Syllabus for Fifth Semester

(ELECTIVE – I)

(a) CUSTOMER RELATIONS MANAGEMENT

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Data that has relevance for managerial decisions is accumulating at an incredible rate due to a host of technological advances. Electronic data capture has become inexpensive and ubiquitous as a by-product of innovations such as the internet, e-commerce, electronic banking, point-of-sale devices, bar-code readers, and intelligent machines. Such data is often stored in data warehouses and data marts specifically intended for management decision support. Data mining is a rapidly growing field that is concerned with developing techniques to assist managers to make intelligent use of these repositories. A number of successful applications have been reported in areas such as credit rating, fraud detection, database marketing, customer relationship management, and stock market investments. The field of data mining has evolved from the disciplines of statistics and artificial intelligence.

This course will examine methods that have emerged from both fields and proven to be of value in recognizing patterns and making predictions from an applications perspective. We will survey applications and provide an opportunity for hands-on experimentation with algorithms for data mining using easy-to- use software and cases.

ELECTIVE – I

(b) TELECOM SERVICES MANAGEMENT

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1. **Telecom Technologies:**
   Global Trends in telecommunication developments and Technological obsolescence, Convergence of services and technologies, Circuit Switching versus Packet Switching, Comparative Advantages.

2. **Telecommunication Networks:**
   a) **Network Components:** Types, Switch/routers, Backbone links and Gateways, Broadband access Networks, Intelligent Networks, Next Generation Networks (NGN), 3G, and 4G Access Networks, Physical and Virtual Networks, Number Portability, Cellular Networks LAN, WAN, MAN, Intranet and Internet, Corporate Networks, WiFi, WiMax.
   b) **Network Topologies:** Major (star, mesh, overlay etc), Network Synchronization
   c) **Tele-traffic Engineering basics:** Traffic, traffic units, routing , grade of service. Loss Systems, Delay systems, queuing systems.

3. Telecom Services:
   Modern Trends, Type of services, Universal Service Obligation (USO) and Universal Access Obligation (UAO), Millennium Development Goals in Telecom Sector: Service Penetrations.

4. **Operation Management:**
   Network availability, Network Performance Indicators, Development of Efficiency Indicators for Operators, Divisions/Departments and Section/offices; Safety and Maintenance of Telecom Networks, Fault analysis, typical fault rates of network components, Spares dimensioning basis, Inventory Management. Information System (MIS): Objectives, Key indicators

5. **General Management:**
   Roles and responsibilities of Senior Manager, Management of time, Problem solving and decision making, Leadership, Motivation of staff, Communication skills, Interpersonal relation, Conflict management, Negotiation skills, Management of staff performance.

6. **Project Management:**
   Concept of project planning and management and processes, Recent project planning approaches, Project cycle, Linkages between Plans/ Programs and projects, Project feasibility study – demand/need forecasting and analysis, technical analysis, financial analysis (NPV, ROI, IRR), economic analysis, social analysis, environmental analysis, Project planning matrix- logical framework, project appraisal and screening, Risk and uncertainty analysis and management, Project negotiation, Project organization, Project implementation plan (PERT, CPM, Network diagram, Gantt Chart), Role and

7. **Marketing Management:**
Role of marketing in service industries, marketing strategies – product/service strategies, pricing strategies, place strategies, promotion strategies. Demand /supply forecasting, market survey, pricing of NT, Marketing management issues and challenges of NT Ratios.

REFERENCE BOOKS

1. Telecom Project Management - Harold Kernzer
2. The art of project management - Scott Berkun

Local Area networks - S.K Basanra,S..Jaiswal

PERSONALITY DEVELOPMENT AND BEHAVIOUR SCIENCE

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Week 1 Psychology: Science or Intuition?
Introduction to Psychology - Foundation
Introduction/Research Methods

Week 2 Research Methods
Development

Week 3 Development

Week 4 Development/Aging
Learning

Week 5 Learning/Memory

Week 6 Memory
Cognition/Language

Week 7 Intelligence

Week 8 Motivation/Emotion

Week 9 Brain/Biological Bases of Behavior
Sensation/Perception

Week 10 Sensation/Perception
Consciousness

Week 11 Consciousness
Personality

Week 12 Stress/Coping
Psychopathology

Week 13 Psychopathology

Week 14 Social Psychology

REFERENCE BOOKS

1. Personality Development & Psychopathology
2. A Dynamic approach-norman Cameron Joseph F Rychlak
3. Personality: A behavioral science - E. Earl Baughman, George schlager
4. Personality Development - Transform yourself - Rajiv K Mishra
5. Personality & Social Behavior - Arrian fuauuam and Patrick Heaver

