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Rajarambapu Institute of Technology, Rajaramnagar

(An Empowered Autonomous Institute, affiliated to Shivaji University, Kolhapur)

Curriculum Structure and Evaluation Scheme

To be implemented for 2023-27 NEP Batch

Department of Computer Science & Engineering (Artificial Intelligence and Machine Learning)

Rev: CSE(AI&ML) Course Structure/ RIT/04/2023-27

B. Tech. in Computer Science & Engineering (Artificial Intelligence and Machine Learning) with Multidisciplinary Minor

Rajarambapu Institute of Technology CSE (AI&ML) Engg. Department 415 414 Rajaramnagar

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To be implemented for 2023-27 NEP Batch

Department of Computer Science & Engineering (Artificial Intelligence and Machine Learning)

Rev: CSE(AI&ML) Course Structure/ RIT/04/2023-27

Class: S. Y. B. Tech **Semester:** III

Course Code	Course	Teaching Scheme				Evaluation Scheme				
		L	T	P	Credits	Scheme	Theory (Marks %) Max	Theory (Marks %) Min. for passing	Practical (Marks %) Max.	Practical (Marks %) Min. for passing
AI201	Discrete Mathematics	3	-	-	3	ISE	20	40	----	----
						UT1	15		----	----
						UT2	15		----	---
						ESE	50	40	----	----
AI203	Data structure & Algorithms	3	-	-	3	ISE	20	40	----	----
						UT1	15		----	----
						UT2	15		----	----
						ESE	50	40	----	----
AI205	Computer Organization and Architecture	2	-	-	2	ISE	20	40	----	----
						UT1	15		----	----
						UT2	15		----	----
						ESE	50	40	----	----
AI207	Principles of Artificial Intelligence	2	-	-	2	ISE	20	40	----	----
						UT1	15		----	----
						UT2	15		----	----
						ESE	50	40	----	----
	Multidisciplinary Minor-I	3	-	-	3	ISE	20	40	----	----
						UT1	15		----	----
						UT2	15		----	----
						ESE	50	40	----	----
SH2174	Environmental Science	1	-	2	2	ISE	50	40	---	---
						ESE	50	40	---	---
AI209	Object Oriented Programming using JAVA	2	-	2	3	ISE	----	----	50	50
						ESE	----	----	50	50
AI211	Data structure & Algorithms Lab	-	-	2	1	ISE	----	----	50	50
						ESE	----	----	50	50
AI213	Desktop Publishing for Web Development	-	-	2	1	ISE	----	----	100	50
AI215	Technical Aptitude-I	-	-	2	1	ESE	-	----	100	50
	Professional Skills Development and Foreign Languages-I	-	-	2	1	ISE	-	----	100	50
	TOTAL	**16**	**-**	**12**	**22**					
	TOTAL CONTACT HOURS	**28**								

ISE = In Semester Evaluation, UT-I = Unit Test-I, UT-II = Unit Test-II, ESE = End Semester Exam

Total Contact Hours/week : 28

Total Credits : 22

Technical Aptitude Courses: Discrete Mathematics, Computer Organization and Architecture, Data structure & Algorithms, Principles of Artificial Intelligence and Object-Oriented Programming.

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Sr. No.	Subject Name		Course Code
1.	Professional Skills Development and Foreign Languages	Professional Leadership Skills	SH2634
2.		Interpersonal Skills	SH2614
3.		Innovation Tools and Methods for Entrepreneurs	SH2694
4.		Personal Effectiveness and Body Language	SH2594
5.		German Language – Level III	SH2734
6.		Japanese Language – Level III	SH2714

Note:

1. A student has to complete any two courses out of six choices offered under Choice Based Professional Skills Development Programme. A course in each semester will be allocated without any repetition.

