Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)
Syllabus for B. Tech in CSE (Artificial Intelligence & Machine Learning)
(Applicable from the academic session 2020-2021)

Curriculum Structure
First Year First Semester

Mandatory Induction Program- 3 week's duration

Sl No.	Category	Subject Code	Subject Name	Total Number of Contact hours			Credits
				L	T	P	
Theory							
1	Basic Science Course	BS-PH101	Physics-I (Gr-A)	3	1	0	4
2	Basic Science Course	BS-M101	Mathematics –IA*	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 Science Course	BS-PH191	Physics-I Laboratory(Gr-A)	0	0	3	1.5
2	Engineering Science Courses	ES-EE191	Basic Electrical Engineering Laboratory	0	0	2	1
3	Engineering Science Courses	ES-ME192	Workshop/Manufacturing Practices(Gr-A)	1	0	4	3
		Total Practical		1	3	9	5.5
		Total credit for First Semester		10	3	9	17.5

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Sl No.	Category	Subject Code	Subject Name	L	T	P	Credits
Second Semester								
				Total Number of Contact hours			**Credits**
Theory								
1	Basic Science Course	BS-CH201	Chemistry-I (Gr-A)	3	1	0	4
2	Basic Science Course	BS-M201	Mathematics –IIA#	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-CH291	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	Engineering Graphics & Design(Gr-A	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

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Sl No.	Category	Subject Code	Subject Name	Total Number of Contact hours			Credits
				L	T	P	
Third Semester							
Theory							
1	Engineering ScienceCourse	**ESC301**	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 Organization	3	0	0	3
4	Basic Sciencecourse	BSC AIML301	Linear Algebra	2	0	0	2
5	Humanities &Social Sciences including Management Courses	HSMC 301	Economics for Engineers (Humanities-II)	3	0	0	3
		Total Theory		14	0	0	14
Practical							
1	Professional Core Courses	PCC-CS391	Data Structure & Algorithms Lab	0	0	4	2
2	EngineeringScience Course	ESC391	Analog and Digital Electronics Lab	0	0	4	2
3	Professional Core Courses	PCC-CS392	Computer Organization	0	0	4	2
4	Professional Core Courses	PCC- CS393	IT Workshop(Python I)	0	0	4	2
		Total Practical		0	0	16	8
		Total Credit for Third Semester		22			

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Semester IV (Second year)								
Sl No	Type of Course		Code	Course Title	Hours per week			Credits
					L	T	P	
1	THEORY	Professional Core Course	PCCCS401	Discrete Mathematics	3	0	0	3
2		Professional Core Course	PCCAIML 401	Artificial Intelligence	3	0	0	3
3		Professional Core Course	PCCAIML 402	Optimization Techniques	3	0	0	3
4		Professional Core Course	PCCCS404	Design and Analysis of Algorithm	3	0	0	3
5		Basic Science Course	BSC401	Biology	2	0	0	2
6		Mandatory Course	MC401	Environmental Science	2	0	0	2
7	PRACTICAL	Professional Core Course	PCCAIML 491	Artificial Intelligence Lab	0	0	4	2
8		Professional Core Course	PCCCS494	Design and Analysis of Algorithm Lab	0	0	4	2
9		Professional Core Course	PCCAIML 492	Python II / R Programming Language Lab	0	0	4	2
TOTAL CREDITS								22

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Sl No		Type of Course	Code	Course Title	Hours per week			Credits
					L	T	P	
1	THEORY	Professional Core Course	PCCAIML 501	Probability and Statistics	3	0	0	3
2		Professional Core Course	PCCCS502	Operating System	3	0	0	3
3		Professional Core Course	PCCCS503	Object Oriented Programming	3	0	0	3
4		Professional Core Course	PCCAIML 502	Introduction to Machine Learning	3	0	0	3
5		Humanities andSocial Sciences including Management	HSMC501	Introduction toIndustrial Management	2	0	0	2
6		Professional Elective	PECAIML501 (A/B/C)	Cloud Computing /Pattern Recognition/ Graph Theory	3	0	0	3
7	PRACTICAL	Professional Core Course	PCCCS592	Operating System Lab	0	0	4	2
8		Professional Core Course	PCCCS593	Object Oriented Programming & Java Lab	0	0	4	2
9		Professional Core Course	PCCAIML 592	Machine Learning Lab	0	0	4	2
TOTAL CREDITS								**23**

Semester V (Third year)

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Sl No		Type of Course	Code	Course Title	Hours per week			Credits
					L	T	P	
1		Professional Core Course	PCCAIML 601	Machine Learning Applications	2	0	0	2
2		Professional Core Course	PCCAIML 602	Deep Learning	3	0	0	3
		Professional Core Course	PCCAIML 603	Soft Computing	3	0	0	3
3		Professional Core Course	PCCCS602	Computer Networks	3	0	0	3
4		Professional Elective	PECAIML601 (A/B/C/D)	Big Data Analytics /Data Mining/ Distributed System/ Game Theory	3	0	0	3
5		Open Elective	OECAIML601 (A/B/C/D)	Database Management System/Human Computer Interaction/Neural Network/Cryptography andNetwork Security	3	0	0	3
6	PRACTICAL	Professional Core Course	PCCAIML 691	Machine Learning Applications lab	0	0	4	2
7		Professional Core Course	PCCAIML 693	Soft Computing Lab	0	0	4	2
8		Professional Core Course	PCCCS692	Computer Networks Lab	0	0	4	2
TOTAL CREDITS								**23**

Semester VI (Third year)

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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 Course	PECAIML701 (A/B/C/D)	Social NetworkAnalysis/ Computer Vision/ Quantum Computing/ Multi Agent Intelligent System	3	0	0	3
2	Professional Elective Course	PECAIML702 (A/B/C/D)	Ecommerce andERP/ Information Theory and Coding/Computer Aided Design/Digital SignalProcessing	3	0	0	3
3	Open ElectiveCourse	OECAIML701 (A/B/C/D)	Internet of Things/Bio Informatics /Robotics Compiler Design	3	0	0	3
4	Humanities and Social Sciences including Management	HSMC701	Project Management and Entrepreneurship	2	0	0	2
	Project	PROJAIML781	Project I	0	0	12	6
TOTAL CREDITS							**17**

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Sl No		Type of Course	Code	Course Title	Hours per week			Credits
					L	T	P	
1		Professional Elective Course	PECAIML801 (A/B/C)	Natural language Processing/Cyber Law and Ethics/Mobile Computing	3	0	0	3
2		Open ElectiveCourse	OECAIML801 (A/B/C)	Economic Policiesin India/ Microelectronicsand VLSI/Software Engineering	3	0	0	3
3		Open ElectiveCourse	OECAIML802 (A/B/C)	Organization Behaviour/ Research Methodology/ Soft skill and Interpersonal Communication	3	0	0	3
4		Project	PROJAIML881	Project II	0	0	12	6
TOTAL CREDITS								**15**

Table header: Semester VIII (Fourth year)