B Tech (Hons) Computer Science and Engineering with specialization in Artificial Intelligence & Machine Learning (187 Credits)

Year	Sub. Code	THIRD SEMESTER Subject Name	L	T	P	C	Sub. Code	FOURTH SEMESTER Subject Name	L	T	P	C
II	EO2001	Economics	3	0	0	3	BB0025	Value, Ethics and Governance	2	0	0	2
	MA2101	Engineering Mathematics – III	3	0	0	3	MA2201	Engineering Mathematics – IV	3	0	0	3
	AI2101	Relational Database Management Systems	3	1	0	4	AI2201	Software Engineering & Project Management	3	1	0	4
	AI2102	Computer Organization and Architecture	3	1	0	4	AI2202	Operating Systems	3	1	0	4
	AI2103	Data Structures and Algorithms	3	1	0	4	AI2203	Principles of Artificial Intelligence	3	1	0	4
	AI2104	Object Oriented Programming	3	1	0	4	AI2204	Automata Theory	3	0	0	3
	AI2130	Relational Database Management Systems Lab	0	0	2	1	*** ***	Open Elective – I	3	0	0	3
	AI2131	Data Structures and Algorithms Lab	0	0	2	1	AI2230	Operating System Lab	0	0	2	1
	AI2132	Object Oriented Programming Lab using Python	0	0	2	1	AI2231	Web Technology Lab	0	0	2	1
	AI2170	Project Based Learning – I	0	0	2	2	AI2232	Principles of Artificial Intelligence Lab	0	0	2	1
							AI2270	Project Based Learning – II	0	0	2	2
		Total	**18**	**4**	**8**	**27**		**Total**	**20**	**3**	**8**	**28**
III		FIFTH SEMESTER						SIXTH SEMESTER				
	AI3101	Soft Computing Methods	3	1	0	4	BB0026	Organization and Management	3	0	0	3
	AI3102	Design and Analysis of Algorithms	3	1	0	4	AI3201	Machine Learning	3	1	0	4
	AI3103	Computer Networks	3	1	0	4	AI3202	Computer Vision and Pattern Recognition	3	1	0	4
	AI3104	Foundation of Data Science & Machine learning	3	1	0	4	AI3204	Natural Language Processing	3	1	0	4
	AI3105	Game Theory/Compiler Construction	3	1	0	4	AI32XX	Program Elective – I	3	0	0	3
	******	Open Elective – II	3	0	0	3	*** ****	Open Elective – III	3	0	0	3
	AI3130	Design and Analysis of Algorithm Lab	0	0	2	1	AI3230	Machine Learning Lab	0	0	2	1
	AI3131	Computer Networks Lab	0	0	2	1	AI3231	Computer Vision and Pattern Recognition Lab	0	0	2	1
	AI3132	Foundation of Data Science Lab	0	0	2	1	AI3270	Minor Project (Thematic projects)	0	0	6	3
	AI3170	Project Based Learning - III	0	0	2	2						
		Total	**18**	**5**	**8**	**28**		**Total**	**18**	**3**	**10**	**26**

		SEVENTH SEMESTER						EIGHTH SEMESTER					
IV	AI4101	Deep Learning	3	1	0	4	AI4270	Major Project	-	-	-	12
	AI4102	Text Mining	3	1	0	4						
	AI4103	Recommender Systems	3	1	0	4						
	AI41XX	Program Elective - II	3	0	0	3						
	AI41XX	Program Elective – III	3	0	0	3						
	AI41XX	Program Elective – IV	3	0	0	3						
	AI4170	Industrial Training	0	0	2	1						
		Total	**18**	**3**	**2**	**22**		**Total**	**0**	**0**	**0**	**12**

3rd Year Programme Electives (PE-I)	**Programme Electives (PE-II, PE-III, PE-IV)**	**Open Electives (OE)**
AI3240: Machine Learning Applications in IOT AI3241: Reinforcement Learning AI3242: Data Mining AI3243: Compiler Construction	AI4140: Information Retrieval AI4141: Augmented & Virtual Reality AI4142: Speech Synthesis & Recognition AI4143: Artificial Intelligence in Healthcare AI4144: Social Network Analysis AI4145: AI For Cyber Security AI4146: Big Data Analytics AI4147: Data Privacy & Security AI4148: Image & Video Analytics	AI0001: Introduction to Artificial Intelligence AI0051: C For Everyone AI0052: Cybersecurity Fundamentals

ANNEXURE-04

B Tech Computer Science and Engineering with specialization in Artificial Intelligence & Machine Learning (169 Credits)