2. Foreign Language course selected in F. Y. B. Tech Sem-I will remain the same with next levels in Sem-III & IV. (No new entries in S. Y. B. Tech Sem-III)

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Department of Computer Science & Engineering (Artificial Intelligence and Machine Learning)

Rev: CSE(AI&ML) Course Structure/ RIT/04/2023-27

Class: S. Y. B. Tech **Semester:** IV

Course Code	Course	Teaching Scheme				Evaluation Scheme					
		L	T	P	Credits	Scheme	Theory (Marks %)			Practical (Marks %)	
							Max	Min. for passing		Max.	Min. for passing
AI202	Statistics and Fuzzy systems	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40		---	---
AI204	Machine Learning	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40		---	---
AI206	Computer Networks	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			--	---
						UT2	15			---	---
						ESE	50	40		---	---
AI208	Database Management Systems	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			--	---
						UT2	15			---	---
						ESE	50	40		---	---
	Multidisciplinary Minor-II	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40		---	---
	Modern Indian Language	2	-	-	2	ISE	100	50	---	---	---
AI210	Machine Learning Lab	-	-	4	2	ISE	---	-----	---	50	50
						ESE	---	-----	---	50	50
AI212	Database Management Systems Lab	-	-	2	1	ISE	---	-----	---	50	50
						ESE	---	-----	---	50	50
AI224	Hardware Networking with python programming	-	-	2	1	ISE	-	-	-	100	50
AI216	Technical Aptitude-II	-	-	2	1	ESE	-	-	-	100	50
	Professional Skills Development and Foreign Languages-II	-	-	2	1	ISE	-	-	-	100	50
	TOTAL	**17**	**-**	**12**	**23**						
	TOTAL CONTACT HOURS	**29**									

ISE = In Semester Evaluation, UT-I = Unit Test-I, UT-II = Unit Test-II, ESE = End Semester Exam

Total Contact Hours/week : 29

Total Credits : 23

Technical Aptitude Courses : Statistics and Fuzzy systems, Computer Networks, Machine learning and Database Management Systems.

Note: Students are required to undergo industrial / field training of minimum two weeks in the vacation of Semester-IV and its evaluation will be carried out in the Semester-V

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Sr. No.	Subject Name		Course Code
1.	Professional Skills Development and Foreign Languages	Professional Leadership Skills	SH2634
2.		Interpersonal Skills	SH2614
3.		Innovation Tools and Methods for Entrepreneurs	SH2694
4.		Personal Effectiveness and Body Language	SH2594
5.		German Language – Level IV	SH2644
6.		Japanese Language – Level IV	SH2624

Sr. No.	Subject Name		Course Code
1	Modern Indian Language	मराठी भाषिक कौशल्यविकास	SH202
2		हिंदी कथा साहित्य एवं प्रयोजमूलक हिंदी	SH204

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Department of Computer Science & Engineering (Artificial Intelligence and Machine Learning)

Rev: CSE(AI&ML) Course Structure/ RIT/04/2023-27

Class: T. Y. B. Tech **Semester:** V

Course Code	Course	Teaching Scheme				Evaluation Scheme					
		L	T	P	Credits	Scheme	Theory (Marks %)			Practical (Marks %)	
							Max	Min. for passing		Max	Min. for passing
AI301	Deep Learning	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40		---	---
AI303	Software Engineering	2	-	-	2	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40		---	---
	Program Elective -I	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40		---	---
	Open Elective-I	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40		---	---
	Multidisciplinary Minor-III	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40		---	---
	Multidisciplinary Minor-IV	2	-	-	2	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40		---	---
AI321	Web Technology Lab	-	-	4	2	ISE	---	---	---	50	50
						ESE	---	---	---	50	50
AI313	Deep Learning Lab	-	-	2	1	ISE	---	---	---	100	50
AI315	Big Data Analytics Lab	1	-	2	2	ISE	---	---	---	50	50
						ESE	---	---	---	50	50
AI323	AI for Edge Devices Lab	-	-	2	1	ISE	---	---	---	100	50
AI3191	Summer Internship/ Professional Certification	-	-	-	1	ISE	---	---	---	100	50
AI325	MOOC**	-	-	-	1	ISE	---	---	---	100	50
SH3035	Scholastic Aptitude - I	2*	-	-	Audit	---	---	---	---	---	---
	TOTAL	**17+2***	**-**	**10**	**24**						
	TOTAL CONTACT HOURS	**27+2*=29***									

ISE = In Semester Evaluation, UT-I = Unit Test-I, UT-II = Unit Test-II, ESE = End Semester Exam

Total Contact Hours/week : 29*

Total Credits : 24

- **Note*: Student should complete 5 days (30 Hours) of Scholastic Aptitude training program organized by Institute.**
- **Note**: MOOC course certification marks will be carried out for the credits.**

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Program Elective-I

Sr. No.	Course Code	Domain	Course
1	AI305	Internet of Things	Sensor Actuated Technology
2	AI307	Computer Vision	Computer Graphics and Vision
3	AI309	Networking	Ad-hoc Networks
4	AI311	Natural Language Processing	Text and Speech Analysis

