SAMRAT ASHOK TECHNOLOGICAL INSTITUTE VIDISHA (M.P.)
(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV Bhopal)

Department Of Information Technology

Programme AIADS

Scheme-2022-23

DEPARTMENT OF INFORMATION TECHNOLOGY

S.No.	Category	Subject Category	Suggested Breakup of Credits (Total 160)	Possible list of subjects	Approx. Credits (Total 160)
	Structure of Undergraduate Engineering Program				
1	Humanities and Social Sciences including Management courses	HSMC	12*	English, Environmental Science, Management Concepts and Principles, Organisation behaviors, Project Management, Ethics, Stress Management, Human resource Management, Financial Management, Marketing Management, Project Management, IPR.	10-12
2	Basic Science courses	BSC	25*	Applied Physics, Applied Chemistry, Engineering Mathematics (M-1, M-2, M-3)	20-22
3	Engineering Science courses including workshop, drawing, basics of electrical/mechanical/computer etc.	ESC	24*	Basic Electrical Engineering, Engineering Graphics & Design, Engineering materials, Manufacturing Practices, Strength of Materials / Mechanics of Materials. Introduction to Computer Science, Basic of Information Technology. Engineering Electronics, Digital Design, Programming for Problem Solving,	20-24
4	Professional core courses	PCC	48*	Specific to Departments	48-50
5	Professional Elective courses relevant to chosen specialization/branch	PEC	18*	Specific to Departments	18-20
6	Open subjects – Electives from other technical and /or emerging subjects	OEC	18*	Specific to Departments	18-20
7	Project work, seminar and internship in industry or elsewhere	PROJ	15*	Specific to Departments	15-20
8	Mandatory Courses [Environmental Sciences, Induction training, Indian Constitution, Essence of Indian Traditional Knowledge]	MC	[Non-Credit]		
Total Credits			160*		
NPTEL/SWAYAM Courses Certification			20* (Max.)		
Mandatory Induction Program for first year students (Three Weeks duration)				• Physical activity • Creative Arts • Universal Human Values • Literary • Proficiency Modules • Lectures by Eminent People • Visits to local Areas • Familiarization to Dept./Branch & Innovations	

SAMRAT ASHOK TECHNOLOGICAL INSTITUTE VIDISHA (M.P.)
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Scheme of Examination (Semester-I)

for Batch Admitted in session - 2022-23

Bachelor of Technology (B. Tech.) — Artificial Intelligence and Data Science

Subject Code	Subject Category	Subject Name	Maximum Marks Allotted							Total Marks	Contact Hrs.			Total Credits
			Theory				Practical				L	T	P	
			ES	MS	Assign ment	Quiz	ES	LW	Quiz					
CHB101	BSC	Applied Chemistry	60	20	10	10	30	10	10	150	3	0	2	4
CSA101	ESC	Introduction to Computer Science Engineering	60	20	10	10	30	10	10	150	3	0	2	4
HUB102	HSMC	Communication and Report Writing	60	20	10	10	30	10	10	150	3	0	2	4
CSA102	ESC	Digital Electronics	60	20	10	10	–	–	–	100	3	0	0	3
MAB101	BSC	Linear Algebra and Calculus	60	20	10	10	–	–	–	100	3	1	0	4
MAC101	MAC*	Universal Human Values and Professional Ethics	–	–		–	60	20	20	100	0	0	2	Grade
ILC100	ILC	Extracurricular Activities	It is a one credit per year activity endorse in eight semester marksheet											
Total			300	100	50	50	150	50	50	750	15	1	6	19

MST: Minimum two mid semester tests to be conducted during Semester, MAC: Mandatory courses classes will be conducted in off hours (Weekends)

MAC	Induction Program	Non-Credit
HEC	NSS/NCC/NSO	Non-Credit

Abbreviations: ES -End Semester, MS- Mid Semester, LW- Laboratory Work/Assignment. (L: Lecture, T: Tutorial, P: Practical) BSC- Basic Science Course, ESC- Engineering Science Course, HSMC- Humanities Science and Management Course, MAC- Mandatory, Audit Course, AC- Audit Course, HEC- Holistic Education Course, ITC- Information Technology Course, ILC-Institute Level Course, DC- Department Course, DE-Department Elective, OC- Open Course, DLC- Department Laboratory, PROJ- Project Work

SAMRAT ASHOK TECHNOLOGICAL INSTITUTE VIDISHA (M.P.)
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Scheme of Examination (Semester-II)
for Batch Admitted in session – 2022-23
Bachelor of Technology (B. Tech.) — Artificial Intelligence and Data Science