Year	THIRD SEMESTER						FOURTH SEMESTER					
	Sub. Code	Subject Name	L	T	P	C	Sub. Code	Subject Name	L	T	P	C
II	EO2001	Economics	3	0	0	3	BB0025	Value, Ethics and Governance	2	0	0	2
	MA2101	Engineering Mathematics – III	3	0	0	3	MA2201	Engineering Mathematics – IV	3	0	0	3
	AI2101	Relational Database Management Systems	3	1	0	4	AI2201	Operating Systems	3	1	0	4
	AI2102	Computer Organization and Architecture	3	1	0	4	AI2202	Principles of Artificial Intelligence	3	0	1	4
	AI2103	Data Structures and Algorithms	3	1	0	4	AI2203	Automata Theory	3	0	0	3
	AI2104	Object Oriented Programming	3	1	0	4	*** ***	Open Elective – I	3	0	0	3
	AI2130	Relational Database Management Systems Lab	0	0	2	1	AI2230	Operating System Lab	0	0	2	1
	AI2131	Data Structures and Algorithms Lab	0	0	2	1	AI2231	Web Technology Lab	0	0	2	1
	AI2104	Object Oriented Programming Lab	0	0	2	1	AI2270	Project Based Learning – I	0	0	2	1
		Total	**18**	**4**	**6**	**25**		**Total**	**17**	**1**	**7**	**22**
III	FIFTH SEMESTER						SIXTH SEMESTER					
	AI3101	Soft Computing Methods	3	0	0	3	BB0026	Organization and Management	3	0	0	3
	AI3102	Design and Analysis of Algorithms	3	1	0	4	AI3201	Deep Learning	3	1	0	4
	AI3103	Computer Networks	3	1	0	4	AI3202	Software Engineering & Project Management	3	0	0	3
	AI3104	Data Science & Machine Learning	3	0	1	4	AI3203	Natural Language Processing	3	1	0	4
	AI31XX	Program Elective – I	3	0	0	3	AI32XX	Program Elective – II	3	0	0	3
	******	Open Elective – II	3	0	0	3	*** ****	Open Elective – III	3	0	0	3
	AI3130	Design and Analysis of Algorithm Lab	0	0	2	1	AI3230	Deep Learning Lab	0	0	2	1
	AI3131	Computer Networks Lab	0	0	2	1	AI3270	Minor Project (Thematic projects)	0	0	6	3
	AI3170	Project Based Learning – II	0	0	2	1						
		Total	**18**	**2**	**7**	**24**		**Total**	**18**	**2**	**8**	**24**

		SEVENTH SEMESTER					EIGHTH SEMESTER					
IV	AI4101	Reinforcement Learning	3	0	1	4	AI4270	Major Project	-	-	-	12
	AI4102	Recommender Systems	3	0	1	4						
	AI41XX	Program Elective – II	3	0	0	3						
	AI41XX	Program Elective – III	3	0	0	3						
	AI41XX	Program Elective – IV	3	0	0	3						
	AI4170	Industrial Training	0	0	2	1						
		Total	**15**	**0**	**4**	**18**		**Total**	**0**	**0**	**0**	**12**

3rd Year Programme Electives (PE-I)	**Programme Electives (PE-III, PE-IV)**	**Open Electives (OE)**
AI3144: Game Theory AI3145: Data Mining AI3146: NOSQL Databases **3rd Year Programme Electives (PE-II)** AI3240: Machine Learning Applications in IOT AI3241: Sentimental Analysis and Opining mining AI3242: Healthcare Informatics AI3243: Compiler Construction	AI4140: Information Retrieval AI4141: Augmented & Virtual Reality AI4142: Speech Synthesis & Recognition AI4143: Artificial Intelligence in Healthcare AI4144: Social Network Analysis AI4145: AI For Cyber Security AI4146: Big Data Analytics AI4147: Data Privacy & Security AI4148: Image & Video Analytics AI4149: Graph Neural Network AI4150: Cognitive Computing AI4151: Behaviour Data Analysis	AI0001: Introduction to Artificial Intelligence AI0051: C For Everyone AI0052: Cybersecurity Fundamentals

MANIPAL UNIVERSITY JAIPUR

Summary

SEMESTER	With Honours (Credits)	Without Honours (Credits)
FIRST SEMESTER	22	22
SECOND SEMESTER	22	22
THIRD SEMESTER	27	25
FOURTH SEMESTER	28	22
FIFTH SEMESTER	28	24
SIXTH SEMESTER	26	24
SEVENTH SEMESTER	22	18
EIGHTH SEMESTER	12	12
TOTAL Credits	**187**	**169**

	#Number of Courses			
	With Honours (Credits)		Without Honours (Credits)	
SEMESTER	Theory	Lab	Theory	Lab
FIRST SEMESTER	6	2	6	3
SECOND SEMESTER	6	3	6	3
THIRD SEMESTER	6	4	6	2
FOURTH SEMESTER	7	4	6	2
FIFTH SEMESTER	6	4	6	3
SIXTH SEMESTER	6	3	6	2
SEVENTH SEMESTER	6	1	5	1
EIGHTH SEMESTER	0	1 (Major Project)	0	1 (Major Project)