

BCIS 4th Semester - Syllabus

ACC 121 Financial Accounting I (BCIS 4th Semester)

Course Objectives

The aim of this course is to provide students with an understanding of the basic concepts, principles, procedures and techniques underlying the accounting process and make them able to prepare financial statements of an organization.

Course Description

The course will cover the nature, scope and function of accounting; basic fundamental concepts and generally accepted accounting principles and practices; the accounting cycle; journalizing adjusting entries, preparation of financial statements; accounting for cash and cash equivalent transaction. The course will also include computer-based project work / case studies.

Course Outcomes

By the end of this course, students should be able to:

- understand accounting concepts, GAAP and accounting standards, and their role;
- introduce the legal and practical aspects of financial reporting with its components and characteristics;
- identify the difference between accrual and cash basis accounting, and carry out adjusting entries;
- prepare financial statements i.e. income statement, balance sheet and cash flow statement;
- explain cash and cash equivalents and prepare bank reconciliation statement;
- appreciate the role of accounting software applications play in gathering, recording, reporting and interpreting financial accounting information; and
- use computers to record and process business transactions.

Course Contents

Unit I: The Conceptual Foundation of Accounting

7hours

Accounting as a language of business, forms of business organizations, types of activities performed by business organization; Users of accounting information: internal and external; Qualitative characteristics of accounting information; The accounting profession, role and activities of an accountant; The accounting framework - basic accounting assumptions, concepts, GAAP, definitions and terminology, Accounting information system in modern business organizations; Use of computers in accounting process.

Unit II: Basics of Corporate Reporting

5 hours

Legal requirements of accounting, provisions of Company Act relating to accounting, introduction to accounting standards (IFRS and NAS), annual report, major components, basic components of financial statements, basic financial statements: Income Statement, Balance Sheet, Statement of Changes in Equity, Cash Flow Statement, Accounting Policies and Notes.

Unit III: Processing and Recording Business Transactions

6 hours

The Basis for Recording Transactions: Sources of accounting information, External and internal events; Accounting transaction, the accounting equation and analysis of transactions, the role of source documents.

The Double Entry System: Debits and credits and its rules; The journals; T account; General ledger; Normal account balances; Objectives and preparation of trail balance; Use of excel in processing business transaction.

Unit IV: Accrual Accounting and Adjustments**12 hours**

Adjusting Entries: The revenue recognition principle, matching principle; Cash versus accrual basis of accounting, The need for adjusting entries; Types of adjusting entries; Journalizing adjusting entries; Effects of failing to prepare adjusting entries, Preparation of adjusted trial balance.

Worksheet and Accounting Cycle: Preparation of ten and twelve column work-sheet; Preparing financial statements from the work sheet The closing process; Post-closing trial balance; Completion of accounting cycle.

Unit V: Preparation of Financial Statements**12 hours**

Income Statement: Concepts and major components; revenues, cost of goods sold, gross profit, net income and retained earnings; statement of retained earnings, preparation of income statement with vertical multi-step format.

Balance Sheet: Concepts and major components; assets, liabilities and stockholders' equity; preparation of balance sheet under vertical- classified format; use of computers in preparation of income statement and balance sheet.

Cash Flow Statements: Cash flows and accrual accounting; purpose of the statement of cash flows; financing, investing and operating activities; formats of statement of cash flows; preparation of cash flow statement using direct method, Reconciling cash flow under operating activity using indirect method, use of computers in preparation of cash flow statement.

Unit VI: Accounting for Cash and Cash Equivalents**6 hours**

Components of cash and cash equivalents; preparation of the bank reconciliation statement and the need for adjustments to accounting records; petty cash, balance sheet presentation of cash and cash equivalent, Internal control system; Cash control: receipt and disbursement.

Basic Text

Porter, G. A., & Norton, C. L. *Financial Accounting: The Impact on Decision Makers*. USA: The Dryden Press.

References

Hermanson, H. R., & Edwards, D. J. *Financial Accounting: A Business Perspective*. USA: Von Hoffmann Press.

Kimmel, P. D., Weygandt, J. J., & Kieso, D. E. *Financial Accounting*. New Delhi: Wiley India Pvt. Ltd.

Narayanswamy, R. *Financial Accounting: A Managerial Perspective*. New Delhi: Prentice Hall of India.

