

Tribhuvan University
Faculty of Management
Office of the Dean



Course detail of
BIM (Bachelor of Information Management) 7th Semester

MGT 203: Organizational Behavior	3 Cr. hrs
MGT 205: Operations Management	3 Cr. hrs
MGT 208: Business Strategy	3 Cr. hrs
IT 226: Management Information System	3 Cr. hrs
IT 227: Object Oriented Analysis and Design	3 Cr. hrs
IT 228: Artificial Intelligence	3 Cr. hrs

2016

MGT 203: Organizational Behavior

Credits: 3

Lecture Hours: 48

Course Objectives

This course aims to provide students with an in-depth understanding of fundamental theories of organizational behavior.

Course Description

The course comprises 10 units- introduction, understanding individual behavior, perception, learning, personality, motivation and job satisfaction, groups and teams in organizations, leadership, communication, conflict and organizational change and development.

Course Details

Unit 1: Introduction to Organizational Behavior

LH 6

Concept, Organizational behavior system, basic assumptions, levels of OB analysis, Basic assumptions of OB, Contributing disciplines to the field of OB, challenges for managers.

Unit 2: Understanding Individual Behavior

LH 5

Concept, behavior as an input-output system. Mental process-beliefs, attitudes, values, needs, motives and behavior, Sensation, Emotions and Cognitive dissonance.

Unit 3: Perception

LH 3

Concept, perceptual process, factors affecting perception, specific application of perception in organizations, theories in organizations, Attribution theory, Attribution errors.

Unit 4: Learning

LH 3

Concept of learning, Learning theories, Factors influencing learning, Principles of learning, Behavior modification.

Unit 5: Personality

LH 5

Concept, Personality traits and characteristics, Determinants of personality, linking an individual's personality and values to the workplace, Major personality attributes influencing OB, application of personality traits and characteristics at work place.

Unit 5: Motivation and Job Satisfaction**LH 5**

Concept, Motivation theories-Maslow Hierarchy needs theory, Hygiene factors and motivators theory, ERG motivation theory, McClelland Achievement theory and Vroom expectancy theory. Application of motivation theories, Motivation for Performance, Concept of job satisfaction, Effects of job satisfaction on employees' performance.

Unit 6: Groups and Teams in Organizations**LH 5**

Concept of group and group dynamics, the dynamics of group formation, types of groups, The dynamics of informal groups, concept and nature of teams, Types of teams, Team processes.

Unit 7: Leadership**LH 4**

Concept, Effective leadership, Theories of leadership-trait perspective, behavioral theories, contingency theories,

Unit 8: Communication**LH 4**

Concept, Function and process, System, Types, Communication network, Barriers to effective communication, Overcoming communication barriers, Issues in communication.

Unit 9: Conflict**LH 3**

Concept, nature, types and nature and types of intergroup conflict, Dynamics of intergroup conflict, Sources of conflict, Approaches to conflict management.

Unit 10: Organizational Change and Development**LH 5**

Concept, Forces of change, Resistance to change, Approaches to managing organizational change, Concept of organizational development (OD), OD values, OD interventions.

Text Books

Robbins, S.P., *Organizational Behavior*, New Delhi: Pearson.

Arnold, H.J. and Fieldman, D.C. *Organizational Behavior*. New York: McGraw Hill Book Company.

Adhikari, D.R. *Organizational Behavior*. Kathmandu: Buddha Academic Enterprises Pvt. Ltd.

Asathappa, K. *Organizational Behavior*. (8th Edition), New Delhi: Himalayan Publishing House.

Dwivedi, R.S. *Human Relations and Organizational Behavior: A Global Perspective*. New Delhi: Macmillan India Limited.

Moorhead, G. and Griffin, R.W. (2000). *Organizational Behavior*. New Delhi: AITBS Publishers.

MGT 205: Operations Management

Credits: 3

Lecture Hours: 48

Course Objective

This course aims to impart the basic knowledge, tools and techniques of operations management to students.

Course Description

Introduction to operations management. Operations strategy, Product and service design, Location decision and facility layout, linear programming , Aggregate planning , Inventory management and The quality system.

Course Details

Unit 1: Introduction

LH 6

Meaning ,definitions, and objectives; The transformation process; Differences between production and service operations; Scope of operations management; Operations and supporting functions; Role of the operations manager; Production system: Intermittent and continuous; Key issues for operations managers; Historical evolution of operations management; Productivity: concepts, types , factors affecting productivity; Productivity measurement, concept on green productivity; Supply chain management (concept only).

Unit 2: Operations Strategy

LH 3

Introduction to operations strategy; Operations strategy as a competitive weapon; Linkage between corporate, business and operations strategy; Components of operations strategy; Manufacturing strategies; Service strategies.