Subject Code	Subject Category	Subject Name	Maximum Marks Allotted							Total Marks	Contact Hrs.			Total Credits
			Theory				Practical				L	T	P	
			ES	MS	Assignment	Quiz	ES	LW	Quiz					
PYB101	BSC	Applied Physics	60	20	10	10	30	10	10	150	3	0	2	4
CSA103	ESC	Problem Solving and Data Structure	60	20	10	10	30	10	10	150	3	0	2	4
ITC101	ITC	Python Programming	60	20	10	10	30	10	10	150	3	0	2	4
CSA104	ESC	Principles of Software System	60	20	10	10				100	3	0	0	3
MAB102	BSC	Statistics: Probability Distribution and Differential Equations	60	20	10	10	–		–	100	3	1	0	4
CSL110	ESC	Computer Workshop (Linux Lab)					30	10	10	50	1	0	2	2
MAC102	MAC*	Disaster Management	–	–		–	30	10	10	50	0	0	2	Grade
ILC100	ILC	Extracurricular Activities	It is a one credit per year activity endorse in eight semester marksheet											
Total			300	100	50	50	150	50	50	750	16	1	8	21

MST: Minimum two mid semester tests to be conducted during Semester, MAC: Mandatory courses classes will be conducted in off hours (Weekends)

ILC	Internship-I (60 Hrs) Institute Level	Non-Credit
HEC	NSS/NCC/NSO	Non-Credit

Abbreviations: ES -End Semester, MS- Mid Semester, LW- Laboratory Work/Assignment. (L: Lecture, T: Tutorial, P: Practical) BSC- Basic Science Course, ESC- Engineering Science Course, HSMC- Humanities Science and Management Course, MAC- Mandatory, Audit Course, AC- Audit Course, HEC- Holistic Education Course, ITC- Information Technology Course, ILC-Institute Level Course, DC- Department Course, DE-Department Elective, OC- Open Course, DLC- Department Laboratory, PROJ- Project Work

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	SAMRAT ASHOK TECHNOLOGICAL INSTITUTE VIDISHA (M.P.)
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	Scheme of Examination (Semester-III)
	for Batch Admitted in session - **2022-23**
	Bachelor of Technology (B. Tech.) – **Artificial Intelligence and Data Science**

Subject Code	Subject Category	Subject Name	Maximum Marks Allotted								Contact Hrs. per week			Total Credits
			Theory				Practical			Total Marks	L	T	P	
			ES	MS	Assignment	Quiz	ES	LW	Quiz					
MAB-301	BSC	Discrete Mathematics	60	20	10	10	--	--	--	100	3	1	0	4
AI-302	DC	Analysis and Design of Algorithms	60	20	10	10	30	10	10	150	3	0	2	4
AI-303	DC	OOPs	60	20	10	10	30	10	10	150	3	0	2	4
AI-304	DC	Operating System	60	20	10	10	30	10	10	150	3	0	2	4
OE-305	OE	OE-I	60	20	10	10	--	--	--	100	3	0	0	3
AI-306	DL	Internet Programming	--	--	--	--	30	10	10	50	0	0	4	2
AI-307	ILC	Internship-I (60 Hrs) Institute Level (Evaluation)	--	--	--	--	-	50	--	50	-	-	2	2
Total			300	100	50	50	120	90	40	750	15	1	12	23
	ILC	Extracurricular Activities	Based on participation in extra curriculum activities, one credit per year to be endorsed in the eight semester mark sheet.											
MAC-308	MAC*	Energy, Ecology, Environment & Society	-	20	20	10	-	-	-	-	-	-	-	Grade
HUM-309	HEC*	Holistic Education Course	-	20	20	10	-	-	-	-	-	-	-	Grade

MS: Minimum two mid semester tests are to be conducted during Semester, (L-Lecture, T- Tutorial, P-Practical)
MAC* -Mandatory audit course & & HEC*- Holistic education courses classes will be conducted in off hours (Weekends)

Open Course Offered by AIADS Session: 2023-24 Semester III			
Open Elective-I (OE-305)	A	B	C
	Computer System Organisation	Operating System	Data Structure
Prerequisite	Fundamental knowledge of digital electronics	Computer Programming	Logical thinking and Computer Fundamentals
Remark	Open to All	Not Applicable for - CSE & CSE(BC)	Not Applicable for - CSE and Allied branches, EC
Note: 1.Open Courses launched by respective Programmes are not applicable for students of parental programmes. **2. Subject which is being opted by IT/IOT/Others in OE-305 should not be opted as DE/DC in parent department**			