Koirala, M. P., Acharya, C., Sharma, L. P. B., Sharma, N., & Gautam, C. M. *Financial Accounting*. Kathmandu: Buddha Academic Enterprises. Nepal

Accounting Standards (NASs)

International Accounting Standards (IASs) / International Financial Reporting Standards (IFRSs)

SIT 201 Data Analysis and Modeling (BCIS 4th Semester)

Course Objectives

This course aims to acquaint students with major statistical and quantitative tools used in modeling and analysis of business decision involving alternative choices.

Course Description

The component of the course includes regression analysis and models, time series analysis, and forecasting, linear programming models and applications, transportation and assignment models, network models.

Course Outcomes

By the end of this course students would be able to

- calculate and interpret the meaning of correlation coefficient to measure the strength of relationship between two numerical variables,
- calculate and interpret the meaning coefficient of determination to measure the predictive power of the simple as well as multiple regression,
- forecast the future values using various models, and
- optimize the resources in the business decision making process.

Course Contents

Unit I Simple Correlation and Regression Models:

Measuring and Predicting Relationships

8 hours

Correlation: Meaning, Scatterplot, Karl Pearson correlation coefficient, Test of correlation coefficient.

Simple Linear Regression: Predicting of One Variable from Another

Statistical model, Least square regression- assumptions, Standard error of estimate, Coefficient of determination, Residual Analysis, Testing of regression coefficient.

Unit II Multiple Regression Models:

Predicting One Factor from Several Others

8 hours

Multiple regression model, Standard error of estimate, Coefficient of determination, Significance of regression model, Test of significance of regression coefficients (Which variables are significant and explaining the most?), Model building, Curvilinear models, Qualitative variables, Stepwise regression, Residual analysis, Multi-collinearity.

Unit III Index Number and its Construction Models

5 hours

Introduction, Definition of index number, Uses of index number, Types of index number, Methods of constructing index number, Base shifting, Deflation, Cost of living index.

Unit IV Time Series and Forecasting Models

10 hours

Index number, Understanding time series analysis, Decomposition of time series, Cyclic variation, Seasonal variation, Deseasonalizing the time series data (Ratio to moving average method), Choosing the appropriate forecasting technique, Moving average, Exponential smoothing, Regression based linear and curvilinear trend models, Measures of forecast accuracy (MAD, MAPE, and MSE).

Unit V: Introduction to Optimization Models

12 hours

Review of Linear Programming Model: Problem formulation, Graphical solution, special cases, Duality in LP

Transportation Model: Initial Solution (Vogel's Approximation Method), Final Solution

Assignment Model: Optimum Solution (Hungarian Method)

Unit VI: Network Models**5 hours**

Introduction, Network Diagram, Project Evaluation and Review Technique (PERT), Probability Estimate in PERT Analysis, Critical Path Method (CPM).

Basic Texts

1. Davis, G., & Pecar, B. *Business Statistics using Excel*. New Delhi: Oxford University Press
2. Berenson, M. L. & David M. L. *Basic Business Statistics: Concepts and Applications*. Upper Saddle River, New Jersey: Pearson Prentice Hall of USA.
3. Eppen, G. D., Gould, F. J. & Schmidt, C.P. *Introductory Management Science*. New Delhi: Prentice Hall
4. Richard I. Levin, David S. Rubin, Joel P. Stinson, Everette S. Gardner, Jr. *Quantitative Approaches to Management*. McGraw-HILL, INC.

References

1. Levin, R. I., & David S. R. *Statistics for Management*. New Delhi: Prentice Hall of India.
2. Panneerselvam, R. *Research Methodology*. New Delhi: PHI Learning Private Limited.
3. Allbright, S. C., Winston, W., & Zappe, C. J. *Data Analysis and Decision Making with Microsoft Excel*. Pacific Grove: Duxubury Press.
4. Argyrous, G. *Statistics for Research with a Guide to SPSS*. New Delhi: Sage South India Edition
5. Whigham, D. *Business Data Analysis using Excel*. New Delhi: Oxford University Press

MGT 211 Fundamentals of Organizational Behaviour

(BCIS 4th Semester)

Course Objectives

Managers need to know why people behave as they do in relation to their jobs, their work groups and their organizations. This knowledge of individuals' perceptions, motivational attitudes and behaviour will enable managers to not only understand themselves better, but also to adopt appropriate managerial policies and leadership styles to increase their effectiveness. The goal of this course is, therefore, to help students develop a conceptual understanding of OB theories and to provide them with skills to put those ideas and theories into practice.

