

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in Computer Science & Engineering
 (Applicable from the academic session 2020-2021)

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 Sciencecourse	BS-PH101/BS-CH101	Physics-I (Gr-A)/Chemistry-I(Gr-B)	3	1	0	4
2	Basic Sciencecourse	BS-M101/BS-M102	Mathematics – IA*/Mathematics–IB*	3	1	0	4
3	EngineeringScienceCourses	ES-EE101	Basic ElectricalEngineering	3	1	0	4
<i>TotalTheory</i>				9	3	0	12
Practical							
1	Basic Sciencecourse	BS-PH191/BS-CH191	Physics-ILaboratory (Gr-A)/Chemistry-ILaboratory(Gr-B)	0	0	3	1.5
2	EngineeringScienceCourses	ES-EE191	Basic ElectricalEngineeringLaboratory	0	0	2	1
3	EngineeringScienceCourses	ES-ME191/ES-ME192	Engineering Graphics&Design(Gr-B)/ Workshop/ManufacturingPractices(Gr-A)	1	0	4	3
<i>TotalPractical</i>				1		9	5.5
TotalofFirstSemester				10	3	9	17.5

First Year Second Semester							
Sl No.	Category	Subject Code	Subject Name	Total Number of contact hours			Credits
				L	T	P	
Theory							
1	BasicSciencecourses	BS-PH201/BS-	Physics-I (Gr-B)/Chemistry-I(Gr-	3	1	0	4

		CH201	A)				
2	BasicSciencecourses	BS-M201/BS-M202	Mathematics – IIA [#] /Mathematics – IIB [#]	3	1	0	4
3	Engineering ScienceCourses	ES-CS201	Programming forProblemSolving	3	0	0	3
4	Humanities and SocialSciences includingManagemen courses	HM-HU201	English	2	0	0	2
	<i>TotalTheory</i>			11	2	0	13
Practical							
1	BasicSciencecourses	BS-PH291/BS-CH291	Physics-ILaboratory (Gr-B)/Chemistry-ILaboratory(Gr-A)	0	0	3	1.5
2	Engineering ScienceCourses	ES-CS291	Programming forProblemSolving	0	0	4	2
3	Engineering ScienceCourses	ES-ME291/ES-ME292	Engineering Graphics&Design(Gr-A)/ Workshop/ManufacturingPractices(Gr-B)	1	0	4	3
4	Humanities and SocialSciences includingManagemen courses	HM-HU291	LanguageLaboratory	0	0	2	1
	<i>TotalPractical</i>			1	0	13	7.5
	Total of Second Semester			12	2	13	20.5

Semester III (Second year)							
Sl. No.	Type ofcourse	Code	Course Title	Hours per week			Credits
				L	T	P	
Theory							
1	Engineering ScienceCourse	ESC 301	Analog and DigitalElectronics	3	0	0	3
2	ProfessionalCore Courses	PCC-CS301	Data Structure &Algorithms	3	0	0	3
3	ProfessionalCore Courses	PCC-CS302	Computer Organisation	3	0	0	3
4	Basic Sciencecourse	BSC301	Mathematics-III (Differential Calculus)	2	0	0	2

5	Humanities & Social Sciences including Management courses	HSMC301	Economics for Engineers (Humanities-II)	3	0	0	3
Practical							
6	Professional Core Courses	PCC-CS393	IT Workshop (SciLab/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	0	0	4	2
				Total credits			2
							2
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-CS401	Discrete Mathematics	3	1	0	4
2	Professional Core Courses	PCC-CS402	Computer Architecture	3	0	0	3
3	Professional Core Courses	PCC-CS403	Formal Language & Automata Theory	3	0	0	3

4	Professional Core Courses	PCC-CS404	Design & Analysis of Algorithms	3	0	0	3
5	Basic Science courses	BSC401	Biology	2	1	0	3
6	Mandatory Courses	MC401	Environmental Sciences	1	-	-	1
Practical							
7	Engineering Science Course	PCC-CS492	Computer Architecture	0	0	4	2
8	Professional Core Courses	PCC-CS494	Design & Analysis of Algorithms	0	0	4	2
Total credits							21

