

B.Tech. Electronics and Computer Engineering

Blending of Indian knowledge system with existing knowledge (June2020)

To enhance the existing knowledge and skill of people, blending learning is the most important asset in India. Blending knowledge provides the collaboration of scientific and non-scientific belongings. In today's scenario blending learning help in the growth of the country and boost up the economy of the country. The creativity of the student's knowledge also enriches by this type of learning. Blending learning also helps the small industries in growth and improvement of their technologies. The outcome of blended learning include the fact that many students can learn best independently, on their own time frame via traditional knowledge and connected to society. Blended learning has seen growth over time, largely because of the increasing accessibility of technology and the learning done in this virtual way is often best consolidated by trial run or validation through personal interactions.

Blending of Indian knowledge system with existing knowledge can be done by doing local meetings with farmers, artisans, and experienced mechanics, etc. of their traditional knowledge. These types of meetings can be conducted in the local language to know complete information about their traditional work/knowledge. Indigenous traditional knowledge is relatively simple, cheaper, safer but usually lack in energy efficiency and sustainability. Firstly, the traditional product is documented with all its details using the feedback from various users. It is blended with the Indian knowledge scientific system to get energy-efficient, user-friendly, and sustainable products for local people. It will connect society with engineering institutes for solving their problems and providing better equipment for their livelihood. As with any educational model, of course, blended learning should be used sensibly and thoughtfully, with an eye toward enriching student learning. Department has made compulsory projects in each semester such projects will be mostly on the blending of the Indian knowledge system with existing knowledge.

B.Tech. Electronics and Computer Engineering

S.No.	Semester	Project Code	Project	Mode of Learning
1	3 rd	ESP303	Electronics Project Workshop-I	Blended Learning
2	4 th	ESP402	Electronics Project Workshop-II	Blended Learning

3	5 th	ESP55	Electronics Project Workshop-III	Blended Learning
4	6 th	ES654	Electronics Project Workshop-IV	Blended Learning
5	7 th	ESP752 & ECP751	Electronics Workshop-V & Major Project	Blended Learning
6	8 th	ECP801	Industrial Training with projects	Industrial training and Blended learning

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Subject wise List for Digital/ Classroom learning

S.No.	Semester	Subjects	Digital Self Learning	Digital Aided Learning	Digital and Classroom Learning	Classroom and lab learning
1	3 rd	Digital Electronics & Computer Organization		https://nptel.ac.in/courses/108/105/108105132/ https://nptel.ac.in/courses/117/106/117106114/ https://nptel.ac.in/courses/117/106/117106086/ https://nptel.ac.in/courses/106/108/106108099/ https://nptel.ac.in/courses/117/103/117103064/ https://swayam.gov.in/nd1_noc20_ee70/preview	Digital and classroom learning	
2	3 rd	Semiconductor Devices		https://nptel.ac.in/courses/117/102/117102061/ https://swayam.gov.in/nd1_noc20_ee77/preview	Digital and classroom learning	
3	3 rd	Object Oriented Programming using C++		https://nptel.ac.in/ https://www.youtube.com/	Digital and classroom learning	
4	3 rd	Analog Communication		https://nptel.ac.in/courses/117/105/117105143/ https://swayam.gov.in/nd1_noc20_ee69/preview	Digital and classroom learning	
5	3 rd	Circuit Analysis and Synthesis		https://nptel.ac.in/courses/108/105/108105159/	Digital and classroom learning	

6	3 rd	Mathematics -III		https://nptel.ac.in/courses/122/107/122107037/ https://nptel.ac.in/courses/122/103/122103012/	Digital and classroom learning	
7	3 rd	Indian Constitution/ Essence of Indian Traditional Knowledge		https://nptel.ac.in/courses/129/106/129106002/	Digital and classroom learning	
8	3 rd	Object Oriented Programming using C++ Lab		http://www.vlab.co.in/		Lab Learning
9	3 rd	Digital Electronics Lab		http://www.vlab.co.in/		Lab Learning
10	3 rd	Analog Communication Lab		http://www.vlab.co.in/		Lab Learning
11	4 th	Digital Communication		https://nptel.ac.in/courses/108/102/108102096/ https://nptel.ac.in/courses/117/105/117105077/ https://nptel.ac.in/courses/117/101/117101051/	Digital and classroom learning	
12	4 th	Analog Electronics Circuits		https://nptel.ac.in/courses/108/105/108105158/ https://nptel.ac.in/courses/108/102/108102112/ https://nptel.ac.in/courses/108/102/108102095/N https://nptel.ac.in/courses/117/107/	Digital and classroom learning	

				117107094/ https://swayam.gov.in/nd1_noc20_e89/preview		
13	4 th	Microprocessors & Its Application		https://nptel.ac.in/courses/108/107/108107029/ https://nptel.ac.in/courses/108/105/108105102/	Digital and classroom learning	
14	4 th	Data Structure using Python		https://nptel.ac.in/courses/106/106/106106145/	Digital and classroom learning	
15	4 th	Digital System Design & Applications		https://nptel.ac.in/courses/117/105/117105080/	Digital and classroom learning	
16	4 th	Theory of Signal & System		https://nptel.ac.in/courses/117/104/117104074/ https://nptel.ac.in/courses/117/101/117101055/	Digital and classroom learning	
17	4 th	Biology		https://nptel.ac.in/courses/122/103/122103039/	Digital and classroom learning	
18	4 th	DSD Lab		http://www.vlab.co.in/		Lab Learning
19	4 th	Analog Electronic Circuit Lab		http://www.vlab.co.in/		Lab Learning
20	4 th	Microprocessors & its Application Lab		http://www.vlab.co.in/		Lab Learning

