

B.Tech. Electronics and Communication 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 Communication Engineering

S.No.	Semester	Project Code	Project	Mode of Learning
1	3 rd	ES303	Electronics Project Workshop-I	Blended Learning
2	4 th	ES402	Electronics Project Workshop-II	Blended Learning
3	5 th	ES555	Electronics Project Workshop-III	Blended Learning
4	6 th	ES654	Electronics Project Workshop-IV	Blended Learning
5	7 th	ES751 & ECP701	Electronics Workshop-V & Major Project	Blended Learning
6	8 th	EIP801	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	Electronics Devices		https://nptel.ac.in/courses/117/102/117102061/	Digital and classroom learning	
2	3 rd	Digital System Design		https://nptel.ac.in/courses/117/105/117105080/	Digital and classroom learning	
3	3 rd	Network Theory		https://nptel.ac.in/courses/108/105/108105159/	Digital and classroom learning	
4	3 rd	Engineering Mechanics		https://nptel.ac.in/courses/112/106/112106286/ https://nptel.ac.in/courses/112/103/112103108/ https://nptel.ac.in/courses/112/103/112103109/ https://swayam.gov.in/nd1_noc20_me46/preview	Digital and classroom learning	

5	3 rd	Mathematics-III	https://nptel.ac.in/courses/122/107/122107037/ https://nptel.ac.in/courses/122/103/122103012/	Digital and classroom learning	
6	3 rd	Indian Constitution/ Essence of Indian Traditional Knowledge	https://nptel.ac.in/courses/129/106/129106002/	Digital and classroom learning	
7	3 rd	Electronics Devices Lab	http://www.vlab.co.in/		Lab Learning
8	3 rd	Digital System Lab	http://www.vlab.co.in/		Lab Learning
9	3 rd	Network Theory Lab	http://www.vlab.co.in/		Lab Learning
10	4 th	Analog and Digital Communication	https://nptel.ac.in/courses/117/105/117105143/ https://nptel.ac.in/courses/108/102/108102096/ https://nptel.ac.in/courses/117/105/117105077/ https://nptel.ac.in/courses/117/101/117101051/ https://swayam.gov.in/nd1_noc20_ee69/preview	Digital and classroom learning	
11	4 th	Analog Circuits	https://nptel.ac.in/courses/108/105/108105158/	Digital and classroom	

			https://nptel.ac.in/courses/108/102/108102112/ https://nptel.ac.in/courses/108/102/108102095/N https://nptel.ac.in/courses/117/107/117107094/ https://swayam.gov.in/nd1_noc20_ee89/preview	m learning	
12	4 th	Microprocessors Microcontrollers	https://nptel.ac.in/courses/106/108/106108100/	Digital and classroom learning	
13	4 th	Computer Architecture	https://nptel.ac.in/courses/106/102/106102157/ https://nptel.ac.in/courses/106/106/106106134/ https://nptel.ac.in/courses/106/104/106104122/ https://nptel.ac.in/courses/106/102/106102062/	Digital and classroom learning	
14	4 th	Signal and Systems	https://nptel.ac.in/courses/117/104/117104074/ https://nptel.ac.in/courses/117/101/117101055/	Digital and classroom learning	
15	4 th	Effective Communication	https://nptel.ac.in/courses/109/107/109107172/ https://nptel.ac.in/courses/109/105/109105117/	Digital and classroom learning	

16	4 th	Biology		https://nptel.ac.in/courses/122/103/122103039/	Digital and classroom learning	
17	4 th	Analog and Communication Lab		https://nptel.ac.in/courses/117/105/117105143/ 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	
18	4 th	Analog Circuits Lab		http://www.vlab.co.in/		Lab Learning
19	4 th	Microprocessors Microcontrollers Lab		http://www.vlab.co.in/		Lab Learning
20	5 th	Electromagnetic Waves		https://nptel.ac.in/courses/117/103/117103065/ https://nptel.ac.in/courses/108/106/108106073/ https://nptel.ac.in/courses/108/104/108104087/ https://nptel.ac.in/courses/108/102/108102119/	Digital and classroom learning	
21	5 th	Probability Theory Stochastic Processes		https://nptel.ac.in/courses/117/105/117105085/ https://nptel.ac.in/courses/117/103/117103067/	Digital and classroom learning	