				Maximum Marks Allotted									**Contact Hrs. per week**			**Total Credits**
Subject Code	**Subject Category**	**Subject Name**		**Theory**				**Practical**			**Total Marks**					
				ES	**MS**	**Assignment**	**Quiz**	**ES**	**LW**	**Quiz**		**L**	**T**	**P**	
AI-401	DC	Computer Networks		60	20	10	10	30	10	10	150	3	0	2	4
AI-402	DC	DBMS		60	20	10	10	30	10	10	150	3	0	2	4
AI-403	DC	Foundation of Data Science		60	20	10	10	30	10	10	150	3	0	2	4
AI-404	DC	Software Engineering		60	20	10	10				100	3	1	0	4
OE-405	OE	OE-II		60	20	10	10				100	3	0	0	3
AI-406	DL	Advance Java Programming						60	20	20	100	0	0	4	2
		Total		300	100	50	50	150	50	50	750	15	1	10	21
	ILC	Extracurricular Activities		Based on participation in extra curriculum activities, one credit per year to be endorsed in the eight semester mark sheet.											
HUM 408	HEC*	Holistic Education Course		-	20	20	10	-	-	-	-	-	-	-	Grade

MS: Minimum two mid semester tests are to be conducted during Semester, (L-Lecture, T- Tutorial, P-Practical)
HEC*- Holistic education courses classes will be conducted in off hours (Weekends)

Open Elective-II	Category	Name	Holistic Course's
OE-405	A	Foundation of Data Science	**Technical writing Skills**
	B	Computer Graphics	**Yoga & Meditation**
	C	DBMS	

Note: 1.Open Courses launched by respective Programmes are not applicable for students of parental programmes.

   2. **Subject which is being opted by IT/IOT/Others in OE-405 should not be opted as DE/DC in parent department.**

SAMRAT ASHOK TECHNOLOGICAL INSTITUTE VIDISHA (M.P.)
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Scheme of Examination (Semester-V) Bachelor of Technology (B. Tech. –AIADS)
for Batch Admitted in session - 2022-23

Subject Code	Subject Category	Subject Name	Maximum Marks Allotted							Total Marks	Contact Hrs.			Total Credits
			Theory				Practical				L	T	P	
			ES	MS	Assignment	Quiz	ES	LW	Quiz					
AI-501	DC	Fuzzy logic	60	20	10	10	30	10	10	150	3	0	2	4
AI-502	DC	Data Science Analytics	60	20	10	10	30	10	10	150	3	0	2	4
AI-503	DC	Cloud Computing	60	20	10	10	30	10	10	150	3	0	2	4
AI-504	DE	DE-I	60	20	10	10	--	--	--	100	3	0	0	3
OE-505	OE	OE-III	60	20	10	10	--	--	--	100	3	0	0	3
AI-506	DLC	Advanced Data Science Lab-I	--	--	--	--	30	10	10	50	0	0	4	2
AI-507	ILC	Internship-II (60 Hrs) Institute Level (Evaluation)	--	--	--	--	--	50	--	50	-	-	4	2
	ILC	Extracurricular Activities	It is a one credit per year activity to be endorsed in eight semester mark sheet											
Total			**300**	**100**	**50**	**50**	**120**	**90**	**40**	**750**	**15**	**0**	**14**	**22**
List of Courses for Honours Degree (MOOCs)														**Credits**
List of Courses for Minor Degree (MOOCs)														**Credits**

Total 20 credits required for Honours / Minor degree

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	DE -I	OE-III
A	Human Computer Interaction	Fuzzy logic
B	Image processing	Computer Graphics & multimedia
C	Information retrieval	Software Engineering

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Scheme of Examination (Semester-VI) Bachelor of Technology (B. Tech. –AIADS)
for Batch Admitted in session - 2022-23

