

Branch Name:	CYBER SECURITY
Program Code:	ET207
Course Title:	E-Commerce, Digital payments and its security
Course Code:	2ET2070205T
Pre-requisite Course:	Fundamental Knowledge of cyber security

Course Objectives: The aim of the course:

1. Discuss the players and processes involved in e-payments.
2. Discuss the different categories and potential uses of smart cards.
3. Different modes of E-Commerce like Electronic data interchange.
4. Web site establishment, electronic publishing and its importance.
5. Study all the aspects of Intra-Organizational electronic commerce including supply chain management

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								Total (Marks)
					Theory (Marks)				Practical (Marks)				
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
3	3	-	-	3	24	60	16	40	-	-	-	-	100

Course Contents:

Unit No	Topics	Total Hours	Weightage (%)
1	Introduction, Magnetic stripe debit and Credit cards, Chip Migration with EMVTM, Remote debit and credit with EMVTM. Payment Card Processing Roles involved in payment card processing, payment card brands, Credit and debit payment cards, Focusing on the magnetic stripe card, Threats and security protections, Processing at the point of service, Payment network and interchange message, On-line authorization, Clearing and Settlement.	09	20
2	A business case for chip migration, An overview of the chip card technology, proprietary payment application, interoperable payment application, EMVTM data elements, EMVTM file system, EMVTM application selection. SMS Payments, USSD Payments, UPI Payments, Mobile Wallets, Bharat Bill Payments, NEFT, IMPS, QR Code, Merchants Payments, Internet Banking & Payments. ATM Payments, Interoperable Payments.	09	20
3	Certification mechanism and algorithm, Public key certificate for RSA scheme, Entities and certifiers, Entity public key remainder, EMVTM certification chain, Issuing EMVTM public key certificates, Verifying EMVTM public key certificates, Issuing signed static application data, Verifying the signed static application data.	09	20
4	Overview of the EMVTM debit/credit transaction, Initiate application processing, Read application data, Off-line data authentication, Processing restrictions, Cardholder Verification, Terminal risk management, Terminal action analysis, On-line processing and issuer authentication.	09	20

5	EMVTM regulatory framework, Deriving ICC specifications by issuers, Selection criteria of the ICC architecture, Multiplication ICC, Issuer's business case, adaptive initiate application processing, Design criteria for CAM selection, Design criteria for CVM, Processing restrictions, Card risk management.	09	20
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Text Books:

1. Cristian Radu, Artech House, Implementing Electronic Card Payment Systems, Computer Security Series.

Reference Books:

1. Electronic Payment Systems for E-Commerce by Donal O'Mahony, Michael Peirce and Hitesh Tewari, Artech House, Computer Security Series.
2. David A. Buchanan, James McCalman, High Performance Work Systems: The Digital Experience, Routledge
3. David A. Montague, Essentials of Online payment Security and Fraud Prevention, Wiley

Course Learning Outcomes (CLO):

Course Outcomes	Description	Bloom's Taxonomy Level
COL1	Understand the shifts that are occurring with regard to digital payments.	Understanding (2) Applying (3)
COL2	Acquire a comprehensive understanding of different tasks associated in usage of digital payment systems.	Applying (3)
COL3	Understand risks involved in e-payments and their counter-measures to provide secure transactions.	Applying (3)
COL4	Understand and analyze chip card technology for digital payment systems.	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				
CLO5	M	M										L				

H: High, M: Medium, L: Low