22	5 th	Digital Signal Processing	https://nptel.ac.in/courses/117/102/117102060/ https://nptel.ac.in/courses/117/104/117104070/ https://nptel.ac.in/courses/108/105/108105055/ https://nptel.ac.in/courses/108/106/108106151/	Digital and classroom learning	
23	5 th	CMOS Design (Program Elective-I)	https://nptel.ac.in/courses/108/107/108107129/ https://nptel.ac.in/courses/117/101/117101105/	Digital and classroom learning	
24	5 th	Nano Electronics (Program Elective-I)	https://nptel.ac.in/courses/117/108/117108047/	Digital and classroom learning	
25	5 th	Power Electronics (Program Elective-I)	https://nptel.ac.in/courses/108/102/108102145/ https://nptel.ac.in/courses/108/101/108101126/ https://nptel.ac.in/courses/108/105/108105066/ https://nptel.ac.in/courses/108/101/108101038/ https://swayam.gov.in/nd1_noc20_ee97/preview	Digital and classroom learning	
26	5 th	Introduction to MEMS (Program Elective-I)	https://nptel.ac.in/courses/117/105/117105082/	Digital and classroom learning	
27	5 th	Environmental Sciences	https://nptel.ac.in/courses/127/105/127105018/	Digital and classroom learning	
28	5 th	Smart Materials and Systems (Open Elective-I)	https://nptel.ac.in/courses/112/104/112104251/ https://nptel.ac.in/courses/112/104/112104173/	Digital and classroom learning	

29	5 th	Electrical Measurement and Instrumentation (Open Elective-I)	https://nptel.ac.in/courses/108/105/108105153/	Digital and classroom learning	
30	5 th	Intelligent Instrumentation (Open Elective-I)	https://nptel.ac.in/courses/108/104/108104049/	Digital and classroom learning	
31	5 th	Electromechanical Energy Conversion (Open Elective-I)	https://nptel.ac.in/ https://www.youtube.com/	Digital and classroom learning	
32	5 th	Renewable Power Generation Systems (Open Elective-I)	https://nptel.ac.in/courses/108/102/108102047/	Digital and classroom learning	
33	5 th	Digital Signal Processing Lab	http://www.vlab.co.in/		Lab Learning
34	5 th	Electromagnetic Lab	http://www.vlab.co.in/		Lab Learning
35	6 th	Control System	https://nptel.ac.in/courses/108/102/108102043/ https://nptel.ac.in/courses/108/102/108102044/ https://nptel.ac.in/courses/108/101/108101037/ https://nptel.ac.in/courses/108/106/108106098/ https://swayam.gov.in/nd1_noc20_ee62/preview https://swayam.gov.in/nd1_noc20_ee90/preview	Digital and classroom learning	

36	6 th	Computer Network	https://nptel.ac.in/courses/106/106/106106091/ https://nptel.ac.in/courses/106/105/106105080/ https://nptel.ac.in/courses/106/105/106105081/	Digital and classroom learning	
37	6 th	Bio Medical Electronics (Program Elective-II)	https://nptel.ac.in/ https://www.youtube.com/	Digital and classroom learning	
38	6 th	Information Theory & Coding (Program Elective-II)	https://nptel.ac.in/courses/117/101/117101053/ https://nptel.ac.in/courses/108/102/108102117/ https://swayam.gov.in/nd1_noc20_ee96/preview	Digital and classroom learning	
39	6 th	Speech and Audio Processing (Program Elective-II)	https://nptel.ac.in/courses/117/105/117105145/	Digital and classroom learning	
40	6 th	Scientific Computing (Program Elective-II)	https://nptel.ac.in/courses/101/104/101104013/	Digital and classroom learning	
41	6 th	Microwave Theory & Techniques (Program Elective-III)	https://nptel.ac.in/courses/108/101/108101112/	Digital and classroom learning	
42	6 th	Digital Image and Video Processing (Program Elective-III)	https://nptel.ac.in/courses/117/105/117105135/ https://nptel.ac.in/courses/117/105/117105079/ https://nptel.ac.in/courses/117/104/117104020/ https://swayam.gov.in/nd1_noc20_ee75/preview	Digital and classroom learning	

43	6 th	Software Defined Radio (Program Elective-III)	https://nptel.ac.in/courses/108/107/108107107/	Digital and classroom learning	
44	6 th	Mobile Communication Network (Program Elective-IV)	https://nptel.ac.in/courses/117/104/117104099/	Digital and classroom learning	
45	6 th	Wireless Sensor Networks (Program Elective-IV)	https://nptel.ac.in/courses/106/105/106105160/	Digital and classroom learning	
46	6 th	MIMO Wireless Communication (Program Elective-IV)	https://nptel.ac.in/courses/117/105/117105132/ https://nptel.ac.in/courses/117/104/117104115/	Digital and classroom learning	
47	6 th	Virtual Instruments Design (Open Elective-II)	https://nptel.ac.in/ https://www.youtube.com/	Digital and classroom learning	
48	6 th	Data Structure (Open Elective-II)	https://nptel.ac.in/courses/106/102/106102064/ https://nptel.ac.in/courses/106/106/106106130/ https://nptel.ac.in/courses/106/106/106106133/	Digital and classroom learning	
49	6 th	Cyber Laws and Security (Open Elective-II)	https://swayam.gov.in/nd2_cec20_cs15/preview https://nptel.ac.in/ https://www.youtube.com/	Digital and classroom learning	
50	6 th	Quality Management (Open Elective-II)	https://nptel.ac.in/courses/110/101/110101010/ https://nptel.ac.in/courses/110/104/110104080/ https://nptel.ac.in/courses/110/104/110104085/	Digital and classroom learning	