21	4 th	Data Structure using Python Lab		http://www.vlab.co.in/		Lab Learning
22	5 th	Database Management System		NPTEL/SWAYAM		
23	5 th	Embedded System Design		NPTEL/SWAYAM		
24	5 th	Computer Network		NPTEL/SWAYAM		
25	5 th	Integrated Circuit Design		NPTEL/SWAYAM		
26	5 th	Environmental Sciences		NPTEL/SWAYAM		
27	5 th	Smart Materials and Systems (Open Elective-I)		NPTEL/SWAYAM		
28	5 th	Electrical Measurement and Instrumentation (Open Elective-I)		NPTEL/SWAYAM		
29	5 th	Control System (Open Elective-I)		NPTEL/SWAYAM		

30	5 th	Electromechanical Energy Conversion (Open Elective-I)		NPTEL/SWAYAM		
31	5 th	Engineering Mechanics (Open Elective-I)		NPTEL/SWAYAM		
32	5 th	Solid & Structures (Open Elective-I)		NPTEL/SWAYAM		
33	5 th	Optimization Techniques (Open Elective-I)		NPTEL/SWAYAM		
34	5 th	Computer Network Lab		NPTEL/SWAYAM		
35	5 th	Database Management System Lab		NPTEL/SWAYAM		
36	6 th	Digital Signal Processing		NPTEL/SWAYAM		
37	6 th	Mobile Communication		NPTEL/SWAYAM		
38	6 th	Internet of Things		NPTEL/SWAYAM		

39	6 th	Information Management System (Program Elective-I)		NPTEL/SWAYAM		
40	6 th	ERP Information System (Program Elective-I)		NPTEL/SWAYAM		
41	6 th	Cyber Laws & Security (Program Elective-I)		NPTEL/SWAYAM		
42	6 th	Principle of Software Testing (Program Elective-I)		NPTEL/SWAYAM		
43	6 th	FSM and Verilog (Program Elective-I)		NPTEL/SWAYAM NPTEL/SWAYAM		
44	6 th	Biomedical Instrumentation (Program Elective-II)		NPTEL/SWAYAM		
45	6 th	Artificial Intelligence (Program Elective-II)		NPTEL/SWAYAM		
46	6 th	Microwave Engineering (Program Elective-II)		NPTEL/SWAYAM		

47	6 th	IC fabrication (Program Elective-II)		NPTEL/SWAYAM		
48	6 th	Advance Computer Organization (Program Elective-II)		NPTEL/SWAYAM		
49	6 th	Cognitive Radio (Program Elective-II)		NPTEL/SWAYAM		
50	6 th	Virtual Instruments Design (Open Elective-II)		NPTEL/SWAYAM		
51	6 th	Quality Management (Open Elective-II)		NPTEL/SWAYAM		
52	6 th	Measurement Data Analysis (Open Elective-II)		NPTEL/SWAYAM		
53	6 th	Soft Skill & Interpersonal Communication (Open Elective-II)		NPTEL/SWAYAM		
54	6 th	Industrial Process Control (Open Elective-II)		NPTEL/SWAYAM		
55	6 th	Mobile Communication Lab		NPTEL/SWAYAM		

56	6 th	Digital Signal Processing Lab		NPTEL/SWAYAM		
57	6 th	Circuit Simulation Lab		NPTEL/SWAYAM		
58	7 th	Computer Vision (Program Elective-III)		NPTEL/SWAYAM		
59	7 th	Data Analytics (Program Elective-III)		NPTEL/SWAYAM		
60	7 th	Cloud Computing and Security (Program Elective-III)		NPTEL/SWAYAM		
61	7 th	Principle of Optical Fiber Communication (Program Elective-III)		NPTEL/SWAYAM		
62	7 th	Digital Image Processing and Analysis (Program Elective-III)		NPTEL/SWAYAM		
63	7 th	VLSI Testing and Design for Testability (Program Elective-III)		NPTEL/SWAYAM		
64	7 th	Satellite Communication		NPTEL/SWAYAM		

		(Program Elective-IV)				
65	7 th	Principle of Machine Learning (Program Elective-IV)		NPTEL/SWAYAM		
66	7 th	Neural Networks and Soft Computing (Program Elective-IV)		NPTEL/SWAYAM		
67	7 th	Basics of Low Power VLSI Design (Program Elective-IV)		NPTEL/SWAYAM		
68	7 th	Wireless Sensor Network (Program Elective-V)		NPTEL/SWAYAM		
69	7 th	Mobile Application Development (Program Elective-V)		NPTEL/SWAYAM		
70	7 th	Electronic Filter Design (Program Elective-V)		NPTEL/SWAYAM		
71	7 th	Power Electronics (Program Elective-V)		NPTEL/SWAYAM		
72	7 th	ASIC and SoC (Program Elective-V)		NPTEL/SWAYAM		

73	7 th	Principles of Operating System (Program Elective-V)		NPTEL/SWAYAM		
74	7 th	Effective Technical Communication		NPTEL/SWAYAM		
75	7 th	Human Resource Management (Open Elective-III)		NPTEL/SWAYAM		
76	7 th	Financial Management (Open Elective-III)		NPTEL/SWAYAM		
77	7 th	Scientific Computing (Open Elective-III)		NPTEL/SWAYAM		
78	7 th	Industrial Safety Engineering (Open Elective-III)		NPTEL/SWAYAM		
79	7 th	Transportation Engg. (Open Elective-III)		NPTEL/SWAYAM		
80	7 th	Electronic Instruments (Open Elective-III)		NPTEL/SWAYAM		