UNIVERSITY OF THE PUNJAB

NOTIFICATION

It is hereby notified that the Syndicate at its meeting held on 15.11.2021 approved the recommendations of the Academic Council made at its meeting dated 25.08.2021 regarding grant of permission to stat BS E-Commerce (Electronic Commerce) alongwith approval of its Syllabi at the Hailey College of Commerce with effect from Academic Session 2021

Sd/-
Muhammad Rauf Nawaz
Registrar

Admin. Block,
Quaid-i-Azam Campus,
Lahore.
No. D/121/Acad.

Dated: 10.01.2022.

Copy of the above is forwarded to the following for information and necessary action: -

1. Dean, Faculty of Commerce.
2. Principal, Hailey College of Commerce
3. Director, Quality Enhancement Cell
4. Controller of Examinations
5. Deputy Registrar (General)
6. Deputy Registrar (Affiliation)
7. Secretary to the Vice-Chancellor
8. PS to PVC
9. PS to Registrar
10. Assistant Syllabus

Assistant Registrar (Academic)
for Registrar

HAILEY COLLEGE OF COMMERCE
University of the Punjab
Curricula/Syllabi of BS E-Commerce Program

Program Title: **BS E-Commerce**
Department: **Hailey College of Commerce**
Faculty: **Faculty of Commerce**

1.   Vision
To achieve academic, professional, and research excellence in business & commerce education

1.1 Mission
HCC aspires to serve the community by imparting professional, practical, and research-oriented knowledge and skills aligned with emerging business and commerce trends. We endure a meritorious culture with continuous improvement that encourages entrepreneurial spirit, professional excellence and commitment which will enable our business and commerce graduates to lead the market through ethical consciousness.

1.2 Core Values
        a. Research
        b. Innovation
        c. Integrity
        d. Entrepreneurship
        e. Good governance
        f. Industry academia linkage

1.3 Strategic Goals

1.	Community Service	To provide quality business and commerce education to all the segments of the society.
2.	Research Oriented Knowledge	To encourage, produce and promote research-based knowledge to implement viable solutions for the emerging problems.
3.	Continual Improvement	To improve continuously: the degree programs, curriculum, faculty, management, staff and facilities as per emerging market trends and needs of all the stakeholders.
4.	Business & Commerce Graduate Excellence	To promote entrepreneurial spirit and professional excellence among graduates by developing leadership qualities; ethical consciousness and creativity.

2. Introduction of Hailey College of Commerce
Hailey College of Commerce was established in 1927 to provide business & commerce education. HCC contributed a lot to the society by creating quality human capital since its

inception and produced well-known personalities at National and International forums. It provides a friendly and enabling working environment that promotes learning and knowledge sharing opportunities for students through creative thinking. It has earned national and international repute for its teaching, research, and community services. Continuous improvement of programs and courses helps the HCC to be competitive by anticipation and reflection of evolving business & commerce trends. Faculty and management at HCC emphasized on projects and teamwork that make learning a challenging and stimulating experience to develop a sense of positive competition, personal initiative, and communication skills among graduates. Hailey College of Commerce offers following full-time degree programs according to HEC & NBEAC guidelines:

1. Associate Degree in Commerce
2. Associate Degree in Accounting and Finance
3. B. Com (Hons.)
4. BS Accounting and Finance
5. M. Com
6. M. Phil (Commerce)
7. Ph. D (Commerce)

Moreover, professional diplomas and certificates are also offered in addition to various skill-oriented courses and training programs. It has diversified and qualified faculty almost 100% PhD faculty (commerce) along-with state of the art classrooms, a dedicated library, fully-equipped computer labs, and other facilities.

3. Program Introduction

BS E-Commerce program is aligned with the modren realities of business world. COVID-19 has unveiled the importane of E-Commerce in modren wrold. This program is developed by integrating the domains of Information Technology and commerce. IT related courses provide technical knowledge and skills to students to enable them to use employe and use information technoloy for business ends. Moreover, courses on business and commerce reinforce professional and entrepreneurial orientation of the students to enable them to start and operate a modren e-business. The program is build on the modren day requirment to lay a stong foundation of technology enablement and entrepreneurial orientation among students. The proposed prorgam is based on a total of 135 credit hours spanned over 04 years of study and lab work.

3 (a) Program Alignment with University Mission

Proposed BS E-Commerce program is aligned with the University mission to produce quality human capital with appropriate knowledge and skills. The mission is to provide education for two-fold benefit including young people are nurtured to be sensitive, tolerant, skilled, and capable of thinking in a creative and critical way. It enables to meet the local, regional, and global emerging demand of professionals equipped with knowledge & leadership potential for individual and collective well-being. The program is directly associated with the mission as it aims at producing ethical business graduates to meet modern day requirements of e-commerce industry. Graduates of this program would demonstrate leadership abilities by laying foundation of e-commerce infrastructure in the country and leading Pakistan towards a prosperous end. The vision of HCC that is consistent and aligned with the university mission; being complementary to each other.

4. Program Objectives
1. To equip the gradates with the required knowledge and skills to enable them to establish, operate, and manage a business in modern technologically advanced world.
2. To promote entrepreneurship among business graduates by focusing on the demands of modern IT based economies.
3. To boost creativity and innovation among students by enabling them to locate innovative business opportunities at local, regional, and international fronts.
4. To polish leadership potential of graduates by building their self-confidence and invoking a behavior of calculated risk taking to reap entrepreneurial outcomes.
5. To enable youth of Pakistan to capitalize on the emerging trends of globalization, digitization, and e-commerce.
6. To enable students to use modern technology in a commercially viable manner to promote business, employment, and prosperity in the country.
7. To integrate practice with academic and produce graduates with modern skills, aligned with practical realities of modern world.
8. To encourage practical learning and knowledge sharing between students and other stakeholders
9. To promote ethical practices, socially responsible ventures and philosophy of individual and collective well-being
10. To enable graduates for accessing, analyzing, evaluating and processing relevant information for decision making

5. Market Need / Rationale of the Program

5 (a) Potential Students for the Program
HCC aims to offer BS E-Commerce to the students representing Generation Z. These students are well versed with the modren digital technologies and internet based innovations. The purpose of offering the course is to capitalize on emerging trends of globalization, digitization, and virtualization. The program is customized to incorporate technical and businsses orirntation to enable students to use modren technlogies for business and professional ends. The program is also focused on boosting entrepreneurial orientation of the graduates, which represent a radical change from previous initiatives of producing graduates for job markets. In this way, the program is developed considering the prefernces of new generation, which is more apt to modren technologies, is self-confident, likes risk taking, and have entrepreneurial mind set and potential. The program encourages students to learn pratical skills, which would enable the students to mark a positive constrilution towards the scoeity and the country. Thus, this program seeks to attract pupils who are at ease with use of digital technologies, have an entrepreneurial mindset, and are eager to contribute towards economic and societal goals of the nation.

5 (b) Potential Employers
The program has a specialized focus on building entrepreneurial orientation of the graduates. Thus, primary focus of the prorgam would be to cultivate an entrepreneurial mindset. Digital trasnformation of the world have provided numerious opportunities for students with the right skill set. The program aims at equiping the students with that right skill set to promote entrepreneurship in the country. Apart from entrepreneurial initiatives, students graduting under

this program would have specific skill set with a blend of IT capabilities and business prientation that would enable them to seek employment in large e-commerce firms. Advent of modren technologies have created vast opportunities for skilled human resouce. After graduting under this porgram, students could easily be employed in evoling digital industries representing e-commerce, digital media selling and marketing, freelancing, content manegment and creation, and online markets. Rapid digitization of the public sector and related services in Pakistan has also created opportunities for E-commere graduates to seek employment in public sector. Considering their IT skill set, these graduates would be an ideal candidate to handle e-modes of service delivery in the public sector of Paksitan. Thus, these graduates would have bright entrepreneurial and employment opportunities in local as well as foreign job markets.

5 (c) Academic Projections

BS E-Commerce could produce quality human capital to meet demands of local, regional and international job market. The program has specialized focus on cultivation of entrepreneurial mindset. External environment of the country presents numerous opportunities for the graduates of E-Commerce. Globalization has created many opportunities for e-commerce and trade, while COVID-19 has further exacerbated the potential of online businesses and service providers. Considering the demography of Pakistan, IT penetration in the country has been increasing at a steady pace, and this trend is expected to continue in the future. This situation provides numerous opportunities for the e-commerce and e-businesses to grow in the country. HCC is offering BS E-Commerce program to capitalize on these trends. Students graduating under this program would pave the path for a digitally enabled economic growth in the country. The program is practical to its core, where students will learn many skills that would enable them to earn their livelihood independently as freelancers, as entrepreneurs, and as employees and managers of e-businesses. Demand for trained human capital under this domain is expected to grow in the time to come. Thus, it is high time to launch this program to capitalize on these favorable trends and maintain the position of an innovative leader in education industry.

5 (d) Faculty

HCC has competent, experienced, and capable faculty with diversified knowledge, exposure, and experience. It has full time PhD faculty members who are working at almost all the academic cadres. The faculty members at HCC have excellent capacity to deliver world-class knowledge, skills, and competencies to the students of undergraduate, graduate, and post-graduate program. Moreover, human, digital, technological, and other resources are sufficient at HCC to meet the emerging needs of the program.

5 (e) Physical Facilities

HCC has fully functional classrooms with appropriate facilities; beautiful and gracious ground along with sports facilities; parking facility; cafeteria; photocopier; dispensary and several allied facilities. It is worth mentioning here that college has sufficient library equipped with modern facilities and enriched with large number of books, journals, magazines, periodicals, and newspapers. Moreover, HCC has three fully functional computer labs for students. Lab 1 & Lab 2 having capacity of 70 PCs each and Lab 3 having capacity of 80 PCs. Similarly, digital and e-books section is also an added value at HCC that facilitates the students and have sufficient capacity for the upcoming students. HCC also have Executive Training & Development Center and Hailey College Media Cell to provide opportunities for professional excellence and career growth to the professionals and students.

6. Admission Eligibility Criteria
 a. Eligibility
   o Intermediate or equivalent
 b. Admission Criteria
   o As specified by PU/ HEC
 c. Admission Formula
   o As per basic criteria by PU

7. Duration of the Program
   ➢ 08 Semesters
   ➢ 04 Years
   ➢ 135 Credit hours

8. Categorization of Courses as per HEC Recommendation and Difference

Semester	Courses	Category (Credit Hours)					Semester Load
		Core Courses	Basic Courses	Major Electives	Minor Electives	Any Other	
1	6	6	6		-		17 credit hours
2	6	6	6		-		18 credit hours
3	5	6	6		-		16 credit hours
4	5	5	5		-		16 credit hours
5	6	-	-	6	-		18 credit hours
6	5	-	-	5	-		15 credit hours
7	5	-	-	3	2		16 credit hours
8	5	-	-	3	2		15 credit hours
*Quran & Sunnah							4 Credit Hours
HCC	43						135 Credit Hours
HEC Guidelines	**41-47**						124-140 Credit Hours
Difference (HEC &) PU	**NIL**						

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Sr.	Code	Course Title	Course Type	Pre-req.	Cr. Hrs.	Total
		Proposed Roadmap for BS E-Commerce				
Semester 1						
1	BEC-111	Functional English	Compulsory		3+0	
2	BEC-112	Business Mathematics	Compulsory		3+0	
3	BEC-113	Financial Accounting I	Compulsory		3+0	
4	BEC-114	Introduction to Information Technology	Compulsory		3+0	
5	BEC-115	IT, Business & Society	Compulsory		3+0	
6	BEC-116	Pakistan Studies	Compulsory		2+0	
Total Credit Hours						17
Semester 2						
1	BEC-121	Business Communication	Compulsory	BEC-111	3+0	
2	BEC-122	Probability and Statistics	Compulsory		3+0	
3	BEC-123	Financial Accounting II	Compulsory	BEC-113	3+0	
4	BEC-124	Programming Fundamentals	Compulsory	BEC-114	3+1	
5	BEC-125	Principles of Economics	Compulsory		3+0	
6	BEC-126	Islamic Studies	Compulsory		2+0	
Total Credit Hours						18
Semester 3						
1	BEC-211	Foreign Language (Arabic)	Compulsory		3+0	
2	BEC-212	Principles of Management	Compulsory	BEC-115	3+0	
3	BEC-213	Cost & Management Accounting	Compulsory	BEC-113	3+0	
4	BEC-214	Operating System Concepts	Compulsory	BEC-124	3+0	
5	BEC-215	Data Base Systems	Compulsory	BEC-124	3+1	
Total Credit Hours						16
Semester 4						
1	BEC-221	Taxation Laws & Practices	Compulsory	BEC-115	3+0	
2	BEC-222	Principles of Marketing	Compulsory	BEC-115	3+0	
3	BEC-223	Financial Management	Compulsory	BEC-203 BEC-102	3+0	
4	BEC-224	Computer Networks	Compulsory	BEC-114	3+1	
5	BEC-225	Web Technologies	Compulsory	BEC-124	3+0	
Total Credit Hours						16
Semester 5						
1	BEC-311	Digital Business Models & Markets	Compulsory	BEC-115	3+0	

2	BEC-312	Digital Marketing	Compulsory	BEC-222	3+0	
3	BEC-313	Entrepreneurship	Compulsory	BEC-115	3+0	
4	BEC-314	Information Security	Compulsory	BEC-224	3+0	
5	BEC-315	Mobile Application Development	Compulsory	BEC-124	3+0	
6	BEC-316	Organizational Behaviour and Human Resource Management	Compulsory	BEC-212	3+0	
Total Credit Hours						**18**
Semester 6						
1	BEC-321	Business, Intellectual Property and Cyber Laws	Compulsory	BEC-115	3+0	
2	BEC-322	Marketing Research and Analytics	Compulsory	BEC-312	3+0	
3	BEC-323	International Finance	Compulsory	BEC-223	3+0	
4	BEC-324	Software Requirement Engineering	Compulsory	BEC-315	3+0	
5	BEC-325	Internet Programming	Compulsory	BEC-225	3+0	
Total Credit Hours						**15**
Semester 7						
1	BEC-411	Contemporary Financial Practices and Technologies	Compulsory	BEC-115	3+0	
2	BEC-412	Supply Chain Management	Compulsory	BEC-316 BEC-222	3+0	
3	BEC-413	Enterprise Application Management	Compulsory	BEC-225	3+1	
4	BEC-414	E-Payment and Block Chain	Compulsory	BEC-314	3+0	
5	BEC-415	Project I	Compulsory	BEC-325	3+0	
Total Credit Hours						**16**
Semester 8						
1	BEC-421	Seminars in E-Commerce	Compulsory		3	
2	BEC-422	E-Customer Relationship Management	Compulsory	BEC-412	3	
3	BEC-423	Professional Development	Compulsory	BEC-121	3	
4	BEC-424	Data Visualization	Compulsory	BEC-215	3	
5	BEC-425	Project II/ Internship	Compulsory	BEC-415	3	
Total Credit Hours						**15**
Quran and Sunnah						**4**
Total Credit Hours of the Program						**135**

Course Outlines

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title:	Functional English		
Course Code:	BEC-111	Credit Hours:	03
Program:	BS E-Commerce	Semester:	01

Introduction of the Course (100-150 words)
The basic objective of this course is to enable students to communicate in English language. This course focuses on basics of grammar and composition, sentence structure, vocabulary, and reading comprehension. After studying this course, students would be able to communicate in English in an effective manner. The focus of the course would be on English reading comprehension and basic English writing skills.

Pre-Requisites Course (s) or Other Requirements/Skills:
No specific prerequisites are required to take this course. However, students are expected to have basic understanding of English language as taught in intermediate level.

Course Learning Outcomes
 1. Develop understanding on the actual use of Grammar, parts of speech, sentence structure
 2. Learning to use direct/indirect speech and active voice and passive voice
 3. Learning to do punctuation
 4. Building appropriate vocabulary and use of idioms
 5. Improving reading comprehension

Course Contents:

Unit-I: Grammar
1.1 Basic Grammar and its use in English Language
1.2 Grammar for business English

Unit-II: Parts of Speech
2.1 Use of verbs
2.2 Use of adverbs
2.3 Use of nouns and pronouns
2.4 Use of adjectives
2.5 Use of proposition
2.6 Use of conjunctions and interjections

Unit-III: Rules of sentences
3.1 Understanding use and tone of declarative, interrogative, imperative, exclamatory, and optative sentences.
3.2 Understanding use of simple, compound, complex, multiple, and conditional sentences.

Unit-IV: Tenses
4.1 Use and application of tenses
4.2 Present tenses, forms, and uses
4.3 Past tenses, forms and uses
4.4 Future tenses, forms and uses

Unit-V: Direct and indirect speech
5.1 Understanding direct and indirect modes of speech and their application.
5.2 Using correct verb and punctuation in direct and indirect speech.

Unit-VI: Active and passive voice
6.1 Understanding use of active and passive voice.
6.2 Ability to transform active voice to passive voice and vice versa.

Unit-VII: Punctuation

7.1 Understanding use of correct punctuation
7.1.1 Use of capital letter
7.1.2 Use of question mark
7.1.3 Use of exclamation mark
7.1.4 Use of full stop
7.1.5 Use of comma
7.1.6 Use of semi-colon
7.1.7 Use of colon
7.1.8 Use of apostrophe
7.1.9 Use of quotation marks
7.1.10 Use of brackets
7.1.11 Use of dash
7.1.12 Use of hyphen
7.1.13 Use of ellipsis

Unit-VIII: Vocabulary
8.1 List of 3000 basic words used in English
8.2 Ability to correctly assign meanings to a specific word and use it in different sentences correctly.
8.3 List of synonyms and antonyms
8.4 Using words in sentences correctly

Unit-IX: Phases and idioms
9.1 Meaning phases and idioms
9.2 List of phases and idioms
9.3 Learning to use idioms and phases in sentences

Unit-X: English Comprehension
10.1 Developing basic English comprehension skills
10.2 Practicing reading English Paragraphs and answering questions correctly
10.3 Developing speed reading skills
10.4 Practicing reading lengthy paragraphs and identifying key points to answer the questions

Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. AFC 01- Functional English: Study Text by ICAP
2. The Oxford 3000 – Seventh Edition

Suggested Readings
Books
1   High School English Grammar & Composition by Wren and Martin

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Business Mathematics
Course Code: BEC-112   Credit Hours: 03
Program: BS E-Commerce   Semester: 01

Introduction of the Course (100-150 words)
This course is focused on the qualitative techniques that are useful in business education. The course provides introduction of mathematical techniques that are applicable to business scenarios.

Pre-Requisites Course (s) or Other Requirements/Skills:
No specific prerequisites are required for this course.

Course Learning Outcomes
6. Provide students basic knowledge of mathematical tools applicable to business scenarios.
7. Enable students to use mathematical tools in real business situations.

 Course Contents:

Unit-I: Exponential and Logarithmic functions
1.1 Exponents and their application in business and finance
1.2 Logarithmic functions and their application in business and finance
Unit-II: Equations and inequalities
2.1 Straight line equations, their forms and their application in business
2.2 Simultaneous equations – linear and quadratic, and their application in business
2.3 Multiplication and division operations on linear and quadratic equations
2.4 Coordinate system and line inequalities and their graphical representation
2.4 Factorization of equations – solving quadratic equations through factorization and completing the square method
Unit-III: Arithmetic and Geometric progression
3.1 Application of arithmetic progression to business problems
3.2 Application of geometric progression to business problems
Unit-IV: Linear programming
4.1 Application of linear programming using graphs
4.2 Identification of constraints, cost minimizations, profit maximization, redundant constraints to solve programs
4.3 Use of corner point theorem
4.4 Analysis of graphical solution to see bounded or unbounded feasible regions
Unit-V: Basic calculus
5.1 Rules for differentiation – Sum, difference, product and quotient rules
5.2 Application of differentiation techniques to calculate revenues, costs, and profits of marginal units
5.3 Second order derivatives and their use – Calculation of maxima, minima, and point of inflexion

Unit-VI: Matrices
6.1 Basic matrix algebra and its application – addition, subtraction, multiplication, and division
6.2 Calculation of determinant, ad-joint, and inverse of matrix
6.3 Using matrix algebra for solution of simultaneous linear equations
6.4 Application of Cramer's rule matrix inverse method
Unit-VII: Financial mathematics
7.1 Time value of money - Simple interest and compound interest and their calculation
7.2 Single sum – calculation of present value and future value through formula and financial table
7.3 Annuity – Calculation of present value and future value through formula and financial table
7.4 Ordinary annuity and annuity due and their calculation
7.5 Compounding more than once in a year
7.6 Perpetuity and its calculation
7.7 International rate of return (IRR) and its calculation – interpolation

Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
3. AFC-03 Quantitative Methods – Study Text by ICAP
4. Essential of College Mathematics (For Business & Economics) (11th Edition) By Raymond A. Barnett, Michael R. Zeigler
5. Applied Mathematics for Business, Economics, and the social sciences: By Frank

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Financial Accounting I

Course Code: BEC-113   Credit Hours: 03

Program: BS E-Commerce   Semester: 01

1.0 Introduction of the Course (100-150 words)
The primary aim of Financial Accounting is to provide students with an introduction to the process and function of financial reporting. Whilst a large proportion of the course is aimed at understanding accounting as a process, taking a preparers' perspective, we will also seek to develop an understanding of the importance of the role of accounting in today's society

Pre-Requisites Course (s) or Other Requirements/Skills:
No specific prerequisites are required for this course

Course Learning Outcomes
1. This basic course of accounting will enable students to understand basic accounting framework and book keeping procedure.
2. After studying this course, students will have working knowledge of book keeping and accounting cycle.

Course Contents:

Unit-I: Introduction
1.1 Introduction to business and accounting
1.2 Understand nature of business and significance of accounting in business
1.3 Defining transactions and relating to business transactions
1.4 Understanding and differentiate key features of different forms of business: sole proprietorship, partnership, and limited company
1.5 Understand meaning and difference between book keeping and accounting

Unit-II: Basic concepts and statements
2.1 Fundamental accounting concepts and statements
2.2 Understanding main accounting concepts: GAAP, accrual, consistency, completeness, true and fair view, materiality, prudence, going concern, substance over form.
2.3 Listing and defining main accounting statements and their purpose: statement of financial position, statement of comprehensive income
2.4 Familiarizing with basic accounting lay out of accounting statements
2.5 Understanding uses and users of financial statements

Unit-III: Book Keeping
3.1 Book keeping: elements of financial statements
3.2 Defining and identification of basic elements of financial statements: assets, liabilities, equity, income, expenses
3.3 Understanding nature, function and usefulness of chart of accounts
3.4 Using accounting equation

Unit-VI: Double Entry System
4.1 Double entry system and rules of debit and credit
4.2 Double entry system and its usefulness
4.3 Extended accounting statement

4.4 Rules of debit and credit

4.5 Identification of financial and non-financial transaction and passing entries

Unit-V: Journal

5.1 Books of prime entry – use of Journal

5.2 Basics of passing an entry and understanding use of business documents and vouching system

5.3 Learning basic contents of sales day book, sales ledger, customer/debtor ledger, purchase day book, purchase journal and ledger

5.4 Learning to use a cash book, types of cash book

5.5 Recording entries in respective books of accounts

Unit-VI: Ledger

6.1 General ledger and it uses

6.2 Learning format and features of general ledger

6.3 Posting entries to ledger and balancing accounts

Unit-VII: Trail Balance

7.1 Trial Balance – purpose and uses

7.2 Format and limitations of a trial balance

7.3 Demonstration of mapping between ledger balances and trial balance

Unit-VIII: Adjustments

8.1 Depreciation and its methods

8.1.1 Understanding nature of depreciation and accumulated depreciation and passing entries

8.1.2 Using different methods of depreciation calculation: straight line, diminution balance, sum of digits, number of units produced method

8.1.3 Understanding gain/ loss on disposal of asset and passing entries

8.2 Adjustments: Allowance for bad debts and write off, prepayments and accruals

8.2.1 Understanding bad debts and allowances for bad debt based on policy and passing entry

8.2.2 Computation of write offs and passing entries and understanding impact on allowance for bad debts

8.2.3 Understanding prepayments and accruals and passing entries

Unit-X: Closing Entries

10.1 Use and purpose of closing entries

10.2 Nature and passing closing entries

10.3 Closing entries for inventories using both periodic and perpetual inventory systems

Unit-XI: Bank Reconciliation

11.1 Uses and purpose of bank reconciliation and related adjustments

11.2 Need and value of bank reconciliation statement

11.3 Reasons for difference between bank account and cash book

11.4 Preparation of bank reconciliation statement

11.5 Correction of cash book error and passing journal entries considering bank reconciliation statement

Unit-XII: Control Accounts

12.1 Control accounts – reconciliation and adjustments

12.2 Mapping between control accounts and subsidiary ledge for accounts receivable and accounts payable

12.3 Preparing control accounts and subsidiary ledge

12. 4 Performing control accounts reconciliation for accounts receivable and account payable and identify errors for corrections

Unit-XIII: Rectification of Errors
13.1 Need for rectification
13.2 Understanding types of errors that might incur in book keeping
13.3 Calculating and understanding the impact of error on financial statements
13.4 Passing journal entries to rectify errors
Unit-XIV: Final accounts for sole-proprietorship
14.1 Final accounts for sole trader: Statement of financial position and statement of comprehensive income
14.2 Understanding the nature and purpose of financial accounts statements and preparing these statements
Unit-XV: Receipts and payment accounts
15.1 Nature of receipts and payment accounts
15.2 Preparation of receipts and payment accounts

Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class
   Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. CAF-01Introduction to Accounting – Study Text by ICAP
2. Financial Accounting 17th Edition by Jan Williams and Susan Haka and Mark Bettner and Joseph Carcello
 Suggested Readings
Books
 ➢ Financial & Managerial Accounting by Jerry J. Weygandt, Paul D. Kimmel, Donald E. Kieso
 ➢ Financial Accounting by Charles T. Horngren, Sundem, Elliott and Philbrick

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title:	Introduction to Information Technology		
Course Code:	BEC-114	Credit Hours:	03
Program:	BS E-Commerce	Semester:	01

Introduction of the Course (100-150 words)
Information Technology has reshaped the modern lifestyle in this digital world; it plays the key role in modern education of any discipline. It has become backbone of the Business world, from retail to corporate world. This has resulted in essential learning of Information Technology to coop the modern challenges. Introduction to Information Technology is specially designed for the students of Business Studies with a very clear objective in mind i.e. equip the students to face the emerging world challenges.

