

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)
Department of Electronics and Communication Engineering

NPTEL EQUIVALENT COURSES FOR MINOR DEGREE 2021-2022 (July-December)

Date: 17-05-2021

Additional Minor Engineering Degree In

- I. Communications and Networking
- II. Embedded Systems & IoT
- III. Signal Processing
- IV. VLSI

Level	Credits
Basic	8 to 10 credits
Advanced	10 to 12 credits

Note: Student has to choose the courses at least from any two groups and from each group at most 2 courses only.

***-subject to approval, from the department**

The Tentative list of courses for Additional Minor Degree approved by Electronics and communication Engineering Department BoS members are as follows:

NPTEL/ COURSERA EQUIVALENT COURSES

Sno	Course Code	Course Name	Institute	Credits	Duration	Start date	Exam date	Nptel/Coursera links
Communications and Networking								
Basic Level								
1	noc21-ee65	Principles of Communication Systems: Part - II	IITK	3	8 Weeks	July 26, 2021	September 17, 2021	https://nptel.ac.in/courses/108/104/108104098/
2	noc21-ee66	Introduction to Wireless and Cellular Communications	IITM	3	12 Weeks	July 26, 2021	October 15, 2021	https://nptel.ac.in/courses/106/106/106106167/
3	noc21-ee72	Microwave Theory and Techniques	IITB	3	12 Weeks	July 26, 2021	October 15, 2021	https://nptel.ac.in/courses/108/101/108101112/
4	noc21-ee74	Analog communication	IITKGP	3	12 Weeks	July 26, 2021	October 15, 2021	https://nptel.ac.in/courses/117/105/117105143/
5	noc21-ee81	Optical Engineering	IITM	3	12 Weeks	July 26, 2021	October 15, 2021	https://nptel.ac.in/courses/108/106/108106161/
6	noc21-ee83	Electromagnetic Theory	IITK	3	12 Weeks	July 26, 2021	October 15, 2021	https://nptel.ac.in/courses/108104087/
7	noc21-ee88	Microwave Engineering	IITG	3	12 Weeks	July 26, 2021	October 15, 2021	https://nptel.ac.in/courses/108/103/108103141/
8	CN	Fundamentals of Network Communication	University of Colorado	1.25	5 Weeks	Considered from registered Date		https://www.coursera.org/learn/fundamentals-network-communications
Advanced Level								
1	noc21-ee64	Principles of Modern CDMA/ MIMO/ OFDM	IITK	2	8 Weeks	August 23, 2021	October 15, 2021	https://nptel.ac.in/courses/117/104/117104115/

		Wireless Communications						
2	noc21-ee82	Applied Electromagnetics For Engineers	IITK	3	12 Weeks	July 26, 2021	October 15, 2021	https://nptel.ac.in/courses/108/104/108104099/
3	noc21-ee91	Computational Electromagnetics	IITM	3	12 Weeks	July 26, 2021	October 15, 2021	https://nptel.ac.in/courses/108/106/108106152/
4	noc21-ee108	Principles and Techniques of Modern Radar Systems	IITKGP	3	12 Weeks	July 26, 2021	October 15, 2021	https://nptel.ac.in/courses/108/105/108105154/
5	noc21-ee111	Advanced Microwave Guided-Structures and Analysis	IITKGP	3	12 Weeks	July 26, 2021	October 15, 2021	https://onlinecourses.nptel.ac.in/noc21_ee111/preview
6	CN	Peer-to-Peer Protocols and Local Area Networks	University of Colorado	1.25	5 Weeks	Considered from registered Date		https://www.coursera.org/learn/peer-to-peer-protocols-local-area-networks
7	CN	Packet Switching Networks and Algorithms	University of Colorado	1.25	5 Weeks	Considered from registered Date		https://www.coursera.org/learn/packet-switching-networks-algorithms
8		TCP/IP and Advanced Topics	University of Colorado	1.25	5 Weeks	Considered from registered Date		https://www.coursera.org/learn/tcp-ip-advanced
Embedded Systems & IoT								
Basic Level								
1	noc21-ee85	Design for internet of things	IISc	2	8 Weeks	July 26, 2021	September 17, 2021	https://onlinecourses.nptel.ac.in/noc21_ee85/preview

2	20CSMIO T14	Introduction to internet of things	IITKGP	3	12 Weeks	July 26, 2021	October 24, 2021	https://onlinecourses.nptel.ac.in/noc21_cs63/preview
3	20CSMC S21	Introduction to Industry 4.0 and Industrial Internet of Things	IITKGP	3	12 Weeks	July 26, 2021	October 23, 2021	https://onlinecourses.nptel.ac.in/noc21_cs66/preview
4	20CSMIO T18	Introduction and programming with IoT Boards	Korea university	1.25	5 Weeks	-	-	https://www.coursera.org/learn/introduction-iot-boards
5	IOT	The Arduino Platform and C Programming	University of California	1	4 Weeks			https://www.coursera.org/learn/arduino-platform?specialization=iot
6	ML	Machine Learning Foundations: A Case Study Approach	University of Washington	1.5	6 Weeks			https://www.coursera.org/learn/ml-foundations?specialization=machine-learning
Advanced Level								
1	20CSMIO T22:Security in IOT	Industrial IoT Markets and Security	Colorado boulder university	1.25	5 Weeks	-	-	https://www.coursera.org/learn/industrial-iot-markets-security
2	ECEA 5315	Real-Time Embedded Systems Concepts and Practices	University of Colorado Boulder	1	4 Weeks			https://www.coursera.org/learn/real-time-embedded-systems-concepts-practices?specialization=real-time-embedded-systems
3	ECEA 5316	Real-Time Embedded Systems Theory and	University of Colorado Boulder	1	4 Weeks			https://www.coursera.org/learn/real-time-embedded-theory-analysis?specialization=real-time-embedded-systems

