ACADEMIC CURRICULA

UNDERGRADUATE DEGREE PROGRAMME

Bachelor of Science
B.Sc Computer Science – Specialization in Cyber Security

Three Years

Learning Outcome Based Curriculum Framework
(LOCF)

Academic Year

2023-2024

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

(Deemed to be University u/s 3 of UGC Act, 1956)
Kattankulathur- 603203, Chengalpattu District
Tamil Nadu, India

Bachelor of Science – Computer Science – Specialization in Cyber Security

Department Vision Statement	
Stmt - 1	Always strive to be the frontiers in learning and inculcating the technical skills and knowledge to excel in all possible dimensions
Stmt - 2	Energizing the art of learning to explore beyond professional assignments through research
Stmt - 3	Contribute to the growth of the nation and society by applying acquired knowledge in technical, computing and managerial skills

Department Mission Statement	
Stmt - 1	To provide a great platform to learn and practice technologies to meet the growing demands in the industries
Stmt - 2	To be distinguished as an renowned department for learning, experimenting and continuing research
Stmt - 3	Encouraging the students to understand the best of practices and standards of software and apply the same while developing applications that benefits the society
Stmt - 4	To make the learners recognize the need for engaging themselves in continuing professional development
Stmt - 5	Promoting students to integrate technical ability and IT-based solutions into appropriate user environments

Program Education Objectives (PEO)	
PEO - 1	Proficiency: To develop skills in students that can help them plan, implement, and monitor cyber security mechanisms to ensure the protection of information technology assets
PEO - 2	Analytical Ability: To develop skills in students that can help them plan, implement, and monitor cyber security mechanisms to ensure the protection of information technology assets
PEO - 3	Continuous learning: To systematically educate the necessity to understand the impact of cyber crimes and threats with solutions in a global and societal context
PEO - 4	Demonstration Skill: To equip students with the technical knowledge and skills needed to protect and defend against cyber threats
PEO - 5	Social Connect: To select suitable ethical principles and commit to professional responsibilities and human values and contribute value and wealth for the benefit of the society

Program Specific Outcomes (PSO)	
PSO - 1	Understand the cyber security threat landscape.
PSO - 2	Develop a deeper understanding and familiarity with various types of cyberattacks, cyber crimes, vulnerabilities and remedies thereto
PSO - 3	Analyse and evaluate existing legal framework and laws on cyber security

Consistency of PEO's with Mission of the Department					
	Mission Stmt. - 1	Mission Stmt. - 2	Mission Stmt. - 3	Mission Stmt. - 4	Mission Stmt. - 5
PEO - 1	H	M	H	H	H
PEO - 2	H	H	H	M	M
PEO - 3	H	M	H	H	H
PEO - 4	L	L	M	M	H
PEO - 5	H	H	H	H	M

H – High Correlation, M – Medium Correlation, L – Low Correlation

Consistency of PEO's with Program Learning Outcomes (PLO)															
	Program Learning Outcomes (PLO)														
	Fundamental	Application of Concepts	Link with Related	Procedural Knowledge	Skills in Specialization	Ability to Utilize	Skills in Modeling	Analyze, Interpret Data	Investigative Skills	Problem Solving Skills	Communication Skills	Analytical Skills	ICT Skills	Professional Behavior	Life Long Learning
PEO - 1	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
PEO - 2	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
PEO - 3	H	H	H	H	H	H	H	H	H	H	H	M	H	H	H
PEO - 4	H	M	H	M	H	M	L	M	L	H	H	L	M	H	H
PEO - 5	H	H	H	H	H	H	H	M	H	H	H	H	H	H	H

H – High Correlation, M – Medium Correlation, L – Low Correlation

Programme Structure

1. Professional Core Courses (C)
(13 Courses)

Course Code	Course Title	L	T	P	C
USA20101J	*Programming for Problem Solving*	4	0	4	6
USA20102J	*Digital Logic Fundamentals*	4	0	2	5
USC23201J	*Essentials of Computer Networking*	4	0	4	6
USC23202J	*Introduction to Cyber Security*	4	0	2	5
USC23301J	*Software Engineering and Testing*	4	0	4	6
USC23302J	*Operating Systems and Virtualization*	4	0	4	6
USC23401J	*Network Security*	4	0	4	6
USC23402J	*Penetration Testing*	4	0	4	6
USA20401J	*Database Systems*	4	0	0	4
USC23501J	*Programming in Java*	4	0	4	6
USC23502J	*Python Programming*	4	0	2	5
USC23503J	*Artificial Intelligence*	4	0	2	5
USC23601J	*Object Oriented Analysis and Design*	4	0	4	6
Total Learning Credits					**72**

2. Discipline Specific Elective Courses (E)
(4 Courses)

Course Code	Course Title	L	T	P	C
USC23301J	*E-Commerce, Digital Payments and Security*	4	0	4	6
USC23D02J	*Cyber Security of Digital Devices*				
USC23D03J	*Social Media Cyber Security*				
USC23D04J	*Data Privacy and Security*	4	0	4	6
USC23D05J	*Cyber Security Plan and Crisis Management*				
USC23D06J	*Cyber Crimes*				
USC23D07J	*Introduction to Blockchain*	4	0	4	6
UCS20D08J	*Cloud Computing*				
USC23D09J	*Cryptography*				
USC23D10L	*Project Work*	0	0	12	6
Total Learning Credits					**24**