Pre-Requisites Course (s) or Other Requirements/Skills:
No specific prerequisite is required

Course Learning Outcomes
After the completion of this course, it is expected that students who will involve themselves in the knowledge base working of the course will be capable to
1. Fully recognize the user-level computing and current digital world.
2. Use computers to enhance productivity independent of the discipline.
3. Comprehend different dimensions of Information Technology like Hardware, Software, Digital Design, Operating Systems, Algorithms, Networks, Internet, World Wide Web, and Databases.
4. Acknowledge the need of System Security, Privacy, Ethics, Etiquettes and Ergonomics.
5. Proficiently use Microsoft Office (MS Word, MS Excel, MS Power Point, MS Access(Optional))

 Course Contents

Unit-I: Introduction to Information Technology
1.1 Course Overview
1.2 Characteristics of Computer
1.3 The Component of Computers
1.4 Categories of Computers
1.5 Hardware vs Software
1.6 Computer Application in Society
Unit-II: Component of System Unit
2.1 The System Unit
2.2 CPU; ALU, CU, Registers, Cache
2.3 IO Devices; Keyboard, Mouse, Scanner, Printer, Speaker,Joystick, Light Pen, etc.
2.4 Storage; RAM, HDD, Flash Drives, Cloud Drives etc.Communication Devices;
2.5 Expansion Slots and Adapter Card
2.6 Ports and Connectors, Buses, Power Supply

Unit-III: Number Systems
3.1 Numerical Representations
3.2 Decimal System, Binary System, Octal System Hexadecimal System
3.3 Inter-Conversion of Number Systems
Unit-IV: Operating system and Utility Programs
4.1 System Software
4.2 Operating System, Device Drivers etc.
4.3 OS Components and theirs Responsibilities
4.4 OS Functions, OS Utility Programs
4.5 Types of Operating Systems
4.6 Batch System, Time Sharing, Multiprogramming System, Multiprocessor System, Distributed 4.7 Operating System, Clustered System, Realtime Operating System, embedded OS, Mobile OS etc
Unit-V: Application Software's
5.1 Business Software
5.2 Graphics and Multimedia Software
5.3 Software for Homes, Personal and Educational Use Application Software for
5.4 Communication and Web
Unit-VI: The Internet and World Wide Web
6.1 History of Internet, How internet works?
6.2 The World Wide Web, Internet services
Unit-VII: Communication and Networks
7.1 Communication Systems Types of
7.2 Communication Serial vs. Parallel Simplex vs Duplex
7.3 Networks and Computer Networks
7.4 Communication Devices, Protocols
7.5 Physical and Wireless Transmission Media
7.6 Types of Networks; LAN, MAN and WAN
Unit-VIII: Microsoft Office Fundamentals Identify
8.1 Interface Components Using Office Help
8.2 Create, Open, Close, Save and 'Save As' a File Select, Edit, Copy and Paste Text
8.3 Find, Replace, Undo and Redo Commands Use Language Tools and Format Painter
Unit-IX: Microsoft PowerPoint
9.1 PowerPoint Basics
9.2 Creating PPT through Template Creating PPT in Outline View
9.3 Slide Master, Slide Notes, Slide Printing Modification, Printing and Importing Outline
9.4 Drawings, Smart Shapes and Multimedia
9.5 Objects Animation; Standard and Customized
9.6 Transition and Slide Show
Unit-X: Microsoft Word
10.1 Word Basics, Page Setup, Printing Documents Font Handling, Paragraph Settings
10.2 Bullets & Numbering, Borders & Shading etc. Columns, Tables, Language & Thesaurus
10.3 Mail Merge, OLE, Tracking Changes
10.4 Header & Footer, Sections, References etc.

Unit-XI: Microsoft Excel

11.1 Worksheets and Workbooks

11.2 Workbook Design, Managing Worksheet Cell References, Relative and Absolute Formula; Creating, Editing and Auditing Commonly Used Formulae

11.3 Charts; Creating, Modifying and Printing

11.4 Window Handling, Freezing, Row Column Handling Data Management; Filters, Import & 11.5 Export of Data Conditional Formatting,

11.6 Data Analysis, Pivot Charts

Unit-XII: Microsoft Access

12.1 Design Database

12.2 Designing Tables & Relationships

12.3 Designing Queries; Single and Multiple Tables Designing Forms; Single Entry and Multi-Entries Expression Building; Data Export to Excel Creating, Designing Reports and Modification

Unit-XIII: Programming (Without Programming Language)

13.1 Sequential Programs with examples

13.2 Conditional Statements; IF..Then..Else, Switch- Examples Loop; While..do, do..while…, for – 13.3 Examples

13.4 Flow Chart for Programming examples

Unit-XIV: Information System

14.1 Transaction Processing Systems

14.2 Management Information Systems Decision

14.3 Support Systems

14.4 Expert Systems

Unit-XV: Information System Development

15.1 System Development Programming Languages

15.2 The Program Development Cycle

Unit-XVI: Database Management

16.1 Data vs. Information Characteristics of Data,

16.2 Databases; Operations on Data Database Management Systems

Unit-XVII: Computers Security

17.1 Security Risk, Viruses, Worms,

17.2 Unauthorized Access, Information Privacy

17.3 Internet Security Risk, Ethics & Society,

Teaching-Learning Strategies

Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:

1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks

In the detail course outline, one may mention chapters of the textbook with the content topic(s).

1. Discovering Computers 2017 by Shelly Cashman ISBN: 978-1439079263

2. Information Systems Today by Leonard Jessup, Joseph Valacich 3rd Edition 2009

    ISBN: 9788120338951

3. Exploring Microsoft Office 2017 cm by Robert T. Grauer side Vol. 1, 3/E by Access

HAILEY COLLEGE OF COMMERCE

UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: IT, Business, and Society
Course Code: BEC-115   Credit Hours: 03
Program: BS E-Commerce   Semester: 01

Introduction of the Course (100-150 words)
This course highlights scope of information technology in modern business organizations and societies. It focuses on various aspects of a business organization, where special consideration is given to the accounting function and taxation aspect of a business organization. The course introduces the students to business and its various aspects.

Pre-Requisites Course (s) or Other Requirements/Skills:
No specific prerequisites are required for this course.

Course Learning Outcomes
1. Understanding nature and scope of modern business enterprise, its functions and operations.
2. Understanding the functions of business enterprise in accordance with modern day practice.
3. Develop a foundation for advanced learning in the domains of accounting, taxation, business management, marketing, and finance.

 Course Contents:

Unit-I: Business Enterprise and its Environment
1.1 Scope and functions of business enterprise
1.2 Micro and macro business environment and its relevance to business.
Unit-II: Economic System and International Business Environment
2.1 Factors of production
2.2 Economic system, types, and functioning.
2.3 Basics of demand and supply and price determination
2.4 Market economy vs controlled economy, implications for businesses
2.5 International business and modes
2.6 Functioning of international marketplace
2.7 Fundamentals of international trade
2.8 Globalization, its pros and cons
Unit-III: Forms of Business Organizations
3.1 Sole proprietorship – nature, pros and cons
3.2 Partnership – nature, pros and cons
3.3 Corporation – nature, pros and cons
3.4 Modes of business expansion - mergers & acquisitions, joint ventures, strategic alliances, franchising internationalization, and multinational corporations.
Unit-IV: Technology: Nature and sources of technological change
4.1 Defining technology and its perspectives
4.2 Nature of modern technological societies
4.3 Technological change as social process

4.4 Push and pull factors of technological change
4.5 Market economies and technological innovations
4.6 Non Economic sources of technological change
Unit-V: Technology and Jobs
5.1 How technology affects modern jobs?
5.2 Historical perspective – threats
5.3 Technology and job creation
5.3 Technology, jobs, and changing structure of economy
5.4 Technology, globalization, and nature of modern jobs
5.5 Pros and cons of technology
Unit-VI: The Age of Internet
6.1 Birth and growth of internet
6.2 Mobile communications
6.3 Social media and its implications for society and business
6.4 Privacy in digital age
6.5 Selling and marketing on internet
6.6 The 'Gig Economy'
Unit VII: Entrepreneurship and Small Business Management
7.1 Entrepreneurship – nature, value, and key elements
7.2 Qualities of an entrepreneur
7.3 Establishment and operations of small businesses
7.4 Business plan – key elements
7.5 Innovation and entrepreneurship
7.6 Financing small businesses - venture capital, seed funding, crowd funding, etc.
7.7 Going public (IPO) – reasons, pros and cons
7.8 Entrepreneurship, innovation, and technology
7.9 Entrepreneurship in a digital world
Unit-VIII: E-Commerce
8.1 Introduction and basics
8.2 E-Commerce business models
8.3 Technical and economic challenges
8.4 Framework and stakeholders
8.5 Technological elements and selling process
8.6 Ethics, moral, and technology
8.7 Implications and impact of E-Commerce
Unit-IX: Marketing in a digital world
9.1 Basics on marketing – value creation, 4 Ps, targeting, segmentation
9.2 Digital marketing – evolution, process, medium and effectiveness
9.3 Digital media and marketing principles
9.4 Digital media marketing strategies
9.5 Ethics, and implications for society
Unit-X: E-banking and payments
10.1 Money, banking, and finance fundamentals
10.2 E-banking evolution and services
10.3 E-wallets, credit cards, and digital currency
10.4 Block chain and cryptocurrency
10.5 Online payment and receipts – procedures, options, and management

Unit-XI: Performance Management
11.1 Performance management – introduction and foundations
11.2 Performance management for ICT and digital environment
11.3 Analytics – Data analytics, big data, impact, reach, etc.
Unit-XII: Social Responsibility and Ethics
12.1 Social responsibility – operating in a responsible manner
12.2 Sustainability and ethical behavior of firms
12.3 Copyrights, trademarks, logos, intellectual property, privacy, piracy, and cyber crimes
12.4 Spamming, product quality, and customer services
12.5 Online data handling and security

Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class
   Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. Business in Action 8th Edition by Courtland L. Bovee. & Jhohn V. Thill
2. Society and Technological Change 8th Edition by Rudi Volti
3. Introduction to E-Commerce by Martin Kütz
4. The Future of Business 6th Edition by Lawrence J. Gitman & Carl McDaniel

Suggested Readings

Newspapers and magazines
1. Business Recorder Daily
2. Pakistan and Gulf Economist
3. The Economist
4. Harvard Business Review
Other readings
1. Stead, B. A., & Gilbert, J. (2001). Ethical issues in electronic commerce. *Journal of Business Ethics*, 34(2), 75-85.
2. Sharma, G., & Lijuan, W. (2014). Ethical perspectives on e-commerce: an empirical investigation. *Internet Research*.
3. Donmaz, A. (2018). Privacy Policy and Security Issues in E-Commerce for Eliminating the Ethical Concerns. *Regulations and Applications of Ethics in Business Practice*, 153-164.
4. Al-Alawi, A. I., Mehrotra, A. A., Elias, H., Safdar, H. S., & Al-Bassam, S. A. (2020). The Implications of Unethical and Illegal Behavior in the World of E-Commerce. In *Ethical Consumerism and Comparative Studies Across Different Cultures: Emerging Research and Opportunities* (pp. 152-230). IGI Global.

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Pakistan Studies
Course Code: BEC-116   Credit Hours: 02
Program: BS E-Commerce   Semester: 01

Introduction of the Course (100-150 words)
Pakistan studies is a compulsory course of the program. The course provides an overview of history of Pakistan from Pakistan Movement to date. It highlights the vision and struggles of the country and tries to evoke patriotic feelings among the students.

Pre-Requisites Course (s) or Other Requirements/Skills:
No specific pre-requisite is required.

Course Learning Outcomes
1. Provide an overview history of Pakistan.
2. Highlight social, geographical, economic, and strategic features of the country.

 Course Contents:

Unit-I: Pakistan Movement
1.1 Muslim revivalist movement in India
1.2 Two nation theory: From Sir Syed Ahmad Khan to Allama Iqbal
1.3 Role of Quid-e-Azam in Pakistan movement
Unit-II: Independence
2.1 Independence of Pakistan – A review of partition mechanism
2.2 Early issues after independence – Economic issues, financial issues, administrative issues
2.3 Rule of Quid-e-Azam and Liaqat Ali Khan
Unit-III: Land and People of Pakistan
3.1 Physical features and geo-strategic location of Pakistan
3.2 Culture and traditions: Regional dimensions
3.3 Population and its distribution
Unit-IV: Economic History of Pakistan
4.1 Five year plans
4.2 Nationalization drive
4.3 De-regulation and de-nationalization
4.4 Issues in Pakistani economy
Unit-V: Political History of Pakistan
5.1 From independence to Ayub Khan
5.2 Ayub Khan and Yaha Khan
5.3 Zulfiqar Ali Bhutto
5.4 Zia-ul-Haq
5.5 Unstable political governments – 1985-1999
5.6 General Pervez Musharraf
5.7 Restoration of democracy to present
Unit-VI: Constitution of Pakistan
6.1 Constitution of 1973
6.2 Formation of the Constitution

6.3 Salient features of the Constitution
Unit-VII: Foreign Policy of Pakistan
7.1 Relationship with India
7.2 Relationship with China
7.3 Relationship with Afghanistan
7.4 Relationship with Iran
7.5 Relationship with Middle Eastern countries
7.6 Relationship with USA
7.7 CPEC and its implications
Unit-VIII: Main Aspects of Pakistan
8.1 Economy of Pakistan
8.2 Agriculture of Pakistan
8.3 Industry of Pakistan
8.4 Natural resources of Pakistan

Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class
    Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. Pakistan Studies by M. Akram Sajid
2. Issues in Pakistan's Economy by S. Akbar Zaidi
Suggested Readings
1. News papers
2. Internet

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Business Communication
Course Code: BEC-121   Credit Hours: 03
Program: BS E-Commerce   Semester: 02

Introduction of the Course (100-150 words)
Communication is an important aspect of everyday life. In business settings, effective communication is very important to deal with variety of stakeholders including employees, customers, suppliers, shareholders, and regulators. This course provides a solid foundation for students to learn modes and etiquettes of communication in modern businesses.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-111 Functional English

Course Learning Outcomes
1. Understanding importance of effective communication in business
2. Learning and practicing different aspects of business communication
3. Learning to use different modes of business communication
4. Learning to communicate effectively in various business situations

Course Contents:

Unit-I: Business Communication
1.1 Nature, scope, and importance of business communication
1.2 Goals, patterns, and channels of business communication
Unit-II: Communication Process
2.1 Components of communication process – Context, sender, message, medium, recipient, and feedback
2.2 Information needs of the organization, its sources, levels, and usefulness
2.3 Barriers to effective communication
2.4 Methods of business communication and their appropriate mediums
2.5 Types of communication networks and their influence on communication process
Unit-III: Interpersonal Communication
3.1 Nature and importance of intrapersonal communication
3.2 Basic aspects of intrapersonal communication: self-concept, perception, expectation, etc.
3.3 Axioms and purpose of interpersonal communication
3.4 Roles of stereotypes in communication process
3.5 Resolve conflict in intercultural relationships through effective communication
3.6 Means to improve interpersonal skills
3.7 Role of ethics in interpersonal communication
Unit-IV: Critical Thinking
4.1 Creative thinking vs. critical thinking
4.2 Critical thinking and effective communication
Unit-V: Non-Verbal Communication
5.1 Importance and value of non-verbal communication
5.2 Using non-verbal communication
        5.2.1 Facial expressions

5.2.2 Posture and gestures

5.2.3 Eye contact

5.2.4 Voice – Pitch and tone

5.2.5 Touch

Unit-VI: Verbal Communication

6.1 Importance and value of verbal communication

6.2 Modes of verbal communication – Oral and written communication, speaking vs. listening skills

6.3 Forms of oral communications

6.3.1 Face to face communication

6.3.2 Interviews

6.3.3 Telephonic conversation

6.3.4 Grapevine

6.3.5 Negotiation

6.3.6 Meeting

6.3.7 Lecture

6.3.8 Speech

6.4 Conflict resolution – skill and approach

6.5 Public speaking - preparation and delivery of speech

6.6 Importance of listening in business communication

6.7 Barriers to effective listening

Unit-VII: Visual Communication

7.1 Nature and value of visual communication

7.2 Functions of visual communication

7.3 Tools for visual communication

Unit-VIII: Written Communication

8.1 Nature and scope of written communication in business settings

8.2 Types of written communications – Letters, circulars, applications, and memos

8.3 Qualities of a good letter, memo, or circular

8.4 Business letters

8.4.1 Purpose and scope of business letter

8.4.2 Components of a business letter

8.4.3 Salient features of persuasive letters and circulars

8.4.4 Writing different types of business letters

8.5 Business reports

8.5.1 Purpose and scope of business report

8.5.2 Contents of business report

8.5.3 Types of business reports and their contents

8.5.4 Writing a business report

Unit-IX: Digital and Online Communication

9.1 Website

9.1.1 Nature, scope, and value of website in business communication

9.1.2 Features of a good website

9.1.3 Web hosting types

9.2 Email

9.2.1 Nature, scope and usefulness of email in business communication

9.2.2 Features of a good email communication

9.2.3 Language of formal email

9.2.4 Writing and reply to emails

9.3 Other modes of electronic communication

9.3.1 Social networking websites – nature, scope and usefulness in business communication

9.3.2 Forums – nature, scope and usefulness in business communication

9.3.3 Blogs – nature, scope and usefulness in business communication

9.3.4 Podcasts – nature, scope and usefulness in business communication

9.3.5 Discussion boards – nature, scope and usefulness in business communication

9.3.6 Messaging – nature, scope and usefulness in business communication

9.3.7 Video conferencing – nature, scope and usefulness in business communication

9.3.8 Pros, cons, and limitations of different modes of electronic communication

Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class
   Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. AFC-02 Business Communication – Study Text by ICAP

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title:	Probability and Statistics		
Course Code:	BEC-122	Credit Hours:	03
Program:	BS E-Commerce	Semester:	01

Introduction of the Course (100-150 words)
This course provides basic overview of the statistical methods and analysis of data. The course of focused on hard core statistical methods that are useful for data analysis to support business decision making. This course also provides an insight into basic probability theory and sampling procedures.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-113 Business Mathematics

Course Learning Outcomes
1. Learning data handling and data presentation
2. Learning to present and visualize data
3. Learning to use appropriate statistical technique to draw inferences from data
4. Understanding basics of probability theory and its application in data collection and analysis

 Course Contents:

Unit-I: Statistics and Business
1.1 Statistics – Nature, scope, value, and application
1.2 Application and value of statistics in business settings
Unit-II: Data Collection, Handling, and Presentation
2.1 Methods of data collection
2.2 Types of data
2.3 Organizing and summarizing data – Tabulation and frequency distributions
2.4 Data presentation – Charts
       2.4.1 Bar charts and their uses – Simple bar charts, multiple bar charts, component bar charts
       2.4.2 Pie chart and its use
       2.4.3 Histogram and its use
       2.4.4 Frequency polygons and their use
       2.4.5 Ogives
       2.4.6 Stem and leaf plots
       2.4.7 Box and whisker plots
       2.4.8 Analyzing data presented through graphs
       2.4.9 Making graphs in Microsoft Word and Excel
Unit-III: Measures of central tendency and dispersion
3.1 Measures of central tendency
       3.1.1 Arithmetic mean: its use, calculation, pros and cons
       3.1.2 Median: its use, calculation, pros and cons
       3.1.3 Mode: its use, calculation, pros and cons

3.1.4 Geometric mean: its use, calculation, pros and cons

3.1.5 Harmonic mean: its use, calculation, pros and cons

3.1.6 Interpretation of different measures of central tendency

3.1.7 Using Excel to calculate measures of central tendency

3.2 Measures of dispersion

3.2.1 Standard deviation: its use, calculation, pros and cons

3.2.2 Variance: its use, calculation, pros and cons

3.2.3 Range: its use, calculation, pros and cons

3.2.4 Interpretation of measures of dispersion

3.4.5 Using Excel to calculate measures of dispersion

Unit-IV: Index Numbers

4.1 Index numbers: Uses, types, and limitations

4.2 Calculation of index numbers using different methods

4.3 Application of index numbers: purchasing power, inflating or deflating a series

Unit-V: Methods of least square and regression

5.1 Scatter diagram: Uses and limitations

5.2 Regression line: Properties, uses, drawing the line

5.3 Using least square method to construct and interpret repression line

5.4 Forecasting through regression line – Change in dependent variables due to independent variable

5.4 Using Excel for regression

Unit-VI: Correlation

6.1 Correlation: Uses and limitations

6.2 Calculation of correlation coefficient and interpretation

6.3 Calculation of coefficient of determination and interpretation

6.4 Pearson correlation vs. Spearman's rank order correlation: Calculation, limitations, and usability

6.5 Using Excel to calculate correlation

Unit-VII: Counting Techniques

7.1 Counting techniques: Uses and limitations

7.2 Calculation and application: mn counting rules, factorial, permutations, combinations

Unit-VIII: Probability Theory

8.1 Probability theory: nature, terminology, scope, value, application

8.2 Addition law for mutually exclusive and non-mutually exclusive events – Calculation

8.3 Multiplication laws for dependent and independent events – Calculation

Unit-IX: Probability Distributions

9.1 Nature and scope of probability distribution

9.2 Binominal distribution: Assumption, usage, and calculating probabilities

9.3 Poisson distribution: Assumption, usage, and calculating probabilities

9.4 Hyper-Geometric distribution: Assumption, usage, and calculating probabilities

9.5 Normal distribution: Assumption, properties usage, and calculating probabilities

Unit-X: Sampling

10.1 Sampling theory: terminology – sample, population, sampling space, sampling frame etc.

10.2 Simple random sampling – value and procedure

10.3 Sampling distribution of a mean and standard error of a mean – Scope and calculation

10.4 Using appropriate sampling technique to calculate probabilities for sampling mean

Unit-XI: Hypothesis testing
11.1 Hypothesis testing and significance criteria
11.2 Hypothesis testing of population means based on small and large samples
11.3 Hypothesis testing of the difference between two population means based on small and large samples
11.4 Hypothesis testing of the difference between two population properties
11.5 Selecting appropriate distributions i.e. z or t for constructing confidence interval for a population mean
11.6 Single proportion variance based on test of Chi-square – Testing goodness of fit and independence
11.7 Confidence interval for estimating population means, proportions, and variance, and differences between proportion means, proportion and variance
11.8 Sample size for an internal estimate of population mean and proportion

Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. AFC-03 Quantitative Methods – Study Text by ICAP
2. Business Statistics, 8th Edition by David F. Groebner, Patrick W. Shannon, Philip C. Fry, Kent D. Smith
3. Applied Statistics in Business and Economics by David P. Doane and Lori E. Seward
4. Statistics for Business and Economics by James McClave, P. George Benson, Terry Sincich.