Cyber Security & Cyber Laws

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Part A Cyber Security

1. **Security Perspective**
   a) Basics of Computer Systems from the Security Perspective
   b) Security Features in an Operating System- Windows/Linux
   c) Networks and Security Challenges

2. **Internet Security Issues**
   a) Technology of Internet and Internet Protocols
   b) Internet Security Risks

3. **Digital Signatures for Securing Information Assets**
   a) Cryptography
   b) Digital Signatures
   c) Security Protocols...SSL, SET and HTTPS

4. **Protecting Information Assets**
   a) Firewalls
   b) Intrusion Detection Systems
   c) Ethical Hacking
   d) Cyber Forensic Tools

5. **Security Policies**
   a) Developing a Policy Framework.
   b) Implementing a Cyber Security Plan

Part B Cyber law:

1. **Basic Concepts of Technology and Law**
   a) Understanding the Technology of Internet
   b) Scope of Cyber Laws

2. **Law of Digital Contracts**
   a) The Essence of Digital Contracts
   b) The System of Digital Signatures

3. **Intellectual Property Issues in Cyber Space**
   a) Domain Names and Related issues
   b) Copyright in the Digital Media
   c) Patents in the Cyber World

4. **Rights of Netizens and E-Governance**
   a) Privacy and Freedom Issues in the Cyber World
   b) E-Governance
   c) Cyber Crimes and Cyber Laws

5. **Information Technology Act 2000**
   a) Information Technology Act-2000-1 (Sec 1 to 13)

b) Information Technology Act-2000-2 (Sec 14 to 42 and Certifying authority Rules)
c) Data Protection Laws in EU and USA
d) Child Abuse Protection Laws in EU and USA
e) Cyber Laws - the Malaysian Approach

6. Cyber Law Issues for Management

a) Cyber Law Issues in E-Business Management
b) Major issues in Cyber Evidence Management

REFERENCE BOOKS

1. Fundamental of computer security technology – Edward Amoroso
2. Cyber security operations handbook – Dr. John W Riitnghouse
3. Handbook of cyber laws – Sharma, Vakul
4. Cyber law simplified – Sood Vivek
5. Trust in cyber space – Fred B. Schnneifer

E-Commerce & M-Commerce

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1. INTRODUCTION

nfrastucture for Electronic Commerce - Networks - Packet switched networks - TCP/IP internet protocol - Domain name services - Web service protocol - Internet applications - Intranets and Extranets - Virtual private network - Strategies for e-commerce - Organizational and business barriers.

2. E-COMMERCE ARCHITECTURE

Electronic commerce models - Shopping cart technology - E-commerce solutions using IIS architecture - Domain model - Site server application - Intelligent agents - Internet marketing - XML and E-Commerce - Development of B2B and B2C web sites.

3. ELECTRONIC PAYMENT SYSTEM

Real World Payment System - Electronic funds transfer - Digital payment - Internet Payment System - Micro payments - Credit Card transactions - Case studies.

4. SECURITY

Threats to Network security - Public key cryptography - Secured sockets layer - Secure electronic transactions - Network security solutions - Firewalls.

5. INTER/INTRA ORGANIZATIONAL ELECTRONIC COMMERCE

EDI-EDI application in business legal, Security and Privacy issues - EDI and Electronic commerce - Standards - Internet commerce - Workflow automation and coodination - Customization and Internet commerce - Supply chain management - Back-End integration.

ADVANCED COMPUTER SYSTEM ARCHITECTURE

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Rationale

The student will get familiar with different types of motherboard, architecture and bus standards. The single user system base on 486, Pentium MMX, Pentium-II, Pentium-III and Pentium-IV will get emphasis.

