

BCIS 7th Semester - Syllabus

CMP 461 Information System Security BCIS, 7th Semester

Course Objectives

The objective of the course is to make student familiar with the basic concepts of information security including different aspects of information security from related technologies, tools to conceptualize information security governance so as to make them able to deal with information security practically.

Course Description

This course is a combination of information security governance and technologies for building an information security. It introduces students with fundamental concepts of information and information security, different types of threats and attacks, concept of encryption and key management and common tools and technologies for information security. Similarly, this course also includes information security policy, standards and best practices along with issues of managing risk, system and business continuity assurance, digital forensic and legal and regulatory issues.

Course Outcomes

- clear understanding of information security basic
- know basic terminologies and issues of information security
- able to know and use common technologies and tools required to maintain information security
- able to tackle multiple dimensions of managing information security

Course Contents

Unit I: Introduction to Information Security

6 hours

- Definition of Information Security
- The History of Information Security
- Components of Information System
- Critical Characteristics of Information
- Information security concepts and practices (CIA and other practices)
- Balancing Security and Access
- Need for Information Security

Unit II: Threats and Attacks

7 hours

- Concepts of threats

- Different Types of threats: Compromise of Intellectual Property, Deliberate software attacks, Deviations in QoS, Trespass, Forces of Nature, Information Extortion, Theft, Human error, Vandalism, Technological Obsolesce etc.
- Concept of Attack

- Different types of attacks: Malicious code, Password attacks, DOS and DDOS attack, Application attacks, Mail Bombing, Spoofing, Spams, Man-in-the-middle, sniffing, phishing, social Engineering etc.
- Internet Threats and Securities

Unit III: Cryptography and Key Management

8 hours

- Basics of cryptography
- Symmetric Cryptography (DES, Triple DES, AES)
- Asymmetric cryptography: Public and private keys, RSA
- Hash function
- Digital signatures
- PKI

Unit IV: Security Technologies and Tools

8 hours

- Firewall
- Intrusion Detection and Prevention System
- Honeypots
- Scanning and analysis tools (Port scanner, Vulnerability scanner, Packet sniffers etc.)
- Penetration Testing
- Secure Communication (VPN, SSL, IPsec, WEP, WPA, SET)
- Concept of access control, Authentication and Authorization
- Identification and authentication techniques
- Access control technique

Unit V: Information Security Policy, Standards and Practices

4 hours

- Basic concept and Definitions
- Categories of policies: Enterprise Information Security Policy, Issue-Specific Information security Policy, System specific Information security Policies
- ISO 27000 series
- NIST Security Model
- IETF Security Architecture

Unit VI: Risk Management

4 hours

- Overview of risk management
- Risk Identification
- Risk Assessment
- Risk Control Strategies
- Best practices

Unit VII: Continuity Planning

4 hours

- Incidence Response Planning
- Business continuity planning
- Disaster recovery planning

Unit VIII: Introduction to Auditing and Digital Forensic **3 hours**

- Auditing
- Monitoring
- Digital Forensic :Team , methodology and procedure

Unit IX: Legal, Ethical and Professional issues in Information Security **4 hours**

- Relevant Laws
- International Laws and Legal Bodies
- Related laws in Nepal, their provisions and limitations.
- Ethical Concepts in Information Security
- Codes of Ethics, Certifications, and Professional Organizations

Basic Text

Whitman, M. E., & Mattord, H. J. *Principals of Information Security*. New Delhi: Cengage Learning.

References

1. *Official (ISC)²® Guide to the CISSP® CBK®*, Third Edition, (ISC)²Press.
2. Stallings, W. *Cryptography and Network Security: Principles and Practice*. Prentice Hall.

CMP 462 IT Project Management BCIS, 7th Semester

Course Objectives

IT Project Management is the course designed to prepare the students with the fundamental concepts of project management so that they are familiarized with the complexity and challenges of managing projects. The principal focus under the course is to understand the specifics related to IT systems project including various knowledge processing issues.

Course Description

Students will gain a sound understanding of project management concepts and principles by applying relevant tools and techniques. In order to assimilate the project management knowledge, the course requires extensive use of case studies and computer tools to carry out various simulation exercises.

