MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR
Deemed to be University
(Declared under Distinct Category by Ministry of Education, Government of India)
NAAC Accredited with A++ Grade
Centre for Artificial Intelligence

ANNEXURE-I

Scheme

of

B. Tech. VII Semester

[Information Technology (Artificial Intelligence and Robotics)/ Artificial Intelligence (AI) and Data Science/ Artificial Intelligence (AI) and Machine Learning]

(Batch admitted in academic session 2021 – 22)

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Scheme of Evaluation
B. Tech. VII Semester *(Information Technology (Artificial Intelligence and Robotics))*

(for batch admitted in academic session 2021 – 22)

S. No.	Subject Code	Category Code	Subject Name	End Sem. Exam.	$^\$$Proficiency in subject /course	Mid Sem. Exam.	Quiz/ Assignment	End Sem. Exam.	Lab work & Sessional	Skill Based Mini Project	Assignment	Exam	Total Marks	L	T	P	Total Credits	Mode of Teaching	Mode of Exam
1.	DE	DE	Departmental Elective (DE-2)	50	10	20	20	-	-	-	-	-	100	3	-	-	**3**	Blended	PP
2.	DE	DE	Departmental Elective* (DE-3)	-	-	-	-	-	-	-	25	75	100	3	-	-	**3**	Blended	MCQ
3.	DE	DE	Departmental Elective* (DE-4)	-	-	-	-	-	-	-	25	75	100	3	-	-	**3**	Blended	MCQ
4.	OC	OC	Open Category (OC-2)	50	10	20	20	-	-	-	-	-	100	3	-	-	**3**	Blended	PP
5.	240701	DLC	Departmental Lab (ROS Lab)	-	-	-	-	60	20	20	-	-	100	-	-	4	**2**	Offline	SO
6.	240702	DLC	Creative Problem Solving (Evaluation)	-	-	-	-	25	25	-	-	-	50	-	-	2	**1**	Offline	SO
7.	240702	DLC	Summer Internship Project-III (04 weeks) (Evaluation)	-	-	-	-	60	-	-	-	-	60	-	-	4	**2**	Interactive	SO
			Total	**100**	**20**	**40**	**40**	**145**	**45**	**20**	**50**	**150**	**610**	**12**	**-**	**10**	**17**		
8.	1000008	**MAC**	Universal Human Values & Professional Ethics(UHVPE)	50	10	20	20	-	-	-	-	-	100	2	-	-	**GRADE**	Blended	**MCQ**

Note: Columns under headings: *Maximum Marks Allotted* → *Theory Slot* (End Term Evaluation: End Sem. Exam., $^\$$Proficiency in subject /course; Continuous Evaluation: Mid Sem. Exam., Quiz/Assignment), *Practical Slot* (End Sem. Exam.; Continuous Evaluation: Lab work & Sessional, Skill Based Mini Project), *MOOCs* (Assignment, Exam); *Contact Hours per week* (L, T, P).

Additional Course for Honours or minor Specialization	Permitted to opt for maximum two additional courses for the award of Honours or Minor specialization

$^\$$**Proficiency in course/subject – includes the weightage towards ability/ skill/ competency /knowledge level /expertise attained etc. in that particular course/subject**

MCQ: Multiple Choice Question   **AO:** Assignment + Oral   **PP:** Pen Paper   **SO:** Submission + Oral

Mode of Teaching			Mode of Examination				Total Credits
Offline	Blended	Interactive	PP	AO	MCQ	SO	
3	12	2	6	0	6	5	**17**
17.65	70.59	11.76	35.29	0	35.29	29.41	**Credits %**

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B. Tech. VII Semester *(Information Technology (Artificial Intelligence and Robotics))*

DE -2		
S. No.	**Subject Code**	**Subject Name**
1.	240731	Robot Operating System
2.	240732	Humanoid Robotics
3.	240734	Augmented and Virtual Reality

OC-2		
S. No.	**Subject Code**	**Subject Name**
1.	OC2	Statistical Programming with R
2.	OC2	Database Management System

DE-3*		
S. No.	**Subject Code**	**Subject Name**
1.	240767	Reinforcement Learning (12 Weeks)
2.	240768	Industrial Robotics: Theories for Implementation (12 Weeks)
3.	240769	Software Testing (12 Weeks)

DE-4*		
S. No.	**Subject Code**	**Subject Name**
1.	240770	Deep Learning for Computer Vision (12 Weeks)
2.	240771	Big Data Computing (8 Weeks)
3.	240772	Mechanics and Control of Robotic Manipulators (8 Weeks)

List of courses to be opted for Honours in VII Semester

Honours*			
(to be opted by students of Parent Department)			
Course Code	**Course Name**	**Course Code**	**Course Name**
Track 1: Information Security		**Track 2: Internet of Things**	
H24072501	Secure Computation Part-II (12 Weeks)	H24072503	Introduction to Industry 4.0 and Industrial IoT (12 Weeks)
H24072502	Practical Cyber Security for Cyber Security Practitioners (12 Weeks)	H24052506	Distributed Systems (8 Weeks)
H24052501	Cyber Security and Privacy (12 weeks)	H24052503	Introduction to Internet of Things (12 weeks)
H24052502	Ethical Hacking (12 weeks)	H24052504	Sensor Technology: Physics, Fabrication and Circuits (8 weeks)
Track 3: High Performance Computing			
H24072504	Advanced Distributed Systems (12 Weeks)		
H24072505	Computational Complexity (12 Weeks)		
H24052505	Multi-Core Computer Architecture (12 weeks)		
H24052506	Distributed System (12 weeks)		

* Course run through SWAYAM/NPTEL/ MOOC Learning Based Platform

Note: In each semester (starting from V to VIII semester), it is required to opt for new subjects towards Honours Degree/ Minor Specialization.