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Financial Accounting II
Course Code: BEC-123   Credit Hours: 03
Program: BS E-Commerce   Semester: 02

1.0 Introduction of the Course (100-150 words)
This course is built upon the Financial Accounting Course in the sense that it provides advanced treatment of basic techniques learned in the first course of Financial Accounting. It mainly focuses upon the company accounts and their understanding in the context of the IAS and companies act 2017.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-113 Financial Accounting I

Course Learning Outcomes
    1. Learning accounting for partnership and precreation of accounting records from incomplete information.
    2. Understanding essence of IAS-1 and IAS-7 to learn preparation of financial statements
    3. Using ratios for financial statement analysis.
    4. Understanding cost classifications

 Course Contents:

Unit-I: Partnership Accounts
1.1 Accounting for partnership – rationale and scope
1.2 Understanding partnership and its essential elements
1.3 Understanding good will
1.4 Preparation of capital account and current account
1.5 Preparation of profit and loss account and statement of financial position for partnership
1.6 Admission and amalgamation of partnership – Journal entries and preparation of records
1.7 Retirement, death and dissolution of partnership - Journal entries and preparation of records
1.8 Dissolution of partnership: Passing entries to transfer/ sale of assets and liabilities to third parties and partners, payment of realization expenses, closing realization account, and settlement of partners' capital account
1.9 Death and retirement of partners: Adjustments for relating to goodwill, accumulated reserves and undistributed profits, revaluation account, adjustment of partners' capital, application of new profit sharing ratio
Unit-II: Accounting for incomplete records
2.1 Incomplete records – nature and need
2.2 Preparation of accounts from incomplete records
2.3 Understanding background/situations on incomplete records: asset destroyed, cash misappropriation, destroyed accounting record
2.4 Learning to apply following techniques for incomplete records: Using accounting equation, using opening and closing balance of ledger accounts, Using cash and bank summary
2.5 Using markup on cost and gross and net profit percentages
Unit-III: IAS-1

3.1 IAS-1 – Scope and application
3.2 Preparation of statement of financial position
3.3 Preparing simple statement of financial position in accordance with IAS 1
3.4 Preparation of statement of comprehensive income
3.5 Preparing simple statement of comprehensive income in accordance with IAS 1

Unit-IV: IAS-7
4.1 IAS-7 – Scope and application
4.2 Preparation of statement of cash flows
4.3 Learning IAS 7 and preparing simple statement of cash flows in accordance with IAS 7
4.4 Understanding cash & equivalent, operating activities, investing activities and financing activities; calculating changes in working capital to calculate cash flow from operating activities, computing other items in cash flow statement

Unit-V: Accounting for Not-for-profit Organizations
5.1 Scope and activities
5.2 Income and expenditure account
5.3 Preparation of income and expenditure account

Unit-VI: Analyzing Financial Statements
6.1 Scope and rationale
6.2 Understanding structure of financial statement and relevance of individual items for ratio analysis
6.3 Analysis of financial statements through ratios
6.4 Basics of ratio analysis: Liquidity, solvency, profitability, efficiency/ activity, and market ratios
6.5 Liquidity ratios – calculation and interpretation of Current ratio, quick ratio
6.6 Solvency ratios– calculation and interpretation of debt to equity ratio, debt ratio, debt servicing ratios
6.7 Profitability ratios – calculation and interpretation of gross profit margin, operating profit margin, net profit margin, return on equity, return on asset, return on capital employed, earning per share, return on investment
6.8 Efficiency ratios – calculation and interpretation of inventory turnover, average age of inventory, debtor turn over, average collection period, creditor turnover, average payment period, asset turnover, fixed asset turnover
6.9 Market ratios – calculation and interpretation of market to book ratio and price/ earnings ratio
6.10 Concept and calculation of Economic value added (EVA) and market value added (MVA)

Unit-VII: Cost classifications
7.1 Cost vs. expense – definition, scope and application
7.2 Cost accounting vs. financial accounting – scope and application
7.3 Nature and behavior of various costs classifications – fixed cost, variable costs, semi variable costs, period cost, product costs
       7.3.1 Direct and indirect cost
       7.3.2 Period and product cost
       7.3.3 Direct and indirect material and labor cost and differentiate it with overhead expenses
7.4 Cost estimation using high low points method and linear regression analysis

Teaching-Learning Strategies
       Lectures, discussions, presentations, quiz & assignments
Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks

In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. CAF-01Introduction to Accounting – Study Text by ICAP
2. Financial Accounting 17th Edition by Jan Williams and Susan Haka and Mark Bettner and Joseph Carcello

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Programming Fundamentals
Course Code: BEC-124   Credit Hours: Theory(03)+Lab(01)
Program: BS E-Commerce   Semester: 02

Introduction of the Course (100-150 words)
Programming is an increasingly important skill, whether you aspire to a career in software development, or in other fields. This course is the first in Programming, extend to any language you might want to learn. This course is designed for students with no prior programming experience. This course is for learners who have an interest in learning how to program, for people with no programming experience or for people with some experience who would like to gain solid fundamentals and a deeper understanding of how to program effectively. The course introduces the fundamental concepts of structured programming. Topics include software development methodology, data types, control structures, functions, arrays, and the mechanics of running, testing, and debugging.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-114 Introduction to Information Technology

Course Learning Outcomes
After the completion of this course, it is expected that students who will involve themselves in the knowledge base working of the course will be capable to
1. Enabling Knowledge: The process of designing algorithmic solutions to computable problems; the syntax and control structures of a programming language, which enable you to code these algorithmic solutions using standard coding conventions
2. Critical Thinking and Analysis: Ability to analyze the requirements for solving simple algorithmic problems and implantation
3. Problem Solving: Ability to design and implement programs to solve simple algorithmic computing problems, based on analysis of the requirements.
4. Communication: Ability to explain key concepts of algorithmic design.

 Course Contents:

Unit-I: Introduction
1.1 Program and it Sequential Execution
1.2 Common Life Example of Program Software and Programs
Unit-II: Introduction to IDE
2.1 First program Compilation
2.2 Primitive Data Type
2.3 Variables with Data Types and their Ranges
Unit-III: Input and Output
3.1 Input/output Functions and Streams
3.2 Formatting the Output and Escape Sequence Using expressions
3.3 Arithmetic Expressions
3.4 Scope of Variables
3.5 Programs of Area & Perimeter Computation, Quadratic Formula

Unit-IV: Control Structures Selection

4.1 Logical Operators

4.2 Simple Conditional Statements; IF …. Then…. Else

4.3 Compound Conditional Statements Truth Table Implementation Nested IFs and

4.4 Switch statement Short Circuiting

Unit-V: Control Structures Repetitive

5.1 Repetition Structure (Loops)

5.2 For Loop, While Do and Do While Loops Nested Loops

5.3 Nested Control Structures (Selective & Repetitive)

Unit-VI: Modular Approach

6.1 Reusability through Functions

6.2 Built-in Functions and Header Files Commonly Used Built-in Function

6.3 User Defined Functions

6.4 Parameter Passing by Value Return Statement

Unit-VII: Arrays

7.1 Introduction to Arrays

7.2 Linear Array Manipulation

7.3 Multidimensional Arrays

Unit-VIII: String Handling

8.1 Char Arrays

8.2 String Input and Output

8.3 String Comparison

8.4 Substring Finding

Unit-IX: Simple User-Defined Data Types

9.1 Struct and its Usage

9.2 Array of Records

9.3 Dynamic Memory Allocation

9.4 Pointers to Records

9.5 Linear Linked List of Records

9.6 Deallocation of Memory

Unit-X: File handling

10.1 Sequential and Random-Access Files

10.2 Creating and Deleting Files

10.3 File Modes

10.4 Reading and Writing into Files

Teaching-Learning Strategies

Lectures, lab work, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks

In the detail course outline, one may mention chapters of the textbook with the content topic(s).

1. Problem Solving with C++ by Walter Savitch 7th Edition, Addison-Wesley ISBN 0321531345.
2. The C Programming Language by Kernighan and Ritchie 2nd Edition Prentice Hall

Tools

10.1 Software

1. Visio 4.5 Technical
2. Microsoft Word for Documentation

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Principles of Economics
Course Code: BEC-125   Credit Hours: 03
Program: BS E-Commerce   Semester: 02

1. Introduction of the Course

This course provides an introduction to a broad range of economic concepts, theories and analytical techniques. It considers both microeconomics - the analysis of choices made by individual decision-making units (households and firms) - and macroeconomics - the analysis of the economy as a whole. The use of a market, supply and demand, model will be the fundamental model in which trade-offs and choices will be considered through comparison of costs and benefits of actions. Production and market structure will be analysed at the firm level. Macroeconomic issues regarding the interaction of goods and services markets, labour and money at an aggregate level will be modelled. The role of government policy to address microeconomic market failures and macroeconomic objectives will be examined.

Pre-Requisites Course (s) or Other Requirements/Skills:
No specific prerequisites are required for this course.

Course Learning Outcomes
1. Understanding nature and scope of economics
2. Understanding functioning of economic systems
3. Understanding price determination through demand and supply
4. Learning different aspects of micro-economics
5. Learning different aspects of macro-economics

Course Contents:

Unit-I: Introduction
1.1 Basics of Economics: Definitions, scope and objectives,
1.2 Type of goods
1.3 Four factors of production
1.4 Economic agents, consumption and production, specialization and division of labor, technology and capital formation
1.5 Micro and macroeconomics
1.6 Income and wealth
Unit-II: Economic Systems
2.1 Basics of economic systems and their function – market, mixed, planned and Islamic economic system
2.2 Features of different economic systems and their comparison
2.3 Pros and cons of different economic systems and their comparison with Islamic economic system
2.4 Economic system of Pakistan
Unit-III: Demand and Supply
3.1 Demand and supply – definition and scope
3.2 Laws of demand and supply – their assumption and limitations
3.3 Movements in demand and supply curves and factors behind these movements

3.4 Practical implications of laws of demand and supply

3.5 Relating to relationship between time and supply, reserve price, factors influencing reserve price 3.6 Equilibrium of demand and supply

       3.6.1 Understanding basics of market and market equilibrium

       3.6.2 Determination of price equilibrium with schedule and graph

       3.6.3 Understanding effect of change in demand and supply on market equilibrium

       3.6.4 Understanding price equilibrium for perishable and durable goods

3.7 Elasticity of demand and supply

       3.7.1 Understanding price elasticity of demand and degree of price elasticity

       3.7.2 Different approaches to measure price elasticity of demand

       3.7.3 Calculating income and cross elasticity of demand

       3.7.4 Understanding concept of elasticity of supply and using percentage and graphical method to measure elasticity of supply

       3.7.5 Determinants of supply elasticity

       3.7.6 Applications of elasticity of demand and supply

Unit-IV: Utility Analysis and Indifference Curve

4.1 Utility, total and marginal utility – definitions, scope, and application

4.2 Law of diminishing marginal utility with schedule and graph, its assumptions, limitations, and practical relevance

4.3 Law of equi-marginal utility with schedule and graph, its assumptions, limitations, and practical relevance

4.4 Indifference curve, budget lines, and studying consumer's equilibrium using indifference curve analysis

4.5 Income effect, price effect, and substitution effect on consumer equilibrium

Unit-V: Laws of Production

5.1 Law of variable proportion and assumptions

5.2 Law of increasing returns and assumptions, applications and its impact on cost of production

5.3 Law of constant returns and assumptions, applications and its impact on cost of production

5.4 Law of diminishing returns and assumptions, applications and its impact on cost of production

Unit-VI: Cost and revenue curves

6.1 Cost of production, implicit and explicit costs

6.2 Short run curves of total cost, total fixed cost, total variable cost, average cost and marginal cost using schedule and graph

6.3 Long run average cost curve from short run average cost cover

6.4 Long run marginal cost curve from total cost curve

6.5 Economies and diseconomies of scale and their impact on long run costs

6.6 Marginal revenue, total revenue and average revenue

Unit-VII: Equilibrium of firm

7.1 Equilibrium of firm in short and long run

       7.1.1 Equilibrium under perfect competition

       7.1.2 Equilibrium under monopoly

       7.1.3 Equilibrium under monopolistic competition

       7.1.4 Equilibrium under oligopoly

Unit-VIII: Macroeconomics – National Income

8.1 Macroeconomics – Definition, scope, and application

8.2 National income – Definition and measurement

8.2.1 GDP

8.2.2 GNP

8.2.3 NNP

8.2.4 Personal income

8.2.5 Disposable income

8.2.6 Per capital income

8.2.7 Nominal vs. real GSP

8.3 Circular flow of national income

8.4 Product approach, income approach, and expenditure approach to measure national income

8.5 Issues in measurement of national income

Unit-IX Consumption, Saving and Investment

9.1 Definitions, scope and implications

9.2 Basics of consumption and saving, autonomous and induced consumption, average and marginal propensity to consume and save

9.3 Keynes psychological law of consumption: relationship between consumption and income using average and marginal propensity to consume curves

9.4 Determinants of consumption and saving function

9.5 Stability of consumption and saving functions in short run

9.6 Investment, induced investment and autonomous investment

9.7 Relationship between investment, marginal efficiency, and interest rate

9.8 Classical and Keynesian approach to determine equilibrium level of output/income

Unit-X: Multipliers and Accelerators

10.1 Scope and relevance

10.2 Multiplier effect on national income and its limitations

10.3 Principle of acceleration and its limitations

10.4 Interaction of multiplier and accelerator to cause output fluctuation

Unit-XI: Growth and recession

11.1 Business cycle, causes and its phases

11.2 Indicators of growth and inflation

11.3 Determinants of cost and benefits of growth

11.4 Unemployment and types of unemployment, means to reduce unemployment

11.5 Inflation, deflation, stagflation, wage spiral inflation, mild and hyperinflation, causes of inflation, cost of inflation, Philip curve

11.6 Inflation in Pakistan – causes, implications, and means to control it

Unit-XII: Fiscal policy

12.1 Fiscal policy – definition, scope, and implications

12.2 Objectives, tools, and limitations of fiscal policy

12.3 Taxation types and regimes and their pros and cons: direct, indirect, proportional, progressive, regressive

12.4 Good taxation policy: canons of taxation

12.5 Difference between public and private finance

12.6 Importance and functions of public finance

12.7 Causes of increasing public expenditure with particular reference to developing countries and Pakistan

Unit-XIII: Monetary policy

13.1 Monetary policy – definition, scope, and implications

13.2 Objectives, tools, and limitations of monetary policy

13.3 Money, its evolution, functions, forms; credit money, its types pros and cons

13.4 Functions of a central bank, money supply, sources of money supply

13.5 Interest rate, its types, and determinants

13.6 Quantity theory of money, Keynesian liquidity preference theory, liquidity trap and their influence on interest rate

13.7 Measurement of value of money

Teaching-Learning Strategies

Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks

In the detail course outline, one may mention chapters of the textbook with the content topic(s).

1. CAF-02 Introduction to Economics and Finance by ICAP

2. McConnel C., Brue S., and Flynn S. (2009) Economics; Principles, Problems, and Policies. McGraw Hill Irwin

3. Mankiw, N. G. (2014). Principles of macroeconomics. Cengage Learning.

Suggested Readings

Books

Samuelson N. and Nordhaus W. (2010), Economics. McGraw Hill, Inc.

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Islamic Studies
Course Code: BEC-126   Credit Hours: 03
Program: BS E-Commerce   Semester: 02

Introduction of the Course (100-150 words)
Islam provide a code of conduct for every aspect of life. This course provides introduction to Islamic concepts and virtues and their importance in business and daily life. Most of the part of this course is tailored to business settings to understand how Islamic teaching are applied to business settings.

Pre-Requisites Course (s) or Other Requirements/Skills:
No specific prerequisites are required for this course.

Course Learning Outcomes
1. Learning basic concepts and virtues of Islam
2. Understanding Islamic viewpoint on business and economics
3. Understanding Islamic financial and economic system
4. Understanding halal and haram in context of business and economics

 Course Contents:

Unit-I: Fundamentals of Islamic faith
1.1 Basic principles of Islamic faith
1.2 Belief system and basic beliefs
Unit-II: Virtues in Islam
2.1 Sincerity in light of Quran and Hadith and application to business
2.2 Righteousness in light of Quran and Hadith and application to business
2.3 Justice in light of Quran and Hadith and application to business
2.4 Generosity in light of Quran and Hadith and application to business
2.5 Gentleness in light of Quran and Hadith and application to business
2.6 Truthfulness in light of Quran and Hadith and application to business
2.7 Trustworthiness in light of Quran and Hadith and application to business
2.8 Honesty in light of Quran and Hadith and application to business
2.9 Moderation in light of Quran and Hadith and application to business
2.10 Contentment (Tawakkul) in light of Quran and Hadith and application to business
2.11 Gratitude (Shukr) in light of Quran and Hadith and application to business
2.12 Mercifulness (Reham) in light of Quran and Hadith and application to business
2.13 Divine love in light of Quran and Hadith and application to business
2.14 Repentance Counsel in light of Quran and Hadith and application to business
2.15 Humbleness in light of Quran and Hadith and application to business
Unit-III: Islamic Economic System
3.1 Islamic economic system
3.2 Comparison of Islamic economic system with capitalism and socialism
3.3 Factors of production in Islam, capitalism, and socialism
3.4 Wealth circulation and its importance in Islam

3.5 Zakat, its application and significance

3.6 Who can receive zakar?

3.7 Welfare state, basic concept and historical context during rule of Hazrat Umar (R.A.)

Unit-IV: Islamic Financial System

4.1 Islamic financial system, its principles and significance

4.2 Riba – Types and implications (Riba al Qard, Riba al Fadal, Interest and Usray)

4.3 Riba in the light of Quran and Hadith

Unit-V: Islamic Finance

5.1 Permissible modes of financing in Islam and their structure - Musharkah, Mudarbah, Ijarah, Marabaha, Salam, Istisna, Sukuk

5.2 Islamic insurance (Takaful) – modes and application

Unit-VI: Halal and Haram

6.1 Concept of halal and haram, its implications in the light of Quran and Hadith

6.2 Halal and haram in daily business life

6.3 Gambling, speculation, and *gharar*, its implications in the light of Quran and Hadith

6.4 Business life examples of Gambling, speculation, and *gharar*

6.5 Black marketing, smuggling, and profiteering

Unit-VII: Marketing and Islam

7.1 Islamic context of marketing

7.2 Permissible means of marketing in Islam

7.3 Lying, deception, and fraud – Islamic revelations

Unit-VIII: Human rights in Islam

8.1 Basic human rights in Islam

8.2 Rights and responsibilities of employee and employer in the light of Quran and Hadith

Unit-IX: Taxation in Islam

9.1 Islamic revelations on taxation and its forms

9.2 Tax planning and evasion – ethical implications

Unit-X: Islam and Technology

10.1 Islam and technology

10.2 Islam and E-commerce

Teaching-Learning Strategies

Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:

1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks

In the detail course outline, one may mention chapters of the textbook with the content topic(s).

1. An Introduction to Islamic Finance by Mufti Taqi Usmani

2. Islamic Law and Finance: Religion, Risk and Return (VH) by Vogel, F. E. and Hayes, S. L.

3. Business Ethics in Islam by Mushtaq Ahmad

4. Islamic Economics by Abdul Hameed Dar and Mian Muhammad Akram

Suggested Readings
Books
1. Islamic Entrepreneurship by Rasem Kayed
2. Business in Islamic Perspectives: Some Selected Issues by Ashmal Hafiz Ahmad Suhaimi et al., Penerbit Qiara Media, 2020

10.2 Articles
1. Masum, A. K. M., Ullah, M., Azad, M., & Kalam, A. (2012). Information technology (IT) ethics in the light of Islam. *IIUC Studies*, *9,* 243-260.
2. Zainul, N., Osman, F., & Mazlan, S. H. (2004). E-Commerce from an Islamic perspective. *Electronic Commerce Research and Applications*, *3*(3), 280-293.
3. Shamim, A. (2010). E-commerce from an Islamic perspective. *Journal of Islamic Marketing*.
4. Sholikhin, M. Y., & Amijaya, R. N. F. (2019). E-commerce based on the law of buying and selling in Islam. *KnE Social Sciences*, 1360-1370.

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Foreign Language (Arabic)
Course Code: BEC-211   Credit Hours: 03
Program: BS E-Commerce   Semester: 03

Introduction of the Course (100-150 words)
Arabic is one of the oldest language of the world. The language has a special place in Muslim world. This course provides overview of basics on Arabic Language with a view to teach students about the language.

Pre-Requisites Course (s) or Other Requirements/Skills:
No pre-requisite is required for the course.

Course Learning Outcomes
1. To make the students able to distinguish and pronounce all Arabic sounds, and write accurately from dictation.
2. To enable the students to understand Quran, Hadith and other Arabic-Islamic literature with an ease and comprehend simple written Arabic texts on familiar topics.
3. To facilitate the students to write simple sentences/paragraphs in Arabic.
4. To empower the students to start talking satisfactorily with any native speaker of Arabic

 Course Contents:

يونٹ ۱: عربی زبان کی اہمیت اور آگاہی
يونٹ ۲: عربی الفاظ کی پہچان، أسماء اشارة ,کلمات استفھام
يونٹ ۳: عربی تراکیب اورضمائرکااستعمال
۱.۳ مرکب اضافی کی پہچان اور استعمال
۲.۳ ضمائرمنفصلہ کی پہچان اور استعمال
۳.۳ ضما ئر متصلہ کی پہچا ن ا ور استعمال
۳.۳ حر و ف قمر یہ و شمسیہ ا ور جملہ ا سمیہ کی پہچا ن ا ور استعمال
۵.۳ حر و ف جا رہ کی پہچا ن ا و ر جملو ں میں ا ستعما ل
٦.۳ مرکب توصیفی، معرفہ ونکرہ کی پہچان اورجملوں میں استعمال
يونٹ ۳: جملہ فعلیہ
۱.۳ جملہ فعلیہ کی ساخت اورجملوں میں استعمال
۲.۳ فعل ماضی(غائب) کی پہچان اورجملوں میں استعمال
۳.۳ فعل ماضی(حاضر) کی پہچان اورجملوں میں استعمال
۳.۳ فعل ماضی(متکلم) کی پہچان اورجملوں میں استعمال
۵.۳ فعل مضارع بنانےکاطریقہ اورجملوں میں استعمال
٦.۳ فعل امربنانےکاطریقہ اورجملوں میں استعمال
يونٹ ۳: عربی گنتی اورہفتےکےدنوں کےنام
يونٹ ۵: منتخب قرآنی آیات کا ترجمہ اور سوالوں کے جواب
يونٹ ٦: منتخب احادیث کا ترجمہ اور سوالوں کے جواب
يونٹ۷: منتخب عربی اشعار کا ترجمہ اور سوالوں کے جواب

Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class
   Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. Arabic Language and Literature (اللغة العربية وأدبها)
2. إعداد وتقديم: الدكتور مقيت جاويد
Suggested Readings
Books
➢ عبد الرحيم، ف، (الدكتور)، دروس اللغة العربية لغير الناطقين بها، وزارة التعليم العالي، المملكة العربية
➢ **السعودية، 1418**

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Principles of Management
Course Code: BEC-212   Credit Hours: 03
Program: BS E-Commerce   Semester: 01

Introduction of the Course (100-150 words)
Business organizations are becoming more and more complex in their structures, functions, and operations. In this context, it is imperative to understand how business organizations are managed to ensure efficiency and effectiveness. This course provides a basic overview of principles of management in this regard.