Course Description

Students are first exposed to fundamentals of organizational behavior such as working with people, the nature of organizations, communication, leadership, and motivation of people. They will then be provided with the knowledge and skills to deal with group behavior, leadership, communication, conflict management, and organizational development issues. The focus of instruction will move progressively through the individual, group and organizational levels of behaviour and will examine the interrelationships of behavioural phenomena among these levels.

Course Outcomes

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

- explain the determinants of behavior and the emerging concepts in organizational behaviour;
- understand the importance of organizational behavior in managerial functions;
- understand the definition and concepts of behavior, group and teams, organizational structure, employee motivation, organizational communication, leadership, conflict and stress, organizational change and development;
- form an appreciation of the complexities and uncertainties of organizational behaviour by examining managerial roles;
- demonstrate clear understanding of the concepts and established theories relating to organizational behavior;
- explain and evaluate the key assumptions on which behaviour in organizations is managed and assess the effects of these ideas on employee attitudes and actions.

Course Contents

Unit I: Introduction to Organizational Behaviour

5 hours

Concept and significance, OB system; basic assumptions, levels of OB analysis, contributing disciplines, emerging trends and challenges in OB, determinants of behaviour – beliefs, attitudes, values, emotions and behaviour.

Unit II: Perception, Personality and Learning

10 hours

Perceptual process, factors influencing perception, perception and individual decision making; Learning – concept and significance of learning, factors influencing learning, major models of learning – classical conditioning, operant conditioning, cognitive learning and social learning; Behaviour modification; Personality – concept, types, determinants, individual differences, personality attributes influencing behavior.

Unit III: Organization Structure, Group Dynamics and Team Development

8 hours

Organization - foundations of organization structure, job design; Human factors in organizing; Organizational Culture - meaning, importance and characteristics of organization culture. Group dynamics – definition and importance, types of groups, group formation, group development, group composition; Work teams – types, team performance factors, building effective work teams, group decision making, issues in managing work teams.

Unit IV: Motivation and Leadership**10 hours**

Motivation: process of motivation, theories of motivation – need hierarchy theory, two factor theory, ERG theory, expectancy theory, equity theory; Leadership - concept; Leadership styles; Leadership theories – trait theory, behavioral theory, Fielder's contingency theory, Managerial Grid, Path-Goal theory; Emerging issues in motivation and leadership.

Unit V: Organizational Conflict and Stress**5 hours**

Concept, sources, patterns, levels, and types of conflict; traditional and modern approaches to conflict management, functional and dysfunctional organizational conflicts, resolution of organizational conflicts; Organizational Stress – concept, causes, consequences, managing stress.

Unit VI: Interpersonal and Organizational Communication**5 hours**

Concept of two-way communication, communication process, barriers to effective communication, types of organizational communication, improving communication, transactional analysis in communication.

Unit VII: Organizational Change and Development**5 hours**

Concept, need for change, resistance to change, theories of planned change, organizational diagnosis; OD intervention; Learning organizations – concept, characteristics and model of learning organization.

Basic Texts

Robbins, Stephen P. *Organizational Behaviour*, Prentice Hall, New Delhi.

Mc Shane, S.L., M.A.V. Glinow and R.R. Sharma, *Organizational Behaviour*, Tata McGraw Hill, New Delhi.

King, Daniel & Lawley, Scott, *Organizational Behaviour*, Oxford University Press.

References

Adhikari, D. R. *Organizational Behaviour*, Buddha Publications, Kathmandu.

Acharya, B. S. *Organizational Behaviour*, Asmita, Kathmandu.

Arnold, H. J. and D. C. Feldman, *Organizational Behaviour*, Tata McGraw Hill, New Delhi.

Newstrom, John W. and Keith Davis. *Organizational Behaviour: Human Behaviour at Work*, Tata McGraw-Hill, New Delhi.

Luthans, Fred. *Organization Behaviour*, Tata McGraw-Hill, New Delhi.

Bhattacharya, D. K. *Organizational Behaviour*. Oxford University Press, New Delhi.

CMP 262 Database Management Systems (BCIS 4th Semester)

Course Objectives

The main objective of this course is to introduce students to fundamentals of data management technology by studying databases from three viewpoints: those of the database user, the database designer, and the database administrator.

