Sacred Heart College (Autonomous), Tirupattur District

1.2.1 List of New Courses

PGDCS

PG Diploma in Cyber Security

Semester	Code	Title of the Subject	L	TCP	P	IM	SM	TM	CD
I	CADC111	Fundamentals of Information Security	4			50	50	100	4
	CADC112	Data Communication and Networking	4			50	50	100	4
	CADC113	Vulnerability Analysis, Penetration Testing, and Incident Handling	4			50	50	100	4
	CADC114	Security Strategies in Operating Systems	4	1		50	50	100	4
			16	**1**		**200**	**200**	**400**	**16**
II	CADC211	Network Cyber Security	4			50	50	100	4
	CADC212	Cyber Forensics	4			50	50	100	4
	CADC213	Application Cyber Security	3	1		50	50	100	4
	CADC214	IOT Security	3	1		50	50	100	4
	CADC215	Advanced Ethical Hacking	3	1		50	50	100	4
	CADC216J	Internship			10	50	50	100	9
			17	**3**	**10**	**300**	**300**	**600**	**29**
	Total Credits								**45**

Sacred Heart College (Autonomous), Tirupattur District

1.2.1 List of New Courses

Department: PGDCS

S.No	Course Code	Course Name
1.	CADC111	Fundamentals of Information Security
2.	CADC112	Data Communication and Networking
3.	CADC113	Vulnerability Analysis, Penetration Testing, and Incident Handling
4.	CADC114	Security Strategies in Operating Systems
5.	CADC211	Network Cyber Security
6.	CADC212	Cyber Forensics
7.	CADC213	Application Cyber Security
8.	CADC214	Big Data & IOT Security
9.	CADC215	Advanced Ethical Hacking

SEMESTER-I

Fundamentals of Information Security

CADC111 FUNDAMENTALS OF INFORMATION SECURITY 4-0-0:100

COURSE OBJECTIVES

To learn the fundamentals of Cryptography and its applications.
To undertand the types of malwares.
To learn the ethical issues in information security.

COURSE OUTCOMES

At the end of the course, the students will be able to

CO. No.	Course Outcome Statement	Cognitive Level
CO1	Observe and Discuss the basic principles of security.	K1,K2
CO2	Observe and Apply the substitution and transposition methods.	K1,K3
CO3	Recognize and Compute symmetric ciphers	K1,K3
CO4	Tabulate and Compute Asymmetric ciphers	K1,K3
CO5	Observe , Discuss and Correlate the concept of digital signatures with security	K1,K2,K4
CO6	Recognize and Express the structure of Public Key Interfaces.	K1,K2
CO7	Observe and Explain the basic concepts in Internet Security.	K1,K2
CO8	Observe and Use the Internet Security Protocols.	K1,K3
CO9	Recognize and Operate the User Authentication Methods.	K1,K3
CO10	Recognize and Assess the architecture of kerberos.	K1,K5

Mapping of CO with PO and PSO

CO	Programme Outcomes (PO)					Programme Specific Outcomes (PSO)					Mean Scores of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	2	2	3	2	3	3	3	2	2	2.5
CO2	3	2	3	3	3	2	3	3	2	2	2.6
CO3	2	3	2	3	2	3	3	2	3	2	2.5
CO4	3	2	2	3	2	3	3	3	2	2	2.5
CO5	3	2	3	3	2	3	3	3	2	2	2.6
CO6	3	2	3	2	2	3	3	2	2	2	2.4
										Mean Overall Score	2.51666667
										Result	High

SEMESTER-I

Data Communication and Networking

CADC112 DATA COMMUNICATION AND NETWORKING 4-0-0:100

COURSE OBJECTIVES

To learn the architecture of Data communication and networking.
To understand the layerd architecture of TCP/IP.

COURSE OUTCOMES

At the end of this course, the students will be able to

CO. NO.	Course Outcome Statement	Cognitive Level
CO 1	Learn and use the concept of Data communication and Transmission Media	K1,K3
CO 2	Determine and Discuss the layer model of OSI and TCP/IP	K2,K3
CO 3	Determine and Elicit the Physical Layer functionalities	K2,K3
CO 4	List the functionality of Data Link Control Protocols and Observe their applications.	K1,K2
CO 5	Separate and Assess the functionality of Network Layer and Transport Layer	K4,K5
CO 6	Observe and Point out the functionality of various Application Layer protocols	K1,K2,K4

Mapping of CO with PO and PSO

CO	Programme Outcomes (PO)					Programme Specific Outcomes (PSO)					Mean Scores of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	1	2	3	3	3	1	2	3	3	2.4
CO2	3	1	2	3	2	3	1	2	3	2	2.2
CO3	3	1	2	2	2	3	1	2	2	2	2
CO4	3	2	2	2	2	3	2	2	2	2	2.2
CO5	3	2	2	2	2	3	2	2	2	2	2.2
CO6	3	2	2	2	2	3	2	2	2	2	2.2
Mean Overall Score											2.2
Result											High

SEMESTER-I

Vulnerability Analysis, Penetration Testing, and Incident Handling

CADC113 VULNERABILITY ANALYSIS, PENETRATION TESTING, AND INCIDENT HANDLING

4-0-0:100

COURSE OBJECTIVES

- To Learn the core concepts of Vulnerability Analysis.
- To understand the process of penetration testing.
- To learn about incident handling technique.

