K.S.RANGASAMY COLLEGE OF ARTS AND SCIENCE (AUTONOMOUS)

TIRUCHENGODE - 637 215.

DEPARTMENT OF COMPUTER SCIENCE

ELECTIVE COURSES:

SEMESTER - V

- 1. E-COMMERCE
- 2. COMPUTER GRAPHICS

SEMESTER - VI

- 1. CLOUD COMPUTING
- 2. MOBILE COMPUTING

Enclosures:

- **Copy of Scheme of Examination** i.
- Syllabus copy of the elective course ii.
- Mapping of the courses. iii.

HoD - B.Sc [CS]

HEAD, Department of Computer Science, K.S. Rangasamy College of Arts and Science (Autonomous), TIRUCHENGODE-637 215.



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Fifth Semester				2/ ₂ ₁ -			
	Part	Ш					
18UCSM501	Core IX: Data Mining and Warehousing	6	3	25	7 5	100	4
18UCSM502	Core X: Software Engineering	5	3	25	75	100	4
18UCSM503	Core XI: Operating Systems	5	3	25	<i>7</i> 5	100	4
	Elective : I	5	3	25	<i>7</i> 5	100	3
18UCSMP501	Core Practical VI: R- Programming	3	3	40	60	100	3
18UCSMP502	Core Practical VII: Computer Hardware	3	3	40	60	100	3
	Pa	rt IV					
18UCSSBP501	SBC Practical III: MySQL(Internal Evaluation)	2	3	40	60	100	2
	P	art V	夏 臺 集				
18UCSE501	Extension Activity	_	-	-	-	-	2
	Non	Credit			* 7		
18ULS501	Career Competency Skills III	1	-	-	-	- A.:	-
		30				700	25
Sixth Semester		47.19					
	Pa	ert III	新音素				150
18UCSM601	Core XII: Python Programming	6	3	25	75	100	4
18UCSM602	Core XIII: Computer Networks [Fifth Unit as Self- study]	6	3	25	75	100	4
	Elective II	6	3	25	75	100	3
18UCSMP601	Core Practical VIII: Python Programming	3	3	40	60	100	3
18UCSMP602	Core Practical IX: Computer Networking	3	3	40	60	100	3
18UCSPR601	Project Work	3	3	40	60	100	4
	P	art IV					
18UCSSBP601	SBC Practical IV:	2	3	40	60	100	2



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NON MAJOR ELECTIVE COURSE

The department offers the following two subjects as Non Major Elective Course for other than the computer science students for third and fourth semesters.

S.No.	Semester	Subject Code	Subject
1	III	18UCSNM301	Internet Technology
2	IV	18UCSNM401	Principles of Web Design

ELECTIVE I

(Student shall select any one of the following subject as Elective in fifth semester)

S.No	Subject Code	Subject
1.	18UCSEL501	E-Commerce
2.	18UCSEL502	Computer Graphics

ELECTIVE II

(Student shall select any one of the following subject as Elective in sixth semester)

S.No	Subject Code	Subject
1.	18UCSEL601	Cloud Computing
2.	18UCSEL602	Mobile Computing



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18UCSEL501	ELECTIVE I: E-COMMERCE	SEMESTER - V
COLIDOR ODLEGE		

COURSE OBJECTIVE:

The course aims

- To learn the basics of E-Commerce.
- To know the concept of E-Marketing, E-Payment, Mobile Commerce and Legal Issues.

Credit Points:	3	Total	Hours: 50
UNIT	CONTENTS	Hrs	СО
I	History of E-commerce and Indian Business Context: Early Business Information Interchange Efforts-Emergence of the Internet - Emergence of World Wide Web - The Milestones - Advantages of E-commerce - Disadvantages of E-commerce -Transition to E-commerce in India - The Internet and India - E-Transition Challenges for Indian Corporates-The Information Technology Act,2000. Business Models for E-Commerce: E-business model based on the relationship of Transaction parties	10	CO1
Ш	Enabling Technologies of the World Wide Web: Internet Client- Server Applications - Software Agents - Internet Standards and Specifications - Internet Service Provider (ISP).E-Marketing: Traditional Marketing - Identifying Web Presence Goals - The Browsing Behaviour Model - Online Marketing - E-advertising	10	CO2