Detailed Contents

1. Salient features and block diagram-486, Pentium-MMX, P-II, P-III and P-IV.
2. Bus standards: ISA, EISA, VESA & PCI.
3. Interface standards: RS 232C, SCSI-II, Fast & wide SCSI, IEEE 488.
4. Detailed Architecture: 486, P-MMX, P-II, P-III, P-IV.
5. Introduction to RISC processor based computer systems (Power PC).
6. Parallel Processing: Pipeline Computing-classification of pipeline processor, array processor-SMID processor and their inter connection networks.
7. Multiprocessor systems: Loosely coupled multiprocessor, tightly coupled multi processor and their interconnection networks.
8. Introduction to IRIX Architecture: IRIX root directory, important IRIX system files, IRIX commands configuring user accounts, IRIX login shell, disk drive supported by IRIX, system Disk, Option disk, and partition layout, IRIX file system, IRIX networking.
9. AS/400: Salient features, Block diagram, Architecture of AS/400.
10. Comparison of Pentium PC and Laptop motherboard.

LIST OF PRACTICALS

1. Study of the mother boards of 486 & Pentium processors.
2. Identification of chipsets and functional aspects of different subsystems on each card.
3. Study of the bus system and identifying various signal lines.
4. Study of peripherals used their speeds & capacities & study of Integration of the peripherals into the systems.
5. Practical based on AS/400.
   - Operations and procedure
   - Log on, Log off, shutdown
   - Jobs and subsystems (Interactive, Batch, Auto start, spooling).
   - Backup and Restores.
   - Terminals and user to the system.
   - Creating multiple AS/400 sessions.
   - Basic objects and library concepts.
   - AS/400 naming conventions.
   - CL commands.
   - Introduction CL programming

6. **Practical based on silicon graphics**

- Creating a login account
- Practical based on IRIX command- pwd, cd, Is, dirview, mkdir, cp, ln, mv, rm,rn-r, rmdir, Ip, lpstat, chmode, man, man-t
- Adding user account using shell command
- Configuring for a network

Reference Books

1. Govind Raju: IBM PC and Clones.
2. Raffiquzzman: Computer Architecture.
3. Fairhead: 80386/80486/BPB publication.
4. Computer Architecture and parallel processing - Kai Hwang, Faye B Briggs.

COMPUTER GRAPHICS

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Rationale

This subject will enable the students to have awareness about fundamental graphics which can be generated through computer using programming language c. They will be able to make pictures and introduce motion in them using basic transformations.

Detailed contents

1. **Overview of Graphics systems**
   - Raster scan displays, Vector scan displays, Colour CRT monitors and Flat panel display, input and output devices.

2. **Output primitives**
   - Line drawing algorithms-DDA Algorithm and Bresenham's algorithm
   - Circle generating algorithms-Circle algorithm, midpoint circle algorithm
   - Introduction to Region filling, flood filling and boundary filling.

3. **Graphics primitives in C**

4. **Two dimensional transformations**
   - Basic transformation-Translation, Rotation, Scaling
   - Matric representation & homogenous coordinates, Composite transformations-translation, Rotation, Sealing
   - Other transformations-Shear and Reflection

5. **Viewing and Clipping**
   - Window to view port coordinate transformation
   - Point clipping, Cohen-Sutherland line clipping algorithm
   - Sutherland Hodgeman polygon clilpping

6. **Three-Dimensional Graphics**
   - Three dimensional transformations, Introduction to wire-frame model, Bezier curves.

7. **Projections**
   - Parallel projections
   - Perspective projections

8. **Animation**
   - Conventional and computer animation
   - Design of animation sequences
   - Morphing
   - Kinematics and dynamics

LIST OF PRACTICALS

1. Programming using graphic primitives in C
2. Line drawing using DDA algorithm
3. Line drawing using Bresenham algorithm
4. Bresenham's circle algorithm
5. 2D translation technique
6. 2D rotation technique
7. 2D scaling technique
8. Creating animations

Reference Books

1. Computer Graphics - Hearn Baker
2. Computer Graphics - Schaum Series
3. Computer Graphics Programming approach - Steven Harrigton
4. Principles of Interactive computer graphics - Newman and sproul

Communication Lab (English & French)

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1. English / FOREIGN LANGUAGE
2. English Language Skills
3. Readings from Popular Science Writing
4. Readings from Drama
5. Readings from Prose and Poetry
6. Linguistics
7. Phonetics and Spoken English
8. Creative Writing
9. Effective Speaking
10. Semantics
11. Prose
12. Literary Criticism
13. Fiction
14. Science Writings
15. Effective Public Speaking
16. Drama I
17. Drama II
18. Poetry I
19. Poetry II
20. Modern Fiction

REFERENCE BOOKS

1. Essentials of Business communication – Rajendra Pal & J S Korlahalli;
2. A Guide to business correspondence – A N Kapoor.