Open Elective – I

Sr. No	Course Code	Course Name	Offered By Department
1	OE3044	Renewable Energy Sources	Robotics & Automation
2	OE3064	Environmental Impact Assessment	Civil Engineering
3	OE3104	Network Administration	Computer Science and Engineering
4	OE3381	Disaster Management	Civil Engineering
5	OE341	Energy Audit and Management	Electrical Engineering
6	OE343	Data Science	Computer Science & Engineering (Artificial Intelligence and Machine Learning)
7	OE365	Distributed Systems	Computer Science and Information Technology
8	OE347	New Product Design & Development	Mechanical Engineering
9	OE349	Non-Conventional Energy Sources	Mechanical Engineering
10	OE351	Hydrogen & Fuel Cell Technology	Mechanical Engineering
11	OE353	Factory Automation	Mechatronics Engineering Dept.

12	OE355	Cyber Physical System	Mechatronics Engineering Dept.
13	OE357	Internet of things	Electronics & Telecommunication Engineering
14	OE359	Drone technology	Electronics & Telecommunication Engineering
15	OE361	Object Oriented Modeling and Design	Computer Science and Information Technology
16	OE363	Robotics Engineering & Applications	Robotics & Automation

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Department of Computer Science & Engineering (Artificial Intelligence and Machine Learning)

Rev: CSE(AI&ML) Course Structure/ RIT/04/2023-27

Class: T. Y. B. Tech **Semester:** VI

Course Code	Course	Teaching Scheme				Evaluation Scheme					
		L	T	P	Credits	Scheme	Theory (Marks %)			Practical (Marks %)	
							Max	Min. for passing		Max.	Min. for passing
AI302	Optimization Techniques for AI	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40		---	---
AI304	Automata Theory	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40		---	---
AI306	Research Methodology	2	-	-	2	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40		---	---
	Program Elective-II	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40		---	---
	Open Elective - II	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40		---	---
	Multidisciplinary Minor-V	3	-	-	3	ISE	20	40	40	---	---
						UT1	15			---	---
						UT2	15			---	---
						ESE	50	40		---	---
AI324	Higher-Level Coding	2	-	-	2	ISE	---	---	---	100	50
AI326	LLM	1	-	2	2	ISE	---	---	---	50	50
						ESE	---	---	---	50	50
AI3181	Mobile Application Development Lab	-	-	2	1	ISE	---	---	---	50	50
						ESE	---	---	---	50	50
AI322	Capstone project Phase – I	-	-	2	1	ISE	---	---	---	100	50
SH3065	Scholastic Aptitude - II	2*	-	-	Audit	ISE	100	50 (P/NP)	---	---	---
	TOTAL	**20+2***	**-**	**6**	**23**						
	TOTAL CONTACT HOURS	**26+2*=28***									

ISE = In Semester Evaluation, UT-I = Unit Test-I, UT-II = Unit Test-II, ESE = End Semester Exam

Total Contact Hours/week : 28*

Total Credits : 23

Note*: Student should complete 5 days (30 Hours) of Scholastic Aptitude training program organized by Institute.

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Program Elective-II

Sr. No.	Course Code	Domain	Course
1	AI308	Internet of Things	Smart Cities
2	AI310	Computer Vision	Augmented & Virtual Reality
3	AI312	Networking	Wireless & Mobile Nets
4	AI314	Natural Language Processing	Sentiment Analysis

Open Elective – II

Sr. No.	Course Code	Course Name	Offered By Department
1	OE3024	Reliability Engineering	Robotics & Automation
2	OE3084	Materials Management	Civil Engineering
3	OE3182	Industrial Drives	Electrical Engineering
4	OE3284	Supply Chain Management	Mechanical Engineering
5	OE3324	Entrepreneurship Development	Mechanical Engineering
6	OE3401	Cyber Security	Computer Science and Information Technology
7	OE342	Data Mining	Computer Science & Engineering (Artificial Intelligence and Machine Learning)
8	OE344	Supply Chain Analytics	Mechatronics Engineering Dept.
9	OE346	Mobile Robotics	Mechatronics Engineering Dept.
10	OE348	Information Technology Foundation Program	Computer Science and Engineering
11	OE350	Operations Research	Civil Engineering

