CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY(A)
Department of Computer Science and Engineering

ONLINE EQUIVALENT COURSES FOR HONOURS DEGREE 2021-2022

Date: 20-5-2021

The Tentative list of courses for Honours Degree approved by Computer Science and Engineering Department BoS are as follows:

I and II Semester-maximum 4 credits, III and IV Semester- maximum 4 to 6 credits including internship, V and VI Semester- maximum 6 credits, VII and VIII Semester-maximum 6 credits

Note: Student has to choose the courses atleast from any two tracks and from each level atmost 2 courses only.

Programming Languages	Virtual and Augmented Reality	Advanced Data Science	Advanced Artificial Intelligence	Software Systems Engineering	Programming and Application Development	Network Technologies	Industry oriented	Courses/ Credits
Design thinking and product innovation/Capstone project(in C/python/C++)/Introduction to AI Tools and Techniques/Start-ups and innovation/Competitive programming	Design thinking and product innovation/Capstone project(in C/python/C++)/Introduction to AI Tools and Techniques/Start-ups and innovation/Competitive programming	Design thinking and product innovation/Capstone project(in C/python/C++)/Introduction to AI Tools and Techniques/Start-ups and innovation/Competitive programming	Design thinking and product innovation/Capstone project(in C/python/C++)/Introduction to AI Tools and Techniques/Start-ups and innovation/Competitive programming	Design thinking and product innovation/Capstone project(in C/python/C++)/Introduction to AI Tools and Techniques/Start-ups and innovation/Competitive programming	Design thinking and product innovation/Capstone project(in C/python/C++)/Introduction to AI Tools and Techniques/Start-ups and innovation/Competitive programming	Design thinking and product innovation/Capstone project(in C/python/C++)/Introduction to AI Tools and Techniques/Start-ups and innovation/Competitive programming	Design thinking and product innovation/Capstone project(in C/python/C++)/Introduction to AI Tools and Techniques/Start-ups and innovation/Competitive programming	2/4
Scripting Languages	Computer Graphics and 3D Design & Printing	Random Variables and Queuing Theory	AI Ethics	Project Management and Testing	Wireframe& Prototype Development /Mobile Application Development using Kotlin	System Administration	Hackerrank*/Hacker earth*/Cloud Associate	2/4
Functional and logic programming	Geometric Algorithms/AR/VR/MR/XR/ Game Development/Human Computer Interaction	Data Warehousing and Data Mining	Deep Learning*/Soft Computing/Advanced Tensor flow Techniques	Agile Methodologies (using Devops)/ Quantum Computing	Full Stack Development	Wireless sensor networks/ TCP/IP and Advanced Topics	*Certification from Online Coding Platforms (Codechef, Leetcode,etc.)	2/6

Semantics of programming languages	User Interface Design and UI Experience	Data Engineering	Generative Adversarial Networks/Swarm Intelligence	Design Patterns/High Performance Computing	Micro services Architecture/Enterprise Application Development	Privacy and Security inOnline Social Media/Software Defined Networks/5G Technologies	Data Engineer/ Cisco Certified/ Java Certification / Associate Android/ Web Apps /Redhat Linux Administration/MIST /Microsoft Server Administration/Microsoft Azure	2/6
			*-subject to approval, from the department				*-subject to approval, from the department	

S.No.	Course Code	Course Name	Institute	Credits	Duration	Course Start Date	NPTEL/COURSERA Link
LEVEL – 1 Equivalent Courses(common to all the Tracks)							
1	20CSH01	Innovation Through Design: Think, Make, Break, Repeat	The University of Sydney	1.25	5 weeks	-	https://www.coursera.org/learn/innovation-through-design
2	20CSH02	Startups in open innovation	Saint Petersburg State University	1.25	5 weeks	-	https://www.coursera.org/learn/startups-in-open-innovation
3	20CSH03	Competitive Programming for Beginners	Moscow Institute of Physics and Technology	1	4 weeks	-	https://www.coursera.org/learn/competitive-programming-for-beginners
4	20CSH04	In order of preference: Algorithmic Puzzles, Algorithms Implemented, Data Structures and Algorithms with C++ and Python Algorithms for Competitive Programming	IIT Gandhinagar	3	12 weeks	26-7-2021	https://onlinecourses.nptel.ac.in/noc21_cs99/preview