		Analysis						
4	ECEA 5317	Real-Time Mission- Critical Systems Design	University of Colorado Boulder	1	4 Weeks			https://www.coursera.org/learn/real-time-mission-critical-systems-design?specialization=real-time-embedded-systems
5	ECEA 5318	Real-Time Project for Embedded Systems	University of Colorado Boulder	1	4 Weeks			https://www.coursera.org/learn/real-time-project-embedded-systems?specialization=real-time-embedded-systems
6	ECEA 5340	Sensors and Sensor Circuit Design	University of Colorado Boulder	1.25	5 Weeks			https://www.coursera.org/learn/sensors-circuit-interface?specialization=embedding-sensors-motors
7	ECEA 5342	Pressure, Force, Motion, and Humidity Sensors	University of Colorado Boulder	1.25	5 Weeks			https://www.coursera.org/learn/pressure-force-motion-humidity-sensors?specialization=embedding-sensors-motors
8	IOT	Interfacing with the Arduino	University of California	1	4 Weeks			https://www.coursera.org/learn/interface-with-arduino
9	IOT	The Raspberry Pi Platform and Python Programming for the Raspberry Pi	University of California	1	4 Weeks			https://www.coursera.org/learn/raspberry-pi-platform?specialization=iot
10	CC	Cloud Computing Concepts, Part 1	University of Illinois at Urbana- Champaign	1.25	5 Weeks			https://www.coursera.org/learn/cloud-computing?specialization=cloud-computing
11	CC	Cloud Computing	University of Illinois	1.25	5 Weeks			https://www.coursera.org/learn/cloud-computing-2?specialization=cloud-computing

		Concepts, Part 2	at Urbana- Champaign					
Signal Processing								
Basic Level								
1	noc21- ee78	Digital Image Processing	IITKGP	3	12 Weeks	July 26, 2021	October 15, 2021	https://nptel.ac.in/courses/117/105/117105135/
2	noc21- ee100	Image Signal Processing	IITM	3	12 Weeks	July 26, 2021	October 15, 2021	https://nptel.ac.in/courses/108/106/108106168/
3	noc21- ee95	Basics of software defined Radios and Practical Applications	IITM	1	4 Weeks	July 26, 2021	August 20, 2021	https://nptel.ac.in/courses/108107107/
Advanced Level								
2	noc21- ee79	Pattern Recognition and Application	IITKGP	3	12 Weeks	July 26, 2021	October 15, 2021	https://nptel.ac.in/courses/117/105/117105101/
5	noc21- ee102	Signal Processing for mm Wave communication for 5G and beyond	IITKGP	3	12 Weeks	July 26, 2021	October 15, 2021	https://onlinecourses.nptel.ac.in/noc21_ee102/p_review
VLSI								
Basic Level								
1	noc21- ee80	Semiconduct or Devices and Circuits	IISc	3	12 Weeks	October 15, 2021	October 23, 2021	https://nptel.ac.in/courses/108/108/108108112/
2	noc21- ee86	Microelectro nics: Devices To Circuits	IITR	3	12 Weeks	October 15, 2021	October 24, 2021	https://nptel.ac.in/courses/108/107/108107142/
3	noc21- ee89	Analog Electronic	IITD	3	12 Weeks	October 15, 2021	October 24, 2021	https://nptel.ac.in/courses/108/102/108102112/

		Circuits						
4	noc21-ee90	Enclosure design of electronics equipment	IISc	3	12 Weeks	October 15, 2021	October 24, 2021	https://nptel.ac.in/courses/117108140/
5	noc21-ee59	Introduction to Semiconductor Devices	IIT Hyderabad	3	12 weeks	July 26, 2021	October 15, 2021	https://onlinecourses.nptel.ac.in/noc21_ee59/preview
Advanced Level								
1	noc21-ee76	Millimeter Wave Technology	IITKGP	2	8 Weeks	September 17, 2021	September 26, 2021	https://nptel.ac.in/courses/117/105/117105139/
2	noc21-ee97	System Design Through VERILOG	IITG	2	8 Weeks	September 17, 2021	September 26, 2021	https://onlinecourses.nptel.ac.in/noc21_ee97/preview
3	noc21-ee98	Integrated Photonics Devices and Circuits	IITM	3	12 weeks	October 15, 2021	October 24, 2021	https://onlinecourses.nptel.ac.in/noc21_ee97/preview
4	ECEA 5362	FPGA Softcore Processors and IP Acquisition	University of Colorado Boulder	1	4 weeks	Considered from registered Date		https://www.coursera.org/learn/fpga-softcore-processors-ip
5	ECEA 5360	Introduction to FPGA Design for Embedded Systems	University of Colorado Boulder	1	4 weeks	Considered from registered Date		https://www.coursera.org/learn/fpga-hardware-description-languages?specialization=fpga-design
6	ECEA 5361	Hardware Description Languages for FPGA Design	University of Colorado Boulder	1	4 weeks	Considered from registered Date		https://www.coursera.org/learn/fpga-hardware-description-languages?specialization=fpga-design
7	ECEA	FPGA	University	1	4 weeks	Considered from		https://www.coursera.org/learn/capstone-fpga-

	5363	Capstone: Building FPGA Projects	of Colorado Boulder			registered Date		design
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