



**JSPM UNIVERSITY PUNE**

Recognized by UGC u/s 2 (f) of UGC Act 1956 and enacted by the  
State Government of Maharashtra - JSPM University Act, 2022 (Mah.IV of 2023)

**JSPM University Pune**  
**Faculty of Science and Technology**  
**School of Basic and Applied Sciences**



**NEP aligned Curriculum Structure**

**for**

**M.Sc (Cybersecurity)**

**(Effective from AY: 2024-25)**



# JSPM University Pune

FACULTY OF SCIENCE & TECHNOLOGY

SCHOOL OF BASIC AND APPLIED SCIENCES

FIRST YEAR MASTER OF SCIENCE  
(CYBER SECURITY)

COURSE STRUCTURE  
(NEP 2020 Aligned)

W. E. F

2024-2025

RELEASE DATE

01/07/2024

REVISION NO.

0.0 (NEP)

## SEMESTER I (LEVEL – 6.5)

COURSE			TEACHING SCHEME				EXAMINATION SCHEME AND MARKS								M A R K S	C R E D I T S
TYPE	CODE	COURSE NAME	Hours / Week				THEORY (Equal Weightage for CIE and ESE)			PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)				
			L	T	P	E L	CONTINUOUS INSEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATI ON (100 / 50 Marks)	CONTINUO US INSEMEST ER EVALUATI ON (50 Marks)	END SEMESTER EXAMINATI ON (50 Marks)	CONTINUO US INSEMEST ER EVALUATI ON (50 Marks)	END SEMESTER EXAMINATI ON (50 Marks)		
							T1 (30 Marks)	T2 (30 Marks)	Assign- ments (40 Marks)							
PSMC	230GMAM04_01	Mathematical Foundations of Computer Science	2	1	-	-	30	30	40	100	-	-	-	-	100	3
PCC	231GCAM01_01	Data Structure and Algorithm	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5
PCC	240GCAM31_01	Introduction to Artificial Intelligence and Machine Learning	2	-	-	-	30	30	40	50	-	-	-	-	50	2
PCC	240GCYM23_01	Introduction to Cyber Security	2	-	-	-	30	30	40	50	-	-	-	-	50	2
SEC	230GCAM40_01	Object-Oriented Programming with Java	2	-	2	-	-	-	-	-	50	50	50	50	100	3
MMC	---	Multidisciplinary Minor Course	1	-	2	-	-	-	-	-	50	50	50	50	100	2
VSC	230IDCB01_01	Design Thinking and Creativity	1	-	-	2	-	-	-	-	-	-	50	50	50	1.5
AEC	230UENM01_01	Communicative English for Professionals	1	-	2	-	30	30	40	50	-	-	-	-	50	2
RMC	230IRMM01_01	Research Methodology	2	-	-	-	30	30	40	50	-	-	-	-	50	2
LC	231GCAM17_01	Data Structure and Algorithm Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
LC	240GCAM41_01	Introduction to Artificial Intelligence and Machine Learning Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1
<b>TOTAL</b>			<b>15</b>	<b>1</b>	<b>10</b>	<b>4</b>									<b>750</b>	<b>22</b>

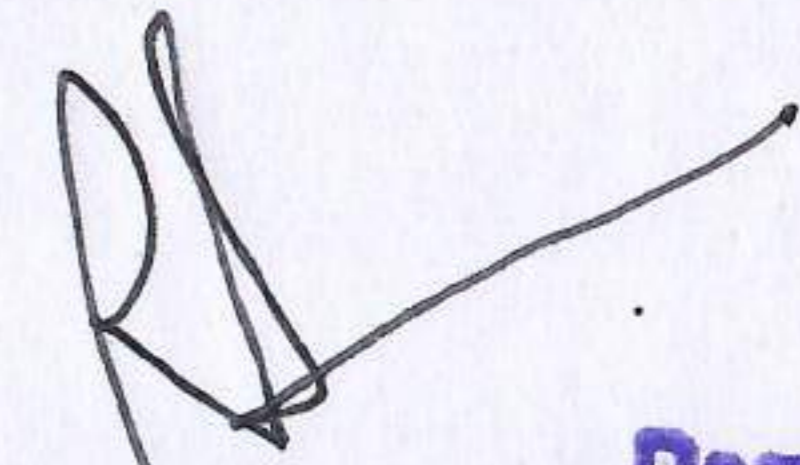
Sem.	Multidisciplinary Minor Course (MMC)					
I	Course Code	230HFSB59_01	230VOSM26_1	250UPOM10_01	230UPYB04_01	250UPOM10_1
	Course Name	Criminalistics	Project Management	Global Challenges	Positive Psychology	Global Challenges
II	Course Code	230GETB34_02	230VBCB17_2	230HFGM26_02	230UHIB04_02	230VBCB19_2
	Course Name	Internet of Things and Applications	Elements of Company Law	Digital Investigations and Cyber Forensics	Making of the Modern Indian	Risk and Insurance Management