LEVEL – 2 Equivalent Courses(Virtual and Augmented Reality Track)							
5	20CSH05	Design Computing: 3D Modeling in Rhinoceros with Python/Rhinoscript	University of Michigan	1.25	5 weeks	-	https://www.coursera.org/learn/3d-modeling-rhinoscript
LEVEL – 2 Equivalent Courses(Advanced Artificial Intelligence Track)							
6	20CSH06	Artificial Intelligence Ethics in Action	LearnQuest	0.75	3 weeks	-	https://www.coursera.org/learn/ai-ethics-analysis
LEVEL – 2 Equivalent Courses(Programming and Application Development Track)							
7	20CSH07	Build Wireframes and Low-Fidelity Prototypes	Google Career Certificates	0.75	3 weeks	-	https://www.coursera.org/learn/wireframes-low-fidelity-prototypes
LEVEL – 2 Equivalent Courses(Network Technologies Track)							
8	20CSH08	Linux System Administration with IBM Power Systems	IBM	1	4 weeks	-	https://www.coursera.org/learn/linux-system-administration-ibm-power-systems
LEVEL – 3 Equivalent Courses(Virtual and Augmented Reality Track)							
9	20CSH09	Geometric Algorithms	EIT Digital	0.75	3 weeks	-	https://www.coursera.org/learn/geometric-algorithms
10	20CSH10	Introduction to Augmented Reality and ARCore	Google AR & VR	1	4 weeks	-	https://www.coursera.org/learn/ar
11	20CSH11	Intro to AR/VR/MR/XR: Technologies, Applications & Issues	University of Michigan	1	4 weeks	-	https://www.coursera.org/learn/intro-augmented-virtual-mixed-extended-reality-technologies-applications-issues
12	20CSH12	Game Design and Development 1: 2D Shooter	Michigan State University	1	4 weeks	-	https://www.coursera.org/learn/game-design-and-development-1
LEVEL – 3 Equivalent Courses(Advanced Artificial Intelligence Track)							
13	20CSH13	Generative Deep Learning with TensorFlow	DeepLearning.AI	1	4 weeks	-	https://www.coursera.org/learn/generative-deep-learning-with-tensorflow
LEVEL – 3 Equivalent Courses(Software Systems Engineering Track)							

14	20CSH14	Introduction to Quantum Computing: Quantum Algorithms and Qiskit	IIT Madras	1	4 weeks	23-08-2021	https://onlinecourses.nptel.ac.in/noc21_cs103/preview
LEVEL – 3 Equivalent Courses(Programming and Application Development Track)							
15	20CSH15	Full Stack Cloud Development Capstone Project	IBM	1.5	6 weeks	-	https://www.coursera.org/learn/ibm-cloud-native-full-stack-development-capstone
LEVEL – 3 Equivalent Courses(Network Technologies Track)							
16	20CSH16	TCP/IP and Advanced Topics	University of Colorado System	1.25	5 weeks	-	https://www.coursera.org/learn/tcp-ip-advanced
LEVEL – 4 Equivalent Courses(Advanced Data Science Track)							
17	20CSH17	Introduction to Data Engineering	IBM	1	4 weeks	-	https://www.coursera.org/learn/introduction-to-data-engineering
LEVEL – 4 Equivalent Courses(Advanced Artificial Intelligence Track)							
18	20CSH18	Apply Generative Adversarial Networks (GANs)	DeepLearning.AI	0.75	3 weeks	-	https://www.coursera.org/learn/apply-generative-adversarial-networks-gans
LEVEL – 4 Equivalent Courses(Software Systems Engineering Track)							
19	20CSH19	Design Patterns	University of Alberta	1	4 weeks	-	https://www.coursera.org/learn/design-patterns
LEVEL – 4 Equivalent Courses(Network Technologies Track)							
20	20CSH20	Software Defined Networking	The University of Chicago	2	8 weeks	-	https://www.coursera.org/learn/sdn

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