

Dr. Babasaheb Ambedkar Technological University Lonere.

ELECTRICAL ENGINEERING DEPARTMENT



Structure and syllabus Of B. Tech. Instrumentation Engineering

With effect from August 2018

TEACHING & EVALUATION SCHEME INSTRUMENTATION ENGINEERING

III SEMESTER.

Course Code	Course Name	Teaching Scheme			Evaluation Scheme					Credits
		L	P	T	Int	MSE	ESE	TW	Pr/OR	
MAL301	Engineering Mathematics-III	3	0	1	20	20	60	-	-	4
IEL301	Sensor and Transducer	3	0	1	20	20	60	-	-	4
IEL 302	Network Analysis and Synthesis	3	0	1	20	20	60	-	-	4
IEL303	Electrical and Electronics Measurement	3	0	0	20	20	60	-	-	3
IEL304	Analog Electronics	3	0	0	20	20	60	-	-	3
IEL305	Elective –I	3	0	0	20	20	60	-	-	3
IEP306	Sensor and Transducer Lab	0	2	0	-	-	-	25	25	1
IEP307	Analog Electronics Lab	0	2	0	-	-	-	25	25	1
IET308	NSS/NCC/Sports/ Arts	0	0	0	-	-	-	-	-	0
	TOTAL	19	04	02	120	120	360	50	50	23

Elective-I 1.Engineering Materials 2. Production Processes and Metrology .

IV SEMESTER.

Course Code	Course Name	Teaching Scheme			Evaluation Scheme					Credits
		L	P	T	Int	MSE	ESE	TW	Pr/OR	
MEL401	Fluid Mechanics and Thermal Engineering	3	0	0	20	20	60	-	-	3
IEL 401	Engineering Economics	2	0	0	20	20	60	-	-	2
IEL 402	Applied Biology	2	0	0						2
IEL403	Digital Electronics	3	0	1	20	20	60	-	-	4
IEL404	Feedback Control System	3	0	1	20	20	60	-	-	4
IEL405	Elective –II	3	0	0	20	20	60	-	-	3
IEL406	Elective –III	3	0	0	20	20	60	-	-	3
IEP407	Digital Electronics Lab	0	2	0	-	-	-	25	25	1
IEP408	Computational Techniques Lab	0	2	0	-	-	-	25	25	1
IEE409	NSS/NCC/Sports/ Arts	-	-	-	-	-	-	-	-	-
	TOTAL	19	04	02	120	120	360	50	50	23

Elective-II Microprocessor Based Systems 2. Analytical Sensors 3.Signals and Systems

Elective –III Industrial Safety 2.Human Values and Engineering Ethics 3.Professional Communication

V Semester

Course Code	Course Name	Teaching Scheme			Evaluation Scheme					Credits
		L	P	T	Int	MSE	ESE	TW	Pr/OR	
IEL501	Microcontroller Techniques	3	0	0	20	20	60	-	-	3
IEL502	Control System Components	3	0	1	20	20	60	-	-	4
IEL503	Modern Control System	3	0	0	20	20	60	-	-	3
IEL504	Unit Operations	3	0	1	20	20	60	-	-	4
IEL505	Value Education, Human Rights and Legislative Procedures	2	0	0	20	20	60	-	-	2
IEL506	Elective-IV	3	0	0	20	20	60	-	-	3
IEL507	Elective-V	3	0	0	20	20	60	-	-	3
IEP508	Numerical Methods Lab	0	2	0	-	-	-	25	25	1
IEP509	Control System Components Lab	0	2	0	-	-	-	25	25	1
IEP510	Microcontroller Techniques Lab	0	2	0	-	-	-	25	25	1
	TOTAL	20	06	02	140	140	420	75	75	25

Elective- IV: 1.Multi sensor and data fusion 2. Biomedical Instrumentation-I

Elective-V: 1. Measurement data analysis 2.Artificial neural network. 3. Operating Systems

VI semester

Course Code	Course Name	Teaching Scheme			Evaluation Scheme					Credits
		L	P	T	Int	MSE	ESE	TW	Pr/OR	
IEL601	Industrial Automation and Process Control	3	0	1	20	20	60	-	-	4
IEL602	Digital Signal Processing	3	0	1	20	20	60	-	-	4
IEL603	Power Electronics	3	0	0	20	20	60	-	-	3
IEL604	Elective-VI	3	0	0	20	20	60	-	-	3
IEL605	Elective-VII	3	0	0	20	20	60	-	-	3
IEL606	Elective-VIII (MOOC Course)	3	0	0	20	20	60	-	-	3
IEP607	Introduction to Virtual Lab	0	2	0	-	-	-	25	25	1
IEP608	Digital Signal Processing Lab	0	2	0	-	-	-	25	25	1
IEP609	Industrial automation and process Control Lab	0	2	0	-	-	-	25	25	1
IEP610	Intellectual Property Rights	0	-	-	-	-	-	-	-	0
IET611	Industrial Training *	0	-	-	-	-	-	-	-	0
	TOTAL	18	06	02	120	120	360	75	75	23

Elective-VI 1.Project Engineering and management 2.Research Methodology 3. Entrepreneur development

Elective-VII 1..Instrument System Design 2. Biomedical Instrumentation-II 3. Network Protocols

Elective- VIII.

*Industrial Training of 30 days to be assessed in 7 semester

VII Semester

Course Code	Course Name	Teaching Scheme			Evaluation Scheme					Credits
		L	P	T	Int	MSE	ESE	TW	Pr/OR	
IEL701	Process Instrumentation	3	0	1	20	20	60	-	-	4
IEL702	Distributed Control System	3	0		20	20	60	-	-	3
IEL703	Elective-IX	3	0	0	20	20	60	-	-	3
IEL704	Elective-X	3	0	0	20	20	60	-	-	3
IEP705	Process Instrumentation Lab	0	2	0	-	-	-	25	25	1
IEP706	Distributed Control System Lab	0	2	0	-	-	-	25	25	1
IEP707	Seminar	0	2	0	-	-	-	25	25	1
IEP708	Project Phase-I	0	8	0	-	-	-	25	25	4
IET709	Industrial Training	0	0	0	-	-	-	25	25	2
	TOTAL	12	08	02	80	80	240	125	125	22

Elective-IX- 1. Fiber Optics Communication 2. Industrial drives 3. Digital Control 4. Clinical Engineering

Elective-X 1.Power Plant Instrumentation 2.Internet of things 3. Analytical Instrumentation 4. Embedded Systems

VIII Semester

Course Code	Course Name	Teaching Scheme			Evaluation Scheme					Credits
		L	P	T	Int	MSE	ESE	TW	Pr/OR	
IEL801	Process Modeling and Optimization	3	0	1	20	20	60	-	-	4
IEL802	Project Engineering in Instrumentation	3	0	1	20	20	60	-	-	4
IEL803	Elective-XI	3	0	0	20	20	60	-	-	3
IEL804	Elective-XII	3	0	0	20	20	60	-	-	3
IEP805	Process Modeling and Optimization Lab	0	2	0	-	-	-	25	25	1
IEP806	PLC and SCADA Lab	0	2	0	-	-	-	25	25	1
IEP807	Project Phase-II	0	12	0	-	-	-	50	50	6
	TOTAL	16	08	02	80	80	240	100	100	22

Elective-XI: 1. Automotive Instrumentation Processing 2. Robotics 3. Biomedical Medical Image 4. Agriculture and Environmental Instrumentation

Elective-XII: 1. Smart materials and systems 2. Building Automation 3. Batch Process Control 4. Data Analytics and Decision Support systems