12	OE352	Image Processing	Electronics & Telecommunication Engineering
13	OE354	Fuzzy logic and Neural Network	Electronics & Telecommunication Engineering
14	OE356	Project Management	Mechanical Engineering
15	OE358	Plumbing (Water and Sanitation)	Civil Engineering
16	OE362	Flexible Manufacturing System	Robotics & Automation
17	OE364	AI for Manufacturing	Computer Science and Information Technology
18	OE366	AI for Cybersecurity	Computer Science and Engineering
19	OE368	AI for Agriculture	Computer Science & Engineering (Artificial Intelligence and Machine Learning)
20	OE370	AI for Sustainability	Electronics & Telecommunication Engineering
21	OE3242	Marketing for Engineers	MBA

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Department of Computer Science & Engineering (Artificial Intelligence and Machine Learning)

Rev: CSE(AI&ML) Course Structure/ RIT/04/2023-27

Class: Final Year B. Tech **Semester:** VII

Course Code	Course	Teaching Scheme				Evaluation Scheme					
		L	T	P	Credits	Scheme	Theory (Marks %)			Practical (Marks %)	
							Max	Min. for passing		Max.	Min. for passing
AI401	Social and Ethical issues in AI	2	-	-	2	ISE	20	40	40	---	---
						MSE	30			---	---
						ESE	50	40		---	---
AI403	Cryptography and Network Security	3	-	-	3	ISE	20	40	40	---	---
						MSE	30			---	---
						ESE	50	40		---	---
AI405	Cloud Computing	3	-	-	3	ISE	20	40	40	---	---
						MSE	30			---	---
						ESE	50	40		---	---
	Program Elective-III	3	-	-	3	ISE	20	40	40	---	---
						MSE	30			---	---
						ESE	50	40		---	---
	Program Elective-IV	3	-	-	3	ISE	20	40	40	---	---
						MSE	30			---	---
						ESE	50	40		---	---
	Program Elective Lab -I	-	-	2	1	ISE	--	---	---	50	50
						ESE	--	---	---	50	50
AI423	Cloud Computing Lab	-	-	2	1	ISE	--	---	---	50	50
						ESE	--	---	---	50	50
AI425	Block chain Technologies Lab	-	-	2	1	ISE	--	---	---	50	50
						ESE	--	---	---	50	50
AI435	Capstone Project Phase - II	-	-	6	3	ISE	--	---	---	50	50
						ESE	--	---	---	50	50
	TOTAL	**14**	**-**	**12**	**20**						
	TOTAL CONTACT HOURS	**26**									

ISE = In Semester Evaluation, MSE = Mid Semester Exam, ESE = End Semester Exam

Total Contact Hours/week : 26

Total Credits : 20

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Program Elective-III

Sr. No.	Course Code	Domain	Course
1	AI407	Internet of Things	Intelligent Transportation System
2	AI409	Computer Vision	Pattern Recognition
3	AI411	Networking	Next-Generation IP Networks
4	AI413	Natural Language Processing	Chatbot

Program Elective-IV

Sr. No.	Course Code	Domain	Course
1	AI415	Internet of Things	Robotics
2	AI417	Computer Vision	Game designing
3	AI419	Networking	Wireless Sensor Network
4	AI421	Natural Language Processing	Natural language processing

Program Elective Lab- I

Sr. No.	Course Code	Domain	Course
1	AI427	Internet of Things	Robotics Lab
2	AI429	Computer Vision	Game designing Lab
3	AI431	Networking	Wireless Sensor Network Lab
3	AI433	Natural Language Processing	Natural language processing Lab

Choice based Internship Model
Model I: Industry Internship (II)

Class: Final Year B. Tech **Semester:** VIII

Course Code	Course	Teaching Scheme				Evaluation Scheme					
		L	T	P	Credits	Scheme	Theory (Marks %) Max.	Min. for passing		Practical (Marks %) Max.	Min. for passing
OE4382	Finance for Engineers (Online Course)	2	-	-	2	ISE	25	40	40	---	---
						ESE	75	40		---	---
OE4362	Engineering Management & Economics (Online Course)	2	-	-	2	ISE	25	40	40	---	---
						ESE	75	40		---	---
IP4024	Industry Internship & Project	-	-	-	12	ISE	---	----		50	50
						ESE	---	---		50	50
	TOTAL	-	-	-	**16**						

ISE = In Semester Evaluation, ESE = End Semester Exam
Total Contact Hours/week : --
Total Credits : 16

Note:
1] Weekly Contact hours are not mentioned as student is expected to be in industry regularly for 20 weeks. However, student needs to report to Institute mentors as and when required.