Pre-Requisites Course (s) or Other Requirements/Skills:
BECOM-115 IT, Business, and Society

Course Learning Outcomes
    1. Understanding scope and functions of business management
    2. Learning to conduct external and internal strategic analysis
    3. Understanding organizational and cultural factors within the scope of business management
    4. Understanding organizational behaviors and their implications for business management

 Course Contents:

Unit-I: Basics of Business Management
1.1 Management and leadership, their nature and scope
1.2 Leader vs. manager
1.3 Role of managers enunciated by Henry Mintzberg
1.4 Functions of Management: Planning, organizing, leading, and controlling
1.5 Role and skills of management
1.6 Managerial levels: roles, skills and hierarchy
Unit-II: Classical Approaches to Management
2.1 Principles of scientific management by Fredrick Taylor
2.2 Management principles by Fayol and Urwick
2.3 Theories of management by Weber, Rosemary, Stewart, and Elton Mayo
2.4 Theories of management by Peter Drucker, Rosabeth Moss Kanter, and Mintzberg
2.4 Criticism on scientific management and classical theory
2.5 Bureaucratic organization and its critique
Unit-III: Behavioral and Management Science Approach
3.1 Hawthorne experiments on human relation approach, their significance and implications for management
3.2 implications of experiments for management and organizational behavior
3.3 theory X, theory Y, and theory Z for their implications and differences
3.4 Operations research in business sciences
3.5 Management skills relating to time and stress management, innovation, creativity, communication, mentoring and leadership
Unit-IV: External Factors and Business Management

4.1 Direct and indirect interactive forces including political, legal, health, and safety and consumer protection forces that may affect organizational environment

4.2 Implications of external factors for business

4.3 Social, demographical, ecological, and competitive factors impact business environment

4.4 PESTEL

4.5 Competitors, supplier, labor, customers, and other external stakeholders

Unit-V: Organizational Structure

5.1 Mission and vision of an organization, nature of organizational structure and different types of organizations

5.2 Different stakeholders of business

5.3 Organizational structures and their salient features: matrix, functional, divisional, virtual

5.4 Contingency theory of organization structure: Burns and Stalker mechanistic and organic structure, Mintzberg's five building blocks for organizational configuration with examples of six organization configuration

5.5 Pros and cons of different organizational structure

Unit-VI: Organizational Change and Change Management

6.1 External forces creating changes in the performance of organizations

6.2 Change and process of change, and forms of reaction to change

6.3 Managing strategic change: change management, change levers, and management skills

6.4 Approaches to change management: Lewin's force field analysis, Lewin's three step approach, the change agent, Gemini 4 Rs and Mckinsey's 7s approach

Unit-VII: Organizational Culture

7.1 Organizational culture and its different levels with examples

7.2 Different types of cultures and their efficacies in context of organizational performance

Unit-VIII: Perception and Attitude

8.1 Perception and its process, and it's their affect

8.2 Differentiate between sensation and perception

8.3 Understanding perceiver (internal factors) and perceived (external factors), their characteristics that affect perceptual selectivity

8.4 Perceptual problems/ distortions in dealing with other people like stereotyping and halo effect etc.

8.5 Attitude, its components, with reference to organizational culture

8.6 Differences between cognitively based attitudes and affectively based attitudes

8.7 Difference between implicit and explicit attitudes

8.8 Cross cultural differences in the bases for attitudes

8.9 Relationship between attitude and behavior

Unit-IX: Job Satisfaction and Stress

9.1 Meaning and outcomes of job satisfaction

9.2 Means to enhance satisfaction

9.3 Stress and its causes

9.4 General categories of stressors or triggers of job stress that affect performance

9.5 Consequences of stress and strategies to cope up with stress

Unit-X: Motivation, Organizational Justice, and Theories

10.1 Understanding motivation with examples

10.2 Maslow need hierarchy model, its strengths and weaknesses

10.3 Herzberg's two factor theory and its criticism

10.4 McClelland's theory of needs and difference between intrinsic and extrinsic motives

10.5 Goal setting theory, its dimensions, its mechanism, and how to set effective goals and related problems in goal setting

10.6 Self-efficacy: high and low self-efficacy

10.7 Law of effect, concept of reinforcement: positive and negative reinforcers

10.8 Organizational justice and its three components: distributive, procedural, and interactional

10.9 Equity theory and its implications

10.10 Vroom's expectancy theory, its three elements: expectancy, instrumentality, and valence

Unit-XI: Leadership and theories

11.1 Leadership, its styles: free rein, engaging, participative, task oriented, and autocratic

11.2 Different theories of leadership: trait theories, Blake and Mouton theory, situational and contingency theories

11.3 Tannenbaum and Schmidt's continuum model of leadership styles

11.4 Principles and need for adaptive change

11.5 Roles, skills and activities of leadership

Unit-XII: Group Dynamics and Team Work

12.1 Teams and groups, scope and differences

12.2 Individual and group behavior at work, formal and information group behavior

12.3 Balance theory of group formation

12.4 Concept and stages of team formation, team roles and performance of effective and ineffective teams

12.5 Stages of group development, factors affecting group cohesiveness

12.6 Making teams more effective

Unit-XIII: Conflict and Negotiation

13.1 Conflict, its types and resolution process

13.2 Intergroup and individual level conflicts

13.3 Pros and cons of conflict in organization

13.4 Intra-individual conflicts with model of frustration

13.5 Physical, psychological and behavioral problems that occur due to conflict

13.6 Negotiation, its various stages and skills for effective negotiations

13.7 Role of mediators, arbitrators, conciliators, and consultants

13.8 Low risk and high risk techniques of negotiation

Teaching-Learning Strategies

Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks

In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. CAF-04 Business Management and Behavioural studies by ICAP
2. Understanding Management by Richard L. Daft and Dorothy Marcic
3. Management by Stephen P. Robbins & Mary Coulter
4. Organizational Behavior by Stephen P. Robbins

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Cost and Management Accounting
Course Code: BEC-213   Credit Hours: 03
Program: BS E-Commerce   Semester: 03

1.0 Introduction of the Course (100-150 words)
The Course deals with examining Cost Accounting as a tool for providing information for manufacturing, internal reporting, external reporting as well as for managerial decision making. The broad course objectives are to help students to understand the central concepts of Cost Accounting, the methods of conducting data analysis preparation of reports for managerial decision making.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-123 Financial Accounting II

Course Learning Outcomes
1. Understanding of cost account and its application to business enterprise.
2. Learning to use cost systems
3. Understand various cost account concepts and techniques in business decision making process.

 Course Contents

Unit-I: Introduction
1.1 Cost accounting – Nature, scope and application
1.2 Cost Accounting and Business Environment
1.3 Cost Terms, concepts, and classifications
1.4 Difference between cost accounting and financial accounting, role of cost accounting in an organization
1.5 Understanding there basic manufacturing cost categories with examples: Material, labour, factory overhead
1.6 Understanding product and period cost, fixed cost and variable cost, direct and indirect cost, differential cost, opportunity cost, sunk cost and their relevance
1.7 Calculating cost of goods sold in an income statement
1.8 Preparing schedule for cost of goods manufactured
Unit-II: Inventory and stocks
2.1 Valuation of inventory and stock – FIFO, LIFO, weighted average, lower of cost and net realizable value
2.2 Application of inventory valuation methods in simple scenarios
2.3 Comparing inventory valuation under different methods
2.4 Calculating NRVs of inventories in given scenario
2.5 Usability and application of EOQ and its calculation
2.6 Safety stock, reasons to maintain it, and it calculation
2.7 Reorder level, objectives to set up reorder level and its calculation
Unit-III: Variance Analysis
3.1 Manufacturing Expenses – Actual and applied

3.2 Over or under absorption of overheads

3.3 Identification of manufacturing expenses with examples

3.4 Manufacturing cost with selling and administrative costs

3.5 Calculating actual and applied overheads

3.6 Actual and absorbed overheads from provided data

3.7 Over and under absorption of overheads in terms of expenditure and volume variance

3.8 Accounting for over or under absorption of overheads

Unit-IV: Production and Services Department

4.1 Apportionment, allocation and absorption of service department, overheads to production

4.2 Production and service facility in manufacturing facility and analyzing their costs

4.3 Basis of allocation of cost of service department to production department

4.4 Allocating costs to production and service department using information provided

4.5 Allocating costs of service departments to production department using information provided

Unit-V Labor Costing

5.1 Productivity and efficiency measurement in relation to controlling labor cost

5.2 Remuneration systems, incentive wage plans, and their types

5.3 Recording labor cost

5.4 Impact of learning curve theory on productivity of employees

Unit-VI: Manufacturing Cost Accounting Cycle

6.1 Flow of cost in production process using examples

6.2 Accounting entries for flow of cost

Unit-VII: Job Order Costing

7.1 Job order costing – application and suitability

7.2 Calculating cost of job and inventories by application of job order costing

7.3 Accounting entries under job order costing system

Unit-VIII: Process Costing

8.1 Process costing – application and suitability

8.2 Treatment of normal/ abnormal loss/ gain

8.3 Cost of product and inventories using process costing

8.4 Accounting entries under job process costing system

8.5 Account for cost of rework, units added in subsequent departments, N.R.V. of by-product in process account

Unit-IX: Costing Systems

9.1 Marginal costing – Basics, application, pros and cons

9.2 Absorption costing – Basics, application, pros and cons

9.3 Activity based costing – Basics, application, pros and cons

9.4 Standard costing - Basics, application, pros and cons

9.5 Target costing - Basics, application, pros and cons

Unit-X: Planning, forecasting, and budgeting

10.1 Budgeting and forecasting process, its purpose, and its relevance to overall planning and control functions

10.2 Stages in budgeting process

10.3 Preparing forecasts using give data and making assumptions using qualitative and quantitative methods

       10.3.1 Times series models

       10.3.2 Moving averages

        10.3.3 Linear regression analysis

10.4 Preparation of budgets

        10.4.1 Fixed and variable budgets

        10.4.2 Performance budgets

        10.4.3 Sales budget

        10.4.4 Production Budget – direct material budget, direct labor budget, manufacturing overhead budget, inventory budget, cost of goods sold budget

        10.4.4 Selling and administrative expenses budget with inflation aspects,

        10.4.5 Master/ cash budget,

        10.4.6 Zero based budget

        10.4.7 Capital expenditure budget

10.5 Different approaches to budgeting

        10.5.1 Flexible and fixed budgeting

        10.5.2 Incremental budgeting

        10.5.3 Zero based budgeting

        10.5.4 Continuous (rolling) budgeting

        10.5.5 performance budgeting

10.6 Human and motivational aspects of budgets and budgeting process for non-profit organization

Unit-XI: Tools for Managerial Decision Making

11.1 Relevant Costing – Concept and application

11.2 Breakeven analysis – Concept and Application

        11.2.1 Calculation in amount and units

        11.2.2 Calculation of margin of safety

        11.2.3 CPV analysis and its application

11.3 Make vs. buy decisions – concept and application

11.4 Pricing for special orders

11.5 Balanced Scorecard – conception, aspects, application, and usefulness

Teaching-Learning Strategies

Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:

1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks

In the detail course outline, one may mention chapters of the textbook with the content topic(s).

1. CAF – 8 Cost and Management Accounting – Study Text by ICAP
2. Managerial Accounting, 12th edition, Garrison, Noreen, & Brewer, McGraw Hill.

Suggested Readings

Books

➢ Cost and Management Accounting by Colin Drury

10.2 Journal Articles/ Reports

➢ Kaplan, R. S., & Norton, D. P. (2005). The balanced scorecard: measures that drive performance. *Harvard Business Review*, 83(7), 172.
➢ Nawaz, M. (2013). An Insight Into the Two Costing Technique: Absorption Costing and Marginal Costing. *BRAND. Broad Research in Accounting, Negotiation, and Distribution*, *4*(1), 48-61.
➢ Hansen, S. C. (2011). A theoretical analysis of the impact of adopting rolling budgets, activity-based budgeting and beyond budgeting. *European Accounting Review*, *20*(2), 289-319.

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title:	Operating Systems Concepts	
Course Code:	BEC-214	Credit Hours: 03
Program:	BS E-Commerce	Semester: 03

Introduction of the Course (100-150 words)
Operating systems are central to computing activities. An operating system is a program that acts as an intermediary between a user of a computer and the computer hardware. Two primary aims of an operating system is to manage resources (e.g. CPU time, memory) and to control users and software. Operating system design goals are often contradictory and vary depending of user, software, and hardware criteria. This course describes the fundamental concepts behind operating systems, and examines the ways that design goals can be achieved.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-124 Programming Fundamentals

Course Learning Outcomes
1. Understating nature and usability of operating systems.
2. Understanding structure of operating systems and related concepts.
3. Understanding impact of operating system design on application system design and performance.
4. Learning to recognize and use operating system design and optimize system performance.
5. Building competency in recognizing and using operating system features.

Course Contents:

Unit-I: Introduction
1.1 Operating system: An abstraction
1.2 Interrupt, trap and signals
1.3 Dual mode operation
1.4 I/O, memory and CPU protection
1.5 Operating System services
1.6 History and types of Operating systems
1.7 Computing environments
Unit-II: Virtualization and Hypervisors
2.1 Introduction to Linux distributions
2.2 Installing Linux on Sun Virtual Box
2.3 Interacting with Linux operating system
2.4 Linux File hierarchy standard and getting help on a Linux terminal
2.5 Linux system call interface and use of GNU gcc compiler on Linux terminal
Unit-III: Users, Programs, and Processes
3.1 Concept of users, programs and processes
3.2 Format of a program file on disk and its components
3.3 Viewing contents of program file using objdump and readelf commands
3.4 Process layout in memory and different components of a process logical address space
3.5 Stack, heap, and PCB. Command line arguments and environment variables

3.6 CPU bound and I/O bound processes

3.7 Two, five, six and seven states Process Model

3.8 Process queueing architecture

3.9 Process schedulers

3.10 Long term, medium term and short term schedulers

3.11 Process creation and termination, getpid(), getppid(), fork(), exit(), wait() and execl() system calls

3.12 Concept of orphan and zombie processes

3.13 Soft and hard process limits using ulimit, and getconf commands

Unit-IV: File Management in Linux

4.1 File management in Linux

4.2 Concept of PPFDT

4.3 Connection of an opened file from file descriptor to file contents

4.4 Concept of input, output and error redirection and its practical examples on a Linux Terminal

4.5 Taxonomy of Inter Process Communication and persistence of different IPC objects

Unit-V: UNIX IPC tools, Pipes, FIFOS and Sockets

5.1 UNIX IPC tools, Pipes, FIFOS and Sockets

5.2 Using of pipes and fifos on a Linux terminal

5.3 Overview of signals

5.4 Signal delivery and execution of a signal handler

5.5 Synchronous and Asynchronous signals

5.6 Standard and Realtime signals

5.7 Sending signals to running processes using kill command

5.8 Signal disposition of some important signals like SIGHUP, SIGINT, SIGKILL, SIGPIPE, SIGALARM, SIGTERM, SIGQUIT, SIGILL, SIGFPE, SIGSEGV, SIGSTOP, SIGTSTP, SIGCHLD, SIGCONT

Unit-VI: Concurrent and Parallel Programming

6.1 Understanding Concurrent and parallel programming

6.2 Introduction to threads, multi-threading and hyper threading

6.3 Merits and demerits of threads

6.4 User level vs kernel level threads

6.5 Threading models (Many to One, One to One, and Many to Many)

6.6 Writing multi-threaded C programs using library calls from the POSIX pthread library like pthread_create(), pthread_join(), and pthread_exit()

Unit-VII: Process Scheduler and Dispatcher

7.1 Understanding process scheduler and dispatcher

7.2 Preemptive vs non-preemptive schedulers

7.3 CPU scheduling and scheduling criteria

7.4 FCFS, SJF and SRTF process schedulers

7.5 Convoy effect and concept of exponential averaging

7.6 Priority Scheduling (Preemptive and Non-preemptive)

7.7 Round Robin scheduler and its merits and demerits

7.8 Multi level Queue Scheduling and Multi level Feed- back queue scheduling

7.9 Rotating stair case dead line scheduler

7.10 UNIX System-V Release 3 Process Scheduler

7.11 Concept of nice value and its impact on priority of a process

7.12 Viewing and changing the nice value of a process on a Linux terminal using ps, nice and renice commands

7.13 Concept of CPU affinity

7.14 Use of Linux schedtool command to query and change different CPU scheduling parameters like scheduling policy, nice value, static priority, cpu affinity

Unit-VIII: Synchronization, Concurrency Control, Race Condition, Critical Section Problem

8.1 Introduction to synchronization, Concurrency Control, Race Condition, Critical Section Problem

8.2 Concept of atomic operation

8.3 General format of a CS problem solution

8.4 Characteristics of a good CSP solution.

8.5 Software Based Solutions to CSP: Dekker solution, Peterson solution, and Leslie Lamport'sBakery algorithm

8.6 Concept of busy waiting

8.7 H/W based solutions to CSP: Disabling of interrupts, TSL and swap instructions

8.8 Thread synchronization using pthread_mutex_t variable and pthread_mutex_lock() and pthread_mutex_unlock() library calls

Unit-IX: Semaphores

9.1 Introduction to semaphores

9.2 Binary and counting semaphores

9.3 Achieving mutual exclusion using semaphores

9.4 Achieving serialization using semaphores

9.5 Solution to Standard Synchronization problems using semaphores, Producer Consumer, Dining Philosopher, Reader writer, Sleeping Barber, Smokers problem

9.6 Limitations of semaphores

9.7 Introduction to Monitors, Condition variables, Hoare and Mesa monitors

9.8 Solution to standard synchronization problems using monitors

Unit-X: Deadlocks

10.1 Introduction to Dead locks,

10.2 Four necessary and sufficient conditions for Dead Locks

10.3 Resource allocation graph

10.4 Dead lock handling methods

10.5 Dead lock prevention

10.6 Dead lock avoidance

10.7 Bankers and Safety Algorithm

10.8 Dead lock detection and recovery

Unit-X1: Memory Management

11.1 Memory Management, address Binding and linking, Logical vs Physical Addresses, Dynamic Loading, Dynamic Linking & Shared Libraries, Overlays, Swapping

11.2 Introduction to Contagious Memory Allocation

11.3 Introduction to paging, Page Table, Address translation in paging, Paging parameters for Intel and PDP11

11.4 Implementing page table in cache, memory and CPU registers, Structure of Page Tables (Hierarchical, Inverted and Hashed Page tables)

11.5 Introduction to Segmentation, address translation in segmentation

11.6 Introduction to paged segmentation, address translation in a paged segmentation

11.7 Address translation in Intel 80386 (Real and protected mode)

11.8 Virtual Memory, Background, Demand Paging, Performance of Demand Paging, Page Replacement algorithms (FIFO, Optimal, LRU, LFU, MFU, Buffering)

11.9 Copy on Write protocol and vfork() system call, Allocation of Frames, Thrashing, Resident Set Management, Working Set Model, Page fault frequency, memory mapped files

Unit-XII: Hard Disk and File Systems

12.1 Hard Disk Geometry

    12.1.1 Spinning and Solid state disk

    12.1.2 Working of spinning disk and its interfaces (IDE, ATA, SATA, SCSI, SAS)

    12.1.2 The concept of Logical Block Addressing and its mapping on CHS address.

12.2 Hard Disk Partitions

    12.2.1 Partitioning a hard disk

    12.2.2 Different types of partition tables, MBR and GPT

    12.2.3 Linux tools used for partitioning a hard disk like fdisk, gdisk, parted, gparted, cfdisk, sfdisk

12.3 Disk Formatting

    12.3.1 Concept of a file system and the basic functionalities that every file system should offer.

    12.3.2 Comparison of different file systems like ext2/3/4, reiserfs, hpfs, minix, ntfs, vfat, xfs and zfs.

    12.3.3 Use of Linux tools like mkfs, mke2fs, mkntfs, mkfs.fat, mkfs.minix to put a file system on a partition

12.4 File system mounting

    12.4.1 Introduction to the concept of file system mounting

    12.4.2 Linux configuration files related to file system mounting

    12.4.3 Linux commands like mount, umount, lsblk, blkid

    12.4.4 Maintaining integrity of file system using Linux commands like fsck, e2fsck, fsck.fat, fsck.nfs

12.5 File system architecture

    12.5.1 Schematic view of a standard UNIX file system

    12.5.2 Describe the contents of boot block, super block, inode block, and data blocks

    12.5.3 Discuss In-memory and on-disk structures used by a file system

    12.5.4 Describes what actually happens behind the curtain when a user creates, accesses and deletes a file and how Linux keep track of opened files by a process

    12.5.5 Use of Linux commands like df, du, lsof, fuser, and tune2fs to perform these tasks

12.6 Hard and soft links

    12.6.1 Use of hard and soft links on all UNIX based systems

    12.6.2 Differences between hard and soft links

    12.6.3 Use of Linux command ln to create hard and soft links

12.7 File permissions

    12.7.1 Use of standard file permissions

    12.7.2 Changing the existing file permissions on a file using symbolic and octal way

    12.7.3 Use of chmod and chown commands

    12.7.4 Setting the default file permissions on a newly created file using the umask command

12.8 Special file permissions

    12.8.1 Concept and use of Saved SUID bit on files

    12.8.2 Concept and use of Saved SGID bit on files and directories

    12.8.3 Concept and use of Sticky bit on files and directories

12.9 Access control list

    12.9.1 Discuss the security on files using Access Control List

12.9.2 Concept of Discretionary Access control and Mendatory Access control

12.9.3 How to set ACLs on files

12.9.4 A discussion on default ACLs or ACLs on directories

12.10 Device files

12.10.1 Seven File Types in Linux and the concept of device files

12.10.2 Describes the contents of /dev/ directory

12.10.3 Describes Major and minor numbers and shows how you can create your own device files

12.10.4 Important /dev/ directory files like zero, null, full, random, urandom and ttys

12.11 Terminal attributes

12.11.1 Overview of Terminal Devices and a comparison between disk and terminal files

12.11.2 Examine current attributes of terminal driver on a Linux machine and changing them using stty command

12.11.3 Overview of Canonical and Non-canonical mode of terminal drivers

12.12 Managing services using system

12.12.1 Introduction to Linux system daemon

12.12.2 Overview of to systemd unit files, specially Target Unit Files and Service Unit Files

12.12.3 Shell commands to manage services using systemctl

12.12.4 Writing/running a basic service of your own

12.13 Booting process of a Linux system

12.13.1 Five phases of Linux Operating system: BIOS / UEFI Initialization, Master Boot Record, Boot Loader, Kernel Initialization, init or systemd Process

Teaching-Learning Strategies

Lectures, videos, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

1. History and evolution of OS after Unit-I
2. Programming Assignment for process creation and termination after Unit-IV
3. Programming Assignments for writing multi-threaded programs in C during Unit-VII
4. Assignment for Scheduling Algorithms after Unit- VII
5. Programming Assignment to synchronize and serialize threads in a multithreaded program after Unit-IX
6. Programming Assignment Writing a command line interpreter after Unit-XII, component 12.6

Assessment and Examinations:

1.	Mid-Term	Written Paper	35 %
2.	Final Examination	Written Paper	40 %
3.	Sessional	Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.	25 %

Textbooks

In the detail course outline, one may mention chapters of the textbook with the content topic(s).

1. Operating Systems Concepts, 10th edition by Abraham Silberschatz, ISBN-13: 978-1118063330
2. Unix: The Text Book, 3rd edition by Sarwar and Koretsky, ISBN-13: 978-1-4822-3358-2

Suggested Readings
Books
1. Modern Operating Systems, 4th edition by Andrew S. Tanenbaum, ISBN-13: 978-0133591620
2. Operating Systems, Internals and Design Principles, 9th edition by William Stallings, ISBN-13: 978-0134670959

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Database Systems
Course Code: BEC-215   Credit Hours: Theory (03) + Lab (01)
Program: BS E-Commerce   Semester: 03

Introduction of the Course (100-150 words)
Databases are part of our everyday life. Whether we are accessing our bank accounts, paying bills, searching the Web or calling a call center, our requests are most likely posted to some database systems. It teaches a paradigm shift from "computation" to "information" and covers some of the core concepts on data structuring and querying. It covers fundamentals of database architecture, database management systems, and database systems, Principles and methodologies of database design, and techniques for database application development.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-124 Programming Fundamentals

Course Learning Outcomes
After the completion of this course, it is expected that students who will involve themselves in the knowledge base working of the course will be capable to:
1. Design and Implement a Relational database for real life problems
2. Write Complex Queries and Use SQL Functions
3. Suggest a Centralized Distributed system according to organizational needs
4. Design and implement solutions for the small business organizations

 Course Contents:

Unit-I: Introduction
1.1 Databases: introduction, functions, and value
1.2 Ordering a Listing, Listing Unique Values Aggregate Function in SQL, Grouping Data
Field, Definitions and Naming Conventions, Components of DB Applications
1.3 DB Tools; Microsoft Access, Oracle, Informix
Unit-II: Database Systems
2.1 Legacy DB Systems
2.2 File Processing Systems, Hierarchical Model, Network Model
Unit-3: Database Models
3.1 Semantic Data Model, Relational Model
3.2 Database Models and the Internet
Unit-IV: Relational Database Management Systems
4.1 A logical view of Data; Entities and Attributes
4.2 Tables and their Characteristics, Keys
Unit-V: Integrity Rules
5.1 Entity Integrity Referential Integrity
5.2 Relational Database Operators
Unit-VI: Relational Algebra
6.1 Unary Operations, Binary Operations , Cartesian Product, Set
Operations
6.2 SQL Operators
6.3 Relational Algebra and SQL

Unit-VII: Structured Query Language
7.1 Introduction to DDL and DML, Data Control Language
7.2 Complex Queries and SQL Functions
7.3 Virtual Tables, Views, View Types SQL Indexes, Joining Database Tables
Unit-VIII: Procedural SQL
8.1 Triggers
8.2 Stored Procedures PL/SQL, Stored Functions
Unit-IX: Normalization of Database Tables
9.1 Need for Normalization Conversion to First Normal Form
9.2 Conversion to Second Normal Form
9.3 Conversion to Third Normal Form
9.4 Boyce-Codd Normal Form (BCNF)

Unit-X: Database Life Cycle (DBLC)
10.1 Database Initial Study Database Design
10.2 Database Design Strategies
10.3 Centralized versus Decentralized Design
Unit-XI: Entity Relationship (E-R) Modeling
11.1 Basic Modeling Concepts Degrees of Data Abstraction
11.2 Association and Cardinality Relationship Participation
11.3 Composite Entities, Super Entity and subtypes
11.4 Enhanced Entity Relationship Diagram
11.5 Challenge of Database Design, Conflicting Goals
11.6 Transform ER/EER to Relational Model
Unit-XII: Transaction Management
12.1 What is a Transaction?
12.2 Evaluating Transaction Results

Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments
Assignments- Types and Number with calendar
Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. Fundamentals of Database Systems by Visio Ramez Elmasri, Shamkant Navathe 5th Edition 2009 ISBN: 9788131716250
2. Database Management Systems by C. J. Dates 8th Edition, 2001 ISBN 0-901-543432-8
3. Database System Concept by Peter Rob, Carlos Coronel ISBN: 9788131509708
4. Introduction to PL\SQL by Oracle Press
Software and Tools
1.   Microsoft Access
2.   Oracle
3.   PHP
4.   Unified Modeling Language

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Taxation Laws and Practices
Course Code: BEC-221   Credit Hours: 03
Program: BS E-Commerce   Semester: 04

Introduction of the Course (100-150 words)
This course provides basic overview of the taxation system of the Pakistan and its fundamentals concepts. After studying this course, the students would be able to understand taxation system of Pakistan, income tax concepts/terms/definitions, Tax authorities and its hierarchy. To know about rules and regulations regarding taxable income from various heads of income and calculation of taxable liability is an important task of this course. Similarly, this course may help the students who want to become tax practitioners as their professional career. This course would also help the students to know about the assessment procedure of taxable income and income tax liability for salaried individuals.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-115 IT, Business, and Society

Course Objectives
1. To understand taxation system of Pakistan.
2. To understand rules and regulations regarding taxable income.
3. To know about exemptions of income earned by a person
4. To provide calculations regarding taxable income and taxable liability of salaried individuals.

