Central University of Rajasthan
School of Engineering & Technology
Department of Computer Science & Engineering
Scheme and Syllabus 2023 – 24 onwards

Master of Technology in Computer Science with Specialization in Cyber Physical Systems (M.Tech. (CPS))

Program Outcomes:

PO1.An understanding of the theoretical foundations and the limits of computing.

PO2. An ability to adapt existing models, techniques, algorithms, data structures, etc. for efficiently solving problems.

PO3. An ability to design, develop and evaluate new computer-based systems for novel applications which meet the desired needs of industry and society.

PO4. Understanding and ability to use advanced computing techniques and tools.

PO5. An ability to undertake original research at the cutting edge of cyber-physical systems& its related areas.

PO6. An ability to function effectively individually or as a part of a team to accomplish a stated goal.

PO7. An understanding of professional and ethical responsibility.

PO8. An ability to communicate effectively with a wide range of audiences.

PO9. An ability to learn independently and engage in life-long learning.

PO10. An understanding of the impact of IT-related solutions in an economic, social and environmental context.

Program-SpecificOutcomes:

1. At the end of the program, graduates will be able to get insights into various fields of Computer Science with a deep understanding of theoretical aspects of Cyber Physical Systems and related analysis.

2. Graduates should also get a broader understanding of Cyber Physical Systems, applications, challenges and solutions to problems.

3. During the course, students should enhance their inquisitiveness to ever-evolving domain of Cyber Physical Systems and apply their knowledge to solve problems.

Scheme

First Year

SEMESTER I

Sr. No	Course Code	Course Name	L	T	P	Credits
			Hours/week			
1	CPS601	Advanced Algorithms	3	1	0	4
2	CPS602	Topics in Computer Science	3	0	2	4
3	--	Program Elective -I	3	1	0	4
4	--	Program Elective -II	3	1	0	4
5		Open Elective -I	3	1	0	4
		Total Credits				**20**

SEMESTER II

Sr. No	Course Code	Course Name	L	T	P	Credits
			Hours/week			
1	CPS603	Cyber-Physical Systems	3	0	2	4
2	CPS604	Internet of Things (IoT)	3	0	2	4
3	--	Program Elective –III	3	1	0	4
4		Program Elective – IV	3	1	0	4
5		Open Elective – II	3	1	0	4
		Total Credits				**20**

Second Year

SEMESTER III

Sr. No	Course Code	Course Name	L	T	P	Credits
			Hours/week			
1	CPS701	SSR/Internship				4
2	CPS702	Dissertation – I / Project - I	0	0	40	16
		Total Credits				**20**

SEMESTER IV

Sr. No	Course Code	Course Name	L	T	P	Credits
			Hours/week			
1	CPS703	Dissertation – II / Project - II	0	0	40	20
		Total Credits				**20**

List of Electives

The following list has to be used for offering ProgrammeElective/ Open Elective. Additional Elective can be added as and when required after taking departmental approval.

Course Code	Programme / Open Elective (s)
CPS631	AI and Intelligent Systems
CPS632	Information Security Audit and Assurance
CPS633	Security Analysis of Protocols
CPS634	Cyber Crime, Forensics and Information Warfare
CPS635	Public Key Infrastructure and Trust Management
CPS636	Digital Watermarking and Steganalysis
CPS637	Data Mining
CPS638	Simulation and Modeling
CPS639	Optimization Techniques
CPS640	Topics in Operating Systems
CPS641	Topics in Computer Architecture
CPS642	Advanced Compiler Design
CPS643	Advanced Topics in Databases
CPS644	Mobile Computing
CPS645	Advance Software Engineering
CPS646	Multimedia System and Security
CPS647	Secure Programming Techniques
CPS648	Network Protocols
CPS649	Cloud Computing
CPS650	Parallel Programming
CPS651	Digital Image Processing

CPS652	Biometrics and Security
CPS653	Number Theory
CPS654	Machine Learning
CPS655	System Design
CPS656	Information Theory and Coding
CPS657	Computer Vision
CPS658	Soft Computing
CPS659	Natural Language Processing
CPS660	Blockchain Technology
CPS661	Game Theory
CPS662	Introduction to Cyber-Physical Systems
CPS663	Wireless Sensor Networks
CPS664	Cryptography and Network Security
CPS665	Vehicular Ad Hoc Networks
CPS666	Deep Learning
CPS667	SCADA and PLC Systems
CPS668	**Attacks and Defences**