

Course Structure

FOR

B. TECH

IN

**ELECTRONICS & INSTRUMENTATION
ENGINEERING**



NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR

2012

Course Structure for B Tech (4 Year, 8 Semester Course) For Electronics and Instrumentation
(to be applicable from 2012 batch onwards)
EI- Electronics & Instrumentation Engineering

Course No	Course Name	L	T	P	C	Course No	Course Name	L	T	P	C
Semester-1						Semester-2					
CH-1101 /PH-1101	Chemistry/Physics	3	1	0	8	EC-1101	Basic Electronics	3	0	0	6
EE-1101	Basic Electrical Engineering	3	0	0	6	CS-1101	Introduction to Computing	3	0	0	6
MA-1101	Mathematics-I	3	1	0	8	MA-1102	Mathematics-II	3	1	0	8
CE-1101	Engineering Graphics	1	0	3	5	ME-1101	Engineering Mechanics	3	1	0	8
HS-1101	Communication Skills	3	0	0	6	PH-1101/ CH-1101	Physics/Chemistry	3	1	0	8
CH-1111 /PH-1111	Chemistry/Physics laboratory	0	0	2	2	CS-1111	Computing Laboratory	0	0	2	2
ME-1111	Workshop	0	0	3	3	EE-1111	Electrical Science lab	0	0	2	2
	Physical Training-I	0	0	2	0	PH-1111/ CH-1111	Physics/Chemistry Laboratory	0	0	2	2
	NCC/NSO/NSS	0	0	2	0		Physical Training –II	0	0	2	0
							NCC/NSO/NSS	0	0	2	0
		13	2	8	38			15	3	6	42
Semester-3						Semester-4					
MA-1201	Mathematics-III	3	1	0	8	EI-1205	Transducers and Sensors	3	1	0	8
EI-1201	Circuits and Networks	3	1	0	8	EI-1206	Advanced Electronics	3	0	0	8
EI-1202	Analog Electronics	3	0	0	6	EI-1207	Control System-I	3	1	0	6
EI-1203	Electrical & Electronic Measurement & Instruments	3	1	0	8	EI-1208	Digital Electronics	3	0	0	6
EI-1204	Electromagnetic Field Theory	3	0	0	6	HS-1201	Managerial Economics	3	0	0	6
EI-1211	Circuits and Networks Lab	0	0	2	2	EI-1213	Analog and Digital Electronics Lab	0	0	2	2
EI-1212	Measurement Lab	0	0	2	2	EI-1214	Control System Lab	0	0	2	2
	Physical Training –III	0	0	2	0	EI-1215	Transducers and Sensors lab	0	0	2	2
							Physical Training-IV	0	0	2	0
	NCC/NSO/NSS	0	0	2	0		NCC/NSO/NSS	0	0	2	0
		15	3	8	40			15	2	6	40
Semester-5						Semester-6					
EI-1301	Industrial Instrumentation-I	3	0	0	6	EI-1305	Industrial Instrumentation-II	3	1	0	8
EI-1302	Process Control Engineering	3	1	0	8	EI-1306	Control System-II	3	0	0	6
EI-1303	Power and Industrial Electronics	3	0	0	6	EI-1307	Digital Signal Processing	3	0	0	6
EI-1304	Communication & Telemetry	3	1	0	8	EI-1308	Microprocessors and Micro Controller	3	1	0	8
HS-1301	Business Management	3	0	0	6	EI-1309	Virtual Instrumentation	3	0	0	6
EI-1311	Industrial Process Engineering Lab	0	0	2	2	EI-1314	Microprocessor & Micro Controllers Lab	0	0	2	2
EI-1312	Communication Lab	0	0	2	2	EI-1315	Instrumentation lab	0	0	2	2
EI-1313	Power Electronic Lab	0	0	2	2	EI-1316	Digital Signal Processing Lab	0	0	2	2
		15	2	6	40			15	2	6	40
Semester-7						Semester-8					
EI-1401	Advanced Instrumentation	3	0	0	6	EI-1403	Real Time Embedded Systems	3	0	0	6
EI-1402	IC & VLSI Design	3	0	0	6	EI-1XXX	Dept Elective-III	3	0	0	6
EI-1XXX	Dept. Elective –I	3	0	0	6	EI-1XXX	Dept. Elective –IV	3	0	0	6
EI-1XXX	Dept. Elective –II	3	0	0	6	EI-1XXX	Dept. Elective –V	3	0	0	6
EI-XXX	Open Elective –I	3	0	0	6	XX 1XXX	Open Elective –II	3	0	0	6
EI-1411	Instrumentation and Automation lab	0	0	2	2	EI-1491	Project –II	0	0	10	10
EI-1490	Project- I	0	0	8	8			15	0	10	40
		15	0	10	40						

NB: Industrial Training after Sixth Semester for a period of 4-6 weeks as an audit course

EE-1111 will be jointly offered by EE and EC Department

LIST OF ELECTIVES

Elective –I

EI 1421	MEMS and Nano Technology
EI 1422	Precision Instrumentation
EI 1423	Artificial Intelligence and Expert Systems
EI 1424	Robotics and Automation
EI 1425	Wireless Communication
EI 1426	Operating System

Elective –III

EI 1441	Mechatronics
EI 1442	Digital Image Processing
EI 1443	Industrial Communications
EI 1444	Automotive Instrumentation And Control
EI 1445	Web Based Instrumentation
EI 1446	Optimization Techniques
EI 1447	Industrial Management

Elective –V

EI 1461	Opto-electronics and fiber Optics
EI 1462	Data base management systems
EI 1463	Data Warehousing and Data Mining
EI 1464	Petro-Chemical Instrumentation
EI 1465	Wind and Solar Energy Systems
EI 1466	Advanced Control Systems

Open Elective-I

EI 1471	Soft Computing Techniques for Non-linear Optimization
EI 1472	Smart Sensors
EI 1473	Evolutionary Algorithms in Search and Optimization
EI 1474	Modern Analytical Instruments
EI 1475	Industrial Automation
EI 1476	Mobile Adhoc and Sensor Networks

Elective –II

EI 1431	Intelligent and Knowledge Based Systems
EI 1432	Renewable Energy Source and Management
EI 1433	PC Based Instrumentation
EI 1434	Higher Power Semiconductor Devices
EI 1435	Biomedical Instrumentation
EI 1436	Intelligent Instrumentation
EI 1437	Logic and Distributed Control Systems

Elective -IV

EI 1451	Computer Networks
EI 1452	Biomedical Signal Processing
EI 1453	Power Plant Instrumentation
EI 1454	Mobile Communications
EI 1455	Non Linear Controls
EI 1456	Information Securities
EI 1457	VLSI Systems & Applications
EI 1458	Advanced Sensor and Signal Processing Systems

Open Elective-II

EI 1481	Optimization Methods in Engineering
EI 1482	Machine Intelligence
EI 1483	Human-Computer Interfaces
EI 1484	Micro Electro Mechanical Systems (MEMS)
EI 1485	Neural Networks and Fuzzy Logic
EI 1486	Bio-Medical Engineering
EI 1487	Industrial Piping and Instrumentation Diagrams
EI 1488	Analog Integrated Circuit Design