51	6 th	Measurement Data Analysis (Open Elective-II)	https://nptel.ac.in/ https://www.youtube.com/	Digital and classroom learning	
52	6 th	Computer Networks Lab	http://www.vlab.co.in/		Lab Learning
53	6 th	Electronics Measurement Lab	http://www.vlab.co.in/		Lab Learning
54	6 th	Microwave /Digital Lab	http://www.vlab.co.in/		Lab Learning
55	7 th	Antenna and Propagation (Program Elective-V)	https://nptel.ac.in/courses/108/101/108101092/ https://nptel.ac.in/courses/117/107/117107035/ https://nptel.ac.in/courses/108/105/108105114/	Digital and classroom learning	
56	7 th	High Speed Electronics (Program Elective-V)	https://nptel.ac.in/courses/117/106/117106089/ https://nptel.ac.in/courses/117/104/117104071/	Digital and classroom learning	
57	7 th	Wavelets (Program Elective-V)	https://nptel.ac.in/courses/108/101/108101093/ https://nptel.ac.in/courses/117/101/117101123/ https://nptel.ac.in/courses/117/101/117101001/	Digital and classroom learning	
58	7 th	Fiber Optic Communication (Program Elective-VI)	https://nptel.ac.in/courses/108/106/108106167/ https://nptel.ac.in/courses/108/104/108104113/ https://nptel.ac.in/courses/115/107/115107095/ https://swayam.gov.in/nd1_noc20_ee79/preview	Digital and classroom learning	

59	7 th	Adaptive Signal Processing (Program Elective-VI)	https://nptel.ac.in/courses/117/105/117105075/	Digital and classroom learning	
60	7 th	Mixed Signal Design (Program Elective-VI)	https://nptel.ac.in/ https://www.youtube.com/	Digital and classroom learning	
61	7 th	Satellite Communication (Program Elective-VII)	https://nptel.ac.in/courses/117/105/117105131/	Digital and classroom learning	
62	7 th	Embedded Systems (Program Elective-VII)	https://nptel.ac.in/courses/108/105/108105057/ https://nptel.ac.in/courses/108/102/108102045/ https://nptel.ac.in/courses/106/105/106105159/ https://swayam.gov.in/nd1_noc20_ee98/preview	Digital and classroom learning	
63	7 th	Error Correcting Codes (Program Elective-VII)	https://nptel.ac.in/courses/117/108/117108044/	Digital and classroom learning	
64	7 th	Human Resource Management (Open Elective-III)	https://nptel.ac.in/courses/110/105/110105069/ https://nptel.ac.in/courses/110/102/110102058/ https://nptel.ac.in/courses/122/105/122105020/	Digital and classroom learning	
65	7 th	Power Plant Engineering (Open Elective-III)	https://nptel.ac.in/courses/112/107/112107291/	Digital and classroom learning	
66	7 th	Soft Computing (Open Elective-III)	https://nptel.ac.in/courses/106/105/106105173/	Digital and classroom learning	

67	7 th	Display Devices (Open Elective-III)	https://nptel.ac.in/ https://www.youtube.com/	Digital and classroom learning	
68	7 th	Financial Management (Open Elective-III)	https://nptel.ac.in/courses/110/107/110107144/	Digital and classroom learning	
69	7 th	Non Linear Control System (Open Elective-IV)	https://nptel.ac.in/courses/108/106/108106024/ https://nptel.ac.in/courses/108/106/108106162/	Digital and classroom learning	
70	7 th	Operational Research (Open Elective-IV)	https://nptel.ac.in/courses/111/107/111107128/ https://nptel.ac.in/courses/110/106/110106062/ https://nptel.ac.in/courses/112/106/112106134/ https://nptel.ac.in/courses/110/106/110106059/	Digital and classroom learning	
71	7 th	Operating System (Open Elective-IV)	https://nptel.ac.in/courses/106/102/106102132/ https://nptel.ac.in/courses/106/108/106108101/ https://nptel.ac.in/courses/106/106/106106144/ https://nptel.ac.in/courses/106/105/106105214/	Digital and classroom learning	
72	7 th	Industrial Safety Engineering (Open Elective-IV)	https://nptel.ac.in/courses/110/105/110105094/	Digital and classroom learning	
73	7 th	Cloud Computing (Open Elective-IV)	https://nptel.ac.in/courses/106/105/106105167/ https://nptel.ac.in/courses/106/104/106104182/	Digital and classroom learning	