DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

SCHEME OF INSTRUCTION AND SYLLABI OF B.Tech. PROGRAM

RGUKT,Basar

IV YEAR
II SEMESTER

Subject Code	Course Name	(L-T)-P	Credits
CS4201	Elective-I(Information security)	4-0-0	3
	Open Elective-I	4-0-0	3
CS4800	Project		12
CS4000	Comprehensive Viva-II		1
Total		8-0-0	21

L-Lectures, T-Tutorials, P-Practicals, C-Credits

CS4201 INFORMATION SEQURITY

Externals: 60Marks **L-T-P-C**
Internals: 40Marks **4-0-0-3**

UNIT I: What is Information Security? Why do you need it? – Basic Principles of Confidentiality, Integrity Availability Concepts Policies, procedures,Guidelines, Standards Administrative Measures and Technical Measures, People, Process, Technology

UNIT II: Current Trends in information Security, Cloud Computing: benefits and Issues related to info Sec. Standards available for InfoSec: Cobit, Cadbury, ISO 27001, OWASP, OSSTMM, etc - An Overview, Certifiable Standards: How, What, When, Who.

UNIT III: Vulnerability, Threat and Risk, Risk Assessment and Mitigation + Quick fixes, Introduction to BCP / DRP / Incident management, Segregation and Separation of Duties & Roles and responsibilities, IT ACT 2000

UNIT IV: Types of assessments for Information Security - VAPT of Networks; Web Appln Audits; IT assessments or audits; Assessment of Network Equipments; Assessment of Security Devices (Web Filtering, Firewalls, IDS / IPS, Routers; Data Center Assessment; Security of Application Software; SAP Security; Desktop Security; RDBMS Security; BCP / DRP assessments; Policy reviews;

UNIT V: Network Security & Common and Popular Tools Used

BM4502 ENTREPRENEURSHIP AND NEW VENTURES

Externals: 60Marks **L-T-P-C***

Internals: 40Marks **4-0-0-3**

Course Objective:

- This course enables the students to learn wide range of managerial concepts and equip them to handle the management assignment in the future.

Course Objective: This course has two basic objectives. The first is to teach effective entrepreneurial and general management practice from the perspective of the founder and stakeholders. The second is to apply the entrepreneurial perspective in order to approach business problems from a value creation framework.

Course Contents:

1. **Introduction to Entrepreneurship:** Learning objectives, Entrepreneurship in Indian Scenario and Future prospects, Emerging economies, Entrepreneurial traits, motivation and leadership (7Modules)

2. **Entrepreneurial Process:** Opportunity Identification, Idea Generation and Evaluation. (6 Modules)

3. **Business Model:** Business Plan, Business Models (Creating a business model with technology differentiators) (5 Modules)

4. **Financing Venture**: Funding, Valuation of a new company, Marketing, Company Growth, Acquisitions and Exit Strategies. (6 Modules)

5. **Building the Team and IPR:** Launching and managing venture, Human resource aspects. Intellectual Property and Corporate Law. (12 Modules)

Suggested Reference Books:

1. Kuratko & Hodgetts, *Entrepreneurship-Theory*, *Process Practice*, Thompson South-Western Publication, (2008).
2. Holt, *Entrepreneurship – New Venture Creation*, PHI Publication, (1992).
3. Kawasaki, *The Art of the Start*, Portfolio Publication, (2004).
4. Lusk & Harrison, *The Mouse Driver Chronicles: The True-Life Adventures of Two First-Time Entrepreneurs*, Perseus Books Group, (2002).
5. Dorf & Byers, *Technology Ventures: From Idea to Enterprise*, McGraw Hill Publication, (2010).
6. Kaplan, Startup: *A Silicon Valley Adventure*, Penguin Books, (2001).

BM4501 **FOUNDATIONS OF MANAGEMENT**

Externals: 60Marks **L-T-P-C***

Internals: 40Marks **4-0-0-3**

Course Objective:

- This course enables the students to learn wide range of managerial concepts and equip them to handle the management assignment in the future.