Course Learning Outcomes
1. After studying this course, the students would be able to understand fundamentals concepts/definitions, tax exemptions and tax rules.
2. This course would also help the students to know about the calculation procedure of taxable income and income tax liability for salaried individuals.
3. This course may help the students who want to become tax practitioners as their professional career.

Course Contents:

Unit-I: Income Tax Laws in Pakistan
1.1 History of Income Tax Law, Income Tax Ordinance, 1979, Income Tax Ordinance, 2001, Scope of Income Tax Laws, Extent of Income Tax Ordinance, 2001.
1.2   Components of Income Tax Law, Income Tax Ordinance, 2001, Income Tax Rules, Notifications, Circulars and Orders, Income Tax Case Law, Finance Act or Ordinance.
Unit-II Definitions of Terms (Section2)
2.1 Importance and understanding of Income Tax terms/concepts/definitions.
2.1 All the definitions given under section 2 of Income Tax Ordinance 2001(updated) (2nd Schedule)
Unit-III: Income Exempt from Tax (section 41 to 51)
3.1 Importance of understanding of Income Exempt from Tax.

3.2 Income Tax Exemptions given under section 41 to 51 of Income Tax Ordinance 2001(updated).

Unit-IV: Heads of Income- Income from Salary

4.1 Overview of all the heads of income with examples. Understanding, features and scope of salary Income. Minimum of Time Scale of Basic Salary, Basic Salary and Salary concepts, Valuation of perquisites, allowances and benefits provided by an Employer such as Accommodation, Conveyance, Medical Charges, Hospital Charges or Medical Allowance, Loan to Employees, Special Allowance, Provident Fund etc.

4.2 Computation of Salary Income, Deductions from total Income, Calculation of Gross Tax, Block of Income under FTR, Block of Income under separate block, Tax Credits.

4.3 Average Relief, Other Related Income and Numerical Demonstration of salaried individuals.

Unit-V: Computation of Income from Property

> 5.1 Understanding the concept of Income from Property, Concept and Calculation of Rent Chargeable to Tax (RCT), Admissible Deductions and Numerical Demonstration.

Unit-VI: Computation of Income from Business

6.1 Understanding the concept of income from business, Taxability of business income, Income from business exempt from tax, income from speculation business, admissible and inadmissible deductions.

Unit-VII: Computation of Income from Capital Gain

7.1 Capital and revenue items, Concept of income from capital gains, Computation of capital gains, Deductions of capital losses, Capital gains on disposal of securities, Exempt capital gain and numerical demonstration.

Unit-VIII: Computation of Income from Other Sources

8.1 Understanding the concept of Income from other sources, Examples of Income from other Sources, Examples of Income, Profits and Gains not taxable under the particular Heads Rather Treated as income from Other Sources, Admissible Deductions.

Unit-IX: Income Tax Allied Topics

9.1.1 Income tax Authorities, Assessment Procedure, Set Off and Carry Forward of losses, Appeals etc.

Unit-X: Computation of Income from Business -Assessment of Non-Salaried Individuals, Association of Persons (AOP) and Company

10.1 Assessment of Non-Salaried Individuals, AOP and Company based on different heads of income under Income Tax Ordinance 2001. Practical Problems of the above-mentioned persons.

Unit-XI: Sales Tax Act 1990

11.1 History of Sales Tax Act, Scope of Sales Tax Laws, Components of Sales Tax Laws

11.2 Definitions of Terms (Section2) – All definition in section 2

11.3 Registration

> 11.3.1 Requirement of Registration, Applicability of Rules, Application for Registration, Attachments to the Application.
>
> 11.3.2 Types of Registrations, Temporary Registration, Compulsory Registration, Change in the Particulars of Registration, Transfer of Registration, De Registration, Black Listing and Suspension of Registration

11.4 Furnishing of Sales Tax Returns

Unit-XI: Taxation on E-Commerce

> 12.1 E-Commerce Policy of Pakistan 2019
>
> 12.2 Scope of taxation and issues

12.3 E-Commerce Regulations and taxation structure

Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar
7.1 Assignment regarding applicability of income tax rules/return will be given after midterm examination.
7.2 Assignment regarding applicability of sales tax rules/return will be given after midterm examination.
7.3 Two quizzes will be taken from midterm course contents and 2 quizzes will be taken from final term course contents.
Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
3. CAF-06 Principles of Taxation by ICAP.
4. Mirza Munawar Hussain, Synopsis of Taxes in Pakistan, IBP Publications.
5. Muhammad Muazzam Mughal, Income Tax: Principles and Practice, Syed Mobin Mahmud & Co, Lahore.
6. Muhammad Muazzam Mughal, Sales Tax, Syed Mobin Mahmud & Co. Lahore.
Suggested Readings
Books and Reports
1. Govt. of Pakistan, Income Tax Ordinance 2001, Sales Tax Act 1990 and relevant laws.
2. R.I. Naqvi, Income Tax Law. Taxation House, Lahore.
3. Khawaja Amjad Saeed, Income Tax Law with Practical Problems, Accountancy and Taxation Services Institute, Lahore.
4. Luqman Baig, Income Tax Law, Ghazanfar Academy, Karachi.
10.2 Websites
<div align="center">www.fbr.gov.pk</div>

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Principles of Marketing
Course Code: BEC-222   Credit Hours: 03
Program: BS E-Commerce   Semester: 04

Introduction of the Course (100-150 words)
This course provides basic understanding of marketing and its relevance to the modern business enterprise. This course enables student to understand marketing process, marketing planning, marketing research, consumer markets and buying behavior, market segmentation, product mix, product planning and development, branding, price determination and strategies, retailing, promotional program, advertising and sales promotion.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-112 IT, Business, and Society

Course Learning Outcomes
1. Understanding marketing concepts relevant to modern day business
2. Develop ability to design and execute marketing strategy
3. Learning to use 4Ps of marketing

 Course Contents:

Unit-I: Introduction
1.1 Marketing, its scope and core concepts
1.2 Major trends and forces that are changing the marketplace in modern age
1.3 Marketing strategy and its elements
1.4 Working with partners to create and deliver customer value
Unit-II: Marketing Environment
2.1 Micro and macro environmental factors
2.2 Understanding how changes in demographic and economic environment affect marketing decisions
Unit-III: Managing Marketing Information
3.1 Marketing information and importance of information to the company
3.2 Marketing research, its scope and value
Unit-IV: Consumer markets and behavior
4.1 Consumer markets and their functions
4.2 Consumer buying behavior, its elements, and relevance to marketing
4.3 Internal and external factors that influence consumer buyer behavior
Unit-V: Market Segmentation
5.1 Market segmentation, its relevance and importance
5.2 Market Targeting, progress and importance
5.3 Building competitive advantage through differentiation and positioning
Unit-VI: New product development
6.1 New product development, scope and process
6.2 Implications for marketing
Unit-VII: Branding

7.1 Concept of product and services in marketing

7.2 Branding and its application in marketing strategy

Unit-VIII: Pricing

8.1 Concept of pricing in marketing

8.2 Importance of price in today's fast changing environment

8.3 Major strategies for pricing imitative and new products.

Unit-IX: Distribution and its Channels

9.1 Distribution channels in marketing

9.2 Functions and organization of distribution channels

9.3 Retailing and wholesaling in distribution channels

Unit-X: Promotion Mix

10.1 Promotion in marketing

10.2 Communication process and effective promotion

10.3 Advertising and selling

10.4 Tools of promotion

Unit-XI: Digital Marketing

10.1 Digital marketing, media, and its relevance to modern market place

10.2 Tools of digital marketing

Teaching-Learning Strategies

Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:

1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class
    Participations and Discipline etc.   25 %

Textbooks

In the detail course outline, one may mention chapters of the textbook with the content topic(s).

7. Principles of Marketing 13th Edition (A South Asian Perspective) by Kotler, Armstrong, Agnihotri and Haque.

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title:	Financial Management		
Course Code:	BEC-223	Credit Hours:	03
Program:	BS E-Commerce	Semester:	04

Introduction of the Course (100-150 words)
This is an introductory course and first in the series of finance courses. After studying this course, the students would be able to develop a basic understanding of financial decision making by a financial manager in a business organization. This course will also provide the students to learn about financial markets mechanism, cash flows of business firms, financial planning and budgeting. The students would also be get benefited to know about the various techniques of financial statements analysis and its application for business decision making. To learn about the application of time value of money concept and its practical problems is also important for a finance learner. The students would also know about working capital management. Current assets and current liabilities management and its impact on liquidity and profitability.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-112 Business Mathematics
BEC-123 Financial Accounting II

Course Objectives
1. To learn about financial markets mechanism, cash flows of business firms.
2. To Know and learn about financial planning and budgeting process.
3. To learn about the application of time value of money concept and its practical problems.
4. To know about working capital management, Current assets and current liabilities management and its impact on liquidity and profitability.

Course Learning Outcomes
1. This course will provide the students to learn about financial markets mechanism, cash flows of business firms, financial planning and budgeting.
2. The students would be able to learn about the application of time value of money concept and its practical problems.
3. The students would also know about working capital management, Current assets and current liabilities management and its impact on liquidity and profitability

Course Contents:

Unit-I: Financial Management
1.1 Introduction to financial management, significance of financial management, relationship with other fields, career opportunities in financial management. Financial management and goal of a business firm, agency problem, corporate governance, corporate social responsibility, ethics and firm's goal, role of financial manager in a business firm.
1.2 Financial environment and financial markets, financial intermediaries, financial brokers, allocation of funds in the economy and interest rate fundamentals.

Unit-II: Financial Statements Analysis
2.1 Financial reporting, users of financial statement analysis, ratio analysis, common size analysis (vertical analysis), comparative analysis, trend analysis and index analysis (horizontal analysis). Types of comparisons.
2.2 Liquidity Ratios, understandings and decision making by using current ratio, acid test ratio, cash ratio etc.

2.3 Debt Ratios/Solvency/Gearing Ratios, its understanding and decision making by using debt ratio, debt/equity ratio, interest coverage ratio etc.

2.4 Activity/turno8ver/efficiency Ratios and its application in decision making.

2.5 Profitability Ratios and decision making by using these ratios.

2.6 Market Ratios and their uses in decision making.

2.7 Using Excel to calculate ratios

2.8 Limitations of ratio analysis.

Unit-III: Financial planning, forecasting and budgeting

3.1 Concept, need and importance of preparation of cash budget and budgeted financial statements, master budget, zero base and incremental budgeting concepts, estimating sales and concept for preparation of cash budget.

3.2 Pro-forma income statement and statement of financial position, methods for preparation and practical use of these financial statements.

3.3 Sensitivity and scenario analysis in cash budget and pro-forma financial statement.

Unit-IV: Time Value of Money

4.1 Introduction, simple interest and compound interest concepts, time line, compounding and discounting.

4.2 Calculation of future value and present value of single amount, annuity and mixed stream. Calculation of present value of perpetuity.

4.3 Amortizing loan, deposits to accumulate some future sum, finding missing rate of return and time periods.

4.4 Nominal and effective interest rates concepts.

4.5 Using Excel to calculate PV, FV, i, n, and PMT

Unit-V: Working Capital Management

5.1 Working capital overview and its practical importance, gross and net working capital, positive and negative working capital concept, its relationship with liquidity and profitability.

5.2 Cash and marketable securities management, accounts receivable management managing credit policy, collection policy, credit selection and credit standards, cost benefit analysis and decision making.

5.3 Inventory management, techniques for managing inventory in a business firm, ABC, EOQ, evaluating bulk purchase and EOQ purchase, just in time methods for managing inventory.

5.4 Accounts payable management in a business firm. Evaluating discount offering by the suppliers of merchandise and cost of giving discount, managing other payables and accruals.

Unit-VI: Risk and Return

6.1 Understanding risk, return, and risk preferences

6.2 Learning to measure risk of a single asset and portfolio

6.3 Basics of CAPAM

Unit-VII: Capital Budgeting

7.1 Basic rules

7.2 Cash flow estimation – Initial investment, Operating Cash flows, Terminal Cash flow

7.3 Evaluation of capital budgeting projects – PBP, DPBP, ARR, PI, NPV, IRR, MIRR

7.4 Risk analysis – Sensitivity analysis, scenario analysis, decision tree and joint probabilities

7.5 Real options and evaluation

7.6 Using Excel for capital budgeting – CF estimation and evaluation

Unit-VIII: Application of python in Finance

8.1 Introduction to finance in python

8.2 Excel vs. python

8.3 Using python for financial calculations

Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar
7.1 Ratio analysis for a real company listed in PSX after Unit-2
7.2 Using TVM in Excel after Unit-4
7.3 Estimation and evaluation of cash flows for a business idea after Unit-7

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. Financial Management: Theory and Practice by Brigham, Eugene and Ehrhardt, M.,
2. Principles of Managerial Finance by Lawrence J Gitman
3. Foundations of Finance by Arthur J. Keown, John D. Martin, and J. William Petty
4. Corporate Finance, by Ross, Westerfield and Jaffe, 9th Edition, McGraw Hill, 20(RWJ)

Suggested Readings
Books
Van Horne J.C., Fundamentals of financial management, Latest edition, Pearson Education.
10.2 Journal Articles/ Reports
1. The Economist
2. Charted Financial Analyst Journal
3. The Financial Times
4. Business Recorder
5. The Financial Daily

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Computer Networks
Course Code: BEC-224   Credit Hours: Theory (03) + Lab (01)
Program: BS E-Commerce   Semester: 04

Introduction of the Course (100-150 words)
This introductory course on Networks aims to provide general knowledge of computer networking in a semi technical manner. Development of Computer network is pervasive which include home, office and small business. It has become very essential for the business manager to have basics of computer networking to keep their organization on progress track. Computer Network is playing the most important role in the growth of organization.
Its focus is on the basic standards, Communication Media, Protocols, Internetworking, Internet, Network management and Network Security.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-114 Introduction to Information Technology

Course Learning Outcomes
After the completion of this course, it is expected that students who will involve themselves in the knowledge baseworking of the course will be capable to
1. Have a unified view of data communications and computer networks.
2. Understand the layered architecture approach with reference to OSI Model.
3. Be aware of the characteristics of different transmission media.
4. To distinguish between different network devices.
5. Have the basic concepts of circuit and packet switched networks.
6. Recognize Assign and Performing IP addressing.

Course Contents:

Unit-I: Network and Network Applications
1.1 Network Uses
1.2 Network Benefits
1.3 Client and Servers
1.4 Network Disadvantages
Unit-II: Some Useful Terms
2.1 Serial vs. Parallel Communication
2.2 Circuit Switching vs. Packet Switching
2.3 Frequency Modulation vs. Amplitude Modulation
2.4 Simplex, Half Duplex and Full Duplex Comm.
2.5 Synchronous vs. Asynchronous Data Transfer
Unit-III: Topologies Bus TopologyStar Topology
3.1 Ring Topology Mesh Topology
3.2 Hybridized Topologies

Unit-IV: Medium
4.1 Guided Media
4.2 UTP Cable and STP Cable
4.3 Fiber Optic Cable
4.4 Unguided Media
4.3 Microwave Communication
4.4 Radio waves Communication
4.5 Infrared and Bluetooth
Unit-V: Network Models
5.1 OSI Standards
5.2 7-Layers and DescriptionTCP/IP Suit
Unit-VI: LAN Signaling & Access
6.1 Signaling
6.2 Baseband & BroadbandAccess
6.3 CSMA/CDCSMA/CA
6.4 Token Passing, Ring, Bus
Unit-VII: Brief Introduction to LAN Standards
7.1 IEEE Ethernet Standard
7.2 IEEE Wireless Standard
Unit-VIII: Inter Connecting Devices
8.1 Repeaters, Bridges, Routers and Gateways
8.2 Virtual LANs
Unit-IX: Interoperability - Protocol Suits, TCP/IP
9.1 Windows/NT
9.2 Novell Netware
Unit-X: Network Addressing
10.1 Internet Address
10.2 Classful Address
10.3 Classless Address
Unit-XI: Brief Intro to Some Useful Protocols
11.1 SMTP, FTP, HTTP, TCP, UDP, IP, ARP, RARP, ICMP, IPv6
Unit-XII: Network Security and Management
12.1 Private Key Cryptography
12.2 Public Key Cryptography
12.3 Digital Signatures
12.4 Key Management
12.5 IP Level Security IPSec Transport Layer Security TLS Application Layer Security: PGP, Firewalls and Virtual Private Networks
Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class
    Participations and Discipline etc.   25 %

Textbooks

In the detail course outline, one may mention chapters of the textbook with the content topic(s).

1. Data Communications and Networking by Behrouz A Forouzan Bold 3rd Edition ISBN: 9780071232418

2. Computer Networks by Andrew S Tanenbaum 4th Edition, ISBN 978-0130661029

3. Local Area Networks by Peter Hodson ISBN: 9780826458667

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title:	Web Technologies	
Course Code:	BEC-225	Credit Hours: 03
Program:	BS E-Commerce	Semester: 04

Introduction of the Course (100-150 words)
The focus in this course is on the World Wide Web as a platform for interactive applications, content publishing and social services. The development of web-based applications requires knowledge about the underlying technology and the formats and standards the web is based upon. In this course you will learn about the HTTP communication protocol, the markup languages HTML, XHTML and XML, the CSS and XSLT standards for formatting and transforming web content, interactive graphics and multimedia content on the web, client-side programming using Javascript.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-124 Programming Fundamentals

Course Learning Outcomes
After the completion of this course, it is expected that students who will involve themselves in the knowledge baseworking of the course will be capable to
 1. History and development of the World Wide Web and associated technologies.
 2. The client-server architecture of the World Wide Web and its communication protocol HTTP/HTTPS.
 3. Formats and languages used in modern web-pages: HTML, XHTML, CSS, XML, XSLT, Javascript, DOM
 4. Programming web pages with Javascript/DOM (client)
 5. Good design, universal design, multi-platform web applications
 6. Be able to understand the technologies, business models and societal issues of semantic web.

Course Contents:

Unit-I: Introduction to Web, WWW
1.1 Introduction to subject
1.2 Introduction to world wide web
1.3 History of languages and developers
Unit-II: Introduction to Web Technologies
2.1 Web protocols, http, ftp, url, web browsers etc
2.2 Client and server environment
Unit-III: An overview about HTML (Basic Tags)
3.1 Creating html pages
3.2 Html structure, Tables, Listing, Div, Span etcFrames, Tables, Links etc
Unit-IV: Introduction to Cascading Style Sheet (CSS)
4.1 Selectors and CSS background properties
Unit-V: Introduction to Javascript
5.1 Introduction to javascript

5.2 How javascript works with HTML elements
5.3 Javascript for client and server side
Unit-VI: Introduction to PHP
6.1 Introduction to PHP, Use of Get, Post and request method
6.2 Developing Dynamic web pages
6.3 Array and loops
6.3 Use of associative array and foreach loop in PHP
Unit-VII: Introduction to Database and connectivity
7.1 Introduction to database
7.2 SQL basic queries for, insert, delete and update database
7.3 Database connectivity using PHP/MS Access
7.4 Database connectivity with web pages
Unit-VIII: Overview of Object-Oriented Programming
8.1 Exception handling, JDBC
8.2 Reading and writing data on stream

Unit-IX: Web site hosting
9.1 Domain and hosting
9.2 IIS server HELM and C Panel
Unit-X: Data Description and Transformation
10.1 XML, XSL, DOM
Unit-XI: Secure web application
11.1 Web security protocols
Unit-XII: Latest Technologies and Tools
Latest technologies and tools
Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class
   Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. Learning PHP,MySQL, Javascript, CSS and HTML
2. Head First PHP and MySQL
3. PHP and MySQL Web Development

Software and tools
        Adobe Dreamweaver

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Digital Business Models and Markets
Course Code: BEC-311   Credit Hours: 03
Program: BS E-Commerce   Semester: 05

Introduction of the Course (100-150 words)
Modern business landscape has been transformed by digitization and virtualization. Modern businesses do not need physical location, infrastructure, and workspace. This course introduces students to the digital business models and markets and enable them to understand their functionality, organization, and value chains. The course has tries to embed modern day examples of digital business models to elaborate contemporary forms of businesses and their organization. Lastly, the course also sheds some light on the organization of digital markets.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-115 IT, Business and Society

Course Learning Outcomes
1. Understanding the concept of business models and their relevance to the decision making
2. Learning distinguishing features of digital businesses and markets
3. Understanding various forms and classifications of digital business models
Course Contents:

Unit-I: Digital Businesses and Markets
1.1 Nature and organization of digital businesses and markets
1.2 Actors, interaction patterns, and value exchange in digital businesses and markets
1.3 Activities of digital businesses
1.4 Digital user structure
1.5 Critical success factors of digital businesses
1.6 Mobile business
1.7 Social media business
Unit-II: Business Models
2.1 Traditional business models: Brick and mortar structure
2.2 Classifications of business models
2.3 Integrated business models
2.4 Levels and goals of business models
Unit-III: Digital Business Technology and Regulations
3.1 Digital business technology: Client server interaction, web services, www technologies, digital business architecture
3.2 Human machine interaction
3.3 Digital business security: cyber security, threats in computer networks, cryptography, block chain
3.4 Digital payment systems and processes
3.5 Regulating digital businesses
Unit-IV: Internet of Things
4.1 Internet of Things: introduction, scope and infrastructure
4.2 Application of IoT: factories, cities and human, retail environments etc.

4.3 Success factors of IoT

4.4 IoT, robotics, and industrial automation

4.5 IoT behavior: industry and consumer

Unit-V: Artificial Intelligence, Big data, and cloud computing

5.1 AI services and applications

5.2 Big data: relevance and growth

5.3 Cloud computing: relevance and value

Unit-VI: Digital Ecosystem, disintermediation, and disruption

6.1 Digital Ecosystem: structure and functioning

6.2 Organizational and operational model of digital ecosystem

6.3 knowledge creation, value creation, and value capture in digital ecosystem

6.4 Digital disintermediation: scope and role in value creation

6.5 Cost benefit analysis of digital disintermediation

6.6 Digital disruption: Case of nextflix

Unit-VII: B2C business models

7.1 Classifications and scope

7.2 Content business model

       7.2.1Value chain, assets, and competencies

       7.2.2 Application of content business model: e-information, e-entertainment, e-infotainment, e-education

       7.2.3 Case studies: Wikipedia, YouTube

7.3 Commerce business model

       7.3.1 Value chain, assets, and competencies

       7.3.2 Application: e-attraction, e-negotiation, e-transaction, e-tailing

       7.3.3 Case studies: eBay, Amazon

7.4 Context business model

       7.4.1 Value chain, assets, and competencies

       7.4.2 Application: e-search, e-catalogue

       7.4.3 Case study: bing

7.5 Connection business model

       7.5.1 Value chain, assets, and competencies

       7.5.2 Application: intra-connection, inter-connection

       7.5.3 Case study: LinkedIn

7.6 Hybrid Business models

       7.6.1 nature and drivers of hybrid business models

       7.6.2 Case: Google

Unit-VIII: B2B Business Models

8.1 Digital sourcing business model: Value chain, core assets, and core competencies

8.2 Digital sales business model: Value chain, core assets, and core competencies

8.3 Digital supportive collaboration business model: Value chain, core assets, and core competencies

8.4 Digital service broker business model: Value chain, core assets, and core competencies

Unit-IX: Digital Strategy and E-Commerce

9.1 Forces of digital strategy

9.2 Digital business value chain

9.3 Strategy development for e-businesses

9.4 Digital leadership

9.5 Digital transformation

9.6 Digital organizations
9.7 Digital teams
9.8 Digital marketing strategy and marketing mix
9.9 Digital procurement
9.10 Digital business implementation
Unit-X: Online markets
10.1 Online markets: Nature and scope
10.2 Organization of online markets
10.3 Players in online markets
10.4 Trading in online markets: value vs threats

Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments
Assignments- Types and Number with calendar
  1. **Assessment and Examinations:**
     Mid-Term   Written Paper   35 %
  2. Final Examination   Written Paper   40 %
  3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class
     Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. Digital Business and Electronic Commerce: Strategy, Business Models and Technology by Bernd W. Wirtz, Springer.
2. Digital Business models: Concepts, models, and the Alphabet case studies by Bernd W. Wirtz, Springer.
3. Platform Revolution: How Networked Markets are Transforming The Economy—And How To Make Them Work For You by Geoffrey G. Parker, Marshall W. Van Alstyne, and Sangeet Paul Choudary, W. W. Norton & Company

Suggested Readings
Books
> Digital Business Models: Driving Transformation and Innovation edited by Annabeth Aagaard, Springer

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Digital Marketing
Course Code: BEC-312   Credit Hours: 03
Program: BS E-Commerce   Semester: 05

Introduction of the Course (100-150 words)
Digital marketing expands scope of marketing activity to digital landscape. The course provides an understanding of contemporary form of marketing using digital technology. Internet has opened new horizons for marketing and selling. This course covers concepts and tools of marketing activity that are useful in modern digital age. The course teaches students to use tools of digital marketing like social media, SEO, and data analytics.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-222 Principles of Marketing

Course Learning Outcomes
1. Learn scope of marketing activities in digital world.
2. Learn to use different tools of digital marketing.
3. Explain the role of digital tools in various marketing functions like promotion and product distribution.
4. Assess performance of digital marketing activities through calculation of ROI.