COURSE OUTCOMES

At the end of this course, the students will be able to

CO. NO.	Course Outcome Statement	Cognitive Level
CO 1	Identify and analyze vulnerabilities to the networks and applications	K1,K3
CO 2	Review, recognize and mitigate the vulnerabilities	K2, K4
CO 3	Comprehend the penetration testing methods and vulnerability types	K1
CO 4	Apply the methods to detect potential cyber security incidents	K3
CO 5	Identify and discover the ways to eradicate cyber security incidents	K1,K3
CO 6	Plan, advise and implement techniques to remove vulnerabilities to the systems and applications	K5, k6

Mapping of CO with PO and PSO

CO	Programme Outcomes (PO)					Programme Specific Outcomes (PSO)					Mean Scores of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	3	2	2	1	3	2	3	1	1	2.1
CO2	3	3	2	3	1	2	2	2	2	1	2.1
CO3	3	2	1	3	1	3	2	3	1	1	2.0
CO4	3	3	3	2	1	3	2	2	1	1	2.1
CO5	3	3	3	2	1	3	2	2	1	1	2.0
CO6	3	3	3	2	1	3	2	2	1	1	2.2
Mean Overall Score											2.1
Result											High

SEMESTER-I

Security Strategies in Operating Systems

CADC114 SECURITY STRATEGIES IN OPERATING SYSTEMS 4-1-0:100

COURSE OBJECTIVES

To Learn the fundamentals of security strategies in Operating Systems.
To Learn Operating system security tools.

COURSE OUTCOMES

At the end of this course, the students will be able to

CO. No.	Course Outcome Statement	Cognitive Level
CO 1	Observe and Discuss the basics of Information security.	K1,K2
CO 2	Recognize, Elicit and Apply the Authorization and access control	K1,K2,K3
CO 3	Observe and Discuss about Laws and Regulations of the privacy policy	K1,K2
CO 4	Recognize and Apply the fundamentals of security strategies in Operating Systems.	K1,K3
CO 5	Demonstrate and Practice the concepts of the network security.	K2,K3
CO 6	Analyze and Evaluate the Operating system security tools	K2,K4

Mapping of CO with PO and PSO

CO	Programme Outcomes (PO)					Programme Specific Outcomes (PSO)					Mean Scores of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	2	2	2	1	3	2	3	1	2	2.1
CO2	3	3	2	3	1	3	3	1	1	2	2.2
CO3	3	2	2	2	1	3	2	1	1	1	1.8
CO4	3	3	2	3	1	3	2	1	2	2	2.2
CO5	3	3	3	2	1	3	2	1	1	2	2.1

CO6	3	2	2	3	1	3	2	1	2	1	2
										Mean Overall Score	2.06666667
										Result	High

SEMESTER-II

Network Cyber Security

II SEMESTER

CADC211 **NETWORK CYBER SECURITY** **4-0-0:100**

COURSE OBJECTIVES

To Understand the basics of network cyber security.
To Learn the issues in wireless networks and internet.

COURSE OUTCOMES:

At the end of this course, the students will be able to

CO. NO.	Course Outcome Statement	Cognitive Level
CO1	Understand and Describe about the basic cyber security and Network security aspects.	K1, K2
CO2	Describe and infer about the mechanisms of firewall, intrusion detection system and public cryptography.	K1, K4
CO3	Apply various cryptographic techniques and analyze the protocols used.	K3, K4
CO4	Compare different types of firewalls	K5
CO5	Explore and understand different cyber threats	K5
CO6	Understand different defense mechanism and develop a model for a specific problem	K1, K6

Mapping of CO with PO and PSO

CO	Programme Outcomes (PO)					Programme Specific Outcomes (PSO)					Mean Scores of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	2	2	2	2	2	1	2	2	2	2
CO2	3	2	2	2	3	2	2	2	2	2	2.2
CO3	3	3	2	2	3	2	2	2	3	2	2.4
CO4	3	3	2	3	3	3	2	2	3	3	2.7
CO5	2	2	2	2	3	3	2	3	2	2	2.3
CO6	3	3	3	3	3	3	2	2	3	3	2.8
										Mean Overall Score	2.4
										Result	High

SEMESTER-II

Cyber Forensics

CADC212 **CYBER FORENSICS** **4-0-0:100**

COURSE OBJECTIVES

- To learn the basics of cyber forensics.
- To understand the types of cyber forensic systems.