Course Contents:

1. **Development of Management Thought:** Learning objectives, Concept of management, Scientific Management-Taylor, Henry Fayol contributions, Human Relations approach-Hawthorne experiments, Approaches to Management, Ethics in management.
2.
2. **Functions of Management:** Management Processes and function: Nature and description of management process, Managerial functions: Planning, Organizing, Directing, Coordinating and Controlling. Communication process, Theories of motivation and leadership, (14 Modules)

3. Human Resource Management: Nature and Scope of Human Resource Management, Functions of HRM, Industrial Relations. (7 Modules)

4. **Marketing Management:** Marketing Environment, Consumer Markets and Buyer Behaviour, Segmentation, NPD, PLC, Marketing Mix (4Ps), Channels of Distribution. Advertising and Sales Promotion, Personal selling, Public relations. (8 Modules)

5. **Production/Operation Management:** Planning and Design of Production and Operation Systems, Facilities Planning, Location, Layout and Movement of Materials, Materials Management and Inventory Control, Maintenance management, Statistical Quality Control, TQM and ISO Certification. (7 Modules)

Suggested Reference Books:

1. Weirich, Koontz & Aryasri, *Principles of Management*, TMH, New Delhi, (2004).
2. Paul Heresy & Ken Blanchard, *Management and Organizational behavior*, PHI, New Delhi, (1995)
3. Kotler Philip, *Marketing Management*, Prentice Hall of India (1997).
4. Luthans Fred, *Human Resource Management*, McGraw Hill, (1997).
5. Stephen Robbins, O*rganizational Behaviour Concepts, Controversies and Applications*.

BM4503 **INTELLECTUAL PROPERTY RIGHTS**

Externals: 60Marks **L-T-P-C***

Internals: 40Marks **4-0-0-3**

Course Objective:

- This course enables the students to learn wide range of managerial concepts and equip them to handle the management assignment in the future.

Course Objective: This course aims at helping the students to learn legalities of intellectual property to avoid plagiarism and other IPR relates crimes like copyright infringements.

Course Contents:

1. **Introduction to IPR:** Meaning of Intellectual Property, Nature of I.P, Protection of IP Rights, Kinds of I.P rights, International Conventions on Intellectual Property Rights-patent treaty 1970, GATT1994, TRIPS &TRIMS, International Organisation for Protection of IPR-WTO, WIPRO, UNESCO.

2. **Patent Rights:** Meaning of patent, commercial significance, Obtaining patent, patentable subject, rights and obligations of patentee, Registration of patents, compulsory licensing and licenses of rights, revocation.

3. **Industrial designs**: Definitions of Designs, Registration of Designs, rights and duties of proprietor of designs, piracy of registered designs.

4. **Introduction and significance of Trademarks**: Meaning of Trademark, purpose of protecting Trademarks, Registered Trademarks, procedure, passing off, assignment and licensing of Trademarks, Infringement of Trademarks.

5. **Nature of scope of Copy Right**: Subject matter of Copy Right, Right conferred by copyright publication, Board- Casting and telecasting, Computer programme, database right, Assignment and Transmission of Copyright, Infringement of copy right.

Suggested Readings:

1. Cornish.W.R, "Intellectual Property Patents", Copy Right and Trademarks and Allied rights, Sweet&Maxwell 1993.
2. P. Narayanan: Intellectual Property Law, Eastern Law House, 2nd edn 1997.
3. Roy Chowdhary, S.K. & Other:Law of Trademark, Copyrights, Patents and Designs, Kamal Law House, 1999.
4. Dr. G.B. Reddy,Intellectual Property Rights and the Law 5th Ed. 2005 GogiaLaw Agency.
5. B.L. Wadhera: Intellectual Property Law, Universal Publishers, 2nd Ed. 2000.