2] For online course, lecture videos of each unit will be made available through college platform to the students. For each unit there will be separate assignment. Students need to submit all assignments within specified time.

Weightage: 25% weightage for unit wise assignments + 75% weightage for final exam. Final exam will be held at college campus.

Model II: Research Internship (RI)

Class: Final Year B. Tech **Semester:** VIII

Course Code	Course	Teaching Scheme				Evaluation Scheme					
		L	T	P	Credits	Scheme	Theory (Marks %) Max.	Min. for passing		Practical (Marks %) Max.	Min. for passing
OE4382	Finance for Engineers (Online Course)	2	-	-	2	ISE	25	40	40	---	---
						ESE	75	40		---	---
OE4362	Engineering Management & Economics (Online Course)	2	-	-	2	ISE	25	40	40	---	---
						ESE	75	40		---	---
RE4044	Research Internship	-	-	-	12	ISE	---	----		50	50
						ESE	---	---		50	50
	TOTAL	-	-	-	**16**						

ISE = In Semester Evaluation, ESE = End Semester Exam

Total Contact Hours/week : --
Total Credits : 16

Note:
1] Weekly Contact hours are not mentioned as student is expected to be in outside research organization regularly for 20 weeks. However, student needs to report to Institute mentors as and when required.

2] For online course, lecture videos of each unit will be made available through college platform to the students. For each unit there will be separate assignment. Students need to submit all assignments within specified time.

3] Students who opt for a research internship need to undergo a minimum of one month of research internship in outside research organizations or laboratories.

Weightage: 25% weightage for unit wise assignments + 75% weightage for final exam. Final exam will be held at college campus.

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Model III: Entrepreneurial Internship (EI)

Class: Final Year B. Tech **Semester:** VIII

Course Code	Course	Teaching Scheme			Credits	Evaluation Scheme					
		L	T	P		Schem	Theory (Marks %)			Practical (Marks %)	
							Max	Min. for passing		Max	Min. for passing
ED4104	Project Management (Online Course)	2	-	-	2	ISE	25	40	40	-	-
						ESE	75	40		-	-
ED4044	Commercial Aspects of the Project (Online Course)	2	-	-	2	ISE	25	40	40	-	-
						ESE	75	40		-	-
ED4064	Entrepreneurship Development Program (EDP)	-	-	-	1	ISE				100	50
ED4084	Entrepreneurial Internship	-	-	-	11	ISE				50	50
						ESE				50	
		-	-	-	16						

ISE = In Semester Evaluation, ESE = End Semester Exam
Total Contact Hours/week : --
Total Credits : 16

Note:
1] Weekly Contact hours are not mentioned as student is expected to be in outside research organization regularly for 20 weeks. However, student needs to report to Institute mentors as and when required.

2] For online course, lecture videos of each unit will be made available through college platform to the students. For each unit there will be separate assignment. Students need to submit all assignments within specified time.

Weightage: 25% weightage for unit wise assignments + 75% weightage for final exam. Final exam will be held at college campus.

3] A one week Entrepreneurship Development Program (EDP) will be conducted after completion of 7th semester and before start of 8th semester.

4] Students who opt for an entrepreneurial internship need to undergo a one-month internship at an outside reputed organization or firm

Multidisciplinary Minor

- Students should choose any one specialization given by the department and complete all the five courses under the specialization to earn 170 Credits.
- Following are the baskets of multidisciplinary minor courses

Multidisciplinary Minor Baskets					
MDM Basket Name	**Sr. No.**	**Course Code**	**Course Name**	**Semester**	**Offered by Department**
Construction Engineering	1	CEMD201	Building Construction and Planning	III	Civil Engineering
	2	CEMD202	Building Estimation and Valuation	IV	
	3	CEMD301	Infrastructure Engineering	V	
	4	CEMD303	Smart Cities and Sustainable Development	V	
	5	CEMD302	Environmental Engineering	VI	
Software Programming	1	CSMD201	Introduction to Data Structures	III	Computer Science & Engineering
	2	CSMD202	Problem solving using JAVA	IV	
	3	CSMD301	Fundamentals of Database Systems	V	
	4	CSMD303	Object-oriented Programming in Python	V	
	5	CSMD302	Artificial Intelligence	VI	
Electrical Power System	1	EEMD201	Electrical Power Generation	III	Electrical Engineering
	2	EEMD202	Power System	IV	
	3	EEMD301	Electrical Machines	V	
	4	EEMD303	Electrical Technology	V	
	5	EEMD302	Smart Grid	VI	
Electronics System Design	1	ECMD201	Electronics Devices and Applications	III	Electronics &Telecommunication Engineering
	2	ECMD202	Electronics Communication Systems	IV	
	3	ECMD301	Advanced Communication Systems	V	
	4	ECMD303	Electronic Product Design	V	