Unit 3: Product and Service Design

LH 5

Concept on product and service design; Product development process; Difference between product and service design; Emerging issues in product and service design; Value analysis, concurrent engineering and quality function deployment; Waiting line theory (Single channel only).

Unit 4: Locations decision and Facilities layout

LH 5

Reasons and Importance of location decisions; Factors affecting location decision of service, and manufacturing organizations; Techniques of location analysis: Qualitative and quantitative analysis; Concept on layout; Types of layout: Product layout , process layout , cellular layout , fixed position layout; Designing process layout.

Unit 5: Linear programming

LH 10

Introduction to linear programming; Graphical and simplex method; Introduction to duality and sensitivity analysis by using solver; Assignment model (only minimization case); Transportation model (Only minimization case: excluding loop formation).

Unit 6: Aggregate planning

LH 4

Concept on aggregate planning; Aggregate planning strategies; Planning options; Aggregate planning in services.

Unit 7: Inventory Management**LH 4**

Concept and importance; Inventory costs; Dependent and independent demand; Inventory systems- continuous and periodical; Basic EOQ Model (with and without discount); ABC classification.

Unit 8: The Quality System**LH 8**

Introduction to quality; Historical evolution of Total Quality Management; Definitions of quality; Philosophy, principles and concepts of Total quality management. Costs of quality; Quality Control: Introduction, objectives, advantages; Statistical process control -Control charts- control charts for variable and attributes; JIT and Six Sigma; Quality Management System: ISO 9000 series; 7 tools for the quality.

Addendum: At least one case will be administered at the end of each chapter. The students will also complete a project work and a few other assignments as specified by the faculty member.

Class Lecture = 45 hrs.

Tutorials = up to 15 hrs.

Assessment = 3 hrs.

Reference Books

Adam and Ebert (2007), *Production and Operations Management*, Fifth Edition, New Delhi: Prentice-Hall of India Private Limited

Bajracharya P., Bajracharya S. and Maharjan B. (2007), *Production and Operations Management*, First Edition, Kathmandu: Quest Publication

Chase, Jacobs, Aquilano and Agrawal (2006), *Operations Management for Competitive advantage*, Eleventh Edition, New Delhi: Tata McGraw-Hill Publishing Company Limited

Dahlgaard Jens. J, Kristensen K and Kanji G.K. (2002), *Fundamentals of Total Quality Management Process analysis and improvement*, London and New York: Taylor and Francis

Gaither and Frazier (2002), *Operations Management*, Ninth Edition, Singapore: Thomson Asia Pte Ltd.

Krajewski and Ritzman (2002), *Operations Management*, Sixth Edition, Delhi: Pearson Education (Singapore) Pte.Ltd

Manandhar, K.D. and Shrestha, K.N. (2000) *Production and Operations Management*, Kathmandu: Valley Publishers

Regmi, Joshi, Chaudhary and Fago (2003), *Production and Operations Management*, Second Edition, Kathmandu: Buddha Academic Enterprises Pvt.Ltd.

Shrestha, S. and Silwal, D. (2000), *Production and Operations Management*, Kathmandu: Taleju Prakashan

Stevenson W.J. (2014). *Operations Management*, Twelfth Edition, New York: McGraw-Hill Education

Sthapit, Yadav, Tamang, Dhital and Adhikari, (2007), *Production and Operations Management*, Second Edition, Kathmandu: Asmita Books Publishers & Distributors

MGT 208: Business Strategy

Credits: 3

Lecture Hours: 48

Course Objective

This course aims to develop students' understanding of the strategic management by clearly explaining strategy concepts, analyzing and evaluating them to show how these are applied in the business world.

Course Description

This course contains introduction, vision and mission, objectives and strategy, strategic analysis, strategy formulation, Strategy Implementation.

Course Details

Unit 1: Introduction

LH 7

Concept and importance of strategic management, importance of strategic decisions, elements of strategic management, Need for strategy, company values, levels of strategy, strategic management process, changes in the approach to strategic management, different perspectives on strategy formulation, concept and features of strategic planning.

Unit 2: Vision and Mission, Objectives and Strategy

LH 7

Developing strategic vision, communicating the strategic vision, crafting a mission statement, linking vision and mission with company values, levels of objectives, crafting objectives.

Unit 3: Strategic Analysis

LH 12

Concept, the general environment; scanning, monitoring and forecasting the environment, Scenario planning, PEST analysis; The competitive environment- Porter's Five Forces Framework, the value net, strategic groups, hypercompetition, Internal environment analysis-value-chain-analysis, evaluating Value chain, SWOT analysis; concept of internal environment, the resource-based view of strategy- resources, competencies, core competencies and distinctive capabilities; identifying sustainable competitive advantage, criticism of resource-based view, knowledge management.

