Third Edition, 2009. 2. George F. Luger, Artificial Intelligence: Structures and Strategies for Complex Problem Solving, Pearson Education, 6th ed., 2009.

COURSE OUTCOMES:

1. Build intelligent agents for search and games
2. Solve AI problems through programming with Python
3. Learning optimization and inference algorithms for model learning
4. Design and develop programs for an agent to learn and act in a structured environment.
5. Understand about Bayesian Networks

END

(A30013) BUSINESS MANAGEMENT & FINANCIAL ANALYSIS

B. Tech (CSE-Cyber Security) - VII Semester

L	T	P	C
4	0	0	4

UNIT - I

Introduction of Management Concepts: Concept, Origin, Growth, Nature, Characteristics, Scope and Principles of Management. Functions of Management: Planning, Organizing, Staffing, Directing, Coordinating, Reporting and Budgeting. Scientific Management- FW Taylor Contributions to Management Modern Management- Henry Fayol Contributions to Management Human Relations Approach to Management: Theories of Motivation and Leadership

UNIT - II

Functional areas of Management: Production Management: Systems of Production, PPC functions & Plant Layout. Financial Management: Objectives, Goals, & Functions of Financial Management. Marketing Management: Recent Trends in Marketing & Marketing Mix. Human Resources Management: Nature, Objectives, Scope & Functions of HR Management

UNIT - III

Introduction to Managerial Economics & Business Environment: Definition, Nature, Scope and Functions Managerial Economics, Difference between Micro & Macro Economics Internal & External Scanning of Business Environment, Importance of National Income, Inflation, Deflation, Stagflation, Business Cycle & Product Life Cycle Concepts. Concept & Law of Demand, Factors Influencing and Limitations. Concept of Elasticity of Demand, Types of Elasticity, Methods of Measuring Elasticity. Introduction to Demand Forecasting, Objectives, Scope, Types and Methods.

UNIT- IV

Theory of Production, Cost, Price & Markets: Production Function, Assumptions, Limitations & Types Cost Concepts, Cost-Output Relationship, Break Even Analysis Assumptions, Limitations & Applications (Simple Problems). Theory of Pricing, Objectives, Situations & Types. Introductions Markets, Demand-Supply Schedule for Equilibrium Price, Nature & Types of Competition.

UNIT - V

Introduction to Financial Statement Analysis: Types & Objectives of Business Enterprises, Conventional & Non-Conventional Sources of Financing Business Enterprise. Identification of Financial Statement Formats-Manufacturing A/c, Trading A/c, Profit & Loss A/c, Balance Sheet. Techniques of Analyzing Financial Statements: Analysis & Interpretation through Liquidity, Leverage, Coverage, Activity, Turnover, Profitability Ratios-Simple Problems on Liquidity, Leverage and Activity Ratios

TEXT BOOKS:

1.Varshney, Maheswari (2003), Managerial Economics, Sultan Chand, New Delhi, India.
2. Stoner, Freeman, Gilbert, Management, 6th Ed, Pearson Education, New Delhi,
2004.

REFERENCE BOOKS:

1. Kotler Philip & Keller Kevin Lane: Marketing Mangement 12/e, PHI, 2005
2. Koontz &Weihrich: Essentials of Management, 6/e, TMH, 2005 Thomas N. Duening& John M. Ivancevich Management—Principles and Guidelines, Biztantra, 2003.
3. Ambrish Gupta (2004), Financial Accounting for Management, Pearson Education, New Delhi, India.
4. Domnick Salvatore (2011), Managerial Economics in a Global Economy, 7th edition, Oxford University Press, United States of America.
5. Narayanaswamy (2005), Financial Accounting, A Managerial Perspective, Prentice Hall of India private Ltd, New Delhi, India.
6. Aryasri (2005), Managerial Economics and Financial Analysis, 2nd edition, Tata McGraw Hill, New
Delhi, India

COURSE OUTCOMES:

1. Float different forms of business enterprises and generate capital from various sources.

2. Analyze financial stability of an enterprise in view of cut-throat competition from rivals.
3. Tune Enterprise in accordance with changes in surround economic environment.
4. Forecast demand, production, cost, capital, price under different market situations for variousproducts of business enterprise in general.
5. Employ various functions of management in different functional areas of enterprise.