3. Generic Elective Courses (G)
(9 Courses)

Course Code	Course Title	L	T	P	C
ULT20G01J	*Tamil – I*				
ULH20G01J	*Hindi - I*	2	0	2	3
ULF20G01J	*French - I*				
ULT20G02J	*Tamil – II*				
ULH20G02J	*Hindi – II*	2	0	2	3
ULF20G02J	*French -II*				
UMS20G01T	*Discrete Mathematical Structures*	3	1	0	4
UMS20G02T	*Mathematical Foundation*	3	1	0	4
UMS20G03T	*Statistical Methods*	3	1	0	4
Total Learning Credits					**18**

4. Ability Enhancement Courses (AE)
(2 Courses)

Course Code	Course Title	L	T	P	C
ULE20AE1T	*English*	4	0	0	4
UES20AE1T	*Environmental Studies*	3	0	0	3
Total Learning Credits					**7**

5. Skill Enhancement Courses (S) (6 Courses & My India Project)					
Course Code	Course Title	Hours/Week			
		L	T	P	C
USC23S01J	Security Threats	1	1	0	2
USC23S02J	Security Principles	1	1	0	2
USC23S03L	Cyber Law	0	0	2	1
USC23S04L	Digital Forensics	0	0	2	1
UCD23S01L	Report Writing - (POC)	0	0	0	1
UCD20S01L	Soft Skills	0	0	2	1
UCD20S02L	Quantitative Aptitude and Reasoning	0	0	2	1
Total Learning Credits					9

6. Extension Activity (NS/NC/NO/YG) (Any 1 Course)					
Course Code	Course Title	Hours/Week			
		L	T	P	C
UNS20201L	NSS				
UNC20201L	NCC				
UNO20201L	NSO	0	0	0	0
UYG20201L	YOGA				
Total Learning Credits					0

7. Life Skill Courses (JeevanKaushal – JK) (4 Courses)					
Course Code	Course Title	Hours/Week			
		L	T	P	C
UJK20201L	Communication Skills	0	0	4	2
UJK20301T	Universal Human Values	2	0	0	2
UJK20401T	Professional Skills	2	0	0	2
UJK20501T	Leadership and Management Skills	2	0	0	2
Total Learning Credits					8

Total Learning Credits : 138

Implementation Plan

Semester - I

Code	Course Title	L	T	P	C
ULT20G01J	Tamil-I				
ULH20G01J	Hindi-I	2	0	2	3
ULF20G01J	French-I				
ULE20AEIT	English	4	0	0	4
USA20101J	Programming for Problem Solving	4	0	4	6
USA20102J	Digital Logic fundamentals	4	0	2	5
UMS20G01T	Discrete Mathematical Structures	3	1	0	4
USC23S01J	Security Threats	1	0	1	2
UCD20S01L	Soft Skills	0	0	2	1
Total Hours Per Week		18	1	11	30
Total Learning Credits					25

Semester – II

Code	Course Title	L	T	P	C
ULT20G02J	Tamil-II				
ULH20G02J	Hindi-II	2	0	2	3
ULF20G02J	French-II				
USC23201J	Essentials of Computer Networking	4	0	4	6
USC23202J	Introduction to Cybersecurity	4	0	2	5
UMS20G02T	Mathematical Foundation	3	1	0	4
USC23S02J	Security Principles	1	0	1	2
UCD20S02L	Quantitative Aptitude and Reasoning	0	0	2	1
UJK20201L	Communication Skills	0	0	4	2
UNS20201L	NSS				
UNC20201L	NCC				
UNO20201L	NSO	0	0	0	0
UYG20201L	YOGA				
Total Hours Per Week		14	1	15	30
Total Learning Credits					23

Semester - III

Code	Course Title	L	T	P	C
USC23301J	Software Engineering and Testing	4	0	4	6
USC23302J	Operating Systems And Virtualization	4	0	4	6
USC23D01J	E-Commerce, Digital Payments and Security				
USC23D02J	Cyber Security of Digital Devices	4	0	4	6
USC23D03J	Social Media Cyber Security				
UMS20G03T	Statistical Methods	3	1	0	4
UCD23S01L	Report Writing - (POC)	0	0	0	1
UJK20301T	Universal Human Values	2	0	0	2
Total Hours Per Week		17	1	12	30
Total Learning Credits					25

Semester - IV

Code	Course Title	L	T	P	C
USC23401J	Network Security	4	0	4	6
USC23402J	Penetration Testing	4	0	4	6
USA20401J	Database Systems	4	0	0	4
USC23D04J	Data Privacy and Security				
USC23D05J	Cyber Security Plan and Crisis Management	4	0	4	6
USC23D06J	Cyber Crimes				
UJK20401T	Professional Skills	2	0	0	2
Total Hours Per Week		18	0	12	30
Total learning credits					24

Semester - V					
Code	Course Title	L	T	P	C
USC23501J	*Programming in Java*	4	0	4	6
USC23502J	*Python Programming*	4	0	2	5
USC23503J	*Artificial Intelligence*	4	0	2	5
USC23S03L	*Cyber Law*	0	0	2	1
USC23S04L	*Digital Forensics*	0	0	2	1
UES20AE1T	*Environmental Studies*	3	0	0	3
UJK20501T	*Leadership and Management skills*	2	0	0	2
Total Hours Per Week		17	0	12	29
Total Learning Credits					23

Semester - VI					
Code	Course Title	L	T	P	C
USC23601J	*Object Oriented Analysis and Design*	4	0	4	6
USC23D07J	*Introduciton to Blockchain*				
UCS20D08J	*Cloud Computing*	4	0	4	6
USC23D09J	*Cryptography*				
USC23D10L	*Project work*	0	0	12	6
Total Hours Per Week		8	0	20	28
Total Learning Credits					18