III B.Sc(CS)		ECS616B
SEMESTER – VI	ADVANCEDCOMPUTER TECHNOLOGIES	HRS/WK – 5
ELECTIVE		CREDIT – 5

Objectives:

To enable the students to learn the concepts of advanced computer technologies

COURSE OUTCOMES:

CO1: Understand the basic need and ways of computer technologies.

CO2: Understanding the basics of smart devices.

CO3: Gain knowledge about IOT.

CO4: Acquire the knowledge about cloud computing.

CO5: To understand the Emerging Trends Of Information Technology

Relationship Matrix Course Outcomes, Programme Outcomes and Programme Specific Outcomes

SEMESTER VI	COURSE CODE: ECS616B					TITLE OF THE PAPER: ADVANCED COMPUTER TECHNOLOGIES					HOURS: 5	CREDITS: 5
COURSE OUTCOMES	**PROGRAMME OUTCOMES(PO)**					**PROGRAMME SPECIFIC OUTCOMES(PSO)**					**MEAN SCORE OF CO'S**	
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5		
CO1	3	3	3	3	3	4	4	3	3	3	3.2	
CO2	3	3	3	4	3	4	4	3	3	3	3.3	
CO3	3	4	3	4	3	3	3	3	4	3	3.3	
CO4	3	3	3	3	3	3	4	3	4	3	3.2	
CO5	3	3	3	3	3	4	3	3	3	4	3.2	
Mean Overall Score											3.2	

Result: The Score of this Course is 3.2(High)

Association	1%-20%	21%-40%	41%-60%	61%-80%	81%-100%
Scale	1	2	3	4	5
Interval	0<=rating<=1	1.1<=rating<=2	2.1<=rating<=3	3.1<=rating<=4	4.1<=rating<=5
Rating	Very Poor	Poor	Moderate	High	Very High

This Course is having **High** association with Programme Outcome and Programme Specific Outcome.

UNIT - I: **[20 hrs]**
E - commerce : Introduction - Evolution and development in Ecommerce- Types of E-Commerce- E-Commerce models- B2B - B2C -security - electronic payments - supply chain - EDI – E-markets - Emerging Trends

UNIT - II: **[20 hrs]**
Pervasive Computing devices and Interfaces: Device technology trends-Connecting issues and protocols-pervasive computing principles-XML and its role in Pervasive Computing - Wireless Application Protocol (WAP) Architecture and Security - Wireless Mark-Up language (WML) - Introduction

UNIT - III: **[15 hrs]**
Smart Devices : Introduction - Types of Smart Phones - Operating Systems for Smart Phones
Emerging Trends of Information Technology: Mobile Communication, Bluetooth, Global Positioning System (GPS), Smart Card, Blue Laser Disc, Nano Technology, DNA Computing, Quantum Computer, Holographic Memory.

UNIT - IV: **[10 hrs]**
IoT: The Vision-Introduction-From M2M to IoT-M2M towards IoT-the global context, A use case example, Differing Characteristics. Building an architecture, Main design principles and needed capabilities

UNIT - V: **[10 hrs]**
Cloud Computing: Introduction-Cloud types- Uses of Cloud- Software as a Service (SaaS): Concepts – Open SaaS Solutions, and Service-Oriented Architecture (SOA)-Platform as a Service (PaaS) -Infrastructure as a Service (IaaS)- Advantages and Server types of IaaS Solutions.

Text Books:

1. Krishna Kumar "Cyber Laws: Intellectual property & E Commerce Security", Dominant Publisher and Distributors

2. Jochen Burkhardt, Horst Henn, Stefan Hepper, Thomas Schaec, Klaus Rindtorff, "Pervasive Computing Technology and Architecture of Mobile Internet Applications", Pearson Education, New Delhi, 2007

3. Jan Holler, VlasiosTsiatsis, Catherine Mulligan, Stefan Avesand, Stamatis Karnouskos, David Boyle, **"From Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence",** 1st Edition, Academic Press, 2014.