****END****

(A30541) COMPUTER VISION & IMAGE PROCESSING (PROFESSIONAL ELECTIVE-III)

(A30536) ADHOC & SENSOR NETWORKS
(PROFESSIONAL ELECTIVE-III)

B. Tech (CSE-Cyber Security) VII Semester

L	T	P	C
3	0	0	3

UNIT-I

Introduction to Ad Hoc Networks - Characteristics of MANETs, Applications of MANETs and Challenges of MANETs. Routing in MANETs - Criteria for classification, Taxonomy of MANET routing algorithms, Topology based routing algorithms-Proactive: DSDV; Reactive: DSR, AODV; Hybrid: ZRP; Positionbased routing algorithms-Location Services-DREAM, Quorum-based; ; Forwarding Strategies: Greedy Packet, Restricted Directional Flooding-DREAM, LAR..

UNIT–II

Data Transmission - Broadcast Storm Problem, Rebroadcasting SchemesSimple-flooding, Probability based Methods, Area-based Methods, Neighbor Knowledge-based: SBA, Multipoint Relaying, AHBP. Multicasting: Tree-based: AMRIS, MAODV; Mesh-based: ODMRP, CAMP; Hybrid: AMRoute, MCEDAR.

UNIT–III

Geocasting: Data-transmission Oriented-LBM; Route Creation Oriented GeoTORA, MGR.TCP over Ad Hoc TCP protocol overview, TCP and MANETs, Solutions for TCP over Ad hoc.

UNIT-IV

Basics of Wireless, Sensors and Lower Layer Issues

Applications, Classification of sensor networks, Architecture of sensor network, Physical layer, MAC layer, Link layer, Routing Layer.

UNIT–V

Upper Layer Issues of WSN

Transport layer, High-level application layer support, Adapting to the inherent dynamic nature of WSNs, Sensor Networks and mobile robots.

TEXT BOOKS:

1. Ad Hoc and Sensor Networks – Theory and Applications, Carlos Corderio Dharma P. Aggarwal,
   World Scientific Publications, March 2006.

REFERENCE BOOKS:

1. Wireless Sensor Networks: An Information Processing Approach, Feng Zhao, Leonidas Guibas,
   Elsevier Science.
2. Wirelss Communications & Networks 2/e, William Stallings, PEA , 2007.
3. Handbook of Wireless Networks and Mobile Computing, Ivan Stojmenovic, Wiley, 2007.

COURSE OUTCOMES:

1. Appraise the importance of Adhoc networks such as MANET
2. Explain the design considerations for deploying the wireless network infrastructure.
3. Describe the state-of-the-art research in the emerging subject of Ad Hoc and Wireless Sensor Networks
4. Solve the issues in real-time application development based on ASN.
5. Conduct further research in the domain of ASN

END

(A36221) CLOUD SECURITY
(Professional Elective - IV)

B. Tech (CSE-Cyber Security) VII Semester	**L**	**T**	**P**	**C**
	3	**0**	**0**	**3**

UNIT - I

Cloud Computing Fundamentals: Cloud Computing definition, private, public and hybrid cloud. Cloud types; IaaS, PaaS, SaaS. Benefits and challenges of cloud computing, public vs private clouds, role of virtualization in enabling the cloud; Business Agility: Benefits and challenges to Cloud architecture.

UNIT - II

Cloud Applications: Technologies and the processes required when deploying web servicesDeploying a web service from inside and outside a cloud architecture, advantages and disadvantages- Development environments for service development; Amazon, Azure, Google App.

UNIT – III

Securing The Cloud: Security Concepts - Confidentiality, privacy, integrity, authentication, nonrepudiation, availability, access control, defence in depth, least privilege- how these concepts apply in the cloud and their importance in PaaS, IaaS and SaaS. e.g. User authentication in the cloud

UNIT - IV

Virtualization Security: Multi-tenancy Issues: Isolation of users/VMs from each other- How the cloud provider can provide this- Virtualization System Security Issues: e.g. ESX and ESXi Security, ESX file system security- storage considerations, backup and recovery- Virtualization System Vulnerabilities.

UNIT - V

Cloud Security Management: Security management in the cloud – security management standardsSaaS, PaaS, IaaS availability management- access control- Data security and storage in cloud.

