

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (A)
Hyderabad-75

Department of Computer Science & Engineering
Scheme of Additional Minor Engineering Degree in Computer Engineering,
AI/ML, Cyber Security, IoT

Date:28-11-2022

Academic Requirements: (Min 20 credits)

A) For Engineering (Mechanical, Civil, ECE, EEE, Bio-Tech and Chemical)

1. Students can choose the courses which were not studied earlier in the previous semester. Further the courses should not be present in the curriculum of the forth coming semesters.
2. This scheme is effective from the batches starting from 2022-23 Academic year

B) CORE ELECTIVE LIST (Any 3 Courses including mandatory course)- 9 to 12 credits

SNO	Course Code	Course Title	L:T:P	Credits	Desirable prerequisites	Preferred Semester
1	20CSCXX	Operating Systems(mandatory course)	3-0-0	3		4 or above
2	20CSC09	Discrete Mathematics	4-0-0	4		4 or above
3	20CSC03	Object Oriented Programming (OOPs)	3-0-2	4	20CSC01	2 or above
4	20CSC13	Computer Architecture & Micro Processors	3-0-0	3	20CSC01	4 or above
5	20CSC14	Database Management Systems	3-0-2	4	-	3 or above
6	20CSC20	Design and Analysis of Algorithms	3-0-0	3	20CSO01	5 or above
7	20CSC21	Data Communications & Computer Networks	3-0-0	3	20CSCOS	5 or above
8	20CSC26	Artificial Intelligence	3-0-0	3	-	5 or above
9	20CSC22	Software Engineering	3-0-0	3	20CSC03	5 or above

Core Elective NPTEL Equivalent courses

SN O	Course Title	No of Weeks/ Credits	Start and End Date	Enroll-ment Last date	NPTEL Link
1	Discrete Mathematics	12/3	23-01-2023, 14-04-2023	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_cs22
2	Programming in Modern C++	12/3	23-01-2023, 14-04-2023	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_cs50
3	Data Base Management System	8/2	23-01-2023, 17-03-2023	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_cs41

4	Design and analysis of algorithms	8/2	23-01-2023, 17-03-2023	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_cs16
5	Computer Networks And Internet Protocol	12/3	23-01-2023, 14-04-2023	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_cs48
6	An Introduction to Artificial Intelligence	12/3	23-01-2023, 14-04-2023	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_cs05

COMPUTER ENGINEERING: (Any THREE Courses or TWO Courses and Project) – 8 to 11 Credits

SNO	Course Code	Course Title	L:T:P	Credits	Desirable prerequisites	Preferred Semester
1	20CSC15	Internet and Web Technologies	3-0-2	4	20CSO01	3 or above
2	20CSE06	Machine Learning	3-0-2	4	20CSE26	5 or above
3	20CSE02	Data Science	3-0-0	3	-	4 or above
4	20CSE22	Cloud Computing	3-0-0	3	20CSCOS	6 or above
5	20CSE28	Free and Open Source Technologies	3-0-0	3	-	5 or above
6	20CSE18	Mobile Application Development	3-0-0	3	20CSC15	4 or above
7	20CSC34	Project	0-1-6	4	-	7 or 8
8	20CSCxx	Special Topics Computer Science	2-0-0	2	-	7 or 8
9	20CSC33	Special Modules in CS	1-0-0	1	-	7 or 8

Above list is tentative and can be suitably updated based on needs of the Industry and availability of relevant course

NPTEL equivalent courses

SNO	Course Title	No of Weeks/Credits	Start and end dates	Enrollment last date	Nptel link
1	Internet and Web Technologies	NA			
2	Machine Learning (Introduction to Machine Learning)	12/3	23-01-2023, 14-04-2023	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_cs18
3	Data Science for Engineers	8/2	23-01-2023, 17-03-2023	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_cs17
4	Cloud Computing	8/2	23-01-2023,	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_cs42

			17-03-2023		
5	Free and Open Source Technologies	NA			
6	Mobile Application Development	NA			
7	Project				
8	Special Topics Computer Science				
9	Special Modules in CS				

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AI & ML(Any THREE Courses or TWO Courses and Project) – 8 to 11 Credits

SNO	Course Code	Course Title	L:T:P	Credits	Desirable prerequisites	Preferred Semester
1	20CAE05	Image Processing and Applications	2-0-1	3	20CSC05	3 or above
2	20CSE02	Data Science	3-0-0	3	-	4 or above
3		Introduction to Logic and Functional Programming	2-0-1	3	20CSC09	4 or above
4	20CSE20	Natural Language Processing	2-0-1	3	20CSE26	5 or above
5	20CSE06/20CAC04	Machine Learning	3-0-2	4	20CSE26	6 or above
6	20CSE26	Computer Vision	2-0-1	3	20CAE05	6 or above
7	20CSE16/20CAC07	Deep Learning	3-0-2	4	20CSE06/20CAC04	6 or above
8	20CSC34	Project	0-1-4	4	-	7 or 8
9	20CSCxx	Special Topics on AI	2-0-0	2	-	7 or 8
10	20CSC33	Special modules in AI	1-0-0	1	-	7 or 8

