BCIS 1st Semester - Syllabus

ENG 101 English I
BCIS, First Year, First Semester

Course Description

This course comprises all aspects of the English language including speaking, pronunciation, listening, reading and writing. The focus is on improving the students to communicate clearly and effectively. The syllabus for the lessons is based on the course books, but the teacher will also use lots of other materials, including suggestions from students so the content of the class can be more useful and interesting. Students are expected to participate as much as possible, but they will work individually, in pairs and groups as well as the whole class. The teacher will correct their spoken and written errors so that they become more accurate and they will progress quickly.

General Course Objectives

The general objectives of the course will be to enable students to

- extend their vocabulary
- increase their fluency
- become more accurate
- communicate in English more easily
- understand more of the world around them

Specific Course Objectives

The specific objectives of the course will be to enable students to

- understand and use basic everyday phrases;
- introduce themselves and ask and answer questions about personal details;
- interact with a co-operative partner;
- acquire a basic repertoire of words and phrases;
- demonstrate limited grammatical control;
- mange short utterances;
- understand sentences and frequently used expressions related to immediately relevant areas;
- communicate in simple and routine tasks;
- describe in simple terms aspects of their background, immediate environment and matters of personal interest;
- use basic sentence patterns;
- use simple structures correctly; and
- read and write on general topics on different themes.

Course Content Areas

The content will include a selection of rich interdisciplinary texts of general academic interest and business texts of various genres. The key areas are as follows: personal identification; house and home, environment; daily life; free time, entertainment; weather; travel; relations with other people; health and body care; education; shopping; food and drink; services; places; cultures; science; environment; language; ancient tales, animals, television, cross-cultural bridges, anthropology, and literature.

Teaching Methods

The suggested teaching method is an eclectic mix of lectures, demonstrations, presentations, activities and seminars. The specific methods for specific units are as suggested for teachers in the course books. Question models will be developed during the teacher orientation program and made available to the campuses.

Basic Texts
1. Grant, D., Hughes, J., & Turner, R. *Business Result: Elementary Student's Book*. Oxford: OUP. (including Elementary Interactive Workbook with video)
2. Nisani, M., & Lohani, S. *Adventures in English Vol I* (3rd ed.). Kathmandu: Ekta. (including Sounds of English and Stories and Poems cassettes)

References
1. Hughes, J. *Business Result: Elementary. Teacher's Book*. Oxford: OUP (including Elementary Class DVD and Elementary Teacher Training DVD).
2. *Oxford Advanced Learner's Dictionary of Current English*. Eighth Edition. Oxford: OUP.
3. Carter, R., & McCarthy, M. *Cambridge Grammar of English*. Cambridge: CUP.

MTH 103 Mathematics I
BCIS, First Year, First Semester

Course Objectives
The objective of this course is to familiarize students with the basic mathematical tools with emphasis on applications to business and economics situations. The course specifically aims to enable students to develop proficiency in the application of mathematical tools to solve business problems.

Course Description
This course basically deals with mathematical concepts like set theory and number system, functions and graphs, derivatives and their applications, vectors, matrices and determinants, and permutations and combinations.

Course Outcomes
By the end of this course, students should be able to:
- use the language of mathematics to communicate ideas;
- demonstrate proficiency in conceptual understanding, and adaptive reasoning;
- solve quantitative problems and perform quantitative investigations in which they discover ideas and gain insights that develop questioning and solution-building skills; and
- use mental strategies and technology accurately and appropriately.

Course Contents

Unit I: Set Theory and Real Number System   **6 hours**
Sets, Types of sets, Venn diagram, Set operations, Laws of algebra of sets (without proof), Number of elements in a set Real number system, Representation of real numbers on the real line, Properties of real numbers (without proof), ordered sets, Inequalities, Intervals, Absolute value, Cartesian product, Relation.

Unit II: Functions and Graphs   **6 hours**
Constants and variables, Concept of functions, Domain and range of a function, Types of functions, Graphic representation (algebraic, logarithmic and exponential functions), Application of functions to business and economics.

Unit III: Derivatives   **9 hours**
Limit of a function at a particular point and at infinity, Properties of limits (without proof) Continuity, Types discontinuity, Test of continuity and discontinuity for simple algebraic functions;

Derivative, Average rate of change, Derivate as a slope of tangent to curves, Methods of differentiation (power rule, sum rule, product rule, quotient rule and chain rule), Differentiation of implicit and parametric functions, Higher order derivatives.