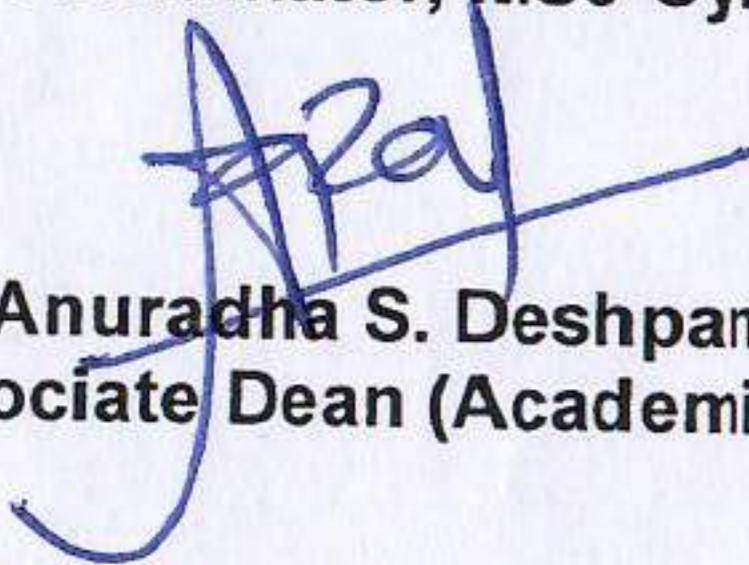
Dr. Nagsen S. Bansod  
Programme Coordinator, MSc-Cyber Security



Dr. G. A. Patil  
Director, School of Computational Sciences



Dr. R. S. Deshpande  
Dean, Faculty of Science and Technology  
JSPM UNIVERSITY PUNE



Dr. Anuradha S. Deshpande  
Associate Dean (Academics)



Prof. B.B. Ahuja  
Vice Chancellor, JSPM University Pune





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W. E. F

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## SEMESTER II (LEVEL - 6.5)

COURSE			TEACHING SCHEME				EXAMINATION SCHEME AND MARKS								M A R K S	C R E D I T S	
TYPE	CODE	COURSE NAME	Hours / Week				THEORY (Equal Weightage for CIE and ESE)				PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)				
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100 Marks)			END SEMESTER EXAMINATION (100 / 50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)	CONTINUOUS INSEMESTER EVALUATION (50 Marks)	END SEMESTER EXAMINATION (50 Marks)			
							T1 (30 Marks)	T2 (30 Marks)	Assignments (40 Marks)								
PSMC	240GMAM41_02	Mathematics in Cyber Security	2	1	-	-	30	30	40	100	-	-	-	-	100	3	
PCC	240GCYM24_02	Operating System Security	2	-	-	2	30	30	40	100	-	-	-	-	100	2.5	
PCC	240GCYM25_02	Python Programming for Cybersecurity	2	-	-	-	30	30	40	50	-	-	-	-	50	2	
PCC	240GCYM26_02	Networks Security	2	-	-	-	30	30	40	50	-	-	-	-	50	2	
MMC	---	Multidisciplinary Minor Course	1	-	2	-	-	-	-	-	50	50	50	50	100	2	
VSC	230IINB02_02	Innovation	1	-	-	2	-	-	-	-	-	-	50	50	50	1.5	
AEC	230UENM02_02	Business Communication	1	-	2	-	30	30	40	50	-	-	-	-	50	2	
RMC	230IRMM03_02	Research Data Analysis	2	-	-	-	30	30	40	50	-	-	-	-	50	2	
LC	240GCYM40_02	Python Programming for Cybersecurity Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1	
LC	240GCYM41_02	Networks Security Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1	
LC	240GCAM42_02	Foundations of Mobile Application Lab	-	-	2	-	-	-	-	-	50	50	-	-	50	1	
IITP/FP/CEP	230GCYM19_02	Internship/Field Project/Community Engagement Program	4 to 6 weeks				-	-	-	-	-	-	-	50	50	50	2
<b>TOTAL</b>			<b>13</b>	<b>1</b>	<b>10</b>	<b>4</b>									<b>750</b>	<b>22</b>	