4. Kris Jamsa, "Cloud Computing" Jones and BaretlettLearnig, 2013.

5.ITL Education Solution Ltd, "Introduction to Information Technology", Dorling, Kindersley (India) Pvt. Ltd, New Delhi.

III B.Sc(CS)	DATA COMMUNICATION AND NETWORKS	19ECS52A
SEMESTER - V		HRS/WK-5
Elective –I (Option I)		CREDIT –4

Objective:

To enable the students to get acquainted with the basics of Networks and to make them concentrate on research side with respect to networks.

COURSE OUTCOMES:

CO1: To know about basics of networks and internetworks.
CO2: To understand the function of layers and signals.
CO3: Ability to understand the different transmission medium with error correction and detection.
CO4: Ability to acquire knowledge about switching
CO5: To understand the concept of networking, internetworking devices and routing algorithm.

Relationship Matrix Course Outcomes, Programme Outcomes and Programme Specific Outcomes

SEMESTER V	COURSE CODE:19ECS52A					COURSE TITLE: DATA COMMUNICATION AND NETWORKS					HOURS: 5	CREDITS: 4
COURSE OUTCOMES	PROGRAMME OUTCOMES(PO)					PROGRAMME SPECIFIC OUTCOMES(PSO)					MEAN SCORE OF CO'S	
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5		
CO1	4	3	3	3	4	4	3	3	3	4	3.4	
CO2	3	4	3	4	4	4	3	3	3	4	3.5	
CO3	3	3	4	3	3	3	3	3	4	3	3.2	
CO4	4	3	4	3	3	3	4	3	3	3	3.3	
CO5	3	3	4	3	4	3	4	3	3	4	3.4	
Mean Overall Score											3.4	

Result: The Score of this Course is 3.4(High)

Association	1%-20%	21%-40%	41%-60%	61%-80%	81%-100%
Scale	1	2	3	4	5
Interval	0<=rating<=1	1.1<=rating<=2	2.1<=rating<=3	3.1<=rating<=4	4.1<=rating<=5
Rating	Very Poor	Poor	Moderate	High	Very High

This Course is having **High** association with Programme Outcome and Programme Specific Outcome.

UNIT-I   **[10hrs]**
Networks: Protocols and standard – line configuration – topology – transmission mode – categories of networks – inter networks.

UNIT-II   **[20hrs]**
The OSI Model: Functions of the layers – TCP/IP protocol suite – signals – analog and digital signal – periodic and a periodic signal – analog signals – digital signal – data transmission – data terminal equipment – data circuit terminals equipment – modems.

UNIT-III   **[20hrs]**
Transmission Media: Guided media – unguided media – transmission impairments – media comparison. Multiplexing – FDM – TDM – WDM. Error detection and correction – types of errors–detection – vertical redundancy check (VRC) – longitudinal redundancy check (LRC) – cyclic redundancy check (CRC) – check sum – error correction.

UNIT-IV   **[15hrs]**
Switching: Circuit switching – packet switching – message switching – networking and internetworking devices – repeaters – bridges – routers – gateways.

UNIT-V   **[10hrs]**
Routing algorithms: Distance vector routing – link state routing – data link control – line discipline – flow control – error control.

Text Books:
1. "Data Communications and Networks" – Behrouz A Forouzan, Second Edition, Tata McGraw Hill,2002.

2. "Data and Computer Communication", William Stallings, 7thEdition, Pearson Education – 2006.
3. Introduction to Data Communications and Networking. Wayne Tomasi . Pearson Prentice Hall, 2005

Reference Books:
1. William Stallings, "Data & Computer Communications", Sixth Edition, Pearson Education, 2001.
2. Introduction to Data Communications and Networking by Behrouz Forouzan, Catherine Ann Coombs, and Sophia Chung Fegan-1997.
3. Fred Halsall, "Data Communications, Computer Networks and Open Systems", Addison Wessley,1995.

III B.Sc (CS) SEMESTER - V Elective –I (Option II)	Electronic Commerce	19ECS52B HRS/WK-5 CREDIT –4

Objective:
To explore the basic concepts of E-Commerce and its Applications in real world.