Above list is tentative and can be suitably updated based on needs of the Industry and availability of relevant course

NPTEL equivalent courses

SN O	Course Title	No of Weeks/Credits	Start and end dates	Enrollment last date	Nptel link
1	Image Processing and Applications(Computer Vision and Image Processing - Fundamentals and Applications	12/3	23-01-2023 , 14-04-2023	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_ee39

2	Natural Language Processing	12/3	23-01-2023, 14-04-2023	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_cs45
3	Machine Learning (Introduction to Machine Learning)	12/3	23-01-2023, 14-04-2023	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_cs18
4	Computer vision (Modern Computer Vision)	12/3	23-01-2023, 14-04-2023	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_ee78
5	Deep learning	12/3	23-01-2023, 14-04-2023	30-01-2023	1. https://onlinecourses.nptel.ac.in/noc23_cs24 2. https://onlinecourses.nptel.ac.in/noc23_cs56

CYBER SECURITY (Any THREE Courses or TWO Courses and Project) – 8 to 11 Credits

SNO	Course Code	Course Title	L:T:P	Credits	Desirable prerequisites	Preferred Semester
1	20CSC05	IT 4.0	2-0-1	3	--	2 or above
2		Wireless and Sensor Networks	2-0-2	3	--	3 or above
3	20CSC15	Internet and Web Technologies	2-0-2	3	20CSO01	4 or above
4	20CSE17	Internet of Things	2-0-1	3	20CSC13	5 or above
5	20CSE02	Data Science	3-0-0	3	-	4 or above
6	20CSC27	Applied Cryptography	2-0-1	3	20CSC21	6 or above
7		Wireless and Mobile Systems	2-0-1	3	20CSEWSN	6 or above
8	20CSC34	Capstone Project	0-1-3	4	-	7 or 8
9	20CSCxx	Special Topics in Cyber Systems	2-0-0	2	-	7 or 8
10	20CSC33	Special modules in Systems	1-0-0	1	-	7 or 8

Above list is tentative and can be suitably updated based on needs of the Industry and availability of relevant course

NPTEL equivalent courses

SNO	Course Title	No of Weeks/Credits	Start and end dates	Enrollment last date	Nptel link
1	Introduction To Industry 4.0 And Industrial Internet Of	12/3	23-01-2023, 14-04-	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_cs52

	Things		2023		
2	Introduction to internet of things	12/3	23-01-2023, 14-04-2023	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_cs51
3	Data Science for Engineers	8/2	23-01-2023, 17-03-2023	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_cs17
4	Privacy and Security in Online Social Media	12/3	23-01-2023, 14-04-2023	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_cs13

INTERNET OF THINGS (Any THREE Courses OR TWO Courses and Project) 8 to 11 Credits

SNO	Course Code	Course Title	L:T:P	Credits	Desirable prerequisites	Preferred Semester
1	20CSC05	IT 4.0	2-0-1	3	--	2 or above
2		Wireless and Sensor Networks	2-0-2	3	--	3 or above
3	20CSE17	Internet of Things	2-0-1	3	20CSC13	4or above
4	20CSE02	Data Science	3-0-0	3	-	4 or above
5	20CSE18	Mobile Application Development	3-0-0	3	20CSC15	4 or above
6		IoT Architectures and Protocols	2-0-1	3	20CSCOS	5or above
7		IoT Security	2-0-1	3	20CSC21	6 or above
8	20CSC34	Capstone Project	0-1-3	4	--	7 or 8
9	20CSC32	Foundation of Cloud IoT Edge ML	2-0-0	2	--	7 or 8
10	20CSC33	Special modules in Systems	1-0-0	1	--	7 or 8

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NPTEL equivalent courses

SNO	Course Title	No of Weeks/Credits	Start and end dates	Enrollment last date	Nptel link
1	Introduction To Industry 4.0 And Industrial Internet Of Things	12/3	23-01-2023, 14-04-2023	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_cs52

2	Introduction to internet of things	12/3	23-01-2023, 14-04-2023	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_cs51
3	Data Science for Engineers	8/2	23-01-2023, 17-03-2023	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_cs17
4	Privacy and Security in Online Social Media	12/3	23-01-2023, 14-04-2023	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_cs13
5	Foundation of Cloud IoT Edge ML	8/2	23-01-2023, 17-03-2023	30-01-2023	https://onlinecourses.nptel.ac.in/noc23_cs65

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CSE- AMD Coordinator

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