TEXT BOOKS:

1. Gautam Shroff, "Enterprise Cloud Computing Technology Architecture Applications", Cambridge University Press; 1 edition [ISBN: 978-0521137355], 2010.

2. Toby Velte, Anthony Velte, Robert Elsenpeter, "Cloud Computing, A Practical Approach", Tata McGraw-Hill Osborne Media; 1 edition 22, [ISBN: 0071626948], 2009.

REFERENCE BOOKS :

1. Tim Mather, Subra Kumaraswamy, Shahed Latif, "Cloud Security and Privacy: An Enterprise Perspective on Risks and Compliance", O'Reilly Media; 1 edition, [ISBN: 0596802765], 2009.

2. Ronald L. Krutz, Russell Dean Vines, "Cloud Security", Wiley [ISBN: 0470589876], , 2010.

COURSE OUTCOMES:

1.Understand the fundamentals of cloud computing.

2.Understand the requirements for an application to be deployed in a cloud.

3. Become knowledgeable in the methods to secure cloud.

4. Able to understand about cloud security

5. Able to understand about cloud security

*****END*****

(A36222) BIOMETRIC SYSTEMS (PROFESSIONAL ELECTIVE-V)

B. Tech (CSE-Cyber Security) VII Semester

L	T	P	C
3	0	0	3

UNIT- I

Introduction -:Biometric fundamentals – Biometric technologies – Biometrics vs. traditional techniques – Characteristics of a good biometric system – Benefits of biometrics – Key biometric processes: verification, identification and biometric matching – Performance measures in biometric systems.

UNIT - II

Physiological Biometrics: Leading technologies: Finger-scan – Facial-scan – Irisscan – Voice- scan – components, working principles, competing technologies, strengths, and weaknesses – Other physiological biometrics: Hand-scan, Retinascan – components, working principles, competing technologies, strengths, and weaknesses – Automated fingerprint identification systems. Behavioural Biometrics: Leading technologies: Signature-scan – Keystrokescan – components, working principles, strengths, and weaknesses.

UNIT - III

Standards in Biometrics: Assessing the Privacy Risks of Biometrics – Designing Privacy - Sympathetic Biometric Systems – Need for standards – different biometric standards - Categorizing biometric applications.

UNIT - IV

Multi Biometrics: Multi-sensor systems, Multi-algorithm systems, Multi-instance systems, Multi-sample systems, Multimodalsystems, Acquisition and Processing Architecture, Fusion Levels.

UNIT - V

Security Of Biometric Systems: Adversary Attacks, Insider attacks, Infrastructure attacks, Attacks at the User Interface, Impersonation, Obfuscation,

Spoofing, Countermeasure: spoof detection, Attacks on Biometric Processing, Attacks on the system modules. Attacks at the interconnections. Attacks on the Template Database.

TEXT BOOKS:

1. Anil K. Jain, Patrick Flynn, and Arun A. Ross, "Handbook of Biometrics," Springer, 2008.
2. Jain, A. K., Ross, A. A., & Nandakumar, K. (2011). Introduction to biometrics. Springer Science & Business Media.

REFERENCE BOOKS:

1. Paul Reid, Samir Nanavati, Michael Thieme and Raj Nanavati, "Biometrics – Identity Verification in a
Networked World," Wiley-Dream Tech India Private Limited, New Delhi, 2003.
2. John R. Vacca, "Biometric Technologies and Verification Systems," Elsevier Inc, 2007.

COURSE OUTCOMES:

1.Identify the various Biometric technologies.
2.Design of biometric recognition for the organization.
3.Develop simple applications for privacy.
4. Understand the research on biometric techniques.
5.Understand the need for biometric in society.

(A30163) AIR POLLUTION AND CONTROL
(OPEN ELECTIVE)

B. Tech (CSE-Cyber Security)

L	T	P	C
3	0	0	3

UNIT I

Introduction: Definition, Sources, classification and characterization of air pollutants. Effects of air pollution on health, vegetation & materials. Types of inversion, photochemical smog.

UNIT II

Meteorology: Temperature lapse rate & stability, wind velocity & turbulence, plume behavior, measurement of meteorological variables, wind rose diagrams, Plume Rise, estimation of effective stack height and mixing depths.

