

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Computer Science & Design
 (Applicable from the academic session 2021-2022)

Curriculum Structure

First Year First Semester							
Mandatory Induction Program- 3 weeks duration							
Sl No.	Category	Subject Code	Subject Name	Total Number of contact hours			Credits
				L	T	P	
Theory							
1	Basic course Science	BS-PH101/ BS-CH101	Physics-I (Gr-A)/ Chemistry-I(Gr-B)	3	1	0	4
2	Basic course Science	BS-M101/ BSM102	Mathematics –IA*/ Mathematics –IB *	3	1	0	4
3	Engineering Science Courses	ES-EE101	Basic Electrical Engineering	3	1	0	4
Total Theory				9	3	0	12
Practical							
1	Basic course Science	BS-PH191/ BS-CH191	Physics-I Laboratory (Gr-A)/ Chemistry-I Laboratory (Gr-B)	0	0	3	1.5
2	Engineering Science Courses	ES-EE191	Basic Electrical Engineering Laboratory	0	0	2	1
3	Engineering Science Courses	ES-ME191/ ES-ME192	Engineering Graphics & Design(Gr-B)/ Workshop/Manufacturing Practices(Gr-A)	1	0	4	3
Total Practical				1		9	5.5
Total of First Semester				10	3	9	17.5

* Mathematics –IA (BS-M101) – CSE, CSD & IT
 Mathematics –IB (BS-M102) - All stream except CSE, CSD & IT

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First Year Second Semester							
Sl No.	Category	Subject Code	Subject Name	Total Number of contact hours			Credits
				L	T	P	
Theory							
1	Basic Science courses	BS-PH201/ BS-CH201	Physics-I (Gr-B)/ Chemistry-I (Gr-A)	3	1	0	4
2	Basic Science courses	BS- M201/BS- M202	Mathematics –IIA#/ Mathematics –IIB #	3	1	0	4
3	Engineering Science Courses	ES-CS201	Programming for Problem Solving	3	0	0	3
4	Humanities and Social Sciences including Management courses	HM-HU201	English	2	0	0	2
Total Theory				11	2	0	13
Practical							
1	Basic Science courses	BS-PH291/ BS-CH291	Physics-I Laboratory (Gr-B)/ Chemistry-I Laboratory (Gr-A)	0	0	3	1.5
2	Engineering Science Courses	ES-CS291	Programming for Problem Solving	0	0	4	2
3	Engineering Science Courses	ES-ME291/ ES-ME292	Engineering Graphics & Design(Gr-A)/ Workshop/Manufacturing Practices(Gr-B)	1	0	4	3
4	Humanities and Social Sciences including Management courses	HM-HU291	Language Laboratory	0	0	2	1
Total Practical				1	0	13	7.5
Total of Second Semester				12	2	13	20.5

Mathematics –II (BS-M201) – CSE, CSD & IT

Mathematics –II (BS-M202) - All stream except CSE, CSD & IT

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	Group-A	Group-B
1 st Year 1 st Semester	Physics-I (BS-PH101); Workshop/Manufacturing Practices (ES-ME192)	Chemistry-I (BS-CH101); Engineering Graphics & Design (ES-ME191)
1 st Year 2 nd Semester	Chemistry-I (BS-CH201); Engineering Graphics & Design (ES-ME291)	Physics-I (BS-PH201); Workshop/Manufacturing Practices (ES-ME292)

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Semester III (Second year)							
Sl. No.	Type of course	Code	Course Title	Hours per week			Credits
				L	T	P	
Theory							
1	Engineering Science Course	ESC 301	Analog and Digital Electronics	3	0	0	3
2	Professional Core Courses	PCC-CS301	Data Structure & Algorithms	3	0	0	3
3	Professional Core Courses	PCC-CS302	Computer Organisation & Architecture*	3	0	0	3
4	Basic Science course	BSC 301	Mathematics-III (Differential Calculus)	2	0	0	2
5	Humanities & Social Sciences including Management courses	HSMC 301	Economics for Engineers (Humanities-II)	3	0	0	3
Practical							
6	Professional Core Courses	PCC-CS393	IT Workshop (Sci Lab/ MATLAB/Python/R)	0	0	4	2
7	Engineering Science Course	ESC 391	Analog and Digital Electronics	0	0	4	2
8	Professional Core Courses	PCC-CS391	Data Structure & Algorithms	0	0	4	2
9	Professional Core Courses	PCC-CS392	Computer Organisation & Architecture*	0	0	4	2
Total credits							22

*Name change from Computer Organisation to **Computer Organisation & Architecture**