Unit 4: Strategy Formulation

LH 14

Concept, Business level strategy- Generic competitive strategies, a resource-based view to strategy formulation, the industry life-cycle; corporate level strategies- Growth strategies, related and unrelated diversification, implementing growth strategies, portfolio analysis- Boston Consulting Group Matrix and The General Electric-Mckinsey Matrix, strategy evaluation.

Unit 5: Strategy Implementation

LH 8

Concept, organizational structures- the entrepreneurial, functional, divisional, matrix and network, strategic leadership, leadership and management, the learning organization, emotional intelligence and leadership performance, leadership capabilities, impact of leadership on vision, values and culture, corporate culture and leadership, leading strategic change.

Text and Reference books:

Henry, E.A. Understanding Strategic Management, Oxford

Jauch, L.R. and Glueck, W.F. Business Policy and Strategic Management, McGraw-Hill.

Pearce II, J.A., Robinson R.B and Mittal, A. Strategic Management: Formulation, Implementation and Control, McGraw Hill.

Thompson, A. Peteraf, M.A., Gamble, J.E., Strickland, A.J., and Jain A.K. Crafting and Executing Strategy, McGraw-Hill

Kajmi, A. Business Policy and Strategic Management, Tata McGraw Hill

Adhikari, D.R. Strategic Management, Buddha Publication

Wheelan, T.L. and Hunger J.D. Strategic Management and Business Policy, Pearson

IT226: Management Information System

Credits: 3

Lecture Hours: 48

Course Objectives

This module aims to provide students with a background on the use and advantages of information systems in organizations with a focus on managerial aspects of MIS to promote an awareness of the economic, social, and ethical implications of such systems on society and IT professionals.

Course Description

Foundations of Information Systems in business, Foundation concepts: The components of IS, Competing with Information Technology, Using Information Technology for strategic Advantage, Managing Data Resources, e-business Systems, Supporting Decision Making.

Course Details

Unit 1: Foundations of Information Systems (IS) in Business

LH 7

- The real world of information system and information system
- The fundamental Roles of IS in Business
- The role of e-business in business
- Types of Information Systems:
 - Operations support systems
 - Management support systems
 - Other classifications of IS
- Managerial Challenges of Information Technology (IT)
 - Success and Failure with IT
 - Developing IS solutions
 - Challenges and Ethics of IT
 - Challenges of IT careers
 - The IS function

Unit 2: Foundation concepts: The components of IS

LH 7

- System concepts: A foundation: System, Feedback and Control
- System characteristics
- Components of ISs
- Information system resources
 - People, hardware, software, data, Network
- Information System Activities
 - Input, Process, Storage of data, Output of Information Products, Control
- Recognizing Information systems

Unit 3: Competing with Information Technology

LH 7

- Fundamentals of Strategic Advantage
- Strategic IT
- Competitive Forces and strategies
- Strategic Uses of Information Technology
- Building a customer-focused business

- The value chain and strategic IS
- Value chain examples

Unit 4: Using Information Technology for strategic Advantage

LH 7

- Strategic Uses of IT
- Reengineering Business Processes
- The role of IT
- Becoming an Agile company
- Creating a virtual company
- Building a knowledge-creating company
- Knowledge management systems

Unit 5: Managing Data Resources

LH 7

- Data resource management
- Types of databases: operational, distributed, external, hypermedia databases
- Data warehousing and data mining
- The database management approach
 - Database management system, database interrogation, database maintenance, application development

Unit 6: e-business Systems

LH 7

- Introduction
- Cross-functional enterprise applications
- Enterprise application integration
- Transaction processing systems
 - The transaction processing cycle
- Enterprise collaboration systems: tools for enterprise collaboration
- Functional business systems
 - Introduction, IT in business
 - Marketing systems: interactive marketing, targeted marketing, sales force automation
 - Manufacturing systems: computer-integrated manufacturing
 - Human resource systems: HRM and Internet, HRM and corporate Intranets
 - Accounting Systems: online Accounting systems
 - Financial management systems

Unit 7: Supporting Decision Making

LH 6

- Decision support in business
- Information, decisions, and management
- Information quality
- Decision structure, decision support trends, decision support systems
- Online analytical processing: OLAP examples
- Using decision support systems: what-if analysis, sensitivity analysis, goal-seeking analysis, optimization analysis, data mining for decision support

Text books

Management Information systems, James A O'brien, George M Marakas, Ramesh Behl, Tenth Edition, McGraw Hill education.