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	E-Security: Information System Security -		
	Security on the Internet - E-business Risk		
	Management Issues-Information security		
	environment in India. E-Payment Systems:		
III	Digital Token-based E-Payment Systems -	10	CO3
	Classification of New Payment Systems-		
	Properties of Electronic Cash (E-cash) -Risk	, les	
	and E-payment System.		
	E-Strategy: Information and Strategy - The		
	Virtual value Chain - Seven Dimensions of E-		
	commerce Strategy - Value Chain and E-		
4.	strategy - Planning the E-commerce project -		
	E-commerce Strategy and Knowledge	10	
	Management - E-Business Strategy and Data		
IV	Warehousing and Data Mining. Information		CO4
	Systems for Mobile Commerce: What is		
	Mobile Commerce - Wireless Applications -		
	Cellular Network - Wireless Spectrum -		
	Technologies for Mobile Commerce - WAP		
	Programming Model - Wireless Technologies.		
	Customer - Effective Web Design:		
	Requirements of Intelligent Websites- Setting		
	Websites Goals and Objectives - Strategies for		
X 7	Website Development. Legal and Ethical	10	GO.
V	Issues: Ethical Issues in the digital Economy -	10	CO5
	Computers as Targets for Crime - Computers		
	as Storage Devices - Computers as		
	Communication Tools - Cyber stalking -		



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	Privacy is at Risk in the Internet Age -		
	Phishing - Copyright - Internet Gambling -		
	Threats to Children- The Special Nature of		
	Computer Ethics.		
TEXT BOO	OK:		
1.	Joseph, P.T. S.J.2009.E-Commerce An Indian Perspective. [Third Edition]		
	Prentice-Hall of India, New Delhi.		
REFEREN	CE BOOKS:		
1.	Gray Schneider, P. 2007. Electronic Commerce [Seventh Annual Edition]		
	Thomson Course/technology		
2.	Ravi Kalakota and Andrew Whinston, B. 2000.Frontiers of Electronic		
	Commerce.[Fifth Indian Reprint]. Pearson Education, New Delhi.		
3.	Ravi Kalakot and Andrew Whinston, B. 2000. Electronic Commerce -A		
izovena Jihad .go _{ki saka}	manager's Guide. [Second Indian Reprint]. Pearson Education, New		
	Delhi.		
WEB REFI	FERENCES:		
1.	https://www.google.com/amp/s/searchcio.techtarget.com/definition/e-commerce%3famp=1		

After the completion of this course, the students should be able to:

CO1	Understand the basics of E-Commerce.
CO2	Know about E-marketing and its applications.
CO3	Understand the concepts of E-security and gain knowledge about the payment systems.
CO4	Understand the E-strategy and mobile commerce.
CO5	Acquire the knowledge of Legal and Ethical issues.



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MAPPING:

PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	M	M	M	Н
CO2	Н	M	M	Н	Н
CO3	Н	Н	Н	Н	Н
CO4	Н	Н	M	M	Н
CO5	Н	Н	Н	Н	Н

H-High; M-Medium; L-Low



18UCSEL502	ELECTIVE I: COMPUTER GRAPHICS	SEMESTER - V
	일 이 경찰 그는 이번 일반 기업을 제하는 사람은 상태를 다시는 것이 되었다.	

COURSE OBJECTIVES:

The Course aims

- To know the knowledge about the graphic technique and algorithm.
- To acquire the knowledge of multimedia system design, and various I/O technologies.

Credit Poir	nts: 3	Total Hou	rs: 50
UNIT	CONTENTS	Hrs	СО
	A Survey of Computer Graphics: Computer-Aided Design- Presentation Graphics- Computer Art- Entertainment-Education and Training - Visualization-Image Processing -Graphical User		
I	Interfaces. Overview of Graphics Systems: Video Display Devices- Raster Scan Systems-Video Controller-Random Scan Systems- Graphics Monitors and Workstations- Input Devices and Hard Copy Devices.	10	CO1
11	Output Primitives: Points and Lines-Line Drawing Algorithms: DDA Algorithm- Bresenham's Line Algorithm- Circle Generating Algorithms. Two Dimensional Geometric Transformations: Basic Transformations- Matrix Representations and Homogeneous Coordinates- Composite Transformations- Other Transformations. Two Dimensional Viewing: The Viewing Pipeline- Clipping Operations- Point Clipping-Line Clipping: Cohen-Sutherland line clipping-Polygon Clipping:	10	CO2