COURSE OUTCOMES

At the end of this course, the students will be able to

CO. No.	Course Outcome Statement	Cognitive Level
CO 1	Observe and Elicit the relevance of cyber forensics.	K1,K2
CO 2	Observe, Recognize and Use methods to perform IR.	K1,K2,K3
CO 3	Draft and Develop systems capable of doing analysis and validation.	K5, K6
CO 4	Discuss and Apply evidence collection and forensic tools.	K1,K3
CO 5	Observe and Discuss the basics of network forensics.	K1,K2
CO 6	Compare and Correlate various aspects of cyber forensics.	K2,K4

Mapping of CO with PO and PSO

CO	Programme Outcomes (PO)					Programme Specific Outcomes (PSO)					Mean Scores of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	3	3	2	2	3	3	2	2	2	2.5
CO2	2	3	2	3	2	3	3	2	2	3	2.5
CO3	2	3	2	3	2	3	3	3	2	2	2.5
CO4	3	3	3	2	2	3	3	2	2	3	2.6
CO5	2	3	2	3	2	3	2	2	2	2	2.3
CO6	3	3	3	2	2	3	3	2	2	2	2.5
										Mean Overall Score	2.5

	Result	High

SEMESTER-II

Application Cyber Security

CADC213 APPLICATION CYBER SECURITY 3-1-0:100

OBJECTIVES

To learn the concepts in application level cyber security.
To understand the concepts of ethical hacking and cyber laws.

COURSE OUTCOMES

At the end of this course, the students will be able to

CO. No.	Course Outcome Statement	Cognitive Level
CO 1	Identify and analyze malicious code in the system and data base	K1,K4
CO 2	Review and recognize Operating system security vulnerabilities	K2,K4
CO 3	Understand the ethical hacking and computer forensics	K1
CO 4	Understand and Describe the Cyber Laws and standards	K1,K2
CO 5	Perform security audit and assess	K3,K6
CO 6	Plan, implement and monitor security breaches	K2,K5

Mapping of CO with PO and PSO

CO	Programme Outcomes (PO)					Programme Specific Outcomes (PSO)					Mean Scores of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	3	2	2	1	3	2	3	1	1	2.0
CO2	3	3	2	3	1	3	3	2	1	2	2.3
CO3	3	2	1	2	1	3	3	3	1	1	2.0
CO4	3	3	1	2	1	3	3	2	1	1	2.0

CO5	3	2	1	2	1	3	3	2	1	1	1.9
CO6	3	3	2	3	1	3	3	3	2	2	2.5
										Mean Overall Score	2.1
										Result	High

SEMESTER-II

Big Data & IOT Security

CADC214 BIG DATA & IOT SECURITY 3-1-0:100

COURSE OBJECTIVES

To undertand the consequences of security in BigData and IoT.
To learn the security mechanisms applied in BigData and IoT.

Course Outcomes

At the end of this course, the students will be able to

CO. No.	Course Outcome Statement	Cognitive Level
CO 1	Observe and Discuss the need of security in IoT.	K1,K2
CO 2	Recognize and Elicit the security mechanisms of IoT	K1,K2
CO 3	Identify and Classify the details of IoT Security Architecture	K1,K2
CO 4	Determine and Correlate the details on Security threat in IoT Perception Layer	K3, K4
CO 5	Determine and Correlate the details on Security threat in IoT Networking Layer	K2, K3
CO 6	Determine and Correlate the details on Security threat in IoT Processing Layer	K2, K3

Mapping of CO with PO and PSO

CO	Programme Outcomes (PO)					Programme Specific Outcomes (PSO)					Mean Scores of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	1	2	3	3	3	1	2	3	3	2.4
CO2	3	1	2	3	2	3	1	2	3	2	2.2
CO3	3	1	1	1	1	3	1	1	1	1	1.4
CO4	3	1	1	1	1	3	1	1	1	1	1.4

CO5	3	1	1	1	1	3	1	1	1	1	1.4
CO6	3	1	1	1	1	3	1	1	1	1	1.4
									Mean Overall Score		1.7
									Result		High

SEMESTER-II

Advanced Ethical Hacking

CADC215 ADVANCED ETHICAL HACKING 3-1-0:100

OBJECTIVES

To understand the basics of Ethical hacking.
To learn the types of hacking and DDOS attacks.

COURSE OUTCOMES

At the end of this course, the students will be able to

CO No.	Course Outcome Statement	Cognitive Level
CO1	Outline and Elicit ethical considerations of hacking	K1,K2
CO2	Outline and Apply legal considerations of hacking	K1,K3
CO3	Execute, Analyze and Evaluate a penetration test using standard hacking tools in an ethical manner.	K2,K4,K5
CO4	Plan and Draft a vulnerability assessment and penetration test for a network	K1,K3
CO5	Compare and Correlate on the strengths and vulnerabilities of the tested network	K2,K4
CO6	Recognize and Identify legal and ethical issues related to vulnerability and penetration testing.	K2,K4

Mapping of CO with PO and PSO

CO	Programme Outcomes (PO)					Programme Specific Outcomes (PSO)					Mean Scores of COs
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5	
CO1	3	2	2	2	1	3	2	3	1	2	2.1
CO2	3	3	2	3	1	3	3	1	1	2	2.2
CO3	3	2	2	2	1	3	2	1	1	1	1.8

CO4	3	3	2	3	1	3	2	1	2	2	2.2
CO5	3	3	3	2	1	3	2	1	1	2	2.1
CO6	3	2	2	3	1	3	2	1	2	1	2
										Mean Overall Score	2.1
										Result	High