Course Contents:

Unit-I: Introduction
1.1 Digital marketing and strategy: Scope, evolution, and application
1.2 Traditional vs. digital marketing: 4Ps, Porter's five forces, brand or perceptual positioning map, customer lifetime value, segmentation, BCG matrix
1.3 Digital Ecosystem
1.4 Implications for organizational strategy
Unit-II: Nature of digital consumer
2.1 Digital consumer: Evolution, nature, and implications
2.2 Digital consumer behavior
2.3 Technology and digital consumer
2.4 Fashion, trends, and digital consumer
Unit-III: Digital Marketing Strategy and Tools
3.1 Information dissemination and digital technologies
3.2 Digital technologies and persuasion
3.3 Digital technologies and branding
3.4 Tools of digital marketing strategy: Website, content marketing, SEO, social media marketing, Good Ads, Google Analytics, affiliate marketing, mobile marketing, neuro marketing, ad targeting, programmatic advertising
Unit-IV: Website
4.1 Creating a website: nature, use, value, and communication
4.2 Design of a website: Utility and usability
4.3 User centric designs: Web 2.0, and beyond

4.4 Content on website
Unit-V: SEO
5.1 Search Engine Optimization: Introduction, value, and scope
5.2 Crawlers: Functioning and implications
5.3 Content and SEO: key words, google AdWords, link building
5.4 Website Optimization: On-page and off page optimization
5.5 SEO and video content – YouTube
Unit-VI: Content Marketing
6.1 Content marketing and digital media
6.2 Content marketing Eco System
6.3 Content marketing strategy and tools: Blogs, viral marketing, emails, social media, forums, videos
6.4 Software for content marketing
6.5 Video content creation: YouTube, TickTok etc.
6.6 Earning through content creation: YouTube, Blogging etc.

Unit-VII: Email Marketing
7.1 Nature and scope
7.2 Bulk emails and effectiveness
7.3 Software for bulk emails
7.4 Spam and related considerations
Unit-VIII: Paid Search Strategy
8.1 Paid search strategy: Scope and usability
8.2 Campaign management and social media
8.3 Displaying advertisement and programmatic targeting
8.4 Search and display advertising and campaign optimization
8.5 Programmatic buying using Google AdWords
8.6 Advertising campaigns on social media: Facebook, Twitter, Instagram, and YouTube
8.7 Pay per click: uses and effectiveness
8.8 Media planning and Budgeting
Unit-IX: Online Audience Management
9.1 Online Audience Management: Scope, value, and implications
9.2 Tracking and aligning online audience
9.3 Google Analytics: Application and utilization
9.4 YouTube Analytics: Application and utilization
Unit-X: Social Media Marketing Strategy
10.1 Using social media for marketing communications
10.2 Use and effectiveness of different social media platforms: FaceBook, Twitter, YouTube, Linked In.
10.3 Attracting, retaining, and engaging followers – Buzz and influencer marketing strategies
10.4 Creating and managing campaigns on social media: FaceBook, Twitter, YouTube, Linked In.
10.5 Budgeting, costing, and evaluation of social media marketing campaigns
10.6 Optimizing campaigns and maximizing ROI
10.7 Measuring campaign success: web analytics, social media metrics
Unit-XI: Mobile Marketing
11.1 Mobile marketing: nature, scope and implications
11.2 Location based marketing

11.3 Text message marketing: Masking and branding
11.4 What's app marketing and selling
11.5 Conversational marketing
Unit-XII: E-Commerce Marketing
12.1 E-Commerce marketing: Scope and activities
12.2 Online listing and selling services
12.3 Affiliate marketing
12.3 ebay model
12.4 Amazon model

Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class
    Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. Digital Marketing Strategy: An Integrated Approach to Online Marketing by Simon Kingsnorth by Kogan Page Publishers
2. Digital Marketing 2020: Grow Your Business with Digital Marketing by Danny Star
3. Digital Marketing For Dummies by Ryan Deiss, Russ Henneberry, John Wiley & Sons

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Entrepreneurship
Course Code: BEC-313   Credit Hours: 03
Program: BS E-Commerce   Semester: 05

Introduction of the Course (100-150 words)
This course focuses on building entrepreneurial capabilities of business and commerce students. The course is tailored towards entrepreneurial initiatives within domain of E-commerce and virtual environment. The course encourages students to develop an entrepreneurial mindset and pursue self-employment by using modern information and communication technologies.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-115 IT, Business, and Society

Course Learning Outcomes
1. Learning how the internet and e-commerce adds value to an entrepreneur's industry and business
2. Identify and assess e-commerce opportunities and initiative(s) which will be most beneficial for the entrepreneur's industry.
3. Developing confidence to evoke entrepreneurial intentions of students
4. Evaluating critical success factors for maximizing e-commerce initiatives relating to the entrepreneur's business.

Course Contents:

Unit-I: Introduction
1.1 E-Business and Ecommerce: Basic elements, scope, and differences
1.2 Adopting E-Business: Scope, value, and potential
1.3 Emerging trends: Internet, social media, online shopping, forms of online businesses
1.4 Challenges and barriers
Unit-II: Development of Business Plan
2.1 Why business plan?
2.2 Components of a business plan
2.3 Feasibility and viability
2.4 Issues, pitfalls, and common mistakes
2.5 Business model, strategic management, and value chain
2.6 Financing, sales forecasts, competitive advantage, location, and other aspects of business plan
Unit-III: Ethical Issues in E-Business
3.1 Importance of Ethics
3.2 Cyber ethics
3.3 Problems in e-business related to ethical issues
3.4 Security issues in e-commerce, security risks, concepts of encryption, certificate, public key, private key, firewall, etc.
Unit-IV: E-Business models and operations
4.1 Various forms of E-Business - e-market, electronic store, e-mall, intermediary

4.2 Importance of internet – domain registration, hosting, SEO, attracting online traffic, search engine optimization, keywords and description and its importance

4.3 Building web site – related issues: design issues, development issues, constraints and limitations

4.4 Integration of traditional business functions with E-Business

Unit-V: Storefront

5.1 Storefront: Meaning and application in E-commerce

5.2 Online catalogs and their type

5.3 Issues of catalog – Design issues, Development issues.

5.4 Search engine to support getting required product.

Unit-VI: Shopping cart

6.1 Shopping cart: Meaning and application in E-commerce

6.2 Types of shopping carts

6.3 Checkout system

6.4 Payment gateway

6.5 Selection of third party service provider

6.6 Issues related to online payments

6.7 Delivery mechanism and issues

Unit-VII: E-Business strategy

7.1 Appropriate strategy process model for e-business

7.2 Tools to generate and select e-business strategies

7.3 Outline alternative strategic approaches to achieve e-business goals

Unit-VIII: Supply chain management in E-Businesses

8.1 Elements of supply chain management and their relationship to the value chain and value networks

8.2 Assess the potential of information systems to support supply chain management and the value chain

8.3 E-procurement – process, pros and cons

8.4 Business inventory management, integrating inventory system to e-commerce site, problem and issues related to it

8.5 Organizational information system and integration of procurement function

Unit-IX: Marketing of E-business

9.1 Website development and design elements

9.2 Need for a specialized marketing strategy for e-business

9.3 Online marketing and Social media marketing

Unit-X: Customer Relationship Management in Virtual Environment

10.1 Customer relationship management and its value

10.2 Methods of acquiring customers via electronic media

10.3 Evaluation of different buyer behavior amongst online customers

10.4 Describe techniques for retaining customers and cross-and up-selling using new media

10.5 Customer support system, chat, ticket system, issues related to customer support

Unit-XI: Financial Management in E-Businesses

11.1 Financing options – Crowdfunding, seed funding, venture capitalists

11.2 Sales and cash flow forecasting – Sales and cash flow budget

11.3 Receiving payments – PayPal, digital wallets, credit cards, crypto currency

Unit-XII: Sustainability and E-Commerce

12.1 Sustainability – meaning, scope, and application

12.2 E-Businesses and sustainability

12.3 Role of e-commerce in achieving sustainability goals

Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class
   Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. E-Business and E-Commerce Management: Strategy, Implementation and Practice by Dave Chaffey (5th Edition) 2014
2. Electronic Commerce. A Managerial Perspective by Efraim Turban and Jon Outland, 9th edition, 2017.
3. Creating A Winning E-Business by H. Albert Napier, Ollie N. Rivers, Stuart W.Wagner, and JB Napier

Suggested Readings
Books
   Essentials of Entrepreneurship and Small Business Management by Zimmerer, Thomas.W. 5th Edition 2009.

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Information Security
Course Code: BEC-314   Credit Hours: 03
Program: BS E-Commerce   Semester: 05

Introduction of the Course (100-150 words)
This course provides an insight into network security. Starting with a discussion of possible threats to secure communication on a public network, we study various mechanisms that are employed to counter these threats. These include cryptographic algorithms, and protocols for authentication and signature analysis, public key systems, confidentiality, integrity and non-repudiation. Internet and Web security concepts and protocols including SSL, SHTTP, TSP, SET, Electronic Money, Email Security, WAP security will be discussed in detail. Network security topics including fire walls, IP security, and Virtual Private Networks (VPNs) will also receive attention.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-224 Computer Networks

Course Learning Outcomes
Upon completion of the course the student will be able to:
1. Gain insight into the field of cryptography
2. Recognize security criteria for the network, and Web Security
3. Understanding the design and working of cryptographic algorithms
4. Security weaknesses and implementation of security measures in E-mail, IP addressing, web and networks in general.
5. Understand Public Key systems and protocols and their implementations in various networks.

Course Contents:

Unit-I: Introduction
1.1 Security Trends
1.2 The OSI Security Architecture
1.3 Security Attacks and Services.
1.4 Security Mechanisms
1.5 A Model for Network Security
Unit-II: Encryption
2.1 Classical Encryption Techniques, Block Cipher and the Date Encryption Standard
2.2 Symmetric Cipher Model
2.3 Substitution Techniques
2.4 Rotor Machines and Steganography
2.5 Block Cipher Principles and The Data Encryption Standard
2.6 The Strength of DES
2.7 Differential and Linear Cryptanalysis

8.5 Application and Operating Software Weaknesses
8.6 Weaknesses in the IP Suite of Protocols
Unit-IX: Microsoft RAS and VPN Windows 2012 Server
9.1 Managing Security Via Object Properties
9.2 Managing Security Via Group Membership
9.3 Active Directory Object Permissions
9.4Domain Trust Relationship
9.5 How to Configure a PPTP Device
.6 How to Configure L2TP
Unit-X: Securing Your Network with Microsoft Proxy Server
10.1 Web Proxy Service
10.2 Winsock Proxy Service
10.3 SOCKS Proxy Service
10.4 Reverse Proxy
10.5 Setting Up Proxy Server
10.6 Trouble Shooting Proxy Server
10.7 Security Strategies
10.8 Implementing the Network Security Policy
10.91 PIX Configuration Examples
Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments
Assignments- Types and Number with calendar
Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class
   Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. Cryptography and Network Security –Seventh Edition-- principles and practices by William
   Stallings. ISBN 13: 978-1-292-15858-7
2. Cryptography and Network Security –Seventh Edition-- principles and practices by William
                        Stallings. ISBN 13: 978-1-292-15858-

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Mobile Application Development
Course Code: BEC-315   Credit Hours: 03
Program: BS E-Commerce   Semester: 05

Introduction of the Course (100-150 words)
Mobile application development has become an exciting skill and a lucrative career. Everything that is needed to develop and manage a mobile application will be taught, and practiced in the course. Ideal candidates are people looking to learn a highly employable skill, or people looking to move from allied fields like digital marketing or web development.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-124 Programming Fundamentals

Course Learning Outcomes
At the end of this course, students will be able to independently make a small mobile app for android and iOS that makes use of database, with due regards and appreciation of analytics tracking, user authentication, app notifications, design principles, user experience, mobile app marketing, user engagement and growth, and monetization. Students will also be encouraged on how to find job placements and/or part-time work in app development field.

Course Contents:
Unit-I: Introduction
1.1 Intro about components of any software program.
1.2 Building Blocks and Common Errors.
1.3 Downloading pre-requite software to student's computers, namely: Flutter, IDE (Android Studio or Visual Studio Code), and Xcode (optional)
1.4 GUI on portable devices. To-do-Lists without Databases.

Unit-II: Database
2.1 Database: using firebase as a database.
2.2 Learning CRUD: Create, Read, Update and Delete operations on a database.
2.3 Using database operations learned.
Unit-III: Testing Software
3.1 Importance of unit testing of the software
3.2 Practical Assignment
Unit-IV: User Experience design
4.1 User Experience design
4.2 Conceiving core features and sketching the UI design of the app.
4.3 Logging analytics events, creating appropriate notifications etc.
Unit-V: Mobile Game Apps
5.1 Mobile Game Apps
5.2 Crashalytics, human testers and user feedback.
Unit-VI: Practical Project
6.1 Development and testing a Mobile App

6.2 Presentations on the Developed App.

Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class
   Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. Bill Phillips, Chris Stewart, Brian Hardy, and Kristin Marsicano, Android Programming:
   TheBig Nerd Ranch Guide, Big Nerd Ranch LLC, 3rd edition, 2017

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Organizational Behavior and Human Resource Management
Course Code: BEC-316   Credit Hours: 03
Program: BS E-Commerce   Semester: 05

Introduction of the Course (100-150 words)
Building on the foundations of Principles of Management, this course provides basic understanding of the human resource management of modern organizations. It enables students to understand job analysis, recruitment and selection, interviewing and induction, training and development, performance management and appraisal, managing careers and succession planning, compensation design, and employee retention.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-212 Principles of Management

Course Objectives
The course is aimed at the following objectives:
- To make students familiar with the importance of human resource for an organization
- To make students understand the ways of handling/managing human resources to get the best out of them
- To make students familiar with the ways of improving people performance

Course Learning Outcomes
After completion of the course a student should have:
- Good understanding of the conventional and contemporary beliefs about value of human resource for organization
- Ways of identifying the determinants of human behaviors
- Ability to develop a system that improves people performance

Course Contents:

Unit-I: Basics of people management (OB & HRM)
Types of organizational resources, value of human resource, behavioral and managerial perspectives of human resource (OB & HRM integrated model)
Unit-2: Values
2.1 Human values and value system
2.2 Role of value in human behaviors
2.3 Types of values
2.4 Value distribution across cultures
Unit-3: Behavioral perspective of human management – Personality
3.1 Concept of personality
3.2 Contents of personality
3.3 Personality assessment measures
Unit-4: Behavioral perspective of human management – Perceptions
4.1 Concept of perception

4.2 Perception determinants

4.3 Ways of perceiving others

4.4 Perceptual biases

4.5 Affective event theory

Unit-5: Behavioral perspective of human management – Attitudes & Behaviors

5.1 Concepts of attitude & behavior

5.2 Differences between attitudes and behavior

5.3 Determinants of A & B

5.4 Emotions & moods

5.5 Various types of emotions

5.6 Emotions and behaviors

5.7 Emotional intelligence

Unit-6: Behavioral perspective of human management – Power & politics

6.1 Concept of power

6.2 Sources of power

6.3 Influence of power

6.4 Concept of politics

6.5 Political behaviors

6.6 Political skills

Unit-7: Behavioral perspective of human management – Motivation

7.1 Motivation concept

7.2 Determinants of motivation

7.3 Need & process theories of motivation

Unit-8: Managerial perspective of human management – HR planning & forecasting

8.1 Concept of HR planning & forecasting

8.2 Strategic nature of HRM

8.3 Organizational goals and HR goals

8.4 Role of HR department

8.5 Functions of HR manager

8.6 Job analysis and contents of job analysis

Unit-9: Managerial perspective of human management – Recruitment & selection

9.1 Concept of recruitment & selection

9.2 Internal & external sources of recruitment

9.3 Selection process

9.4 Types of selection tools (tests & interviews)

9.5 Conditional and final job offer

Unit-10: Managerial perspective of human management – Orientation and Training & development

10.1 Concept of socialization & orientation

10.2 Need for socialization

10.3 Training need assessment

10.4 Ways of training

10.5 Training evaluation

Unit-11: Managerial perspective of human management – Performance evaluation

11.1 Concept of performance evaluation

11.2 Ways of performance evaluation

12.3 Efficacy of performance evaluation system

Unit-12: Managerial perspective of human management – Compensation management

12.1 Concept of compensation management

12.2 Types of compensation

12.3 Compensation and motivation

Unit-13: Managerial perspective of human management – Employee relations

13.1 Concept of employee relations

13.2 Unionization and collective bargaining

13.3 Various types of unions

13.4 Conflict handling

Unit-14: Managerial perspective of human management – Health & safety

14.1 Concept of health & safety

14.2 Health & safety issues

14.3 Health & safety laws

Teaching-Learning Strategies

The course would/could be both lecture and field work based

Assignments-

Types and Number with calendar

Assessment and Examinations:

1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks

1. DeCenzo, D. A., Robbins, S. P., & Verhulst, S. L. (latest edition). *Fundamentals of human resource management*. John Wiley & Sons.
2. Dessler, G. (latest edition). *Fundamentals of human resource management*. Pearson.

Suggested Readings

Books

➢ Drucker, P. F. (1995). *People and performance: The best of Peter Drucker on management*. Routledge.
➢ Drucker, P. F. (2007). *Management challenges for the 21st century*. Routledge.

10.2 Journals

1. Journal of Organizational Behavior
2. Journal of Management
   3.   Academy of Management Journal

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Business, Intellectual Property, and Cyber Laws
Course Code: BEC-321   Credit Hours: 03
Program: BS E-Commerce   Semester: 06

Introduction of the Course (100-150 words)
This course provides basic understanding of the legislative environment and its principles that are applicable to business and E-Commerce in Pakistan. It also provides an overview of the laws related to businesses and corporations. More specifically, it covers Contract Act 1872, intellectual property laws like Copyright law, and Cyber laws in the country.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-115 IT, Business, and Society

Course Learning Outcomes
1. Understanding legal principles applicable to business
2. Develop ability to enter into a formal contract and use legal remedies in case of breach of contract
3. Understand basic frame work of Laws related to Intellectual Property, internet, and e-commerce.

Course Contents:

Unit-I: Legal system of Pakistan
1.1 Sources and process of legislation
1.2 Structure of constitution of Islamic Republic of Pakistan
1.3 Process of legislation as per constitution, structure of courts, and alternate dispute resolution – pros and cons
Unit-II: Contract Act 1872
2.1 Introduction and use
2.2 Basic terminology
        2.2.1 Contract, agreement, and process
        2.2.2 Valid contract, its essentials, and factors influencing validity of contract
        2.2.3 Different types of contracts
2.3 Offer and acceptance
        2.3.1 Types of offer
        2.3.2 Offer and invitation
        2.3.3 Essential elements of offer and acceptance
        2.3.4 Timing of revocation and its communication
        2.3.5 Circumstances under which offer lapses
2.4 Capacity and consideration
        2.4.1 Capacity of parties and circumstances when a person is not competent to contract
        2.4.2 Consequences or enforceability of contracts; not competent to enter into contract
        2.4.3 Consideration and its elements, understanding its rules, identifying agreements
2.5 Free consent and legality of object and consideration
        2.5.1 Free consent, consequences of absence of free consent, factors that affect free consent

2.5.2 Coercion undue influence, fraud, misrepresentation, and mistake

2.5.3 Identifying where object or consideration or object becomes unlawful

2.5.4 Agreements opposed to public policy

2.6 Void, contingent and quasi contract

2.6.1 Void Agreement, circumstances under which agreement becomes void or voidable

2.6.2 Different types of void and voidable agreements

2.6.3 Contingent contracts, their characteristics, rules and its difference with wagering agreement

2.6.4 Quasi contract, its rules, and different kinds

2.7 Performance of a contract

2.7.1 Performance of a contract, its types: actual and attempted

2.7.2 Rules of joint and reciprocal contracts and appropriation for payment

2.7.3 Rules relating to a joint and reciprocal promises

2.7.4 Essentials of a valid tender, defining tender, its types and effects

2.7.5 Factors that may affect performance of a contract

2.7.6 Meaning of appropriation of payment and rules regarding appropriation of payment

2.7.7 Assignment of contracts

2.8 Discharge of a contract and remedies for breach of contract

2.8.1 Meanings of discharge of contract, rules of discharge, and modes of discharge: by performance, by consent, by operation of law, by impossibility of performance, by lapse of time, and breach (actual or anticipatory)

2.8.2 Nature and availability of remedies

2.8.3 Kinds of damages, remoteness of damages, and rules relating to amount of damages

2.9 Indemnity and Guarantee

2.9.1 Contract of indemnity and contract of guarantee and difference between both

2.9.2 Identification of parties in contract of indemnity and guarantee

2.9.3 Rights of indemnity holder

2.9.4 Essentials of contract of guarantee, kinds of guarantee: specific and continuing and revocation of continuing guarantee

2.9.5 Rights and responsibilities of surety, ways to discharge surety

2.9.6 Rules relating to indemnity, guarantee, and surety

2.10 Bailment and pledge

2.10.1 Bailment, essentials to contract of bailment, types of bailment, duties and right of bailer and Bailee, termination of bailment

2.10.2 Rights and duties of finder of goods

2.10.3 Explaining pledge (pawn), pledger (pawnor), pledgee (pawnee), rights of pledger and pledgee

2.10.4 Rules of pledge by non-owner

2.10.5 Difference between bailment and pledge

2.11 Agency

2.11.1 Defining agency, agent, and principal; types of agents; rights and duties of agent and principal; and rules of agency

2.11.2 Differentiating sub agent and co-agent

2.11.3 Creation of an agency

2.11.4 Circumstances where an agent is personally liable

2.11.5 Irrevocable agency

2.11.6 Termination of agency

2.11.7 Undisclosed agency, position of agent, principal and third party

Unit-III: Sale of Goods Act 1930
3.1 Introduction
        3.1.1 Definitions and scope
        3.1.2 Essentials of a contract sales
        3.1.3 Difference between sales and agreement to sell
        3.1.4 Kinds of goods: Existing goods, future goods, contingent goods
        3.1.5 Destruction of goods
        3.1.6 Fixation of price
3.2 Conditions and Warranties
        3.2.1 Definitions and scope and difference between condition and warranties
        3.2.2 Express and implied conditions and warranties
        3.2.3 Doctrine of caveat Emptor and exceptions
3.3 Transfer of Property
        3.3.1 Rules regarding transfer of property
        3.3.2 Sale by Non owner
3.4 Performance of contract of sales
        3.4.1 Delivery of goods, modes and rules of delivery
        3.4.2 Rights and duties of buyer
3.5 Rights of unpaid seller
        3.5.1 Definition, scope, and features of unpaid seller
        3.5.2 Rights of unpaid seller
            3.5.2.1 Rights against goods
            3.5.2.2 Rights against buyer
3.6 Buyer's rights against seller
3.7 Auction sales
Unit-IV: Intellectual Property Laws
4.1 Patents Design Ordinance 2000 and Patent Rules 2003
        4.1.1 Patentability
        4.1.2 Application for patent
        4.1.3 Opposition or grant of patent
        4.1.4 Grant and sealing of patent
        4.1.5 Patents of Addition
        4.1.6 Restoration of lapsed patents
        4.1.7 Revocation and surrender of patents
        4.1.8 Licensing
        4.1.9 Appeals
4.2 Trade Mark Ordinance 2001 and Trade Mark Rules 2004
        4.2.1 Registration of Trade Mark
        4.2.2 Rights conferred by registration
        4.2.3 Infringement of Trade Mark
        4.2.4 Assignment and Transmission of Trade mark
        4.2.5 Use of Trade Mark and Licensees
4.3 Copy Right Ordinance 1962
        4.3.1 Copyright, ownership of copyright, and rights of owner
        4.3.2 Rights of broadcasting organizations and performers
        4.3.3 Rights in Published editions of works
        4.3.4 Licenses
        4.3.5 Registration of Copyrights

4.3.6 International Copyright

4.3.7 Infringement of copyrights

4.3.8 Offences and penalties

Unit-V: Cyber Laws

5.1 Prevention of Electronic Crimes Act, 2016

5.1.1 Offences and Punishments

5.1.2 Investigation Agency and Procedural Powers for Investigation of Cyber Crimes

5.1.3 International Cooperation

5.1.4 Preventive Measures

5.2 e-Commerce policy of Pakistan 2019

5.2.1 Scope

5.2.2 Legislative and legal aspects

Teaching-Learning Strategies

Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:

1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks

In the detail course outline, one may mention chapters of the textbook with the content topic(s).