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	Sutherland-Hodgeman Polygon Clipping- Curve		
	Clipping- Text Clipping- Exterior Clipping.		
	Structures and Hierarchical Modeling: Structure		
	Concepts- Editing Structures- Basic Modeling		
	Concepts- Hierarchical Modeling with Structures.		
	Graphical User Interfaces and Interactive Input		
III	Methods: The User Dialogue: Windows and Icons-	10	CO3
	Input of Graphical Data- Input Functions-		
	Interactive Picture Construction Techniques-		
	Virtual Reality Environments.		
	Three-Dimensional Concepts: Three-Dimensional		
	Display Methods- Three- Dimensional Graphics		
	Packages. Three-Dimensional Object		
	Representations: Polygon Surfaces-Curved Lines		
IV	and Surfaces- Quadric Surfaces-Blobby Objects.	10	CO4
	Three-Dimensional Viewing: Projections-		
	Clipping- Hardware Implementations- Three-		
	Dimensional Viewing Functions.		
	Visible-Surface Detection Methods: Classification		
	of Visible-Surface Detection Algorithms- Back-Face		
	Detection- Depth-Buffer Method- A-Buffer Method-		
	Scan-Line Method-Depth-Sorting Method-Area-		
	Subdivision Method. Color Models and Color		
V	Applications: Standard Primaries and the	10	CO5
	chromaticity Diagram: XYZ Color Model-RGB Color		
	Model-YIQ Color Model-CMY Color Model-HSV		
	Color Model. Computer Animation: Design of		
	Animation Sequences-General Computer-		



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	Animation Functions-Raster Animations –
	Computer-Animation Languages-Key-Frame
	Systems - Motion Specifications. Understanding
	Services and Applications:Using Media and
	Streaming: Understanding the Streaming Process -
	Audio Streaming - Working with VoIP Applications
	- Video Streaming. Using the Mobile cloud:
	Working with Mobile Devices: Using Smart
	Phones with the Cloud. Working with Mobile Web
	Services: Understanding Service Types.
TEXT BOOK	
	Donald Hearnand Pauline Baker.M.2008.Computer Graphics C Version.
1.	[Second Edition-Sixth Impression].Pearson Education in South Asia.
REFERENCE	BOOKS:
	Neuman.W.M.andSproullR.F. 1997. Principles of Interactive Computer
1.	Graphics. [Second Edition]. McGraw-Hill.
	PradeepK.Bhatia. 2008. Computer Graphics. [First Edition].
2.	I.K.International Publishing House Pvt Ltd.
	Zhigang Xiangand Roy A. Plastock. 1986. Computer Graphics. [Second
3.	Edition].McGraw Hill.
WEB REFFER	RENCES:
1.	http://www.javapoint.com/computer-graphics-tutorial
	nttp.//www.javapoint.com/computer-graphics-tutorial



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After the completion of this course, the students should be able to:

CO1	Understand the basics of computer graphics.
CO2	Acquire knowledge about two dimensional and their transformations.
CO3	Understand the concepts of virtualization and gain knowledge about the
	user interface between the computer graphics.
CO4	Know the concept of three dimensional viewing methods.
CO5	Gain knowledge of Video, audio streaming and mobile applications.

MAPPING:

PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	Н	M	M	Н	Н
CO2	Н	M	M	Н	Н
CO3	Н	Н	M	Н	Н
CO4	Н	Н	M	Н	Н
CO5	Н	Н	M	Н	Н

H-High; M-Medium; L-Low



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18UCSEL601

ELECTIVE II: CLOUD COMPUTING

SEMESTER - VI

COURSE OBJECTIVES:

The Course aims

- To know the emerging areas of Cloud Computing.
- To acquire the knowledge of Virtualization, Cloud Security and Services.