Course Outcomes

At the conclusion of the course, students should be able to:

- Fundamental learning and use of various project management tools and techniques;
- Skills on exploration and appropriate use of computer based applications and tools related to project design, planning, scheduling, budgeting, process control and monitoring;
- Understanding the complexities, criticalities and specific problems related to IT project, which are primarily non-existent on non-IT projects; and
- Appreciation towards the critical role of human resources and experiential knowledge in ensuring timely and successful project completion.

Course Contents

Unit I: Introduction

6 hours

Project Management Institutes' (PMI) Framework, Project Management Body of Knowledge, Project Portfolio Management, The project management profession; Characteristics of project life cycles, IT Product Development Life Cycle, Product Life Cycle and Project Life Cycle, System Development methodologies, Stakeholder management

Unit II: Project Formation, Integration and Scope Management

7 hours

Develop project charters, Develop preliminary project scope statement, Develop project management plan, Scope verification, Project scope management, Scope control, Project group formation, Resource allocation and matching, Direct and manage project execution, Project monitoring, Controlling project work, Create Work Break Down Structure, Project Integration management, Change management.

Unit III: Project Time Management

6 hours

Activity definition, Decomposition and sequencing of project activities, Estimation of Activity resources and duration, network diagram, precedence diagram method with dependencies, Gantt charts, CPM and PERT methods.

Unit IV: Project Cost Management**6 hours**

Cost management, Project cost estimating, types of cost estimates, estimating process and accuracy, organizational process and assets valuation, cost estimating tools, Cost budgeting, cost aggregation, deriving budget from activity cost, Cost control process, cost control methods, Earned Value Management (EVM) and Project Portfolio Management (PPM).

Unit V: Project Quality Management**4 hours**

Quality theories, TQM and ISO statements; Quality planning, Project quality requirements, Quality management plan, Quality assurance, Quality audits, Quality control process, Quality tools like Control chart, Pareto charts, Six Sigma and Testing.

Unit VI: Project Communication Management**4 hours**

Communication management requirement and issues, Communications planning process, Effective meeting organization and conduction, Information distribution process, Performance reporting process, integrated reporting system, Report standards.

Unit VII: Project Risk Management**5 hours**

Risk concept, Qualitative and quantitative risks, Risk management planning process, Project risk assessment, Qualitative and Quantitative risk analysis processes, Risk Analysis Methods based on Probability Matrices, Decision Trees, Expected Monetary Value, Simulation, and Sensitivity Analysis, Risk modeling techniques, Risk response planning, Risk monitoring and control process.

Unit VIII: Human Resource Management**3 hours**

Human resource planning, Motivation theories, Project organizational chart, Responsibility assignment matrices, Staffing management plans with resource histograms, Resource assignment, loading and leveling, Project team development, Training, team building, and reward and recognition systems, Project Teaming tools and techniques

Unit IX: Project Procurement Management**5 hours**

Procurement management process flow, Plan purchases and acquisition process, Bid document preparation, Evaluation and selection criteria, Contract process plan, Standard forms, Contract administration process, Contract closure process. Public procurement legalities in local context such as Nepalese PPMO guidelines and e-bidding procedures.

Unit X: Other Specifics**2 hours**

Project timing issues, Knowledge transfer issues, Change management issues, IT Project as product delivery versus service delivery.

Case Studies

This course requires extensive exposure of practical examples with at least SIX relevant case studies.

Basic Text

Schwalbe, K. *Information Technology Project Management*. New Delhi: Cengage Learning.

References

1. Portny, S. E. *Project Management For Dummies*. New York: Wiley.
2. Meredith, J. R., & Mantel, S. J. *Project Management : A Managerial Approach*. New York: Wiley.

MGT 314 Management of Human Resources BCIS, 7th Semester

Course Objectives

This course serves as an introduction to Human Resources Management (HRM) and its contributions to the workplace. Today's organization faces a variety of complex issues, such as globalization, demands for increased productivity, strategic planning and compliance with government legislation. In today's world, "people" provide the competitive advantage, and HR policies and practices have a significant impact on the bottom line and overall performance of an organization.

Course Description

The course will examine the evolution of HR from a primarily administrative function to a strategic partner and decision maker in the organization. Among other things, the course will look at the effective management of human capital, the importance of attracting and retaining employees, managing a diverse workforce, recognizing employee rights, and legislative requirements. The course specifically deals with the concepts and issues relating to recruitment, selection, and retention practices, evaluating performance, employee development, compensation regulations, employee relations as well as related areas.