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-CS501	Compiler Design	3	0	0	3
3	Professional Core Courses	PCC-CS502	Operating Systems	3	0	0	3
4	Professional Core Courses	PCC-CS503	Object Oriented Programming	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-IT501A/B/C/D	(Elective-I) Theory of Computation/Artificial Intelligence/Advanced Computer Architecture/Computer Graphics	3	0	0	3
7	Mandatory Courses	MC-CS501A/B	Constitution of India/Essence of Indian Knowledge Tradition	-	-	-	0
Practical							
8	Professional Core Courses	ESC-591	Software Engineering		0	4	2
9	Professional Core Courses	PCC-CS592	Operating Systems		0	4	2
10	Professional Core Courses	PCC-CS593	Object Oriented Programming		0	4	2
Total credits							24

Semester VI(Thirdyear)							
Sl. No.	Type of course	Code	Course Title	Hours per week			Credits
				L	T	P	
1	Professional Core Courses	PCC-CS601	Database Management Systems	3	0	0	3
2	Professional Core Courses	PCC-CS602	Computer Networks	3	0	0	3
3	Professional Elective courses	PEC-IT601A/B/C/D	(Elective-II) Advanced Algorithms/ Distributed Database Management System/ Signals & Systems/ Image Processing	3	0	0	3

4	Professional Elective courses	PEC-IT602A/B / C/D	(Elective-III) Parallel and Distributed Algorithms/ Data Warehousing & Data Mining/Human Computer Interaction/Pattern Recognition	3	0	0	3
5	Open Elective courses	OEC-IT601A/B	(Open Elective-) Numerical Methods/Human Resource Development and Organizational Behavior	3	0	0	3
6	Project	PROJ-CS601	Research Methodology	3	0	0	3
Practical							
7	Professional Core Courses	PCC-CS691	Database Management Systems	0	0	4	2
8	Professional Core Courses	PCC-CS692	Computer Networks	0	0	4	2
Total credits							22

Semester VII (Fourth year)							
Sl. No.	Type of course	Code	Course Title	Hours per week			Credits
				L	T	P	
1	Professional Elective courses	PEC-CS701A/B / C/D/E	(Elective-IV) Quantum Computing/ Cloud Computing/ Digital Signal Processing/ Multi-agent Intelligent Systems/ Machine learning	3	0	0	3

2	Professional Elective courses	PEC-CS702A/B / C/D/E	(Elective-V) Neural Networks and Deep Learning/ Soft Computing/ Ad-Hoc and Sensor Networks/ Information Theory and Coding/Cyber Security	3	0	0	3
3	Open Elective courses	OEC-CS701A/B /C	(Open Elective-II) Operations Research/ Multimedia Systems/ Introduction to Philosophical Thoughts	3	0	0	3
4	Humanities & Social Sciences including Management courses	HSM C701	Project Management and Entrepreneurship	2	1	0	3
5	Project	PROJ-CS781	Project-II	0	0	12	6
Total credits							18

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-CS801A / B/C/D/E	(Elective-VI) Signals and Networks/Cryptography & Network Security/Speech and Natural Language Processing/Web and Internet Technology/Internet of Things	3	0	0	3

2	Open Elective courses	OEC-CS801A/B / C/D/E	Open Elective-III Big Data Analysis/Cyber Law and Ethics/ Mobile Computing/Robotics/ Soft Skill & Interpersonal Communication	3	0	0	3
3	Open Elective courses	OEC-CS802A/B /C	(Open Elective-IV) E-Commerce and ERP/Micro-electronics and VLSI Design/Economic Policies in India	3	0	0	3
4	Project	PROJ-CS881	Project-III	0	0	12	6
Total credits							15