Note: A Post Graduate Diploma will be awarded if a student exits after first year.

For "Exit" at the end of First Year the student must complete a total of 8 additional credits.

a) An internship / OJT of 8 - 10 weeks (4 credits) over and above semester 2 internship of minimum 4 weeks.

b) Additional one Course of 4 credits (Course offered will be Vocational Skill Course (VSC) or Skill Enhancement Course (SEC) or a mini project)

L-Lecture

Format No.: JSPMUni/ACAD/001

T-Tutorial

Rev. No.:0.0

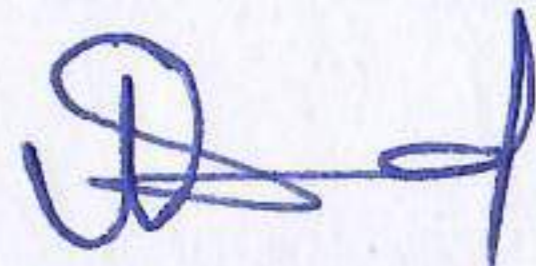
P-Practical Session (Laboratory)

Rev. Date:01/07/2024

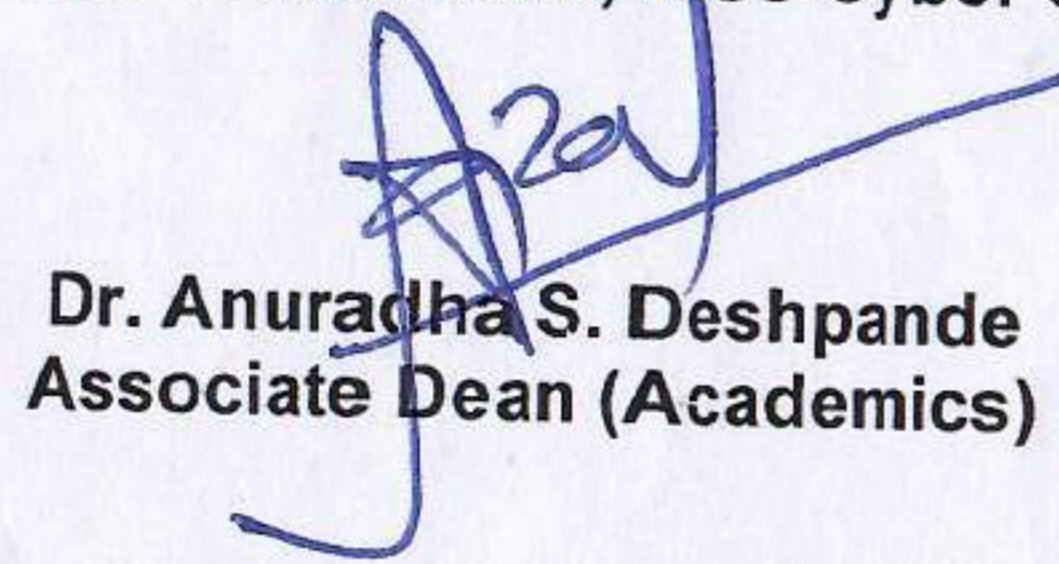
EL-Experiential Learning

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Sem.	Multidisciplinary Minor Course (MMC)					
I	Course Code	230HFSB59_01	230VOSM26_1	250UPOM10_01	230UPYB04_01	250UPOM10_01
	Course Name	Criminalistics	Project Management	Global Challenges	Positive Psychology	Global Challenges
II	Course Code	230GETB34_02	230VBCB17_2	230HFGM26_02	230UHIB04_02	230VBCB19_02
	Course Name	Internet of Things and Applications	Elements of Company Law	Digital Investigations and Cyber Forensics	Making of the Modern Indian	Risk and Insurance Management