Course Outcomes

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

- Discuss the relationship between human resource management, the organization and its internal and external environment;
- Explain the concepts and principles of HR planning, job analysis and job design and define the related terms like job description and job specification;
- Explain the recruitment and selection processes and methods;
- Explain the concept, purpose and techniques of employee training, training needs identification, management development, and career development;
- Demonstrate understanding of the performance appraisal concept and examine the techniques of measuring individual performance;
- Discuss the conceptual framework of job evaluation, compensation and rewards management and their application in organizational context;
- Explain the nature of occupational disease, health and safety programs, and responses that ensure legal compliance;
- Explain the concept of labour relations system, collective bargaining, grievance handling, disciplinary actions and industrial actions.

Course Contents

Unit I: Human Resources Management: Concept and Context

5 hours

The concept of HRM; Functions of HRM; Changing dimensions of HRM; Changing role and challenges of HRM managers; Essential skills for HR managers; Purpose and structure of HR

department; HRM as a shared function; External and internal context of HRM; HRM in the Nepalese context.

Unit II: Human Resources Planning and Recruitment **10 hours**

Job requirements - the role and importance of jobs; Relationship of job requirements to HRM functions; Job analysis and Job design – concepts, methods and outcomes; Human resources planning – importance, purpose and major elements of HR planning; HR inventory; Replacement and succession planning; Recruiting from within and outside the organization; Recruitment of protected classes; Electronic recruitment; Selection process; Matching people and jobs; Sources of information about job candidates; Employment interview; Employment tests; Reaching a selection decision; Issues of gender in recruitment and selection; Induction and placement.

Unit III: Training and Career Development **8 hours**

Training as a system; Training as a tool for developing work culture; Designing training programs; Training needs assessment – concept and methods; Training non-managerial employees; Training managers and supervisors; Training methods; Psychological principles of learning; Evaluation of training programs; Career development - phases and objectives of career development; Management development techniques; Emerging concepts of HRD – leadership development, talent management, empowerment, mentoring; HRD practices in Nepalese organizations - career management and employee retention issues.

Unit IV: Performance Appraisal **4 hours**

Concept, process and benefits of performance appraisal; Performance appraisal methods; Appraisal interviews; Factors affecting performance appraisal; PA practices in Nepalese organizations; Improving employee performance; Counseling employees with problems.

Unit V: Compensation Management **7 hours**

Concept, process, methods of employee compensation; Job evaluation systems – concept and methods; Compensation structure and components; Employee benefits – incentive system, gain sharing, employee benefits and services, types of employee benefit; Incentives for management employees; Governmental regulations of compensation in Nepal – minimum wages, welfare and incentive provisions, retirement benefits; Issues in compensation management in Nepal.

Unit VI: Safety and Health at Work **4 hours**

Legal requirements for safety and health; Accidents; Occupational diseases and other health issues; Sexual harassment at work; Drug and alcohol related problems; Creating a safe and healthy work environment; Emerging concepts and issues in OHS.

Unit VII: Industrial Relations and Disciplinary System **10 hours**

Disciplinary policies and procedures; Types of disciplinary actions; Grievance handling methods and mechanisms; Methods of reducing complaints; Industrial relations system – concept, process and issues; Trade unions - structures, functions, and leadership; Trade union issues in Nepal; Industrial disputes – nature and types; Government regulations of labor relations; Collective bargaining process and contract administration; Trends and issues in collective bargaining in Nepal.

Basic Texts

1. DeCenzo, D. A., & Robbins, S. P. *Fundamentals of Human Resources Management*. New Delhi: Wiley India.
2. Dessler, G., & Verkey, B. *Human Resource Management*. New Delhi: Prentice Hall of India.

References

1. Gilmore, S., & Williams, S. *Human Resource Management*. New Delhi: Oxford University Press.
2. Halder, U. K., & Sarkar, J. *Human Resource Management*. New Delhi: Oxford University Press.
3. Ivancevich, J. M. *Human Resource Management*. New Delhi: Tata McGraw Hill.
4. Adhikari, D. R. *Human Resource Management*. Kathmandu: Buddha Publications.
5. Acharya, B. S. *Introduction to Human Resource Management: Text, Cases and Applications*. Kathmandu: Asmita Books.
6. Agrawal, G. R. *Human Resource Management*. Kathmandu: K. K. Publications.
7. Jyothi, P., & Venkatesh, D. N. *Human Resource Management*. New Delhi: Oxford University Press