Credit Po	ints: 3	Tota	l Hours: 50
UNIT	CONTENTS	Hrs	СО
I	Understanding Cloud Computing: Beyond the Desktop: An Introduction to Cloud Computing: Cloud Computing: What It Is – and What It Isn't – From Collaboration to the Cloud: A Short History of Cloud Computing – The Network Is the Computer: How Cloud Computing Works – Companies in the Cloud: Cloud Computing Today – Why Cloud Computing Matters. Are You Ready for Computing in the Cloud?: The Pros and Cons of Cloud Computing – Who Benefits from Cloud Computing? – Who Shouldn't Be Using Cloud Computing? Developing Cloud Services: Why Develop Web-based Applications? – The Pros and Cons of Cloud Service Development – Types of Cloud Service Development – Discovering Cloud Services Development Services and Tools.	10	CO1
II	Cloud Computing for Everyone: Cloud Computing for the Family: Centralized E-Mail Communications - Collaborating on Schedules - Collaborating on Grocery List -Collaborating on To-Do List - Collaborating on Household Budgets -	10	CO2



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IV	Cloud: Administrating the Cloud. Understanding	10	CO4
13.7	Exploring Cloud Infrastructures: Managing the		
	Cloud Services -Using Windows Live.		
	Microsoft Cloud Services: Exploring Microsoft	, i	
	Web Service Components and Services. Using		
	Understanding Amazon Web Services - Amazon		
	Google Toolkit. Using Amazon Web Services:		
III	Exploring Google Applications - Exploring the	10	CO3
	Porting Applications. Using Google Web Services:		
	Hypervisors - Understanding Machine Imaging -		
	Load Balancing and Virtualization - Understanding		
	Virtualization: Using Virtualization Technologies -		
	Using Platforms: Understanding Abstraction and		
	Management.		
	Applications – Exploring Online Planning and Task		
	Applications - Exploring Online Scheduling		
	and Task Management: Exploring Online Calendar	Not the con-	
	Services:Collaborating on Calendars, Schedules,		
	- Collaborating on Presentations. Using Cloud		
	on Budgets - Collaborating on Financial Statements		
	Collaborating on Expense Reports - Collaborating		
	Collaborating on Marketing Materials -		
	Managing Projects - Collaborating on Reports -		
	Managing Schedules - Managing Contact List -		
	Events. Cloud Computing for the Corporation:		
	Community - Collaborating on Group Projects and		
	Collaborating on contact list. Cloud Computing for the Community: Communicating across the		



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	Cloud Security: Securing the Cloud - Securing				
	Data - Establishing Identity and Presence.				
	Understanding Services and Applications: Moving				
	Applications to the Cloud: Applications in the				
	Cloud.				
	Understanding Services and Applications:Using				
	Media and Streaming: Understanding the				
	Streaming Process - Audio Streaming - Working		7		
	with VoIP Applications - Video Streaming. Using				
V	the Mobile cloud: Working with Mobile Devices:	10	CO5		
	Using Smart Phones with the Cloud. Working with				
	Mobile Web Services: Understanding Service				
	Types.				
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	Michael Miller. 2009. Cloud Computing: Web - Base	ed Applica	tions That		
1.	Change the Way You Work and Collaborate Online. [First Impression].				
1.	Pearson Education. New Delhi. (Unit I and Unit II).				
	<u>- 1 - 8 19 : 1 : 1 : 1 : 1 : 1 : 1 : 1 : 1</u>	ot Edition	D : .1		
2.	Barrie Sosinsky. 2013. Cloud Computing Bible. [First Edition - Reprint].				
	Wiley India Edition. New Delhi. (Unit III to Unit V).				
KEFERE	NCE BOOKS:				
	George Reese. 2009. Cloud Application Architectures: Building Applications				
1.	and Infrastructure in the Cloud. [First Edition]. Oreily's Publications. New				
	York.				
	Thomas Erl, Ricardo Puttini, ZaighamMahmood. 2013	3. Cloud	Computing		
2.	Concepts, Technology & Architecture. [Second Edition]. Prentice Hall.				
	New York.		critice Trui		
	Kris Jamsa. 2014. Cloud Computing: SaaS, PaaS	, IaaS. Vi	rtualizatio		
3.	Business Models, Mobile, Security and More. [Fi	rst Edition]. Jones an		
	Bartlett Learning. New Delhi.				