Kenneth C. Laudon, Jane P. Laudon, "**Management Information System, Managing the Digital Firm**", Ninth Edition, Pearson Education

References

Management information systems, Waman S Jawadekar, fourth edition, Tata McGraw Hill

Information technology for management, Ramesh Behl, Tata McGraw Hill

IT 227: Object Oriented Analysis and Design

Credits: 3

Lecture Hours: 48

Course Objective

The main objective of this course is to acquaint students about technical approach for analyzing, designing and application, system, or business by applying the object oriented paradigm and visual modeling throughout development life cycles to foster better stakeholder communication and product quality.

Course Description

This course contains introduction to object oriented analysis and design, elaboration, System sequence diagrams, GRASP, UML state diagrams and modeling.

Course Details

Unit 1: Introduction

LH 9

Introduction to OOAD – concept of OOAD? – Concept of UML, What are the United process(UP) phases – Inception – Use case Modeling – Relating Use cases – include, extend and generalization

Unit 2: Elaboration

LH 10

Concept, Domain Models – Finding conceptual classes and description classes – Associations – Attributes – Domain model refinement – Finding conceptual class hierarchies – Aggregation and Composition – UML activity diagrams and modeling

Unit 3: System Sequence Diagrams

LH 10

Concept, Relationship between sequence diagrams and use cases Logical architecture and UML package diagram – Logical architecture refinement – UML class diagrams – UML interaction diagrams

Unit 4: GRASP

LH 10

Concept, Designing objects with responsibilities – Creator – Information expert – Low Coupling – Controller – High Cohesion – Designing for visibility – Applying GoF design patterns – adapter, singleton, factory and observer patterns

Unit 5: UML State Diagrams and Modeling

LH 9

Concept – Operation contracts – Mapping design to code – UML deployment and component diagrams

Text Books

Craig Larman, *"Applying UML and Patterns: An Introduction to Object – Oriented Analysis and Design and Iterative Development"*, Third Edition, Pearson Education, 2005

References

Mike O' Docherty, *"Object – Oriented Analysis & Design: Understanding System Development with UML 2.0"*, John Wiley & Sons, 2005.2. James W-Cooper, Addison-Wesley, *"Java Design Patterns – A Tutorial"*, 2000.

Micheal Blaha, James Rumbaugh, *"Object-Oriented Modeling and Design with UML"*, Second Edition, Prentice Hall of India Private Limited, 2007.

Erich Gamma, Richard Helm, Ralph Johnson, John Vlissides, *Design Patterns: Elements of Reusable Object-Oriented Software"*, Addison-Wesley, 1995

IT 228: Artificial Intelligence

Credits: 3
Lecture Hours: 48

Course Objectives

This module aims to provide the students with the basic foundation on concepts of searching and knowledge representation in AI systems. The key objective is to make students more pragmatic in knowledge of AI by giving its applications like designing and training Artificial Neural Networks along with additional laboratory works.

Course Description

Introduction, Agents and Environments, Informed and Uninformed Search, Knowledge Representation, Learning, Applications of AI, Production Systems, Uncertainty in AI.

Course Details

Unit 1: Introduction

LH 4

- 1.1 What is AI?
 - 1.1.1 Turing test approach: Chinese room argument
 - 1.1.2 Cognitive approach
 - 1.1.3 Laws of thought approach
 - 1.1.4 Rational agent approach
- 1.2 Difference between AI and Omniscience

Unit 2: Agents and Environments

LH 7

- 2.1 Agent, Rational agent, and Intelligent Agent
- 2.2 Relationship between agents and environments
- 2.3 Environments and its properties
- 2.4 Agent structures
 - 2.4.1 Simple reflex agents
 - 2.4.2 Model-based reflex agents
 - 2.4.3 Goal-based agents
 - 2.4.4 Utility-based agents
 - 2.4.5 Learning agents
- 2.5 Performance evaluation of agents: PEAS description

Unit 3: Informed and Uninformed Search

LH 8

- 3.1 Why search in AI?
- 3.2 Blind search (Un-informed search)
 - 3.2.1 Breadth first search (BFS)
Variations:Uniform cost search
 - 3.2.2 Depth first search (DFS)