COURSE OUTCOMES:

CO1: To know about basics of E-Commerce.
CO2: To understand the use of Electronic Payment.
CO3: To understand the various security policies.
CO4: To acquire knowledge about various cards used for transactions.
CO5: To know   .

Relationship Matrix Course Outcomes, Programme Outcomes and Programme Specific Outcomes

SEMESTER V	COURSE CODE: 19ECS52B					COURSE TITLE: Electronic Commerce					HOURS: 5	CREDITS: 4
COURSE OUTCOMES	PROGRAMME OUTCOMES(PO)					PROGRAMME SPECIFIC OUTCOMES(PSO)					MEAN SCORE OF CO'S	
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5		
CO1	3	3	4	5	4	4	3	4	3	3	3.6	
CO2	4	4	3	4	4	4	4	4	2	3	3.6	
CO3	4	4	3	4	4	4	3	4	3	2	3.5	
CO4	4	3	2	3	4	4	4	4	3	3	3.4	
CO5	4	3	4	3	3	3	3	3	3	4	3.3	
Mean Overall Score											3.48	

Result: The Score of this Course is 3.48(High)

Association	1%-20%	21%-40%	41%-60%	61%-80%	81%-100%
Scale	1	2	3	4	5
Interval	0<=rating<=1	1.1<=rating<=2	2.1<=rating<=3	3.1<=rating<=4	4.1<=rating<=5
Rating	Very Poor	Poor	Moderate	High	Very High

This Course is having **High** association with Programme Outcome and Programme Specific Outcome.

UNIT-1 [10HRS]

Electronic commerce environment and opportunities: Background – the electronic commerce environment - electronic marketplace technologies – models of electronic commerce: Overview – electronic data interchange – migration to open EDI – electronic commerce with WWW/Internet – Commerce Net Advocacy – Web commerce going forward.

UNIT-II [15HRS]

Approaches to safe electronic commerce: Overview – secure transport protocols – secure transactions – secure electronic payment protocol (SEPP) – Secure electronic transaction (SET) – certificates for authentication – security on web servers and enterprise networks – electronic cash and electronic payment schemes: Internet monetary payment and security requirements – payment and purchase order process – on-line electronic cash.

UNIT-III [20HRS]

Internet/Intranet security issues and solutions: The need for computer security – specific intruder approaches – security strategies – security tools – encryption – enterprise networking and access to the internet – antivirus programs – security teams.

UNIT-IV [20HRS]

MasterCard/visa secure electronic transaction: Introduction – business requirements – concepts – payment processing – E-mail and secure E-mail technologies for electronic commerce: Introduction – The means of distribution A Model for message handling – how does E-mail work?- MIME: Multipurpose internet mail extensions – S/MIME: Secure multipurpose internet mail extensions – MOSS: Message object. Security services – Comparisons of security methods – MIME and related facilities for EDI over the internet.

UNIT-V [10HRS]

Internet and web site establishment: Introduction – technologies for web servers – internet tools relevant to commerce – internet applications for commerce – internet charges – internet access and architecture – searching the internet – internet resources: A travelogue of web malls: Introduction a shopping experience – a travelogue – applications: Advertising on the internet: Issues and technologies: Introduction – advertising on the web – "Marketing 101" – creating a website.

Text Books:
1. Daniel Minoli and Emma Minoli. Web commerce technology handbook. Tata Mc Graw Hill. 1999.
2. Kamalesh K Bajaj and DebjaniNag.. E-Commerce, the cutting edge of business. TataMcGrawHill.1999
3. Janice Reynolds.. The Complete E-Commerce Book: Design, Build & Maintain a Successful Web-based Business. Focal PressPublication.2004

Reference Books:
1. Kenneth C. Laudon, Carol GuercioTraver.. E-commerce: Business, Technology, Society. Addison WesleyPublication,2001
2. Constance H. McLaren, Bruce J. McLaren. E-commerce: Business on the Internet South.