Course Contents for Subjects with Code: COMP

This document only contains details of courses having code **COMP**.

Code	Subject Title		Cr. Hrs	Semester
COMP-101	Computer-I		3	I
Year	Discipline			
1	Statistics-II, Islamic Education			

Course will contain the topics:
- Introduction to computers
- History and types of computers
- Introduction to Computer Communication
- Hardware Introduction
- IO devices
- Storage devices
- Memory and types
- Introduction to Software
- Introduction to MS Office
- Electronic documentation using MS Word
- Building presentation using MS Power Point
- Creating spread sheets using MS Excel
- Database management using MS Access

Code	Subject Title	Cr. Hrs	Semester
COMP-102	Computer Lab-I	1	I
Year	**Discipline**		
1	Statistics-II		

Practical Work: How to use computers
                    How to use accessories in Operating System
                    What is MS. Office
                    MS. Word, MS. Power Point, MS Excel Practical in lab sessions

Recommended Book:
1. Discovering Compuers by Shelly Cashman, Computer application in business by Dr. Liaqat
2. Peter Norton's Introduction to Computers, 6/e
3. Microsoft Office 2003: The Complete Reference by Jennifer Kettell, Guy Hart-Davis and Curt Simmons
4. Computer Fundamentals (Paperback) by P. K. Sinha
5. Discovering Computers 2008: Living in a Digital World, Fundamentals (Shelly Cashman Series) by Gary B. Shelly and Misty E. Vermaat

Code	Subject Title	Cr. Hrs	Semester
COMP-103	Computer-II	3	II
Year	Discipline		
1	Statistics-II, Islamic Education		

1. **Introduction:**
   a. Data, Processing & Information
   b. Data Item/Entity, Record, File, Metadata, Database
   c. Files and its types
   d. Traditional File Processing Systems and its disadvantages
2. **Database**
   a. Database Systems
   b. Database Objectives
   c. Database Management Systems
   d. Components of the DBMS
   e. Types of DBMS
   f. Database Applications
   g. Advantages of Database System
   h. Disadvantages of Database System
3. **Database Development**
   a. Database development with information system
   b. Database development process
   c. 3-Schema Architecture
4. **Data Associations**
   a. Entity, Attribute & Associations
   b. Entity, Attribute & Associations
   c. Types of Associations
   d. Entity-Relation Model
5. **Relation & its Characteristics**
   a. Relation
   b. Properties of Relations
   c. Key and its types
6. **Normalization**
   a. Normalization and its steps
   b. Types of Normalization
   c. Effects for Normalization
7. **Database Design**
   a. Logical Database Design
   b. Physical Database
   c. Database Administration

Code	Subject Title	Cr. Hrs	Semester
COMP-104	Computer Lab-II	1	II

Year	Discipline
1	Statistics-II

1. Database Implementation
a. Using access
b. Creating relations
c. Forming attributes and fields
d. Selecting record by using query
e. Command introduction
f. DBMS introduction in market

2. SQL
a. Structured query language of relational DBMS
b. Data definition language (DDL)
c. Data manipulation Language (DML)
d. DCL

3. DBMS Usage:
a. How to switch among database management systems
b. Similarities and dissimilarities of DBMS
c. Interacting querying, updating, manipulating DBMS
d. Maintenance of Database Management System

4. Queries
a. Introduction of query
b. Writing query
c. Sub query
d. Joins and queries

5. Practical Issues:
a. Database connectivity and its issues (ODBC)
b. Two tier and thee tier architecture issues
c. Business rules and constraints and implementation in DBMS
d. DBA

Recommended Books:
1. Discovering Computers by Shelly Cashman, Computer application in business by Dr. Liaqat
2. Peter Norton's Introduction to Computers, 6/e
3. Microsoft Office 2003: The Complete Reference by Jennifer Kettell, Guy Hart-Davis and Curt Simmons
4. Computer Fundamentals (Paperback) by P. K. Sinha
5. Discovering Computers 2008: Living in a Digital World, Fundamentals (Shelly Cashman Series) by Gary B. Shelly and Misty E. Vermaat

Code	Subject Title	Cr. Hrs	Semester
COMP-111	Computer (Introduction and Applications)	3	I
Year	Discipline		
1	Botany, Zoology, Mathematics-I,II, Statistics-I,III, Chemistry-I,II, Business Administration, Economics, English, Sociology & Sociocultural Studies, Social Work, Political Science, Mass Communication, History, Education (Elementary), Education (Secondary), Urdu		

Introduction to computers, Characteristics of computers, Components of computers, Categories of computers, Computer applications/uses in society, Components of system unit; Presenting the Internet, Communicating through the Internet; Interacting with the computer (Input devices), Using the Keyboard and Mouse; Seeing, Hearing, and Printing Data (Output devices), Video and Sound, Printing; Processing Data, Transforming Data into Information; Storing Data, Types of Storage Devices; Operating Systems, Operating System Basics, Survey of PC and Network Operating Systems; Working with Application Software, Productivity Software, Graphics and Multimedia Software; Networks, Types of computer networks, Data communication; Database Management, Database Management Systems, Survey of Database Systems; Development of Information Systems, Basics of Information Systems; Information Assurance: Security, Privacy, and Ethics