Subject Code	Subject Category	Subject Name	Maximum Marks Allotted							Total Marks	Contact Hrs.			Total Credits
			Theory				Practical				L	T	P	
			ES	MS	Assignment	Quiz	ES	LW	Quiz					
AI-601	DC	Data Mining & Data Warehousing	60	20	10	10	30	10	10	150	3	0	2	4
AI-602	DC	Machine Learning	60	20	10	10	30	10	10	150	3	0	2	4
AI-603	DE	DE-II	60	20	10	10				100	3	1	0	4
AI-604	DE	DE-III	60	20	10	10				100	3	1	0	4
AI-605	OE	OE-IV	60	20	10	10				100	3	0	0	3
AI-606	DLC	Advanced Data Science Lab-II					30	10	10	50	0	0	2	1
AI-607		Minor Project					50	50		100			4	2
	ILC	Extracurricular Activities	It is a one credit per year activity to be endorsed in eight semester mark sheet.											
Total			**300**	**100**	**50**	**50**	**140**	**80**	**30**	**750**	**15**	**2**	**10**	**22**
List of Courses for Honours Degree (MOOCs)														**Credits**
List of Courses for Minor Degree (MOOCs)														**Credits**

Total 20 credits required for Honours / Minor degree

Internship-III (120 Hrs) External /Institute Level

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	DE -II	DE -III	OE-IV
A	Artificial Intelligence	Computer Vision	Artificial Intelligence
B	Knowledge Representation	Introduction to IOT	Data Science Analytics
C	Cryptography & Network Security	Robotics and process automation	Image processing

DEPARTMENT OF INFORMATION TECHNOLOGY
Tentative pool of subjects for Minor Degree

SWAYAM/NPTEL/ MOOC's Course *

Annexure-I

S. No.	Minor Degree(for students of other department)	Remark
1.	Programming, Data Structures And Algorithms Using Python	**8-12 weeks**
2.	Introduction to Database Systems	**8-12 weeks**
3.	Data Science for Engineers	**8-12 weeks**
4.	Introduction to Machine Learning	**8-12 weeks**
5.	An Introduction to Artificial Intelligence	**8-12 weeks**
6.	Data Mining	**8-12 weeks**
7.	Data Analytics with Python	**8-12 weeks**
8.	Fuzzy Logic and Neural Networks	**8-12 weeks**

Note*:-1. Those subjects which are already studied in the core scheme from I to VIII semester cannot be opted.

2. Note: Pool of subjects for Honours & Minor degrees are subjected to change as floated by NPTEL/MOOC's/SWAYAM.

3. 20 credits additionally to be earned between V to VIII sem. Maximum 6 credits per semester from V sem. onwards will be permitted

4. Students must have to provide certificate of courses opted by **SWAYAM/NPTEL/ MOOC's for Minor Degree.**

DEPARTMENT OF INFORMATION TECHNOLOGY

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Subject Code	Subject Category	Subject Name	Maximum Marks Allotted							Total Marks	Contact Hrs. per week			Total Credits
			Theory				Practical				L	T	P	
			ES	MS	Assignment	Quiz	ES	LW	Quiz					
AI-701	DC	Deep Learning	60	20	10	10	30	10	10	150	3	0	2	04
AI-702	DE	DE-IV	60	20	10	10	--	--		100	3	1	0	04
AI-703	DE	DE-V	60	20	10	10	--	--		100	3	1	0	04
AI-704	PROJ	Major Project (Phase-I)	--	--	--		60	20	20	100	0	0	4	02
AI-705	ILC	Internship-III (Completed in Third Year)	--	--	--		30	10	10	50	0	0	2	02
Total			**180**	**60**	**30**	**30**	**120**	**40**	**40**	**500**	**9**	**2**	**8**	**16**
	ILC	Extracurricular Activities			It is a one credit per year activity endorse in eight semester mark sheet									
MST: Minimum two mid semester tests to be conducted during Semester														

	DE -IV	DE-V
A	Introduction to Logics	Big Data Analytics
B	Natural Language Processing	Data Handling & Visualization
C	Business Intelligence	Software Testing & Quality Assurance

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Scheme of Examination (Semester-VIII) Bachelor of Technology (B. Tech.) –AIADS

for Batch Admitted in session - 2022-23

Subject Code	Subject Category	Subject Name	Maximum Marks Allotted							Total Marks	Contact Hrs.			Total Credits
			Theory				Practical				L	T	P	
			ES	MS	Assignment	Quiz	ES	LW	Quiz					
AI 801	Major Project / MOOCS	Major Project (Phase-II)					300	200		500	0	0	20	**10**
	ILC	Extracurricular Activities												**4**
Total							300	200		500				**14**
List of Courses for Honors Degree (MOOCs)														**Credits**
List of Courses to be floated from NPTEL/SWAYAM During Academic years 2024- to-2026.														
List of Courses for Minor Degree (MOOCs)														**Credits**
List of Courses to be floated from NPTEL/SWAYAM During Academic years 2024- to-2026.														