional Communications (AT)
13.506.2	Fuzzy Systems & Applications (AT)
13.506.3	Artificial Neural Networks (AT)
13.506.4	Bioinformatics (AT)
13.506.5	Mechatronics (AT)
13.506.6	Analytical Instrumentation (A)
13.506.7	Fluid Dynamics & Instrumentation (A)

13.606 Elective II

13.606.1	Speech Processing (AT)
13.606.2	Adaptive Signal Processing (AT)
13.606.3	DSP Systems & Architecture (AT)
13.606.4	Professional Ethics (AT)
13.606.5	Wavelets & Applications (AT)
13.606.6	Optimization Techniques (A)
13.606.7	Electromagnetics (A)

13.705 Elective III

13.705.1	Pattern Recognition (AT)
13.705.2	Automotive Electronics (A)
13.705.3	Industrial Safety and Management (A)
13.705.4	Power Plant Instrumentation (A)
13.705.5	Biomedical Imaging Techniques (A)
13.705.6	Advanced Control of Electric Drives (A)

13.706 Elective IV

13.706.1	Intellectual Property Rights (AT)
13.706.2	MEMS (AT)
13.706.3	Embedded Systems (AT)
13.706.4	Control of Power Converters(A)
13.706.5	Instrumentation & Control in Petrochemical Industries (A)
13.706.6	Instrumentation System Design(A)

13.805 Elective V

13.805.1	Entrepreneurship (AT)
13.805.2	Distributed Control System & Communication Protocols (A)
13.805.3	Aviation Electronics (A)
13.805.4	Wireless Sensors and Systems (A)
13.805.5	Electromagnetic Interference & Compatibility (A)
13.805.6	VLSI Devices & Process Simulation (A)

13.806 Elective VI

13.806.1	Management Information Systems (AT)
13.806.2	Nuclear Instrumentation (A)
13.806.3	Machine Vision (A)
13.806.4	NanoSensors and BioSensors (A)
13.806.5	Robust Control System (A)
13.806.6	Parameter Estimation & System Identification (A)