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Scheme of Evaluation
B. Tech. VII Semester *(Artificial Intelligence (AI) and Data Science)*

(for batch admitted in academic session 2021 – 22)

S. No.	Subject Code	Category Code	Subject Name	Maximum Marks Allotted									Total Marks	Contact Hours per week			Total Credits	Mode of Teaching	Mode of Exam
				Theory Slot				Practical Slot			MOOCs			L	T	P			
				End Term Evaluation		Continuous Evaluation		End Sem. Exam.	Continuous Evaluation		Assignment	Exam							
				End Sem. Exam.	$Proficiency in subject /course	Mid Sem. Exam.	Quiz/ Assignment		Lab work & Sessional	Skill Based Mini Project									
1.	DE	DE	Departmental Elective (DE-2)	50	10	20	20	-	-	-	-	-	100	3	-	-	**3**	Blended	PP
2.	DE	DE	Departmental Elective* (DE-3)	-	-	-	-	-	-	-	25	75	100	3	-	-	**3**	Blended	MCQ
3.	DE	DE	Departmental Elective* (DE-4)	-	-	-	-	-	-	-	25	75	100	3	-	-	**3**	Blended	MCQ
4.	OC	OC	Open Category (OC-2)	50	10	20	20	-	-	-	-	-	100	3	-	-	**3**	Blended	PP
5.	270701	DLC	Departmental Lab (AR-VR Lab)	-	-	-	-	60	20	20	-	-	100	-	-	4	**2**	Offline	SO
6.	270702	DLC	Creative Problem Solving (Evaluation)	-	-	-	-	25	25	-	-	-	50	-	-	2	**1**	Offline	SO
7.	270703	DLC	Summer Internship Project-III (04 weeks) (Evaluation)	-	-	-	-	60	-	-	-	-	60	-	-	4	**2**	Interactive	SO
	Total			100	20	40	40	145	45	20	50	150	610	12	-	10	17		
8.	1000008	**MAC**	Universal Human Values & Professional Ethics(UHVPE)	50	10	20	20	-	-	-	-	-	100	2	-	-	GRADE	Blended	**MCQ**
Additional Course for Honours or minor Specialization			Permitted to opt for maximum two additional courses for the award of Honours or Minor specialization																

$**Proficiency in course/subject – includes the weightage towards ability/ skill/ competency /knowledge level /expertise attained etc. in that particular course/subject**

MCQ: Multiple Choice Question   **AO:** Assignment + Oral   **PP:** Pen Paper   **SO:** Submission + Oral

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Offline	Blended	Interactive	PP	AO	MCQ	SO	
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17.65	70.59	11.76	35.29	0	35.29	29.41	**Credits %**

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B. Tech. VII Semester *(Artificial Intelligence (AI) and Data Science)*

DE -2		
S. No.	**Subject Code**	**Subject Name**
1.	270731	Generative AI
2.	270732	Pattern Recognition
3.	270733	Augmented and Virtual Reality

OC-2		
S. No.	**Subject Code**	**Subject Name**
1.	OC2	Statistical Programming with R
2.	OC2	Database Management System

DE-3*		
S. No.	**Subject Code**	**Subject Name**
1.	270761	Responsible and Safe AI Systems (12 Weeks)
2.	270762	Deep Learning for Computer Vision (12 Weeks)
3.	270763	Applied Accelerated AI (12 Weeks)

DE-4*		
S. No.	**Subject Code**	**Subject Name**
1.	270764	Big Data Computing (8 Weeks)
2.	270765	Software Testing (12 Weeks)
3.	270766	Artificial Intelligence for Economics (8 Weeks)

List of courses to be opted for Honours in VII Semester

Honours*			
(to be opted by students of Parent Department)			
Course Code	**Course Name**	**Course Code**	**Course Name**
Track 1: Information Security		**Track 2: Internet of Things**	
H27072501	Secure Computation Part-II (12 Weeks)	H27072503	Introduction to Industry 4.0 and Industrial IoT (12 Weeks)
H27072502	Practical Cyber Security for Cyber Security Practitioners (12 Weeks)	H27052506	Distributed Systems (8 Weeks)
H27052501	Cyber Security and Privacy (12 weeks)	H27052503	Introduction to Internet of Things (12 weeks)
H27052502	Ethical Hacking (12 weeks)	H27052504	Sensor Technology: Physics, Fabrication and Circuits (8 weeks)
Track 3: High Performance Computing			
H27072504	Advanced Distributed Systems (12 Weeks)		
H27072505	Computational Complexity (12 Weeks)		
H27052505	Multi-Core Computer Architecture (12 weeks)		
H27052506	Distributed System (12 weeks)		

* Course run through SWAYAM/NPTEL/ MOOC Learning Based Platform

Note: In each semester (starting from V to VIII semester), it is required to opt for new subjects towards Honours Degree/ Minor Specialization.