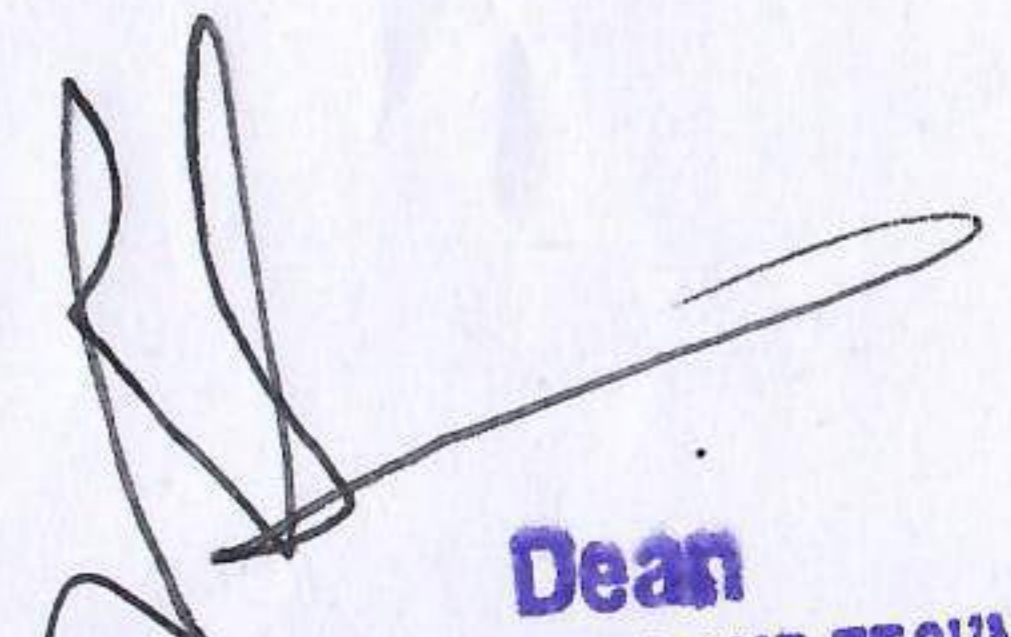
Dr. Nagsen S. Bansod  
Programme Coordinator, MSc-Cyber Security



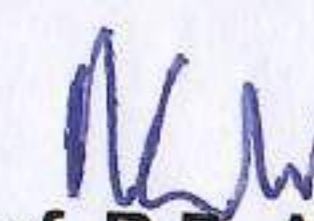
Dr. Anuradha S. Deshpande  
Associate Dean (Academics)



Dr. G. A. Patil  
Director, School of Computational Sciences

Dean  
FACULTY OF SCIENCE AND TECHNOLOGY  
JSPM UNIVERSITY PUNE  
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SCHOOL OF BASIC AND APPLIED SCIENCES

SECOND YEAR MASTER OF SCIENCE  
(CYBER SECURITY)

## COURSE STRUCTURE (NEP 2020 Aligned)

W. E. F

2025-2026

RELEASE DATE

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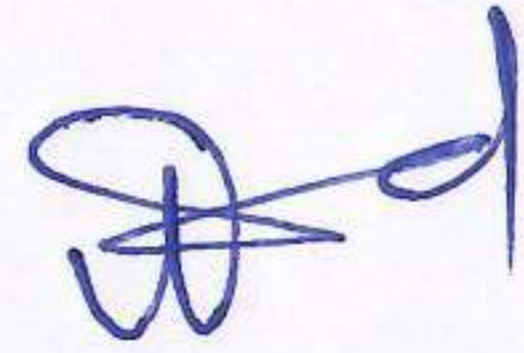
### SEMESTER III (LEVEL - 7.0)