	5	ECMD302	Industrial Electronics	VI	
Software Development	1	CIMD201	Data Structures	III	Computer Science & Information Technology
	2	CIMD202	Computer Algorithms	IV	
	3	CIMD301	Introduction to DBMS	V	
	4	CIMD303	OOP using Java	V	
	5	CIMD302	Software Engineering	VI	
Product Design and Development	1	MEMD203	Design Thinking	III	Mechanical Engineering
	2	MEMD204	Behavioral Engineering and Design	IV	
	3	MEMD305	Product Design Tools and Techniques	V	
	4	MEMD307	Design and Prototyping	V	
	5	MEMD304	Marketing and Business Fundamentals for New Products	VI	
Mechatronics Engineering	1	MCMD201	Fundamentals of Mechatronics	III	Mechatronics Engineering
	2	MCMD202	Industrial Fluid Power	IV	
	3	MCMD301	Sensor and Instrumentation	V	
	4	MCMD303	Industrial Automation	V	
	5	MCMD302	Industrial Robotics	VI	
Artificial Intelligence	1	AIMD201	Object Oriented Programming	III	Computer Science & Engineering (AI&ML)
	2	AIMD202	Data Structures and Algorithms	IV	
	3	AIMD301	Machine Learning	V	
	4	AIMD303	Business Intelligence	V	
	5	AIMD302	Principles of AI	VI	
Robtocis & Automaiton	1	RAMD201	Fundamentals of Robotics & Automation	III	Robtocis & Automaiton
	2	RAMD202	Sensors and Actuators	IV	
	3	RAMD301	Kinematic & Dynamics for Robots	V	
	4	RAMD303	Robot Programming	V	
	5	RAMD302	Industrial Automation & Control	VI	

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B. Tech. in Computer Science & Engineering (Artificial Intelligence and Machine Learning) with Double Minor (Multidisciplinary and Specialization Minor)

Double Minor

1. It is required to complete SIX courses (each of 3 credits) from ONLINE platform to earn total of 18 credits under Double Minor (DM) certification.
2. Student must complete and earn the credits for all the six courses starting from Second Year First semester (3rd semester) to Final Year Second Semester (8th semester).
3. Basket of the DM courses and respective semester is mentioned in the following table.

Sr. No.	Semester	Course	Code
1	III	DM – I	AIDM3XXX
2	IV	DM – II	AIDM4XXX
3	V	DM – III	AIDM5XXX
4	VI	DM – IV	AIDM6XXX
5	VII	DM – V	AIDM7XXX
6	VIII	DM – VI	AIDM8XXX

4. To select course platform, first preference must be given to NPTEL.
5. Other than NPTEL, courses from COURSERA and UDEMY platforms are allowed to register only in following cases,
    a. If timeline of NPTEL course is not in line with timeline of academic calendar.
    b. The suitable succeeding course in line with previous course is not available on NPTEL.
    c. If any other unavoidable circumstances occur.
6. Platform and course selection must be as per recommendation of BOS of the department.
7. Student will get the credits of respective DM course in following conditions,
    a. In case of course selected from NPTEL platform, student have to complete the timely assignments, PASS the exam and secure the certificate.
    b. In case of course selected from COURSERA or UDEMY, student have to secure the certificate and appear for VIVA (oral) exam.
8. While selecting online course, following points must be taken care of,
    a. Selected course must be of basic or fundamental level.
    b. Contents of the course should not be covered in any of the course offered in regular curriculum or not listed in any elective (open or program elective) or in Multidisciplinary Minor (MDM)
    c. Duration of each online course must be of EIGHT weeks for NPTEL and 30+ hours for UDEMY, COURSERA courses.

