

Branch Name:	CYBER SECURITY
Program Code:	ET207
Course Title:	Web and Database Security Practical
Course Code:	2ET2070304P
Pre-requisite Course:	Database security must guard against human error, excessive employee database privileges, hacker and insider attacks, malware, backup storage media exposure, physical damage to database servers, and vulnerable databases such as unpatched databases or those with too much data in buffers.

Course Objectives:

Elements of Criminal Procedure Code related to forensic science and Law.

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								
					Theory (Marks)				Practical (Marks)				Total (Marks)
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
1	-	-	2	2	-	-	-	-	10	25	10	25	50

Course Contents:

Unit	Details	Contact Hours
1	Fundamentals of Web Security: a. Understand common web vulnerabilities such as SQL injection, XSS, CSRF, and how to mitigate them. b. implement HTTPS, security headers, and secure authentication mechanisms.	2
2	Advanced Web Security Techniques: a. Deploy and configure Web Application Firewalls (WAFs) to protect against emerging threats. b. Implement secure session management and prevent session hijacking.	2
3	Fundamentals of Database Security: a. Learn secure configuration and access control best practices for databases. b. Understand the importance of encryption for data at rest and in transit. c. Implement database auditing and logging to monitor and detect unauthorized access..	2
4	Advanced Database Security Techniques: a. Implement database firewalls and intrusion detection systems (IDS) to protect against attacks. b. Explore database encryption and data masking techniques to safeguard sensitive information.	2
5	Compliance and Governance: a. Understand regulatory compliance requirements relevant to web and database security (e.g., GDPR, HIPAA). b. Learn about governance frameworks and best practices for maintaining security standards and audits.	2
6	Integration and Practical Application: a. Understand the interplay between web applications and databases in terms of security. b. Implement security best practices in a holistic approach across web and db environments.	2

Reference Books:

1. W.J. Tilstone, M.L. Hastrup and C. Hald, Fisher's Techniques of Crime Scene Investigation, CRC Press, Boca Raton (2013)
2. S.H. James and J.J. Nordby, Forensic Science: An Introduction to Scientific and Investigative Techniques, 2nd Edition, CRC Press, Boca Raton (2005)
3. R. Saferstein, Criminalistics, 8th Edition, Prentice Hall, New Jersey (2004).
4. Vipa P. Sarthi, Law of Evidence, 6th Edition, Eastern Book Co., Lucknow (2006).

Course Outcomes:

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

Course Outcomes	Description	Bloom's Taxonomy Level
CO1	The fundamental principles and functions of forensic science.	Understanding (2)
CO2	The working of the forensic establishments in India and abroad	Understanding (2)
CO3	The significance of criminal profiling to mitigate crime.	Applying (3)
CO4	Elements of Criminal Procedure Code related to forensic science.	Applying (3)

Mapping of CLO with PO and PSO

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes(PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CLO1	H	M	M		M											
CLO2	H	M			M							L				
CLO3	H	M	M		M											
CLO4	M	M	M		M							L				

H: High, M: Medium, L: Low