COURSE			TEACHING SCHEME				EXAMINATION SCHEME AND MARKS								M A R K S	C R E D I T S
TYPE	CODE	COURSE NAME	Hours / Week				THEORY (Equal Weightage for CIE and ESE)			PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)				
			L	T	P	EL	CONTINUOUS INSEMESTER EVALUATION (100 / 25 Marks)			END SEMESTER EXAMINATI ON (100 / 75/ 50 Marks)	CONTINUO US INSEMEST ER EVALUATI ON (50 Marks)	END SEMESTER EXAMINATI ON (50 Marks)	CONTINUO US INSEMEST ER EVALUATI ON (50 Marks)	END SEMESTER EXAMINATI ON (50 Marks)		
							T1 (30 Marks)	T2 (30 Marks)	Assign- ments (40 Marks)							
PEC	---	Program Elective Course -I	3	-	-	-	25			75	-	-	-	-	100	3
PEC	---	Program Elective Course -II	3	-	-	-	25			75	-	-	-	-	100	3
IOC	---	Interdisciplinary Open Course	2	-	-	-	30	30	40	100	-	-	-	-	100	2
IOC	---	Interdisciplinary Open Course	2	-	-	-	30	30	40	100	-	-	-	-	50	2
VEC	230USYB01_03	Behavioral Science and Ethics	2	-	-	-	30	30	40	50	-	-	-	-	100	4
PROJ	231GCYM21_03	Field Project	-	-	4	8	-	-	-	-	50	50	50	50	50	2
SLC	231GCYM22_03	Seminar	-	-	-	8	-	-	-	-	-	-	-	50	50	2
<b>TOTAL</b>			<b>12</b>	<b>0</b>	<b>04</b>	<b>16</b>				50	-	-	-	-	<b>600</b>	<b>18</b>
MLC#	---	Audit course	1	-	-	-	-	-	-	-	50	-	-	-	50	1

Sem.	Program Elective Course (PEC)					Advanced Technologies
	Specialization	AI and ML	Data Science	Network Security and Privacy	Cyber Forensics	
III	Course Code	230GCAM08_03	230GDIM21_03	230GCYM06_03	240GCYM36_03	240GCYM45_03
	Course Name	Fundamentals of Soft Computing	Introduction to Data Science	Cyber Security and Privacy	Digital Forensics Fundamentals	Quantum Cryptography
III	Course Code	230GCAM09_03	230GDIM22_03	230GCYM07_03	240GCYM37_03	240GCYM46_03
	Course Name	Introduction to Deep Learning	Foundations of Big Data Analytics	Practical Cyber Security for Cyber Security Practitioners	Network Forensics	Social Media Engineering
IV	Course Code	230GCAM10_04	230GDIM23_04	231GCAB13_04	240GCYM38_04	240GCAM34_04
	Course Name	Fundamentals of Natural Language Processing	Data Warehousing and Mining	Computer Networks and Internet Protocol	Mobile Device Forensics	Blockchain Technologies
IV	Course Code	230GCAM11_04	230GDIM24_04	240GCYM44_04	240GCYM39_04	240GCYM47_04
	Course Name	Foundations of Brain Computer Interface	Advanced Data Visualization and Analytics	Cryptography and Network Security	Cloud Forensics	Human Computer Interaction

Sem.	Interdisciplinary Open Course (IOC)				
	III	Course Code	230HFGM28_03	230VBCB14_03	250ULBB03_03
Course Name		Impression Forensics	E-Commerce	Cybersecurity Law and Policy	Energy Audit and Management
Course Code		230HFGM27_03	230VMSM05_03	230UPYB34_03	230VBCB16_03
Course Name		Investigative Skills	Fundamentals of Financial Management	Psychology at Workplace	Financial Fraud

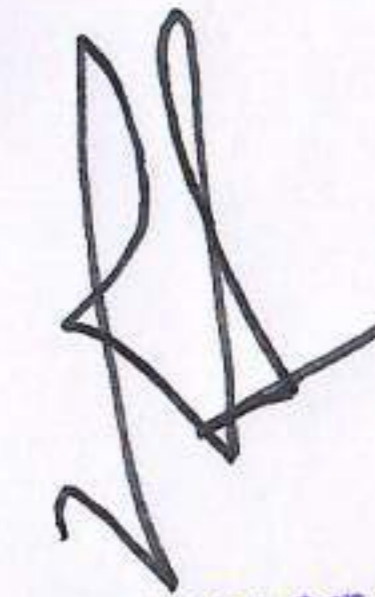
Mandatory Learning Course (MLC# ) Audit Course	
Course Code	250GCYM1_03
Course Name	Malware Analysis