B. Tech. in Computer Science & Engineering (Artificial Intelligence and Machine Learning) with Honor and Multidisciplinary Minor

Honors with Multidisciplinary Minors

1. It is required to complete SIX courses (each of 3 credits) from ONLINE platform to earn total of 18 credits under Honor certification.
2. Student must complete and earn the credits for all the six courses starting from Second Year First semester (3rd semester) to Final Year Second Semester (8th semester).
3. Basket of the Honor courses and respective semester is mentioned in the following table.

Sr. No.	Semester	Course	Code
1	III	Honor - I	AIH3XXX
2	IV	Honor - II	AIH4XXX
3	V	Honor - III	AIH5XXX
4	VI	Honor - IV	AIH6XXX
5	VII	Honor - V	AIH7XXX
6	VIII	Honor - VI	AIH8XXX

4. To select course platform, first preference must be given to NPTEL.
5. Other than NPTEL, courses from COURSERA and UDEMY platforms are allowed to register only in following cases,
    a. If timeline of NPTEL course is not in line with timeline of academic calendar.
    b. The suitable succeeding course in line with previous course is not available on NPTEL.
    c. If any other unavoidable circumstances occurs.
6. Platform and course selection must be as per recommendation of BOS.
7. Student will get the credits of respective Honor course in following conditions,
    a. In case of course selected from NPTEL platform, student have to complete the timely assignments, PASS the exam and secure the certificate.
    b. In case of course selected from COURSERA or UDEMY, student have to secure the certificate and appear for VIVA (oral) exam.
8. While selecting online course, following points must be taken care of,
    a. Selected course must be of advanced level and not basic or fundamental level.
    b. Contents of the course should not be covered in any of the course offered in regular curriculum or not listed in any elective (open or program elective)
    c. Duration of each online course must be of EIGHT weeks for NPTEL and 30+ hours for COURSERA, UDEMY courses.

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B. Tech. in Computer Science & Engineering (Artificial Intelligence and Machine Learning) -Honors with Research and Multidisciplinary Minor

K.E. Society's

Rajarambapu Institute of Technology, Rajaramnagar

(An Empowered Autonomous Institute, affiliated to Shivaji University, Kolhapur)

Curriculum Structure and Evaluation Scheme

To be implemented for 2023-27 NEP Batch

Department of Computer Science & Engineering (Artificial Intelligence and Machine Learning)

Rev: CSE(AI&ML) Course Structure/ RIT/04/2023-27

Honors with Research and Multidisciplinary Minor

The student will work on Research Project or Dissertation for 18 Credits in the Fourth Year in respective discipline. The distribution of 18 Credits for Research project in Sem-VII and Sem-VIII is given below. To get B.Tech in Computer Science & Engineering (Artificial Intelligence and Machine Learning)-Honors with Research and Multidisciplinary Minor degree Student need to earn total 188 Credits which consist 170 credits of regular Multidisciplinary Minor courses and 18 credits of Research courses.

Class: Final Year B. Tech **Semester:** VII

Course Code	Course	Teaching Scheme				Evaluation Scheme					
		L	T	P	Credits	Scheme	Theory (Marks %) Max.	Min. for passing		Practical (Marks %) Max.	Min. for passing
REH401	Intellectual Property Rights	-	-	-	2	ISE	50	40	40	---	---
						ESE	50	40		---	---
REH403	Research project (Synopsis) phase – I	-	-	-	2	ISE	--	--	--	50	50
						ESE	--	--		50	50
REH405	Research Specific core course - I (Online NPTEL course)	-	-	-	3	ISE	50	40	40	--	--
						ESE	50	40		--	--
	TOTAL	-	-	-	7						

ISE = In Semester Evaluation, ESE = End Semester Exam

Note: For Evaluation of Online NPTEL course ISE Marks will be marks obtained by students in the assignments given by NPTEL, students who will secure NPTEL certification will be only eligible for ESE of the same course which will be conducted at institute

Class: Final Year B. Tech **Semester:** VIII

Course Code	Course	Teaching Scheme				Evaluation Scheme					
		L	T	P	Credits	Scheme	Theory (Marks %) Max.	Min. for passing		Practical (Marks %) Max.	Min. for passing
REH402	Research project phase - II	-	-	-	11	ISE	--	--	--	50	50
						ESE	--	--		50	
	TOTAL	-	-	-	11						

ISE = In Semester Evaluation, ESE = End Semester Exam

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