UNIT III

Sampling: Sampling of particulate and gaseous pollutants (Stack, Ambient & indoor air pollution), Monitoring and analysis of air pollutants (PM2.5, PM10, SOX, NOX, CO, NH3). Development of air quality models-Gaussian dispersion model-Including Numerical problems.

UNIT – IV

Control Techniques: Particulate matter and gaseous pollutants- settling chambers, cyclone separators, scrubbers, filters & ESP - Including Numerical problems. Site selection for industrial plant location.

UNIT – V

Air pollution due to automobiles, standards and control methods. Noise pollution- causes, effects and control, noise standards. Environmental issues, global episodes. Environmental laws and acts.

TEXTBOOKS:

1. M. N. Rao and H V N Rao, “Air pollution”, Tata Mc-G raw Hill Publication.
2. H. C. Perkins, “Air pollution”. Tata McGraw Hill Publication.
3. Mackenzie Davis and David Cornwell, “Introduction t o Environmental Engineering” McGraw-Hill Co.

REFERENCE BOOKS:1. Noel De Nevers, "Air Pollution Control Engineering", Waveland Pr Inc.
2. Anjaneyulu Y, "Text book of Air Pollution and Control Technologies", Allied Publishers.

COURSE OUTCOMES:

1. Identify the major sources of air pollution and understand their effects on health and environment.
2. Evaluate the dispersion of air pollutants in the atmosphere and to develop air quality models.
3. Ascertain and evaluate sampling techniques for atmospheric and stack pollutants.
4. Choose and design control techniques for particulate and gaseous emissions.

END

(A30163) MANAGEMENT OF INDUSTRIAL RELATIONS (OPEN ELECTIVE)

(OPEN ELECTIVE)

L	T	P	C
3	0	0	3

B. Tech (CSE-Cyber Security)

UNIT I

Introduction to data communications, networking, signals, noise, modulation and demodulation. Data communication network architecture, layered network architecture, open systems interconnection, data communications circuits, serial and parallel data transmission, data communications circuit arrangements, data communication networks, alternate protocol suites. Information capacity, bits, bit rate, baud, and M-ARY encoding.

UNIT II

Metallic cable transmission media & optical fiber transmission media: metallic transmission lines, transverse electromagnetic waves, characteristics of electromagnetic waves, transmission line classifications, metallic transmission line types, metallic transmission line equivalent circuit, wave propagation on metallic transmission lines, metallic transmission line losses, block diagram of an optical fiber communications system, optical fiber versus metallic cable facilities.

UNIT III

Digital transmission & multiplexing and t-carriers digital transmission: pulse modulation, pulse code modulation, dynamic range, signal–to-quantization noise voltage Ratio, linear versus nonlinear PCM codes

Multiplexing: Time- division multiplexing, t1 digital carrier system, north American digital multiplexing hierarchy, digital line encoding, t carrier systems, European digital carrier system, statistical time – division multiplexing, frame synchronization, frequency- division multiplexing, wavelength- division multiplexing, synchronous optical network

UNIT IV

Telephone instruments and signals: The subscriber loop, standard telephone set, basic telephone call procedures, call progress tones and signals, cordless telephones, caller id, electronic telephones, paging systems.

The telephone circuit: The local subscriber loop, telephone message- channel noise and noise weighting, units of powers measurement, transmission parameters and private-line circuits, voice-frequency circuit arrangements, crosstalk.

UNIT V

Data communication codes, bar codes, error control, error detection, error correction, data formats, data communications hardware, character synchronization.

TEXT BOOKS:

1.Introduction to Data Communications and Networking, Wayne Tomasi, Pearson Education.

REFERENCE BOOKS:

1.Data Communications and Networking, Behrouz A Forouzan, Fourth Edition.Tmh.

2.Computer Communications and Networking Technologies, Gallow, Secondedition Thomson

3.Computer Networking and Internet, Fred Halsll, Lingana Gouda Kulkarni, Fifth Edition, Pearson Education

COURSE OUTCOMES:

1. Attain the knowledge on basic concepts of data communication systems.
2. Explain the elements of data communications systems, different types of transmission medias and different digital modulation techniques
3. Attain the knowledge on different telephone instruments, signal and circuits
4. Describe different error detecting and correcting codes.

****END****