Unit IV: Applications of Derivatives   6 hours
Increasing and decreasing functions, Derivative as a rate of change, Critical point, Point of inflection, Maximum and minimum of a function of one variable, Problems related to business and economics.

Unit V: Vectors   6 hours
Introduction, Vector representation, Magnitude of a vector, Types of vectors, Vector addition and multiplication, Scalar product of two vectors, Vector product of two vectors, Collinear and coplanar vectors, Vector space, Linear dependence and independence vectors.

Unit VI: Matrices and Determinants   9 hours
Introduction, Types of matrices, Matrix operations, Transpose of a matrix, Determinant of a matrix, Minors and cofactors of matrix, Properties of determinants, Singular and non-singular matrix, Adjoint and inverse of matrix, Solution of system of linear equations having unique solution up to three variables (Cramer's rule, Inverse matrix method and Gaussian elimination method), linear transformations, rank of matrices.

Unit VII: Permutations and Combinations   6 hours
Basic principles of counting, factorial notation, permutation, Permutation of objects alike, Permutation with restrictions, Circular permutation, Combination, Combination with restrictions.

Basic Text
Budnick, F. S. *Applied Mathematics for Business, Economics and the Social Sciences*. New Delhi: Tata McGraw Hill.

References
1. Thomas, G. B. Jr., & Finney, R. L. *Calculus and Analytical Geometry*. New Delhi: Narosa Publishing House.
2. Berresford, G.C. *Calculus with Finite Mathematics*. New York: Andrew M. Rockett.

PSY 101 General Psychology
BCIS, First Year, First Semester

Course Objectives
The objective of this course is to familiarize students with the basic psychological concepts and processes to understand human mind and behavior in relation to self and others. Specifically, it provides a basic understanding of psychological science of human nature. It familiarizes students on how biology, cognition and action influence the human behavior and personality of the individual. It helps to acquire the knowledge of different psychological processes and their effect on human cognition and behavior. Finally, it develops an understanding of how human behavior can be understood, shape, and applied in individual and group/social level.

Course Description
This course surveys the major concept, theories, and processes of basic psychology. It addresses the core psychological process as well as their importance on individual and social setting.

Course Outcomes
By the end of this course, students should be able to:
- know basic concepts of human psychology and the core processes related to psychology;

- have an idea of the major theories that explain human behavior and cognitive processes;
- use psychological knowledge to describe and explain human behavior in personal and social settings; and
- apply human psychology in understanding and explaining individual and social level of behavior.

Course Contents

Unit I: Introduction to Psychology as a science of Mind and Behavior   5 hours
Nature, modern history, of Psychology, common sense and psychology, similarities and differences with other social sciences; Perspectives of psychology (Biological perspective, cognitive perspective, behavioral perspective, Psychodynamic and humanistic perspective, Socio-cultural perspective and evolutionary perspective); Scientific method and psychological research

Unit II: Biological Basis of Behavior   5 hours
Importance of Biology in psychological understanding of behavior, Neurons, nervous system, structure and functions of central nervous system, Endocrine system and its importance.

Unit III: Sensation and Perception   10 hours
Sensation: Meaning, importance, sensory threshold, habituation and adaptation; Types of sensory experiences, structure and functions of Visual and auditory sensation, *Perception*: definition and characteristics*;* Perceptual processes (Pathways in Brain and top-down and bottom-up processing), subliminal and extrasensory perception, Theoretical explanation of perceptual organization (Gestalt principles), Perceptual ambiguity and distortion. Social cognition and behavior: process of social cognition, attitude, social influence, prejudice and discrimination.

Unit IV: Learning and Memory   9 hours
Learning: Nature of learning (Behavioral vs. cognitive, instinct, and complex forms of learning) Classical condition learning and its application; Operant conditioning learning and behavior modification and shaping, Cognitive learning (cognitive map, insight and observational learning). *Memory:* Memory phenomenon and basic processes (encoding, storage and retrieval), Models of memory; Parallel Distributed Processing Model and Information Processing Model, Retrieval (cues, recall, recognition, reconstruction, and automatic encoding); Forgetting: nature and causes of forgetting, memory and the brain, amnesia and false memories.

Unit V: Cognition (Thinking and Intelligence)   7 hours
Thinking: Definition and nature, component of thought (mental images, concepts, prototypes) and reasoning, thought and brain; Problem solving and decision making (preparation, production and judgment): obstacles in problem solving thinking and decision making; Creativity; *Intelligence:* nature, types, and determinants of intelligence, Intelligence tests and concept of IQ; Individual differences in intelligence.