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Semester IV (Second year)							
Sl. No.	Type of course	Code	Course Title	Hours per week			Credits
				L	T	P	
Theory							
1	Professional Core Courses	PCC-CSD401	Computer Graphics & Animation	3	1	0	4
2	Professional Core Courses	PCC-CSD 402	Design & Analysis of Algorithms	3	0	0	3
3	Professional Core Courses	PCC-CSD 403	Object Oriented Programming and Design	3	0	0	3
4	Professional Core Courses	PCC-CSD 404	Computer Networks	3	0	0	3
5	Basic Science courses	BSC 401	Biology	2	1	0	3
6	Mandatory Courses	MC401	Environmental Sciences	1	-	-	0
Practical							
7	Engineering Science Course	PCC-CSD 491	Computer Graphics & Animation Lab	0	0	4	2
8	Professional Core Courses	PCC-CSD 492	Design & Analysis of Algorithms Lab	0	0	4	2
8	Professional Core Courses	PCC-CSD 493	Object Oriented Programming and Design Lab	0	0	4	2
						Total credits	22

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Semester V (Third year)							
Sl. No.	Type of course	Code	Course Title	Hours per week			Credits
				L	T	P	
1	Engineering Science Course	ESC501	Software Engineering	3	0	0	3
2	Professional Core Courses	PCC-CSD501	Augmented Reality, Virtual Reality & Mixed Reality	3	0	0	3
3	Professional Core Courses	PCC-CSD502	Database Management Systems	3	0	0	3
4	Professional Core Courses	PCC-CSD503	Operating System	3	0	0	3
5	Humanities & Social Sciences including Management courses	HSMC-501	Introduction to Industrial Management (Humanities III)	3	0	0	3
6	Professional Elective courses	PEC-CSD 501A/B/C	(Elective-I) Digital Image Processing/ Creative Thinking Process and Design / GPU Computing	3	0	0	3
7	Mandatory Courses	MC- CS501A/B	Constitution of India/ Essence of Indian Knowledge Tradition	-	-	-	0
Practical							
8	Professional Core Courses	PCC-CSD591	Augmented Reality, Virtual Reality & Mixed Reality Lab		0	4	2
9	Professional Core Courses	PCC-CSD592	Data Base Management System Lab		0	4	2
10	Professional Core Courses	PCC-CSD593	Operating System Lab		0	4	2
Total credits							24

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Semester VI (Third year)							
Sl. No.	Type of course	Code	Course Title	Hours per week			Credits
				L	T	P	
1	Professional Core Courses	PCC-CSD601	Games & Applications Design	3	0	0	3
2	Professional Core Courses	PCC-CSD602	Artificial Intelligence & Machine Learning	3	0	0	3
3	Professional Elective courses	PEC-CSD601A/B/C	(Elective-II) Human Computer Interaction / Data Visualization / CAD & CAM	3	0	0	3
4	Professional Elective courses	PEC-CSD602A/B/C	(Elective-III) Wearable Devices, Interactions and Applications / Interactive Interface Design / Design Processes & Perspectives	3	0	0	3
5	Open Elective courses	OEC-CSD601A/B/C/D	(Open Elective- I) Robotics / Computer Vision / Wireless Sensor Networks / Internet of Things	3	0	0	3
6	Project	PROJ-CSD 601	Research Methodology	2	0	0	2
Practical							
7	Professional Core Courses	PCC-CSD691	Games & Applications Design Lab	0	0	4	2
8	Professional Core Courses	PCC-CSD692	AI & ML Lab	0	0	4	2
9	Professional Core Courses	PCC-CSD693	Robotics Workshop	0	0	4	2
Total credits							23

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Semester VII (Fourth year]							
Sl. No.	Type of course	Code	Course Title	Hours per week			Credits
				L	T	P	
1	Professional Elective courses	PEC-CSD701A/B/C/D	(Elective-IV) Deep Learning/ Prototyping Interactive System / Quantum Computing / Multi-agent Intelligent Systems	3	0	0	3
2	Professional Elective courses	PEC-CSD702A/B/C/D	(Elective-V) Blockchain Technology / Information Security /Cyber Security, Law and Ethics / Cloud Computing	3	0	0	3
3	Open Elective courses	OEC-CSD701A/B/C	(Open Elective-II) Big Data Analysis / Aesthetics & Arts / Introduction to Philosophical Thoughts	3	0	0	3
4	Humanities & Social Sciences including Management courses	HSMC 701	Project Management Entrepreneurship	2	1	0	3
5	Project	PROJ-CSD781	Project-II	0	0	12	6
			Total credits				18

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Semester VIII (Fourth year)							
[Summer Industry Internship]							
Sl. No.	Type of course	Code	Course Title	Hours per week			Credits
				L	T	P	
1	Professional Elective courses	PEC-CSD801A/B/C	(Elective-VI) Inclusive Design, Universal Design & Accessibility / Multimedia Systems / Web Design & Development	3	0	0	3
2	Open Elective courses	OEC-CSD801A/B/C/D	Open Elective-III Visual Design & Communication / Compiler Design / Mobile Computing / Natural Language Processing	3	0	0	3
3	Open Elective courses	OEC-CSD802A/B/C	(Open Elective-IV) Optical Networking / 3D Printing & Design / Micro-electronics and VLSI Design	3	0	0	3
4	Project	PROJ-CSD881	Project-III	0	0	12	6
Total credits							15