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B. Tech. VII Semester *(Artificial Intelligence (AI) and Machine Learning)*
(for batch admitted in academic session 2021 – 22)

S. No.	Subject Code	Category Code	Subject Name	Maximum Marks Allotted									Total Marks	Contact Hours per week			Total Credits	Mode of Teaching	Mode of Exam
				Theory Slot				Practical Slot			MOOCs			L	T	P			
				End Term Evaluation		Continuous Evaluation		End Sem. Exam.	Continuous Evaluation		Assignment	Exam							
				End Sem. Exam.	$Proficiency in subject /course	Mid Sem. Exam.	Quiz/ Assignment		Lab work & Sessional	Skill Based Mini Project									
1.	DE	DE	Departmental Elective (DE-2)	50	10	20	20	-	-	-	-	-	100	3	-	-	3	Blended	PP
2.	DE	DE	Departmental Elective* (DE-3)	-	-	-	-	-	-	-	25	75	100	3	-	-	3	Blended	MCQ
3.	DE	DE	Departmental Elective* (DE-4)	-	-	-	-	-	-	-	25	75	100	3	-	-	3	Blended	MCQ
4.	OC	OC	Open Category (OC-2)	50	10	20	20	-	-	-	-	-	100	3	-	-	3	Blended	PP
5.	280701	DLC	Departmental Lab (AR-VR Lab)	-	-	-	-	60	20	20	-	-	100	-	-	4	2	Offline	SO
6.	280702	DLC	Creative Problem Solving (Evaluation)	-	-	-	-	25	25	-	-	-	50	-	-	2	1	Offline	SO
7.	280703	DLC	Summer Internship Project-III (04 weeks) (Evaluation)	-	-	-	-	60	-	-	-	-	60	-	-	4	2	Interactive	SO
	Total			100	20	40	40	145	45	20	50	150	610	12	-	10	17		
8.	1000008	**MAC**	Universal Human Values & Professional Ethics(UHVPE)	50	10	20	20	-	-	-	-	-	100	2	-	-	GRADE	Blended	**MCQ**
Additional Course for Honours or minor Specialization			**Permitted to opt for maximum two additional courses for the award of Honours or Minor specialization**																

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Offline	**Blended**	**Interactive**	**PP**	**AO**	**MCQ**	**SO**	
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17.65	**70.59**	**11.76**	**35.29**	**0**	**35.29**	**29.41**	**Credits %**

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DE -2			DE-3*		
S. No.	**Subject Code**	**Subject Name**	**S. No.**	**Subject Code**	**Subject Name**
1.	280731	Generative AI	1.	280761	Responsible and Safe AI Systems (12 Weeks)
2.	280732	Pattern Recognition	2.	280762	Deep Learning for Computer Vision (12 Weeks)
3.	280733	Augmented and Virtual Reality	3.	280763	Applied Accelerated AI (12 Weeks)
OC-2			DE-4*		
S. No.	**Subject Code**	**Subject Name**	**S. No.**	**Subject Code**	**Subject Name**
1.	OC2	Statistical Programming with R	1.	280764	Big Data Computing (8 Weeks)
2.	OC2	Database Management System	2.	280765	Software Testing (12 Weeks)
			3.	280766	Artificial Intelligence for Economics (8 Weeks)

List of courses to be opted for Honours in VII Semester

Honours* *(to be opted by students of Parent Department)*					
Course Code	**Course Name**		**Course Code**	**Course Name**	
Track 1: Information Security			**Track 2: Internet of Things**		
H28072501	Secure Computation Part-II (12 Weeks)		H28072503	Introduction to Industry 4.0 and Industrial IoT (12 Weeks)	
H28072502	Practical Cyber Security for Cyber Security Practitioners (12 Weeks)		H28052506	Distributed Systems (8 Weeks)	
H28052501	Cyber Security and Privacy (12 weeks)		H28052503	Introduction to Internet of Things (12 weeks)	
H28052502	Ethical Hacking (12 weeks)		H28052504	Sensor Technology: Physics, Fabrication and Circuits (8 weeks)	
Track 3: High Performance Computing					
H28072504	Advanced Distributed Systems (12 Weeks)				
H28072505	Computational Complexity (12 Weeks)				
H28052505	Multi-Core Computer Architecture (12 weeks)				
H28052506	Distributed System (12 weeks)				

* Course run through SWAYAM/NPTEL/ MOOC Learning Based Platform
Note: In each semester (starting from V to VIII semester), it is required to opt for new subjects towards Honours Degree/ Minor Specialization.