Unit VI: Motivation, Emotion and Stress   7 hours
Motivation: Nature and characteristics of motivation, Instinct, drive-reduction approach, arousal approach, incentive approach of motivation, cognitive approach to motivation; Physiological need and motivations (Hunger and sex), Socio-psychological motivation (need for achievement and power); *Emotion:* nature and types and functions of emotion; James-Lange, Cannon-Bard, and Schachter-Singer theories of emotion. Emotion and Health; *Stress:* stressor and the cost of stress, general adaptation syndrome model, psychoneuroimmunology of stress; Coping stress, style and learned helplessness, social support;

Unit VII: Personality   5 hours

Nature and determinants of personality, Theories of personality: Freud's theory; Trait theory (All port and Cattel's theory); Big five personality traits, evaluation; Bandura's social cognitive theory, evaluation; Humanistic approach; Measurement of personality; Self-report; Projective tests, Behavioral assessment.

Basic Texts
1. Feldman, R. S. *Understanding Psychology.* New Delhi: Tata McGraw Hill.
2. Ciccarelli, S. K., & Meyer, C. E. *Psychology*. New Delhi: Pearson Education.

References
1. Zimbardo, P. G., Johnson, R. L., & McCann, V. *Psychology: Core concepts*. USA: Pearson Education.
2. Passer, M. W., & Smith, R. E. *Psychology: The Science of Mind and Behavior*. New York: McGraw Hill.

ECO 101 Introductory Microeconomics
BCIS, First Year, First Semester

Course Objectives

This course is designed to reinforce and expand students' understanding of the basic microeconomic theory. It aims to provide students with an introductory-level treatment of economic theory with emphasis on the technique besides the results. Besides, it helps the students to master the basic tools used by the prominent economists, and makes them able to apply these tools in a variety of contexts to set up and solve economic problems.

Course Description

The first three units of this course examine the two fundamental microeconomic topics, viz. the introduction to microeconomics, consumer theory and producer theory. Then the course focuses on market competition with the introduction of monopoly, oligopolistic and monopolistic competition. The major concentrations of this course are: supply and demand, consumer demand theory: preferences and choice, rationality assumptions, and budgetary constraints, producer theory: production and costs functions, market structure: perfect competition, monopoly, monopolistic competition, and oligopoly and distribution theory.

Course Outcomes

By the end of this course, students should be able to:
- explain basic economic terminology (as e.g. opportunity costs, marginal utility, consumer's equilibrium etc) in a comprehensive and intuitive way;
- describe and justify the main assumptions behind simple economic models as e.g. the demand and supply model, the perfect competition model, the monopoly model, etc;
- illustrate diagrammatically these models and perform policy experiments (e.g. introducing taxes);
- derive numerically economic instruments and learn how to use them in practice (e.g. price elasticity, optimum commodity purchase, profit maximization, Lerner's index etc.); and
- solve algebraically simple microeconomic models in order to determine the equilibrium economic variables, and reflect on the solutions with a critical mind.

Course Contents

Unit I: Introduction to Microeconomics   **8 hours**
Introduction to Economic Theory: Problem of Scarcity, Introduction to Microeconomics and Macroeconomics, Function of Microeconomic Theory, Comparative Statics and Dynamics, Positive and Normative Economics, and Fundamental Principles of Economics.

Unit II: Theory of Consumer Behavior   **12 hours**
Meaning and Concept of Demand, Meaning and Concept of Supply, Law of Demand and Supply, Shifts in Demand and Supply,   Price Elasticity of Demand, Income Elasticity, Cross Price Elasticity and Price Elasticity of Supply, Determinants of Elasticity, Uses and Importance of Elasticity. Cardinal Approach of Utility, Consumer Equilibrium, Ordinal Approach of Utility, Indifference Curve, Marginal Rate of Substitution, Budget Line, Consumer's   Equilibrium,

Application of Ordinal Analysis- Separation of Substitution and Income Effect from Price Effect for Normal, Inferior and Giffen Good.

Unit III: Production and Cost   **9 hours**
Short Run and Long Run Production Functions: Law of Variable Proportions, Law of Returns; Optimal Input Combination; Classification of Costs; Short Run and Long Run Cost Curves and Interrelationships. Economies of Scale: Internal and External. Revenue Curves: Optimum Size of the Firm, Factors Affecting the Optimum Size.

Unit IV: Market Structures and Pricing   **9 hours**
Equilibrium of the Firm and Industry: Perfect Competition, Monopoly, Monopolistic Competition, Monopoly Power, Discriminating Monopoly, Aspects of Non-price Competition; Meaning of an Oligopolistic Behavior.