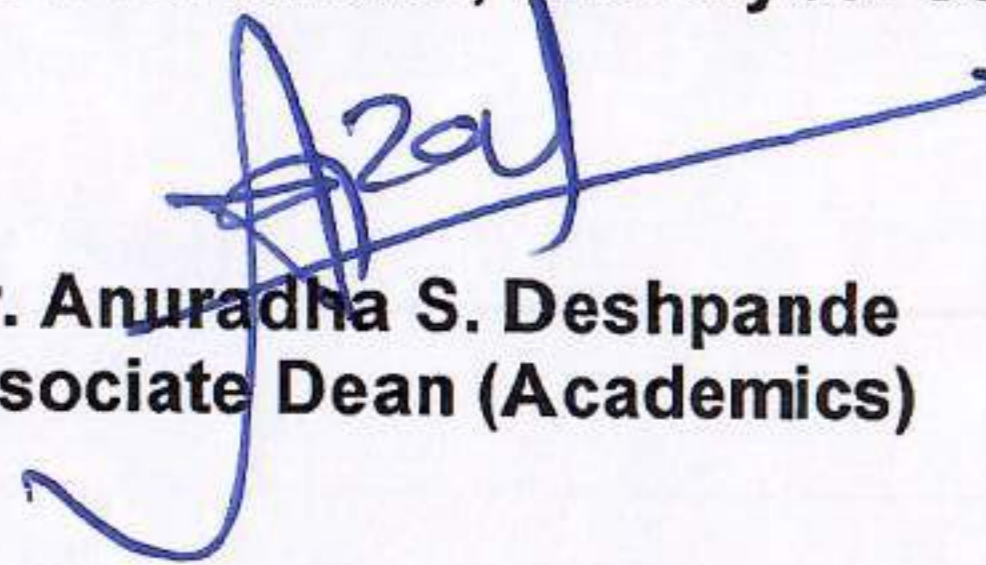
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## SEMESTER IV (LEVEL – 7.0)

COURSE		TEACHING SCHEME	EXAMINATION SCHEME AND MARKS											C R E D I T S		
TYPE	CODE	COURSE NAME	Hours / Week				THEORY (Equal Weightage for CIE and ESE)			PRACTICAL (Equal Weightage for CIE and ESE)		ORAL (Equal Weightage for CIE and ESE)			M A R K S	
			L	T	P	E L	CONTINUOUS INSEMESTER EVALUATION (100 / 25 Marks)			END SEMESTER EXAMINATI ON (100 / 75/ 50 Marks)	CONTINUO US INSEMEST ER EVALUATI ON (50 Marks)	END SEMESTER EXAMINATI ON (50 Marks)	CONTINUO US INSEMEST ER EVALUATI ON (50 Marks)			END SEMESTER EXAMINATI ON (50 Marks)
							T1 (30 Marks)	T2 (30 Marks)	Assign- ments (40 Marks)							
PEC	---	Program Elective Course -III/ MOOC	3	-	-	-	25			75	-	-	-	-	100	3
PEC	---	Program Elective Course -IV/ MOOC	3	-	-	-	25			75	-	-	-	-	100	3
PROJ	231GCYM23_04	Project / Internship with project	-	-	12	24	-	-	-	-	200	200	100	100	300	12
<b>TOTAL</b>			<b>6</b>	<b>0</b>	<b>12</b>	<b>24</b>								<b>500</b>	<b>18</b>	
MLC#	---	Audit course	1	-	-	-	-	-	-	50	-	-	-	-	50	1

**Note: A Postgraduate Diploma will be awarded if a student exits after first year.**

For "Exit" at the end of First Year the student must complete a total of 8 additional credits.

a) An internship / OJT of 8 - 10 weeks (4 credits) over and above semester 2 internship of minimum 4 weeks.