Course Description

This course will concentrate on the principles, design, implementation and applications of database management systems. Topics include database management systems, relational database management system, structured query language, database design and the E-R Model, relational database design, transaction concurrency control, recovery system.

Course Outcomes

On completion of the course, students should be able to

- understand the different issues involved in the design and implementation of a database system.
- study the physical and logical database designs, database modeling, relational, hierarchical, and network models.
- understand and use data manipulation language to query, update, and manage a database
- develop an understanding of essential DBMS concepts such as: database security, integrity, concurrency, distributed database, and intelligent database, Client/Server (Database Server),
- design and build a simple database system and demonstrate competence with the fundamental tasks involved with modeling, designing, and implementing a DBMS.

Course Contents

Unit One: Introduction

3 hours

Database management systems and its applications, Purpose of Database systems, View of Data, Data models, Database Language, Instances and schemes, Database users and administrators, Application architecture(one tier, two tier, n-tier)

Unit Two: Database Design and the E-R model

7 hours

E-R model, Entity sets, Relationship sets, Attributes, Constraints, Mapping Cardinalities, Participation constraints, Keys (Super key, Candidate key, Primary key), Entity Relationship Diagram, Basic Structure, Mapping Cardinality, mapping cardinalities in E-R DIAGRAM, Complex attributes, Roles, non-binary relationship sets, Weak, strong entity sets, E-R Diagram

(case study), Extended E-R Features, Specialization, Generalization, Constraints on Generation, Aggregation, E-R Diagram with Aggregation

Unit Three: Introduction to the Relational model

6 hours

Structure of Rational database, Database Schemes (case study), Keys, Schema Diagram, Rational Query Language, Relational operations.

Unit Four: Introduction to SQL

13 hours

Overview of SQL Query language, SQL Data Definition, Basic types, Basic Schema Definition, Basic Structure of SQL Queries (single, multiple), Natural join, Additional Basic Operations, Set operational (union, intersect, except), Null Values, Aggregate function (Basic, Grouping, Having, Nested sub-queries (comparison, empty relating from clause) Scalar sub-queries), Modification of the database.(insert, update, delete), Join

Expression, join conditions, outer joins, view, materialized view, Transaction (commit, Rollback), Integrity constraints (not null, unique, check, referential integrity), Authorization (Grant, Revoke), Roles, view, transfer of privileges, revoking of privileges, Functions and Procedures, Declaring and Revoking SQL functions and Procedures, Language constraints for procedures and functions, Triggers, indexes

Unit Five: Relational Database Design

7 hours

Database anomalies, Functional Dependencies, Basic Concepts, Closure of set of Functional Dependencies, closure of attribute set, Decomposition, Lossless Join Decompositions, Dependency preservation, Normalization, First Normal Form, Second Normal Form, Third Normal Form, Boyce -Codd Normal Form, Comparison of BCNF and 3NF

Unit Six: Transactions

4 hours

ACID Properties, Simple transactions models, Storage structure, transaction atomicity of durability, Transaction Isolation, Serializability, transaction isolation and atomicity, Locking, timestamp

Unit Seven: Concurrency Control

4 hours

Lock-Based protocols, Dead-lock handling, Multiple Granularities, Time-stamp Based Protocols, Validation based protocols

Unit Eight: Recovery System

4 hours

Failure classification, Storage, Recovery and atomicity, Recovery Algorithm, Buffer management, Failure with loss of non-volatile storage, Early lock release and logical undo operations, Remote Backup systems

Note: Students are required to complete the project. Project should be done on group at most 4-5 number of students. Format of project report is given below:

- Project Description
- Description of entities or object consideration in the project
- Algorithm or Diagram showing description of project
- Conclusion of the project.

Basic Texts

Silberschatz, Abraham , Henry F. Korth, S. Sudarshan *Database system concepts*: McGraw Hill
6th Edition, New Delhi

References

Post,Gerald V.: *Database Management Systems*, McGraw Hill International Edition, New Delhi Ramezelmasri, B.
Navate, *Fundamentals of Database Systems*, Pearson Education Asia

CMP 265 Internet Technology (Web Programming) **(BCIS 4th Semester)**

Course Objectives

This course is designed so that students can interact with the real world programming beyond just the theoretical knowledge. This course will help students to create web applications. The main objective of this course is to meet the current market need for a web developer.