BSBE 4501 SUSTAINABLE TECHNOLOGIES

Externals: 60 Marks **L-T-P-C**
Internals: 40 Marks **3-0-0-3**

Learning objectives: To give an overview of existing technologies and their associated problems. The main objective of the course is to stress on the need of innovation in development of sustainable technologies.

Learning outcome: This paper sets out to discuss the commonalities that can be found for sustainable development. The commonalities include systemic or holistic thinking, the integration of different perspectives, skills such as critical thinking, diverse attitudes and values. Student will get the knowledge to resolve the environmental problems of the planet, work towards community-oriented problems with coherent and inferential problem solving skills.

UNIT 1: DRAW BACKS OF CURRENT TECHNOLOGIES

Environmental degradation, financial constraints, social issues with automation in technology, extinction of fossil fuels, risks involved in operations. Global environmental issues- Resource degradation, Climate change (Carbon credits and carbon trading, carbon foot print), Global warming, Ozone layer depletion, Regional and Local Environmental Issues.

UNIT 2: ENVIRONMENT REMEDIATION

Environment Impact Assessment (EIA) - Procedures of EIA in India, Physical and Chemical technologies for reclamation, Need for ecosystem restoration, Bioremediation.

Alternative Hirarchy Process (AHP), Selection of best technology using AHP, Alternative resources and technologies, resource recovery from waste, energy recovery from waste, Sustainable Development vs Environmental Engineering - Energy Issues.

UNIT 3: SUSTAINABLE TECHNOLOGIES

Sustainability - Introduction, Need and concept of sustainability; People, planet and profit; Social, environmental and economic sustainability concepts. Sustainable development, Nexus between Technology and Sustainable development, Challenges for Sustainable Development. Multilateral environmental agreements and Protocols - Clean Development Mechanism (CDM), Green technologies.

UNIT 4: BIOMIMICRY

Defining biomimicry, why biomimicry matters? Biomimicry examples - Bioplastics, biomaterials, bioluminescence for LED's, neural networks, swarm intelligence, aerodynamics for automobile engineering, DNA computing.

UNIT 5: BIOLOGICAL RESOURCES FOR SUSTAINABILITY

Organic Farming for sustainable agriculture, Microbial leaching of low grade mineral ores, Bioelectricity (Microbial fuel cells), Biomagnetism (for therapy), Biofuels (for energy), Microbial engineering for cleaning environmental pollution, biosynthesis of industrial products.

Reference:

1. *Perspectives on Sustainable Technology- M. Rafiqul Islam*

2. Sustainable Energy Consumption and Society- David L. Goldblatt

3. Sustainable development (energy, engineering and technologies, manufacturing and environment) - Chaouki Ghenai

4. Sustainability and Environmental Impact of Renewable Energy Sources - R. E. Hester, R. M. Harrison

5. Sustainable Natural Resources Management - Prof. Abiud Kaswamila.

6. Sustainable Communities Design Handbook - Woodrow W. Clark

7. Handbook of Bioplastics and Biocomposites Engineering Applications - Srikanth Pilla

8. Modeling & Imaging of Bioelectrical Activity: Principles and Applications (Bioelectric Engineering) - Bin He

9. Handbook of Swarm Intelligence: Concepts, Principles and Applications – YuhuiShi, Meng- Hiot Lim, Bijaya ketan Panigrahi.

10. DNA Computing and Molecular Programming - DNA 16 – Yasubumi sakkibara, yongli Mi

CODE: CS4000 **COMPREHENSIVE VIVA-II**

External Exam : 50 Marks **Credits : 1**

Students are assessed in the courses they have undergone till the completion of that academic year. They are asked to comprehend the concepts in the core subjects and the elective subjects, to make them ready to face technical interviews which improve their employability skills.

There are no sessional marks. The end examination shall be conducted by a committee consisting of an External examiner, Head of the department and two senior faculty members. The evaluation is purely external and it carries marks 50.