Variations:Depth limited search, Iterative deepening DFS

- 3.3 Heuristic search (Informed search)
 - 3.3.1 Hill climbing
 - 3.3.1.1 The Foothills Problem
 - 3.3.1.2 The Plateau Problem
 - 3.3.1.3 The Ridge Problem
 - 3.3.2 Greedy (Best-first) search
 - 3.3.3 A* algorithm (search)
 - 3.3.4 Means-Ends Analysis: Household ROBOT, Monkey Banana Problem
- 3.4 General Problem Solving (GPS): Problem solving agents
 - 3.4.1 Constraint satisfaction problem
 - 3.4.1.1 Constraint Satisfaction Search
 - 3.4.1.2 AND/OR trees
 - 3.4.1.3 The bidirectional search
 - 3.4.1.4 Cryptoarithmic
- 3.5 Game playing and AI
 - 3.2.1 Game Trees and Minimax Evaluation
 - 3.2.2 Heuristic Evaluation
 - 3.2.3 Min-max algorithm (search)
 - 3.2.4 Min-max with alpha-beta
 - 3.2.5 Games of chance
 - 3.2.6 Game theory

Unit 4: Knowledge Representation

LH 8

- 4.1 Logic
 - 4.1.1 Propositional Logic
 - 4.1.1.1. Syntax, semantics, and properties
 - 4.1.1.2. Conjunctive Normal Form (CNF)
 - 4.1.1.3. Disjunctive Normal Form (DNF)
 - 4.1.1.4. Inference Rules
 - 4.1.1.5. Resolution
 - 4.1.2 Prehdicate Logic
 - 4.1.1.1. First-Order Predicate Logic (FOPL)
 - 4.1.1.2. Syntax and semantics in FOPL
 - 4.1.1.3. Quantifiers
 - 4.1.1.4. Clausal Normal Form
 - 4.1.1.5. Resolution
 - 4.1.3 Fuzzy Logics
- 4.2 Semantic networks (nets): Introduction, and examples

Unit 5: Learning

LH 6

- 5.1 Why learning?
- 5.2 Supervised (Error based) learning

- 5.2.1 Gradient descent learning: Least Mean Square, Back Propagation algorithm
- 5.2.2 Stochastic learning
- 5.3 Unsupervised learning
 - 5.3.1 Hebbian learning algorithm
 - 5.3.2 Competitive learning
- 5.4 Reinforced learning (output based)
- 5.5 Genetic algorithms: operators

Unit 6: Applications of AI

LH 5

- 6.1 Artificial Neural Networks (ANN)
 - 6.1.1 Neural Networks (NN) and ANN
 - 6.1.2 Activation functions: unit (unary and binary), ramp, piecewise linear, & sigmoid
 - 6.1.3 Training and testing: Basic concept
 - 6.1.4 Mc-Colloch-Pits neuron model
 - 6.1.5.1. Realization of AND, OR, NOT, and XOR gates
 - 6.1.5 Neural network architectures
 - 6.1.6.1. Single layer feed-forward architecture: ADALINE, Perceptron NN
 - 6.1.6 Applications of ANN
- 6.2 Natural Language Processing (NLP)
 - 6.2.1 Fundamentals of language processing

Unit 7: Production systems

LH 4

- 7.1 Strong Methods vs Weak Methods
- 7.2 Advantages of Production Systems
- 7.3 Production Systems and inference methods
 - 7.3.1 Conflict resolution strategies
 - 7.3.2 Forward chaining
 - 7.3.3 Backward chaining

Unit 8: Uncertainty in AI

LH 3

- 8.1 Fuzzy sets
- 8.2 Fuzzy logic
- 8.3 Fuzzy inferences
- 8.4 Probability theory and uncertainty

Unit 9: Expert Systems Human and Machine experts

LH 3

- 9.1 Characteristics of expert systems
- 9.2 Knowledge engineering
- 9.3 Knowledge acquisition
- 9.4 Classic expert system
 - 9.4.1 DENDRAL
 - 9.4.2 MYCIN
 - 9.4.3 EMYCIN
- 9.5. Case based reasoning

Lab Task:

Students are required to carry out at least 6 lab tasks on predicate calculus, searching and neural networks using **ProLog** and C/C++/Java. Some of the lab tasks may be on:

- 1 Relationship programs (e.g. mother, father, brother etc)
- 2 Recursive programs: Factorial, Fibonacci series etc
- 3 Ancestor programs
- 4 Tower of Hanoi (TOH) program
- 5 Monkey banana problem
- 6 Realization of logic gates (using C/C++/Java)

References

Russel S. and Norvig P., *Artificial Intelligence: A modern Approach*, Prentice hall

Ritch and Knight, *Artificial Intelligence*, Prentice hall

Dan W. Patterson, *Artificial Intelligence*

Artificial Intelligence in the 21st century, Stephen Lucci, Danny Kopec, Mercury Learning and Information

Artificial Intelligence: **Foundations of computational Agents**, David L. Poole, Alan K. Mackworth, first edition, Cambridge University Press