Course Descriptions

We cover some fundamental of web environment, how it is designed and how an actual application is created. This course covers all the creating as well as debugging and implementing it in the real world. This course deals with some latest technology in web programming like HTML 5 / CSS 3 etc. The important factors that are the issues in real life like browser compatibility, security implementation of XML are covered in this syllabus. Web application uses framework and object oriented programming in a real scenario which is also covered in the syllabus. This will really help students to meet the criteria that the market needs from a technical student.

Course Outcomes

After completion of the course, students should be able to:

- design web sites
- understand the real world programming need
- debug the fault that appears in the code.
- create user friendly environment.
- create browser compatible web applications.
- solve a problem, i.e. the course is planned in such a way that instructors do not fix the problem but teach students how to fix it.

Course Contents

I. Web Environment 2 hours

Introduction, History, Client Server Architecture, Web Site Design

II. HTML/CSS 4 hours

III. Review of HTML Tags (formatting, links, images, table, forms, frames etc.), Getting started with HTML5, CSS 3, Responsive design, and Browser compatibility

IV. Introduction to XML and XHTML 3 hours

V. XML, DTD, XSTL, XHTML

VI. Client Side Scripting 8 hours

Java Script: Introduction, Operator, Control, DOM, Array, Object, Smart Form, Class and objects, jQuery: Using jQuery, element finder, events and animations.

VII. Server Side Scripting (Basic) 7 hours

PHP: Setup/Getting started, Operators, Control, Array, Function, String operations, Math functions, Using Regx, Exception handling

VIII. Server Side Advance

8 hour

Class and objects, inheritance, polymorphism, Session, Database Connectivity, CRUD Operation, working with files, garbage collection, Magic quotes, send receive emails, Introduction to CMS

IX. Security Considerations

5 hours

Principle of Cryptography, Authentication, Encryption/Decryption, Digital Certificates, Digital signature, Secure Socket Layer, VPN

X. Electronic Payment

2 hours

Electronic Cash, Credit Card Processing, Electronic Check Processing, Gift and Prepaid Certificates, Payer Authentication, Smart Authorization

XI. Legal Issues

2 hours

On-Line Contract Law, Consumer Transaction, Digital Copyright, Taxation

XII. PHP Framework

6 hours

a. MVC Model

b. Getting Started with PHP Framework

Note: Students should create a project as an mandatory requirement for the completion of this subject. The project should use HTML5, CSS3, JS, XSL, PHP and MySQL.

Laboratory Work

1. Creating a simple static web site with 4 pages, using HTML5 and CSS3.
2. Creating a form with all the elements and validating it using client side scripting.
3. Creating jQuery Slider and image gallery
4. Use jQuery date picker and sort
5. Create Login form and authorize it also use sessions
6. Create a form to upload images using php
7. Create a form to add data to database
8. Create a form to implement CRUD operations

Note: Each of the above lab sessions should cover more than 4 hours of practical work.

Basic Text

Ivan Bayross *Web Enabled Commercial Application Development Using HTML, JavaScript, DHTML and PHP*
4th edition Bpb Publications

References

Niederst, Jennifer. *Web design in a Nutshell* O'Reilly (<http://www.oreilly.com>)
Kenneth C, Laudon, Carol Guercio. Traver, *E-commerce Business, Technology and Society* Prentice Hall; 9 edition New Delhi

PRJ 291 Minor Project I (BCIS 4th Semester)

Project works enhance students learning, processing and thinking ability. Computer courses in Information Technology, being dynamic in nature and increasing in scope requires “project works” to be an inseparable part of its learning.

The project work assisted by experience of an expert in the respective field supports students the way and manner in which projects are handled and executed for an optimal result. Students are highly encouraged to use the knowledge of JAVA programming language, System Analysis and Design and Concepts on Database Management Systems.

Purpose

The purpose of the project is to learn how to formulate applications and to experience how to solve problems using methods, algorithms and techniques included syllabus. The students will conduct experimental evaluation on dataset and will analyze the business implications of the obtained solutions. Students are encouraged to identify new problems, tasks and applications.

Outcomes

- Knowledge of real time working environment.
- Knowledge of basic to high level of programming and implementation of business logic.
- Knowledge of Software Development Processes and its challenges.
- Knowledge to bridge the gap between academic knowledge and industry requirements.

Tools

Front end: JAVA

Back End: Preferred Database

IDE: Netbeans

Evaluation

Students’ project work will be evaluated by project supervisors and internal examiners on the basis of project report, project demonstration and presentation.