Unit V: Theory of Distribution   **10 hours**
Input Price and Employment under Perfect Competition and Imperfect Competition. Demand and Supply Curve of a Firm for an Input. Input Pricing under Bilateral Monopoly. Concepts of Wage Differential, Minimum Wage and Brain Drain.

Basic Texts
1. Mankiw, N. G. *Principles of Microeconomics*, Dryden Press, Harcourt Brace College Publishers.
2. Salvatore, D. *Theory and Problems of Microeconomics Theory*, *Schaum's Outline Series*.
   New Delhi: Tata McGraw Hill.

References
1. Salvatore, D. *Principles of Microeconomics*. New Delhi: Oxford University Press.
2. Koutsoyiannis, A. *Modern Microeconomics*. London: Macmillan Education Ltd.
3. Dwivedi, D. N. *Principles of Microeconomics*. New Delhi: Pearson Education.
4. Cowell, F. A. *Microeconomics Principles and Analysis.* New Delhi: Oxford University Press.
5. Watson, D. S. & Getz, M. *Price Theory and its Uses.* New Delhi: AITBS Publishers and Distributors.

MGT 111 Principles of Management
BCIS, First Year, First Semester

Course Objectives
The purpose of this course is to provide students with a broad and integrative introduction to the theories and practice of management. In particular, this course focuses on the major areas of the management process: planning, organizing, leadership and control from an organizational viewpoint. The course also attempts to enable students to understand the role, challenges, and opportunities of management in contributing to the successful operations and performance of organizations.

Course Description

This course presents a thorough and systematic coverage of management theory and practice, and focuses on the basic roles, skills and functions of management, with special attention to managerial responsibility for effective and efficient achievement of goals. Special attention is given to communication, motivation, leadership, team management, quality management, conflict management, and organizational change and development.

Course Outcomes

By the end of this course, students should be able to:
- understand fundamental concepts and principles of management, including the basic roles, skills, and functions of management;
- demonstrate knowledge about the historical development, theoretical aspects, and emerging trends and developments in management;
- conceptualize how internal and external environment shape organizations and their responses;
- analyze organizational goals, planning systems, organizational structures, staffing practices, and conflict management strategies of an organization;
- examine the interpersonal talents a manager must develop to be effective as a leader and change agent; and
- discuss various concepts and approaches to decision making, leadership, employee motivation, management control, work group behavior, and quality management.

Course Contents

Unit I: The Nature of Management   10 hours

Introduction to Management: Definition; Characteristics of management; Principles of management; Process and functions of management; Managerial hierarchy and levels; Managerial Skills and roles; Emerging issues and challenges for management.

Management Theories: The classical, behavioural, management science, systems, contingency, and contemporary perspectives on management.

The Environmental Context of Management: Concept; Organization-environment interface; Types and components of organizational environment; Emerging business environment in Nepal.

Unit II: Planning and Decision Making   7 hours

Organizational Goal Setting and Planning: Organizational goals – purpose and functions; The planning function – planning system, methods, types, and steps in the planning process; Concept of strategic planning - situational analysis; Tools to aid strategic planning.

Managerial Decision Making: Concept; The decision making process; Types and conditions of decision making; Group decision making; Techniques to aid decision making.

Unit III: Organizational Structure and Staffing   10 hours

Organizational Structure and Design: Principles, process, and approaches to organizing; Organizational design – major types; Departmentation; Authority, power and responsibility; Delegation and decentralization of authority; Informal organization; Emerging concepts in organizing and design.

Staffing: Concept, objectives, importance and components of staffing; Human resource management system.

Unit IV: Mobilizing Individuals and Groups   11 hours
Leadership: Concept and functions; Leadership versus management; Qualities of good leadership; Leadership traits and styles; Approaches to leadership.

Managing Work Teams: Concept, importance, types, and formation of work groups; Team management – concept, types and strategy for effective team management; Organizational conflicts – concept, types, and sources; Conflict management strategies and techniques.

Employee Motivation: Concept and types; Theories of Maslow and Herzberg; Techniques of employee motivation.

Interpersonal and Organizational Communications: Concept and purpose; Communication network and process; Communication flows; Types of communication; Barriers to effective communication; Enhancing organizational communication.

Unit V: Management Control System   5 hours
Control System: Concept, types and process; Features of effective control; Managing information for effective control; Techniques of control.

Quality Management: Concept and principles; Quality control – concept and methods; Total Quality Management – concept and techniques; Factors affecting control; Deming management; Emerging quality management issues and challenges.