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							T1 (30 Marks)	T2 (30 Marks)	Assign- ments (40 Marks)							
PEC	---	Program Elective Course -III/ MOOC	3	-	-	-	25			75	-	-	-	-	100	3
PEC	---	Program Elective Course -IV/ MOOC	3	-	-	-	25			75	-	-	-	-	100	3
PROJ	231GCYM22_04	Project / Internship with project	-	-	12	24	-	-	-	-	200	200	100	100	300	12
<b>TOTAL</b>			<b>6</b>	<b>0</b>	<b>12</b>	<b>24</b>								<b>500</b>	<b>18</b>	
MLC#	---	Audit course	1	-	-	-	-	-	-	50	-	-	-	-	50	1

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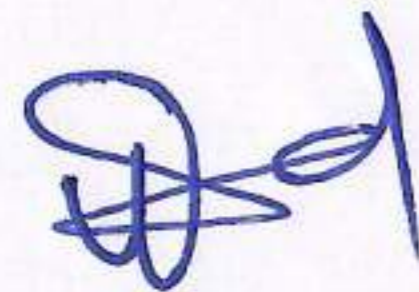
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	Specialization	AI and ML	Data Science	Network Security and Privacy	Cyber Forensics	
III	Course Code	230GCAM08_03	230GDIM21_03	230GCYM06_03	240GCYM36_03	240GCYM45_03
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	Course Name	Introduction to Deep Learning	Foundations of Big Data Analytics	Practical Cyber Security for Cyber Security Practitioners	Network Forensics	Social Media Engineering
IV	Course Code	230GCAM10_04	230GDIM23_04	231GCAB13_04	240GCYM38_04	240GCAM34_04
	Course Name	Fundamentals of Natural Language Processing	Data Warehousing and Mining	Computer Networks and Internet Protocol	Mobile Device Forensics	Blockchain Technologies
IV	Course Code	230GCAM11_04	230GDIM24_04	240GCYM44_04	240GCYM39_04	240GCYM47_04
	Course Name	Foundations of Brain Computer Interface	Advanced Data Visualization and Analytics	Cryptography and Network Security	Cloud Forensics	Human Computer Interaction

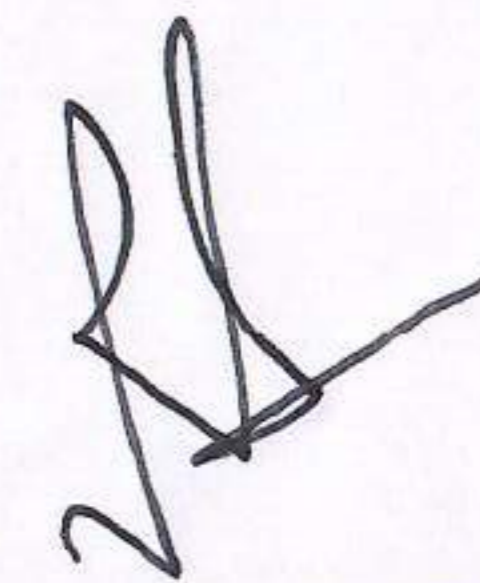
Mandatory Learning Course (MLC# ) Audit Course		
Course Code	250GCYM1_03	230UPOB02_04
Course Name	Malware Analysis	Introduction to Constitution of India



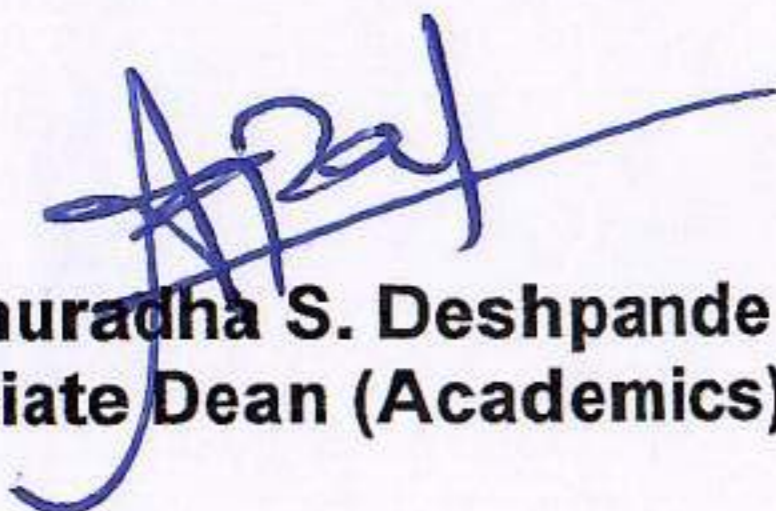
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