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WEB REI	FERENCES:
1.	https://searchcloudcomputing.techtarget.com
2.	https://www.webopedia.com/cloudcomputing
3.	https://www.infoworld.com/cloud

After the completion of this course, the students should be able to:

CO1	Understand the basics of cloud computing
CO2	Acquire knowledge about cloud computing works in family, community
CO2	and corporation.
CO3	Understand the concepts of virtualization and gain knowledge about
COS	Google, Amazon and Microsoft cloud with its services.
CO4	Know the cloud security and its applications.
CO5	Gain knowledge of Video, audio streaming and mobile cloud.

MAPPING:

PSO CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	Н	M	M	Н	Н
CO2	Н	M	M	Н	Н
CO3	н	Н	M	Н	Н
CO4	Н	Н	M	Н	Н
CO5	Н	Н	M	Н	Н

H-High; M-Medium; L-Low



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18UCSEL602

ELECTIVE II: MOBILECOMPUTING

SEMESTER-VI

COURSE OBJECTIVES:

The course aims

- To learn basic concept of Mobile Computing.
- To explore the knowledge of Telecommunication among the students.

UNIT	ts: 3 CONTENTS	Hrs	lours: 50
UNII	Introduction: Applications - A Simplified	nrs	
I	Reference Model. Wireless Transmission: Frequencies for radio transmission - Signals - Antennas - Signal Propagation - Multiplexing - Modulation - Spread Spectrum - Cellular System.	10	CO1
П	Medium Access Control: Motivation for a Specialized MAC- Hidden and exposed terminals - Near and far terminals - SDMA - FDMA - TDMA - Fixed TDM - Classical Aloha - Slotted Aloha - Carrier Sense Multiple Access - Demand assigned Multiple Access - PRMA Packet Reservation Multiple Access - Reservation TDMA - MultipleAccess with Collision Avoidance - Polling - Inhibit Sense Multiple Access. CDMA - Spread Aloha	10	CO2
ш	multiple access. Comparison of S/T/F/CDMA. Telecommunication Systems: GSM - Mobile Services - System Architecture - Radio Interface - Protocols - Localization and Calling - Handover - Security. UMTS and IMT 2000: UMTS releases	10	CO3



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	and standardization - UMTS System				
	Architecture - UMTS Radio Interface -UTRAN -				
	UMTS Handover.				
	Satellite System: History - Applications - Basics -				
	Routing- Localization - Handover. Wireless LAN:				
	IEEE 802.11- System Architecture - Protocol				
\mathbf{IV}	Architecture - Physical Layer - Medium Access	10	CO4		
	Control Layer. Bluetooth: User scenarios -				
	Architecture - Radio Layer - Baseband Layer - Link				
	Manager Protocol.				
	Mobile Network Layer: Mobile IP - Goals,				
	Assumption, and Requirements - Entities and				
	Terminology - IP Packet delivery - Agent discovery		CO5		
V	- Registration. Dynamic Host Configuration	10			
	Protocol - Mobile Transport Layer: Traditional TCP				
	- Congestion Control - Slow Start - Fast Retransmit.				
TEXTBOOK		•	0 1		
1	Jochen Schiller. Pearson Education. Mobile Communications. [Second				
	Edition].				
REFERENC					
1	Gordon L. Stüber. Principles of Mobile Communication				
2	William Stallings, Wireless Communication and Networks, 2nd Edition,				
	Pearson Education, 2005.				
3	Theodore Rappaport, Wireless Communications: Prin	ciples and			
WEB REFER	Practice, Prentice Hall Communications,1996.				
1	https://www.tutorialspoint.com/mobile computing				
2	https://www.minigranth.com				
3	https://searchmobilecomputing.techtarget.com				
3	1 / / The second second				



On successful completion of this course, the students will be able to:

CO1	Describe the basic Wireless Transmission.				
CO2	Overview of multiplexing techniques in wireless networks.				
CO3	Understand telecommunication Systems concepts.				
CO4	Attain the knowledge of satellite system.				
CO5	Learn the concept of mobile network layer.				

MAPPING:

CO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	M	Н	M	M	М
CO2	Н	Н	Н	Н	Н
CO3	Н	Н	M	Н	Н
CO4	Н	Н	H	Н	M
CO5	Н	Н	H	Н	M

H-High; M-Medium; L-Low



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