1. CAF-03 Business Law - Study Text by ICAP
2. Business Law by Khalid Mehmood Cheema

Suggested Readings

10.1 Legislation

1. Contract Act, 1872
2. Sales of Goods Act, 1930
3. Patents Design Ordinance 2000
4. Patent Rules 2003
5. Trade Mark Ordinance 2001
6. Trade Mark Rules 2004
7. Copy Right Ordinance 1962
8. Prevention of Electronic Crimes Act, 2016
9. e-Commerce policy of Pakistan 2019

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Marketing Research and Analytics
Course Code: BEC-322   Credit Hours: 03
Program: BS E-Commerce   Semester: 06

Introduction of the Course (100-150 words)
Modern businesses face tough competition in the market. In order to deal with the competition, businesses need to remain updated with regard to their external environment and also keep up with the demands and requirements of the stakeholders. This course elaborates the process of research and enables students to understand relevance of research in real business situations. This course will focus on modern day research and data analysis requirements of the businesses. The course is more focused on the digital businesses and related research requirements.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-312 Digital Marketing

Course Learning Outcomes
 1. Understanding scope and application of marketing research on modern business dynamics
 2. Learning to collect and analyze data for practical business decisions
 3. Understanding the nature and application of big data in business and marketing decision making
 4. Learning to collect and analyze data from social media sources
 5. Learning to use online tools for marketing and business analyses

Course Contents:

Unit-I: Introduction
1.1 Marketing research: introduction and scope
1.2 Marketing research process
          1.2.1 Problem definition
          1.2.2 development of approach to problem
          1.2.3 Research design basics
          1.2.4 Data collection: qualitative vs quantitative data
          1.2.5 Data handling and analysis: introduction to SPSS
          1.2.6 Drawing inferences, communication, and decision making
1.3 Market research and business decision making
1.4 Marketing research and marketing strategy
1.5 Ethical considerations in marketing research
Unit-II: Research Design and Data Collection
2.1 Research design: Introduction, importance and classifications
2.2 Types of research designs
          2.2.1 Exploratory research
          2.2.2 Descriptive research
          2.2.3 Explanatory/ causal research
2.3 Primary vs. secondary data: uses, merits and demerits
2.4 Qualitative vs. quantitative data: uses, merits and demerits

2.4 Using secondary data in marketing research
        2.4.1 Sources and classifications of secondary data: internal and external sources
2.5 Using primary data in marketing research
        2.5.1 Primary data collection: nature and implications
        2.5.2 FGDs: Nature, types, use, and administration
        2.5.3 Interviews: Nature, types, use, and administration
        2.5.4 Observations: Nature, types, use, and administration
        2.5.5 Surveys: Nature, types, use, and administration
                2.5.5.1 Online surveys: uses, value and construction
                2.5.5.2 Administering surveys through google forms and survey monkey
        2.5.5 Experimentation: Using experiments in marketing research
2.6 Big data and its implications for marketing research
        2.6.1 Bid data: nature and scope
        2.6.2 Sources of big data
        2.6.3 Handling big data to make it useful
2.7 Sampling
        2.7.1 Sampling: nature and implications
        2.7.2 Types of sampling designs
                2.7.2.1 Probability sampling designs: Types, uses, and implications
                2.7.2.2 Non-probability sampling designs: Types, uses, and implications

Unit-III: Data Analysis
3.1 Analysis of qualitative data
        3.1.1 Overview of NVIVO
        3.1.2 Coding and categorization of data: locating themes
        3.1.3 Using queries and other tools for data exploration
        3.1.3 Qualitative research traditions: Ethnographies, case studies, grounded theory, etc.
3.2 Analysis of quantitative data
        3.2.1 Overview of SPSS
        3.2.2 Data types, measurement, and scales
        3.2.3 Descriptive statistics: tabulation, frequencies, measures of central tendency and dispersion
        3.2.4 T-tests and their application
        3.3.5 Correlation and regression
        3.3.6 Cluster analysis and factor analysis
        3.3.7 Conjoint Analysis
3.4 Textual analysis
        3.4.1 Content analysis
        3.4.2 Sentiment analysis

Unit-IV: Big Data Analytics
4.1 Big data: definition, scope, and evolution
4.2 Sources of big data and its users
4.3 Big data platforms and storage
4.4 Utilization of big data in research and business decision making
4.5 Big data analytics and machine learning
4.6 Analysis of big data
4.7 Visualization of big data

Unit-V: Social Media and Data Analytics
5.1 Basics of social media listening
5.2 Social media as source of data
5.3 Collecting data from social media: twitter, YouTube, Facebook, and other specialized forums
5.4 Using Python/R to collect data
5.5 Analyzing and using data
5.6 Using Python/ R to analyze and present data
Unit-VI: Google Analytics, Alexa, and other online platforms and data sources
6.1 Google analytics basics: interface, functions, and uses
6.2 Using google analytics to obtain information
6.3 Using the information for business decision making in online settings
6.4 Alexa: interface, functions, and uses
6.5 Alexa ranking and its mechanics
6.6 Other online platforms: Google Trends and other online traffic sites
6.7 Online campaigns and analysis
Unit-VII: Other tools of marketing analytics
7.1 A/B testing
7.2 Estimation of customer lifetime value
7.3 Application of machine learning: Decision trees, Bagging, Tag clouds, Random forests, Boosting, Ensemble, Regularized regression, Cluster analysis, etc.
Unit-VIII: Ethical considerations
8.1 Ethics and its scope in marketing research
8.2 Data privacy issues in online data collection and handling
8.3 Other ethical considerations

Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. Essentials of Marketing Research: An Applied Orientation by Naresh Malhotra, John Hall, Mike Shaw, Peter Oppenheim, Pearson Prentice Hal
2. Python Social Media Analytics by Siddhartha Chatterjee, Michal Krystyanczuk, Packt Publishing Ltd
3. Learning Social Media Analytics with R by Raghav Bali, Dipanjan Sarkar, Tushar Sharma, Packt Publishing Ltd

Suggested Readings

Books
1. Marketing Analytics: Data-Driven Techniques with Microsoft Excel by Wayne L. Winston, John Wiley & Sons
2. Social Media Analytics Strategy: Using Data to Optimize Business Performance by Alex Gonçalves, Apress

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: International Finance
Course Code: BEC-323   Credit Hours: 03
Program: BS E-Commerce   Semester: 06

Introduction of the Course (100-150 words)
Businesses are operating in an increasingly interconnected global environment. Most businesses today are either directly or indirectly exposed to international competition. Managing such businesses requires understanding of currency risks and global financial environment. This course provides information and analysis on the latest developments in the world of finance, and their implications for business strategies. The main topics covered in this course are: forex markets, international Parity conditions, forex risks, currency derivatives and hedging issues, issues with currency investment strategies, issues with cross border financing decisions and cross border investment decisions.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-223 Financial Management

Course Learning Outcomes
   After completing this course, students should be able to
   1. Demonstrate basic understanding of foreign exchange market and exchange rates
   2. Demonstrate basic understanding of how to use foreign exchange derivatives and other techniques to manage foreign exchange exposures of firms
   3. Demonstrate basic understanding of the issues pertaining to multinational financing and investment decisions
   4. Demonstrate critical and analytical skills wherein they should be able to make sense out of a mass of information to address relevant issues pertaining to international finance

Course Contents:

Unit-I: Introduction
1.1 Introduction and scope International Finance
1.2 Benefits of studying international finance
1.3 Scope and area of international finance
1.4 Role of financial manager in international finance
Unit-II: International Financial Markets   Foreign exchange market
2.1 International money market
2.2 International credit market
2.3 International bond market
2.4 International stock market
2.5 How financial markets facilitates international businesses
Unit-III: Exchange Rate Determination
3.1 Measuring exchange movements
3.2 Exchange rate equilibrium

Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class
    Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. International financial management by Jeff Madura
2. International finance by D. Levi
3. International finance management by Parkash G Apte

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Software Requirement Engineering
Course Code: BEC-324   Credit Hours: 03
Program: BS E-Commerce   Semester: 06

Introduction of the Course (100-150 words)
The course will introduce students how to succeed as a successful requirement engineer
and how to successfully gather crucial and important requirements in the industry and
understand the role of requirements. Students will learn about requirements engineering
cycle and get knowledge about how to select any requirement engineering process
model and related activities such as requirement elicitations, analysis, negotiation etc.
The application of specification, validation and requirement management techniques on
actual projects will be applied. The course will also focus on goal-oriented requirement
engineering and requirement traceability management techniques.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-315 Mobile Application Development

Course Learning Outcomes
    After the completion of this course, it is expected that students who will involve
    themselves in the knowledge base working of the course will be capable to
    1. Understand the basic concepts of software requirements engineering.
    2. Select the appropriate requirements elicitation techniques to identify their
        requirements.
    3. Create a requirements specification to communicate their requirements.
    4. Utilize various RVTs to critically evaluate the requirements and identify defects
    5. Learn requirement management and apply the techniques learned on software
        project.

 Course Contents:
Unit-I: Introduction to Requirements Engineering
1.1 Define Requirements Engineering
1.2 Role of Requirements Engineering
1.3 Importance of Requirements Engineering
Unit-II: Requirements from Customer's Perspective
2.1 Role of Software Customers
2.2 Responsibilities of Software Customers
2.3 Cosmic Truths about Software Requirements
Unit-III: Requirements Engineering Process
3.1 Levels and Types of Requirements
Unit-IV: Requirement Prioritization / SWOT Analysis
4.1 How to Prioritize Requirements?
4.2 What is SWOT Analysis and its role in Requirements Engineering Requirement
4.3 Prioritization Techniques
Unit-V: Requirement Elicitation & Techniques

5.1 Explain what Elicitation is?

5.2 Role of Requirement Elicitation in gathering crucial requirements.

5.3 Importance of Requirement Elicitation Techniques and their importance.

Unit-VI: Storyboarding

6.1 Define Storyboarding

6.2 Role of Storyboarding in Requirement Engineering

6.3 Types of Storyboarding

Unit-VII: Quality Assurance in Requirements Engineering

7.1 Difference between QA and QC.

7.2 Role of Software Tester and Quality Engineer

7.3 How QA effects Requirements Engineering.

Unit-VIII: Introduction to Requirements Engineering

8.1 Define Requirements Engineering

8.2 Role of Requirements Engineering

8.3 Importance of Requirements Engineering

Unit-IX: Types of RE Models

9.1 Define what RE Model is?

9.2 Discuss different types of Models in detail.

Unit-X: Modeling/Diagrams/Test Cases/Testing Techniques

10.1 Explain different types of Models/Diagrams i.e. Use Case Model, Class Diagram, Domain Model.

10.2 Black Box and White Box Testing

10.3 How Testing is done and how to write Test Cases and description.

Unit-XI: Requirement Negotiation and Conflict Resolution

11.1 How to negotiate and understand requirements with Customers.

11.2 How to eliminate Conflicts in Requirements Engineering.

Unit-XII: Requirement Change Management

12.1 Configuration Management.

12.2 How to handle changes in the project and how it affects Requirement Engineering

Unit-XIII: Requirement Engineering & Agile Methodology

13.1 Define Agile Methodology and Agile Principles.

13.2 Explain role of Requirements Engineering in Agile.

Unit-XIV: Requirement Traceability

14.1 Explain steps involved in tracing crucial Requirements.

14.2 RE Traceability techniques

Teaching-Learning Strategies

Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:

1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks

In the detail course outline, one may mention chapters of the textbook with the content topic(s).

1. Software Requirements: Best practices by Karl Wiegers, Joy Beatty 2013 3rd edn. Microsoft Press.
2. Requirements Engineering: Process &Techniques by Kotonya, Sommerville, 2015
3. Engineering and Managing Requirement by Aybuke Aurum, Wolin
4. Perspective on Software Requirements by Leite, Doorn

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Internet Programming
Course Code: BEC-325   Credit Hours: 03
Program: BS E-Commerce   Semester: 06

Introduction of the Course (100-150 words)
This course is an introduction to Internet Programming and web application development. Subject covered include basic web page development and an introduction to dynamic web page development using client-side and server-side scripting and database connectivity.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-225 Web Technologies

Course Learning Outcomes
>   After the completion of this course, it is expected that students who will involve themselves in the knowledge base working of the course will be capable to
>   1.   Detail Knowledge of Web Application Development.
>   2.   Demonstrate knowledge of objects that interacts with server-based programs.
>   3.   Implementation of N Tier Architecture.
>   4.   Be familiar with Modern Web Technologies and Frameworks

Course Contents:

Unit-I: Introduction to Internet, Web, Protocols
1.1 Internet protocols, http, ftp, url, web browsers etc.
1.2 Client –Server Environment
1.3 Cookies, Sessions, Web Protocols etc.
1.4 Bootstrap – UI framework

Unit-II: Programming Languages & Frameworks
2.1 Introduction to Framework
2.2 Node.js - a server-side JavaScript framework
2.3 Angular.js - a front-end JavaScript framework.
2.4 Python – Django – a full-stack framework built using python
2.5 Ruby on Rails - a full-stack framework built using ruby
2.6 .NET - a full-stack framework built by Microsoft
2.7 Objective-C– the programming language behind iOS by Apple
2.8 Java– Used by Android (Google) and a lot of desktopapplications.
Unit-III: Modern Development Work
3.1 Progressive Web Apps
3.2 Artificial Intelligence and ChatbotsAccelerated Mobile Pages
3.3 Voice Search Optimization
Unit-IV: Introduction to SQL Database
4.1 MongoDB – open-sourced NoSQL Meteordatabase.

4.2 PostgreSQL – open-sourced SQL database.

4.3 MySQL – open-sourced SQL database. Oracle – is an enterprise SQL database.

4.4 SQL Injection, Dependency Injection

Unit-V: Search Engine Optimization

5.1 SEO Techniques in Websites

5.2 Digital Marketing, Social Media MarketingBlockchain

Unit-VI: N-Tier Architecture

6.1 N-Tier Architecture

Unit-VII: Introduction to SOAP services

7.1 Introduction to Web services Introduction to XML

7.2 SOAP services architectureResponsive web

Unit-VIII: Introduction to DevOps

8.1 Web Software Integration GIThub, Dockers

Unit-IX: Introduction to Micro Services

9.1Implementation of Micro Services in Large ScaleWeb Apps

Unit-X: Web Domain and Hosting

10.1 Overview of domain name Hosting plans and selection Client server and cloud hosting

Unit-XI: Web Security

11.1 Web Security Protocols

11.2 IPsec - Internet Protocol Security

11.3 IKE - Internet Key Exchange

11.4 SSH - Secure Shell

11.5 SSL - Secure Socket Layer

11.6 HTTPS - Secure Embedded Web Server

11.7 RADIUS - Remote Authentication Dial in User Service

Teaching-Learning Strategies

Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks

In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. Complete Reference HTML and CSS
2. Java 2 Complete reference

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Contemporary Financial Practices and Technologies
Course Code: BEC-411   Credit Hours: 03
Program: BS E-Commerce   Semester: 07

Introduction of the Course (100-150 words)
Financial innovation has become an active area of modern financial paradigm. Evolution of various technologies and practices have broadened the scope of financial activities. This course reviews modern financial technologies and practices to elaborate how innovations and modern technologies have facilitated financial aspects of businesses including financing, investing, payments, receipts, and risk management. In this regard, this course reviews innovations and conceptualizations surrounding fin-tech and other contemporary financial practices facilitating both conventional and online businesses.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-115 IT, Business, and Society

Course Learning Outcomes
8. Understand contemporary financial landscape with reference to modern technologies
9. Understand scope and evolution of financial technologies and related innovations
10. Grasp current trends in financial technologies and their application in business and commerce
11. Identifying the scope of financial innovations and using technology to pursue financial innovation

Course Contents:

Unit-I: Integration of Finance and Technology
1.1 Current trends in financial technology
1.2 Fin-Tech: Emergence, scope, value, and participants
1.3 Crypto currencies and block chain
1.4 Application of AI and machine learning in finance
1.5 Disruption and disintermediation of financial services and products
1.5 Regulation of Fin-Tech and other financial innovations
Unit-II: Fin-Tech
2.1 Evolution and description of Fin-Tech
2.2 Scope, future, and eco system of Fin-Tech
2.3 Fin-Tech typology
2.4 Fin-Tech and Reg-Tech
2.5 Fin-Tech and disruption of financial services
2.6 Cyber security, frauds, and ethical considerations
2.7 Financial inclusion and fin-tech
Unit-III: Encryption, Security, and Block chain
3.1 Encryption and information security
3.2 Block chain and distributed ledger technology: architecture
3.3 Application of block chain: current application and future potential

Unit-IV: Crypto currencies
4.1 Introduction, evolution, and potential of crypto currencies
4.2 Forms and functions of crypto currencies
4.3 Structure and evolution of major options
4.4 Investment, regulation, and risk management
Unit-V: AI and Machine Learning in Finance and Risk Management
5.1 AI and machine learning application in finance
5.2 Big data and its application in finance
5.3 AI and machine learning application for investment and risk management
5.4 Data analytics in finance
5.5 Application for portfolio management
5.6 Open banking and its applications
Unit-VI: Regulation of Fin-Tech
6.1 Regulation paradigm: Introduction and challenges
6.2 Evolution of Reg-Tech
6.3 Reg-Tech ecosystem
6.4 Reg-Tech start upsand challenges
6.5 Regulators and Reg-Tech
Unit-VII: Insur-Tech
7.1 Evolution and application
7.2 Trends and challenges
7.3 Technology enablers and application
Unit-VIII: Crowd funding, crowd investing, and other forms of lending and investment
8.1 Introduction and evolution of crowd funding
8.2 Crowd funding model and applications
8.3 Crowd funding platforms and success stories
8.4 Initial Coin Offerings (ICO)
8.5 Peer to Peer Lending: Evolution, application, and technologies
8.6 Online market place lending and applications
8.7 Social investment: scope and nature
Unit-IX: Mobile and E-Banking
9.1 Evolution of mobile and E-banking
9.2 Application and issues
9.3 Security and outreach
9.4 Digital and mobile wallets: functioning, application, and scope
9.5 Branchless banking
Unit-X: Contemporary commerce
10.1 POS evolution and applications
10.2 mPOS model and applications
10.3 Tablet based cash registers
10.4 Online payment platforms
10.5 Mobile wallets and payments

Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar
Assessment and Examinations:

1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class
    Participations and Discipline etc.   25 %

Textbooks

In the detail course outline, one may mention chapters of the textbook with the content topic(s).

1. Fintech: The New DNA of Financial Services by Pranay Gupta, T. Mandy Tham, Walter de Gruyter GmbH & Co KG
2. FinTech in a Flash: Financial Technology Made Easy by Agustin Rubini, Walter de Gruyter GmbH & Co KG
3. The FINTECH Book: The Financial Technology Handbook for Investors, Entrepreneurs and Visionaries by Susanne Chishti and Janos Barberis, John Wiley & Sons

Suggested Readings

Books

1. Bank 4.0: Banking everywhere, never at a bank by Brett King, Marshall Cavendish International Asia Pte Ltd.
2. Disrupting Finance: FinTech and Strategy in the 21st Century edited by Theo Lynn, John G. Mooney, Pierangelo Rosati, Mark Cummins, Springer.

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Supply Chain Management
Course Code: BEC-412   Credit Hours: 03
Program: BS E-Commerce   Semester: 07

Introduction of the Course (100-150 words)
A supply chain is comprised of all the parties involved in fulfilling a customer request. The integrated management of this network is a critical determinant of success in today's competitive environment. Companies like Nestle, Toyota, Dell, Unilever, Procter & Gamble, and a relatively new comer like Tesla Motors are proof that excellence in supply chain management is a must for financial strength and industry leadership. With increasing competition around the globe, supply chain management is both a challenge and an opportunity for companies. It becomes more challenging for e-businesses. This course provides understanding of supply chain management and related technologies that facilitate SCM in digital environment.

Pre-Requisites Course Requirements/Skills:
BEC-316 Organizational Behavior and Human Resource Management
BEC-222 Principles of Marketing

Learning Outcomes:
The course aims at the following CLO:
1. This course aims to develop students' abilities to understand the basics of supply chain management and value chain for various forms of businesses.
2. At the completion of the course, students should be familiar with key ideas and approaches in SCM across various industries.
3. Understanding the scope and use of information technology in supply chain management
4. Grasping the nature, processes, and technologies of E-Supply Chain management

Course Contents:

Unit-I: Introduction to Supply Chain Management
1.1 Introduction, scope, and activities
1.2 New trends in SCM: Global supply chains, integration of information technology
Unit-II: Value Chain for Business
2.1 value chain: introduction and processes
2.2 Managing value chains of digital businesses
Unit-III: Procurement and vender Management
3.1. Nature, scope and activities
3.2 E-procurement and vender management
3.3 GS1 Codes: barcoding
3.4 Electronic data interchange - Electronic product code information system (EPCIS)
Unit-IV: Operations and Production Management
4.1 Operations and production management
4.2 Outsourcing and managing quality

4.3 E-operations and production management

Unit-V: Inventory Management

5.1 Inventory management: scope and activities

5.2 inventory management in E-Commerce businesses

Unit-VI: Warehousing

6.1 Introduction, scope, and activities

6.2 Warehouse operations

6.3 E-commerce and warehousing challenges

6.4 information management in ware housing

6.5 RFID and other technological interventions for warehouse management

Unit-VII: E-Logistics Management

7.1 ICT infrastructure of e-logistics

7.2 Data management: big data, cloud computing, and related technologies

7.3 Automating e-logistics

7.4 Electronic marketplace

Unit-VIII: Managing Global Supply Chains

8.1 Global supply chains: Evolution, scope, and activities

8.2 Information technology and global supply chain management

Unit-IX: Enterprise Resource Planning

9.1 ERP: Introduction, scope and modules

9.2 Use of ERP in supply chain management

Unit-X: E-Commerce and Supply Chain

10.1 Technologies for e-supply chain management

10.2 Data collection, handling, and transmission technologies

10.2 Dig data, cloud computing, e-payments, e-SCM scorecard

Teaching-Learning Strategies

The course will have following instruction methodologies:

- Class lectures
- Video lectures
- Readings
- Panel discussions
- Seminars
- Term project and presentations

Assignments- Types and Number with calendar

Assessment and Examinations:

1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class
   Participations and Discipline etc.   25 %

Textbooks

1. Myerson, P. (2015). *Supply chain and logistics management made easy: methods and applications for planning, operations, integration, control and improvement, and network design*. Pearson education.

2. Wang, Y., & Pettit, S. (Eds.). (2016). E-Logistics: Managing your digital supply chains for competitive advantage. Kogan Page Publishers.
3. Wannenwetsch, H. H., & Nicolai, S. (2004). E-supply-chain-management. Gabler Verlag.

Suggested Readings

1. E-Logistics and E-Supply Chain Management: Applications for Evolving Business edited by Deryn Graham, Ioannis Manikas, Dimitris Folinas, Idea Group Inc (IGI)
2. Anderson, D. L., & Lee, H. L. (2000). The internet-enabled supply chain: From the "first click" to the "last mile". Achieving supply chain excellence through technology, 2(4), 1-7.
3. Hugos, M. H. (2018). *Essentials of supply chain management*. John Wiley & Sons.
4. Wisner, J. D., Tan, K. C., & Leong, G. K. (2018). *Principles of supply chain management: A balanced approach*. Cengage Learning.
5. Chopra, S. (2019). *Supply chain management: strategy, planning, and operation* (7th edition). Boston, MA: Pearson.