Unit VI: Organizational Change and Development   5 hours
Organizational Change: Concept; Forces for change – internal and external; Need for planned change; Process of planned change; Resistance to change; Causes of resistance; Overcoming resistance to change; Implementing and monitoring the change process.

Organizational Development: Concept, objectives, key benefits, OD activities and process.

Basic Texts
1. Robbins, S. P., & DeCenzo, A. D. *Fundamentals of Management*. New Delhi: Pearson Education.
2. Griffin, R. W. *Management*. New Delhi: AITBS Publishers and Distributors.

References
1. Bateman, T. S. & Snell, S. A. *Management: Competing in the New Era*. New Delhi: Tata McGraw Hill.
2. Pant, P. R. *Principles of Management*. Kathmandu: Buddha Academic Enterprises.
3. Paudel, S. R., Pradhan, G. M., & Bhandari, K. P. *Principles of Management*. Kathmandu: Asmita Publications.
4. Weihrich, H., Cannice, M. V. & Koontz, H. *Management: A Global Perspective.* New Delhi: Tata McGraw Hill.

CMP 161 Programming Language
BCIS, First Year, First Semester

Course Objective
This course provides students with a comprehensive study of the C programming language. Classroom lectures stress the strengths of C, which provide programmers with the means of writing efficient, maintainable, and portable code. The lectures are supplemented with non-trivial lab exercises.

Course Description
The overall objective of this course is to provide the students a sound understanding of the fundamentals of C and how to apply them effectively in the practical ground. The course provides step-by-step approach of how to apply these concepts solving real world problems.

Course Outcomes

By the end of this course, students should be able to:
- understand the importance of the software development process - from specification to design to implementation to testing to review;
- recognize the value of documentation at different stages of the software development process, including the production of a specification document, a design document, diagramming (such as flowcharts and Jackson Structured Programming), and a test plan and results;
- understand general principles of computer languages such as: loops (while/for), conditional branching (if/switch), block structures (including nesting and scope rules), functions (including parameter passing, prototypes and recursion), input/output (e.g. input from keyboard or a stored file, output to the screen or a stored file), arithmetic rules (e.g. precedence, operators, common functions);
- learn how these principles are implemented in the C programming language;
- develop problem-solving skills to translate 'English' described problems into programs written using the C language;
- understand how to use and manipulate variables and types to change the program state, including numeric, character, array and pointer types, as well as the use of structures and typesets;
- understand the purpose of pointers for parameter passing, referencing and dereferencing, and linking data structures; and
- understand the purpose and use of function libraries.

Course Contents

Unit I: Historical Development   **2 hours**
History of computing and computers, Types of computers (analog and digital), Generations of computers.

Unit II: Introduction to Computer Systems   **4 hours**
Fundamental concepts of computer, Memory, hardware, software and firmware, Block diagram of digital computer, Computer peripherals.

Unit III: Programming Preliminaries   **10 hours**
Introduction to program and programming language, Types of programming language, Generations of programming languages, Program design methodology, Software development: Stages of software development, Text editor; Assembler, Compiler, Interpreter, Algorithms, Flowcharts, Pseudo codes, ASCII.

Unit IV: Introduction to C   **16 hours**
C Basics; variables and constants, The simple data types in C. Operators, Header files, Input and Output statement: Unformatted I/O, Formatted I/O, Type conversion, Loops and Decisions (For loop, while loop, Do while loop, Nested loop Case-break and continue statements, If Else, Else- If and Switch statements), Functions (Variables, Returning a value from a function, Sending a value to a function, Arguments, Preprocessor directives, C libraries, Macros, Header files and proto typing), Recursion.

Unit V: Arrays and Strings   **4 hours**
Initializing arrays, Multidimensional arrays, String; functions related to the string.

Unit VI: Structures and Unions   **3 hours**
Initializing structures, Nested type structure, Arrays and structures, Unions.

Unit VII: Pointers   **4 hours**
Pointer data type, Pointers and Arrays, Pointers and Functions, Pointers and Structures.

Unit VIII: Files and File handling   **5 hours**

Opening and creating a file in different modes (Read, Write and Append).

Basic Text

    Thareja, R. *Introduction to C Programming.* New Delhi: Oxford University Press.

References

1. Kelley, A. & Pohl, I. *A Book on C.* Singapore: Addison Wesley Longman.
2. Rajaraman, V. *Computer Programming in C.* New Delhi: Prentice-Hall of India.
3. Balagurusamy, E. *Programming in ANSI C.* New Delhi: Tata McGraw Hill