Course Title: Enterprise Application Management

Course Code: BEC-413	Credit Hours:	Theory (03) + Lab (01)
Program: BS E-Commerce	Semester:	07

Introduction of the Course (100-150 words)
This course introduces you to enterprise systems, to show how organizations use enterprise systems to run their operations more efficiently and effectively, to learn about the critical success factors and implementation strategies that lead to enterprise system success, and to consider the informational, knowledge, and decision-making opportunities afforded by enterprise systems.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-225 Web Technologies

Course Learning Outcomes
1. Understanding Microsoft .NET architecture.
2. Understanding and developing Enterprise Application Development using
3. Microsoft Platform/Technologies.
4. To have solid working experience C# programming language
5. To be efficient in developing desktop application using Microsoft .NET
6. framework and class library
7. To have solid foundation and experience in planning, developing and
8. deploying web based application using ASP.NET
9. N-Tier Architecture
10. Service Oriented Architecture
11. Building Loosely Coupled Systems

Course Contents:

Unit	Component	
1	1	Introduction to Course, Overview of Enterprise Application Development, Microsoft technology history, Intro to .net and its architecture, Concept of MSIL, CLR, CLS, CTS, .NET Managed and Unmanaged Code
	2	Global Assembly Cache, Assembly manifest , Single-file assembly, Multifile assembly, Private assemblies, Shared assemblies, Static assemblies, Dynamic assemblies, HelloWorld Program, csc compiler, input from command line, Input from Console
2	1	Introduction to C#, Data Types, value Types, Reference Types, Control Structures, Loops, foreach loop, C# Class structure and Access specifiers(Public, private), Object creation, Concept of Namespaces, Namespace Aliasing

	2	Boxing and Un-Boxing, Using ref and out keywords, params modifier, Invoke an Overloaded Constructor Through this, Object Initializers, Optional Arguments, Named Arguments
3	1	Implementing multi-tier architecture
	2	Introduction to ADO.Net, Connected and Disconnected Model, .Net Data Providers(Connection, Command, DataReader), Generics, Collections (List, Dictionary)
4	1	Sql Injection, parameterized queries,Usage of Data Set, Data Adapter and Command Builder in disconnected Model
	2	Delegate, Multicast delegates, introduction to windows forms, Resizing controls with form using Anchor and Dock Property, Application and Control Class.
5	1	Delegates, Events, Anonymous Methods, Lambda Expression
	2	Data Binding, Simple and Complex Data Binding, Binding Source, Binding List, Listbox, DataGridView, Application Settings (user vs Application scope)
6	1	Debugging js using Firebug, Introduction to the Browser's Object (BOM)
	2	Document Object Model, Events, Event Flow, Event Capturing vs Event bubbling, Query selector API
7	1	Introduction to Jquery, Selecting and Filtering, Event, Manipulating Contents and Attributes
	2	Jquery Effects, Manipulating CSS, AJAX, XML and JSON
8	1	Introducing LINQ, LINQ to Objects, LINQ to Sql, Query Syntax, Projection, Filtering and Join In Linq Queries
9	1	Extension Methods, Lambda Expression, Method Syntax in LINQ, LINQ to SQL in depth
	2	The Entity Data Model, CSDL: The Conceptual Schema, SSDL: The Store Schema, MSL: The Mappings
10	1	Eager vs Lazy Loading, POCO Classes, DBContext API, Querying Entity Data Models, LINQ to Entities, Projection, Navigation, Joins in queries, Modifying Entities and Saving Changes
	2	Controllers overview, Action Methods, parameterized action methods
11	1	Introduction to Razor Syntax, Code Expressions, Code Blocks, Implicit Vs Explicit Code Expression, Views, ViewData and ViewBag, Strongly Typed Views, View Models
	2	Layouts, ViewStart, partial Views, Model, Model Binding
12	1	Forms, Get Vs Post, Html Helpers, Form, Input Helpers, Strongly Typed Helpers, Templated Helpers, Helpers and Model State
	2	Data Annotations, Client + Server Side Validation, Validation and Model Binding, Validation and Model State
13	1	Building Loosely Coupled Components, Introduction to dependency Injection, Constructor Injection, D.I using NInject.
	2	Dependency Inject in MVC, Introduction to Repository Pattern.
14	1	Introduction to Web API, Example of Web API using CRUD Example
	2	MVC Routing, Recap Of MVC

Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class
   Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. Pro ASP.NET MVC 4 (Professional Apress)
2. Professional ASP.NET MVC 4 Published by John Wiley & Sons, Inc.
3. Programming Entity Framework, by Julia Lerman
4. LINQ in Action by MANNING
5. Professional WCF Published by John Wiley & Sons, Inc

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title:	E-Payment and Block chain	
Course Code:	BEC-414	Credit Hours: 03
Program:	BS E-Commerce	Semester: 07

Introduction of the Course (100-150 words)
To understand the technologies and applications for e-payment and cryptocurrency. Specifically, the students should:
➢ understand fundamental security technologies for supporting e-payment and cryptocurrency;
➢ evaluate different types of payment methods; and
➢ understand the design and application of e-payment and Blockchain.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-314 Information Security

Course Learning Outcomes
  After the completion of this course, it is expected that students who will involve themselves in the knowledge base working of the course will be capable to
   1. acquire a fundamental understanding of cryptocurrency and e-payment
   2. the basic principles as well as the technical and business aspects;
   3. evaluate cryptocurrency and e-payment systems, applications and protocols; and
   4. design and implement cryptocurrency and e-payment systems/applications.
   5. follow trends of e-payment and crypto-currency; and
   6. build up on team work, presentation and technical writing skills.

Course Contents:
Unit-I: Introduction
Payment fundamentals; Different types of payment; Regulatory issues.
Unit-II: Security Fundamentals
Review of security mechanisms (encryptions, digital signatures, hash functions, authentication protocols, digital certificate, Internet security).
Unit-III: E-payment Security I
Hash functions, symmetric encryption, DES and AES (Rijndael).
Unit-IV: E-payment Security II
Trapdoor functions, RSA, Diffie-Hellman Key exchange, El Gamal encryption, elliptic curve cryptography.
Unit-V: Credit Card Security: SSL/TLS, SET
 The SSL/TLS Protocol. Cipher suites. Transport-Layer Security (TLS), Secure Electronic Transactions (SET), Visa 3D-Secure.
Unit-VI: Stored-Value Cards
Smart card architecture and security, contactless cards, PIN security.
Unit-VII: Internet Payment Systems
SET and 3D credit card payment protocols; Electronic check; E-cash; Internet payment services.
Unit-VIII: Mobile Payment Systems

Apple Wallet; Google Wallet; Other mobile paymentsystems.

Unit-IX: Electronic Cash
Security foundations for electronic cash: anonymity, untraceability, digital denominations, Chaum's double-spending protocol.

Unit-X: Micropayments
Characteristics of micropayment systems. Face-to-face payments. GeldKarte. Remote micropayments: Payword, Remote micropayments: Micromint, statistical schemes, Millicent.

Unit-XI: Cryptocurrency: Blockchain
Blockchain; Bitcoin (and its variants, e.g. Litecoin); Other crypto-currency systems (e.g. Ethereum, Monero, ZCash).

Unit-XII: Virtual Money
Wireless payments, Mobipay, Paybox. Digital wallets.

Unit-XIII: Peer-To-Peer Payment Systems, Electronic Banking
PayPal, Electronic banking. B2B payments

Unit-XIII: Electronic Invoice Presentment and Payment
Electronic statement delivery. Biller service providers, customer service providers. Thick vs. thin consolidation. Reconciliation. Future directions for e-Payment systems.

Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. Protocols for Secure Electronic Commerce, 3rd Edition by Mostafa Hashem Sherif, CRC Press 2016.
2. Computer Security: Principles and Practice (3rd Edition) by William Stallings and Lawrie Brown, Publisher: Prentice Hall, 2014.
3. Cryptography and Network Security, 6th Edition by William Stallings, Prentice Hall, 2013.
4. Understanding Cryptography by Christof Paar and Jan Pelzl, Published by Springer, 2010

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Project I
Course Code: BEC-415   Credit Hours: 03
Program: BS E-Commerce   Semester: 07

Introduction of the Course (100-150 words)
Students are required to complete a Project report during the final semester of their BS in E-Commerce program, up to maximum of 06 credit hours, individually on a research topic approved by Faculty. BS E-Commerce curriculum has a variety of major courses, so students are allowed to do their final project in the area of their interest.
The choice of the final project is at the student's discretion. However, consultation with the supervisor is compulsory. Students have to submit a detailed write-up of the Project and may be required to give a presentation. In this course student is require to provide a detatailed proposal of the project, he/she wishes to undertake.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-325 Internet Programming

Course Learning Outcomes
 1. To be able to implement learning into practice
 2.   Learning to develop a viable proposal for some innnovative idea

Course Contents:

There are no contents for this course. Student will develop a proposal under supervision.
Few exemplary feasible project titles:

Project No.	Project Topics for E-Commerce
1	Application of E-Tailing in various sectors
2	E-Commerce and Cryptocurrency
3	An Enterprise Digitalization
4	Crowd Funding for Small Business
5	Effects of Cyber Crime on E-Commerce Technology
6	Financing an E-Commerce Venture and Types of Funding
7	Measuring the impact of social media marketing campaign
8	Role & Importance of Logistics on E-Commerce
9	Short Term & Long-Term Business Strategies used in E-Commerce
10	Steps to blogging your way to business success
11	Ways to Reduce Retail Customer Returns

Teaching-Learning Strategies
Mentoring and guidance of supervisor, self-learning

Assignments
None

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
        None

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Seminars in E-Ecommerce
Course Code: BEC-421   Credit Hours: 03
Program: BS E-Commerce   Semester: 08

Introduction of the Course (100-150 words)
Seminars in E-Commerce is a seminar based course. The course would highlight contemporary issues and recent developments in the domain of E-Commerce. It is encouraged to invite guest speakers, industry leaders, and successful entrepreneurs to share their experience in the class.

Pre-Requisites Course (s) or Other Requirements/Skills:
This course will be offered in last semester of the the program.

Course Learning Outcomes
1. Gain practical insight into industry and get familiar with contemporary issues of e-commerce industry
2. Enable industry leaders and entrepreneurs to share their experience with students to provide them practical insight and motivate
3. Evoke entrepreneurial mindset of the students to encourage them to start a venture

Course Contents:

There is no defined course outline and lesson plan for this course. Instructor is encouraged to design a seminar plan considering the contemporary and interesting issues relating to E-Commerce. Instructor is encouraged to use latest case studies and invite industry leaders for invited talks.
Some interesting topic for the course could be:
1. Islamic perspectives on E-Commerce
2. Content Marketing: How to use it
3. Using Amazon Affiliate model
4. Using Digital marketing campaigns to enhance reach
5. Creating online store using Shopify, Ecwid
6. Facebook marketing
7. Viral marketing and its application
8. Freelancing: Using freelancing platforms like fiver and upwork
9. E-Commerce payment options
10. SEO in practice
11. Success stories on online businesses crowd funding
12. Crowd funding successes and failures
13. AI and Machine Learning applications in E-Commerce
14. Developing an entrepreneurial mindset

Teaching-Learning Strategies
Case studies, invited talks, motivational videos

Assignments- Types and Number with calendar

Assessment and Examinations:
1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks

In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. None

Suggested Readings

Case studies and other material as deemed suitable be instructor

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: E-Customer Relationship Management
Course Code: BEC-422   Credit Hours: 03
Program: BS E-Commerce   Semester: 08

Introduction of the Course (100-150 words)
Customer relationship management has been a focus of marketing strategy of modern businesses. It becomes even more challenging in online and digital environment. This course provides an overview of conventional customer relationship management and its application in digital modes of businesses.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-412 Supply Chain Management

Course Learning Outcomes
1. Understanding CRM, its scope and importance for modern business landscape
2. Learning to apply concepts and tools of CRM
3. Understanding electronic implications of CRM
4. Using digital and online tools to implement CRM

Course Contents:

Unit-I: Introduction
1.1 Customer relationship management: Introduction, evolution, and value
1.2 Aspects of CRM: Strategic CRM, operational CRM, and analytical CRM
1.3 Issues, misunderstandings and pitfalls
1.4 Implications for consumers, marketplace, and marketing strategy
1.5 Relationship marketing and CRM

Unit-II: CRM value chain
2.1 CRM and its goals
2.2 CRM value chain stages
2.3 Creating value for customer and company
Unit-III: Strategic CRM
3.1 Elements of CRM strategy
3.2 Development of CRM strategy
Unit-IV: Information technology for CRM
4.1 Technology and CRM
4.2 CRM marketplace
4.3 CRM architecture and applications
4.4 technology for CRM value chain
Unit-V: Analytical CRM
5.1 Traditional marketing metrics
5.2 Customer acquisition metrics
5.3 Customer activity metrics

5.4 Popular customer based value metrics

5.5 Strategic customer based value metrics

5.6 Customer selection strategies

5.7 Business intelligence and CRM

5.8 Use of online tools and applications

Unit-VI: Data mining and using databases

6.1 Data mining, uses, and value for CRM

6.2 Data mining process

6.3 Data bases and types

6.4 Use and value of marketing databases

Unit-VII: Customer life cycle management

7.1 Concept, application, and value

7.2 Acquisition of new customer: strategies and their effectiveness

7.3 Customer retention and development: strategies and their effectiveness

Unit-VIII: Social Media CRM

8.1 Concept, application and value

8.2 Social media landscape

8.3 Word of mouth and social media communications

8.4 ROI of social media CRM

8.5 Social media and branding strategy

8.6 Social coupons and their application

8.7 Social networking and CRM

8.8 Using social media for CRM

Unit-IX: Privacy, ethics, and future of CRM

9.1 Customer privacy concerns

9.2 Regulatory environment

9.2 Implications for companies

Unit-X: CRM for E-Commerce

10.1 Scope, activities and tools

10.2 Data collection and analytics

10.3 Evaluation and effectiveness

Teaching-Learning Strategies

Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:

1. Mid-Term   Written Paper   35 %
2. Final Examination   Written Paper   40 %
3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class
   Participations and Discipline etc.   25 %

Textbooks

In the detail course outline, one may mention chapters of the textbook with the content topic(s).

1. Customer Relationship Management by Francis Buttle, Routledge
2. Customer Relationship Management: Concept, Strategy, and Tools by V. Kumar and Werner Reinartz, Springer

3. Customer Relationship Management: The Foundation of Contemporary Marketing Strategy by Roger J. Baran and Robert J. Galka, Taylor & Francis

Suggested Readings
Books
1. Electronic Customer Relationship Management by Jerry Fjermestad, Nicholas C Robertson Jr, Routledge
2. Electronic Customer Relationship Management E-CRM A Complete Guide by Gerardus Blokdyk, 5STARCooks.

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Professional Development
Course Code: BEC-423   Credit Hours: 03
Program: BS E-Commerce   Semester: 08

Introduction of the Course
This course highlights the nature and importance of professional skills and personality development. It helps learners to analyze their own personality and improve it for their professional development. This course is also aimed to highlight the various factors like: presentation skills, body language, interpersonal skills, sell-esteem, self-efficacy, resilience, optimism, self-motivation, problem-solving, stress handling, time-management, negotiation & conflict resolutions, team building and leadership. This course will help students to groom and be more prepared to operate in competitive professional world.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-121 Business Communication

Course Objectives
    1 - provide relevant knowledge about personality characteristics and development.
    2 - enable students to understand the importance of body language and various interpersonal skills.
    3 - prepare students to present in most efficient and effective manner.
    4 – To enhance self-confidence, resilience, optimism, and leadership skills among pupils.
    5 – To enhance the time-management, conflict resolution and team work capabilities.
Course Learning Outcomes
    1 – students will be able to demonstration better personality characteristics, body language, interpersonal skills. confidence, optimism, resilience, leadership, conflict handling and time management.
    2 – students will be able to show better presentation skills.
    3 – this course will develop team building and handling capabilities among students.
    4 – it will enable students to be better equipped for contemporary competitive professional environment.
Course Contents:

Unit-I
Self-analysis: identifying personal strengths and weakness, discussion on various attributes of the personality, personality improvement for creating an ever-lasting impression on others.
Unit-II
Personality development: presentation skills, body language, confidence, manners and etiquettes.
Unit-III
Speaking skills: reading and story-telling, review writing and presentation.
Unit-IV
Positive psychology: attributes related to positive work outcomes, understanding the natures and importance of hope, optimism, resilience and self-efficacy.
Unit-V

Employability and attitudes: positive and negative attitudes, factors responsible for success & hurdles in achieving success, development of positive attitude, self-esteem and personality improvement.

Unit-VI

Self-motivation and personality improvement, motivating others.

Unit-VII

Employability quotient: resume building, interpersonal and group discussions, preparing yourself for interviews, facing the interview.

Unit-VIII

Public speaking: voice, movements and gestures that engage audience, effective speaking for different occasions and purposes.

Unit-IX

Emotional intelligence: nature and impact of stress, stress management, building social and emotional skills to handle stress.

Unit-X

Fear and anger management, managing emotions, building social and emotional skills to handle fear and anger.

Unit-XI

Work ethics: moral, ethical, social and religious responsibilities pertaining to professional endeavor.

Unit-XII

Working with a team, team development, team handling and leadership.

Unit-XIII

Understanding conflicts and disputes, strategies and techniques for organizational conflict management, negotiations and interpersonal conflict-handling communication skills.

Unit-XIV

Problem-solving and decision-making skills, time management,

Teaching-Learning Strategies
- Lectures
- Discussions
- Case studies
- Projects & Term Papers
- Reading Assignments
- Presentations

Assignments-
1 –Self-analysis: identify and write about own strengths and weaknesses (after unit I)
2 – Book review and presentation (after unit III)
3 – Writing resume and prepare a topic for group discussion (after unit VII)
4 – Identify what causes stress, fear and anger in you and how can you overcome these emotions (after unit X)

Assessment and Examinations:

1. Mid-Term	Written Paper	35 %
2. Final Examination	Written Paper	40 %

3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class
   Participations and Discipline etc.   25 %

Textbooks
1. Van Emden, J., & Becker, L. (2016). *Presentation skills for students*. Macmillan International Higher Education.
2. Luthans, F., Youssef, C. M., & Avolio, B. J. (2015). *Psychological capital and beyond*. Oxford University Press, USA.
3. Mattingly, B. A., McIntyre, K. P., & Lewandowski, G. W. (Eds.). (2020). *Interpersonal relationships and the self-concept*. Springer.

Suggested Readings
Books
1. Willinks, T. (2019). *Stress Management: 7 Simple Steps to Eliminate Uncontrollable Stress, Anxiety and Fear by Understanding Psychology and Emotional Intelligence with Mindfulness and Meditation.* Important Publishing
2. Robbins, S., Judge, T. and Campbell, T. (2019). *Organizational Behaviour.* Pearson

10.2 Journal Articles/ Reports
1. GiLE Journal of Skills Development (GJSD)
2. Journal of Career Assessment
3. Latest research papers on stress handling, team building and other professional skills

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Data Visualization
Course Code: BEC-424   Credit Hours: 03
Program: BS E-Commerce   Semester: 08

Introduction of the Course (100-150 words)
Data visualization is the graphical representation of data to aid understanding, and is the key to analyzing big data for fields such as science, engineering, medicine, and the humanities. This undergraduate course is an introduction to data visualization, where you will learn how to design, build, and evaluate visualizations for different types of data, disciplines, and domains.
The course has a strong emphasis on design and practical applications of data visualization. The format for the course will be lectures by the instructor, practical design exercises, group discussions, as well as a set of practical assignments throughout the course. The grading will be based on participation in class and assignments.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-215 Database Systems

Course Learning Outcomes
After the completion of this course, it is expected that students who will involve themselves in the knowledge baseworking of the course will be capable to
1. Articulate human, visual, and interactive design issues for creating effective visualizations.
2. Use existing visualization tools and techniques to analyze basic datasets.
3. Apply existing techniques from scalar, volume, multidimensional, textual, graph-based, tree-based, and temporal visualization to actual problems and data.
4. Evaluate a visualization solution based on quantitative metrics such as time and error, as well as more complex and qualitative metrics.

Course Contents:

Unit-I: Introduction to Data Visualization
    Introduction to visualization, The visualization pipeline
Unit-II: The Value of Data Visualization
    What's Vis, and Why Do It?
Unit-III: Data and Data Validation
    Why Do Data Semantics and Types Matter? Data Types Dataset Types, Attribute Types, Semantics
    Why Validate? Four Levels of Design, Angles of Attack Threats and Validation Approaches Validation Examples
Unit-IV: Marks and Channels
    Why Marks and Channels? Defining Marks and Channels Using Marks and Channels Channel Effectiveness, Relative vs. Absolute Judgments
Unit-V: Design Guidelines

Why and When to Follow Rules of Thumb? No Unjustified 3D No Unjustified 2D, Eyes Beat Memory
Resolution over Immersion, Overview First, Zoom and Filter, Details on Demand Responsiveness Is Required, Get It Right in Black and White Function First, Form Next

Unit-VI: Tables, Networks and Trees

Why Arrange? Classifying Arrangements by Keys and Values Express: Quantitative   Values Separate, Order, and Align: Categorical Regions Spatial Axis Orientation, Spatial Layout Density, Connection: Link Marks Matrix Views, Costs and Benefits: Connection vs. Matrix Containment: Hierarchy

Unit-VII: Visualization of Spatial Data

Why Use Given? Geometry, Scalar Fields: 1 Value Vector Fields: Multiple Values Tensor Fields: Many Values

Unit-VIII: Color, Facets and Views

Color Theory Colormaps Other Channels
Why Facet?
Juxtapose and Coordinate Views Partition into Views Superimpose Layers

Unit-IX: Data Interaction and Navigation Techniques

Why   Change? Change View over Time Select Elements Navigate: Changing Viewpoint Navigate: Reducing Attributes

Unit-X: Data Reduction

Why Reduce? Filter Aggregate

Unit-XI: Textual and Temporal Data

Words and text visualization Document visualization
Continuous time-series visualization Discrete event visualization

Unit-XII: Multiple Linked Views

Small Multiples
Linked Highlighting with Brushing
Linked Navigation: Bird's Eye Map

Unit-XIII: Latest Technologies and Tools

Teaching-Learning Strategies
Lectures, discussions, presentations, quiz & assignments

Assignments- Types and Number with calendar

Assessment and Examinations:
  1. Mid-Term   Written Paper   35 %
  2. Final Examination   Written Paper   40 %
  3. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
1. Interactive Data Visualization for the Web by Scott Murray 2nd Edition (2017)
2. D3.js in Action by Elijah Meeks 2nd Edition (2017)
3. Semiology of Graphics by Jacques Bertin (2010)
4. The Grammar of Graphics by Leland Wilkinson
5. ggplot2 Elegant Graphics for Data Analysis by Hadley Wickham

HAILEY COLLEGE OF COMMERCE
UNIVERSITY OF THE PUNJAB, LAHORE

Course Title: Project II
Course Code: BECOM-425   Credit Hours: 03
Program: BS E-Commerce   Semester: 08

Introduction of the Course (100-150 words)
Students are required to complete a Project report during the final semester of their BS in E-Commerce program, up to maximum of 06 credit hours, individually on a research topic approved by Faculty. BS E-Commerce curriculum has a variety of major courses, so students are allowed to do their final project in the area of their interest.
The choice of the final project is at the student's discretion. However, consultation with the supervisor is compulsory. Students have to submit a detailed write-up of the Project and may be required to give a presentation.

Pre-Requisites Course (s) or Other Requirements/Skills:
BEC-415 Project I

Course Learning Outcomes
1. To be able to implement learning into practice
2. Lean to implement ideas
3. Successfully launch some E-commerce idea

Course Contents:
There are no content for this course. Student will implement the proposal proposed in Project I.
Few exemplary feasible project titles:

Project No.	Project Topics for E-Commerce
1	Application of E-Tailing in various sectors
2	E-Commerce and Cryptocurrency
3	An Enterprise Digitalization
4	Crowd Funding for Small Business
5	Effects of Cyber Crime on E-Commerce Technology
6	Financing an E-Commerce Venture and Types of Funding
7	Measuring the impact of social media marketing campaign
8	Role & Importance of Logistics on E-Commerce
9	Short Term & Long-Term Business Strategies used in E-Commerce
10	Steps to blogging your way to business success

11	Ways to Reduce Retail Customer Returns

Teaching-Learning Strategies
Mentoring and guidance of supervisor, self-learning

Assignments- Types and Number with calendar

Assessment and Examinations:

4. Mid-Term   Written Paper   35 %
5. Final Examination   Written Paper   40 %
6. Sessional   Quizzes and Tests, Assignment and Presentations, Attendance, Class
   Participations and Discipline etc.   25 %

Textbooks
In the detail course outline, one may mention chapters of the textbook with the content topic(s).
    None