Microsoft Office: introduction to word, creating, saving, closing and opening a file, difference between save and save, moving through the word document, selecting, cut, copy and paste through shortcuts and edit menu, undo and repeat, word menu bar and drop down menu, tool bar and status bar. Formatting using menu and formatting bar, paragraph formatting, borders and shading, spell checking, creating and manipulating table; introduction to Excel, creating, saving closing and opening a worksheet, entering data, calculations using operators , using Functions, IF statement, creating and manipulating charts; Introduction to Power Point, presentations, creating a new blank presentation, presentation type, different view icons, new, outline, slide and slide show, slide animations, animation effect, slide timings, picture and backgrounds, drawing tools, selecting object, grouping and ungrouping, resizing and rotating objects.

Text Books:
1. Peter Norton's Introduction to Computers, 6th Edition
2. Microsoft Office 2003: The Complete Reference by Jennifer Kettell, Guy Hart-Davis and Curt Simmons

Recommended Books:
1. Computer Fundamentals (Paperback) by P. K. Sinha
2. Discovering Computers 2008: Living in a Digital World, Fundamentals (Shelly Cashman Series) by Gary B. Shelly and Misty E. Vermaat

Code	Subject Title	Cr. Hrs	Semester
COMP-112	Computer Usage-I	2	I
Year	Discipline		
1	Applied Psychology		

This course is designed in view of the application of computers in wide range of areas. This course would familiarize students with basics of computer. The course will cover introduction to computer hardware and software related to psychology. After having completed this course students would be able to use window software such as MS office including MS Excel, MS Word and Power point.

Course Contents
Introduction to Computers
History of Computer Development
Uses and Limitations
Basic Units of Personal Computers
Introduction to Windows
Why Windows?
Basic features of Windows
Starting up
Using Applications
Managing Files and Folders
Managing the Desktop
Change Settings
Introduction to MS Word
Basic features of MS Word
Typing, editing, formatting text
Saving and printing
Making Tables in Word
Introduction to MS Excel
Basic features
Everyday Worksheet Tasks
Creating and Formatting Charts
Printing Worksheet
Pedagogy
This is a practical course which will be conducted in computer laboratory with hands-on instructions and guidance. Students will be given assignments in various applications such as MS Word and MS Excel.

Recommended Books
1. Maran, R. (1995). Windows 95 simplified. Foster City, C.A: IDG Books World Wide, Inc.
2. Maran, R., & Wing, K. (1997). Teach yourself word 97, Foster City, C.A: IDG Books world wide, Inc.
3. Nelson, K.Y. (1996). Windows 95 is driving me crazy. Berkeley, CA: Peach Pit Press.
4. Person, R. (1993). Using Excel Version 5 for windows. Indianapolis: Que Corporation.

Code	Subject Title	Cr. Hrs	Semester
COMP-113	Computer Usage-II	2	II
Year	Discipline		
1	Applied Psychology		

This course is designed in view of the application of computers in wide range of areas. This course would familiarize students with basics of computer. The course will cover introduction to computer hardware and software and software related to psychology. After having completed this course students would be able to use window software such as MS office including MS Excel, MS Word and Power point.

Course Contents
1. Everyday Worksheet Tasks
2. Creating and Formatting Charts
3. Printing Worksheet
4. Introduction to Power Point
   a. Basic Features
   b. Preparing presentations using Power Point
5. Pedagogy

This is a practical course which will be conducted in computer laboratory with hands-on instructions and guidance. Students will be given assignments in various applications such as MS Word, Power point and MS Excel.

Recommended Books:

1. Maran, R. (1995). Windows 95 simplified. Foster City C.A: IDG Books Worldwide, Inc.
2. Maran, R., & Wing, K. (1997). Teach yourself word 97. Foster City, C.A: IDG Books worldwide, Inc.
3. Nelson, K. Y. (1996). Windows 95 is driving me crazy. Berkeley, CA: Peach pit Press.
4. Person, R. (1973). Using Excel Version 5 for windows. Indianapolis: Que Corporation

Code	Subject Title	Cr. Hrs	Semester
COMP-121	Computer Applications in Business	3	I
Year	Discipline		
1	Commerce		

Computer
- Characteristics of Computers
- History of Computer
- Generation of Computer
- Types of Computer
- Classification of Digital Computer
- Computer Hardware and Software
- Basic Architecture of Computer System
- Microprocessor
- Types of Memory
- Input/output Devices
- Computer Software
- Programming Languages

Data Communication, Networks, and Data Processing
- Network
- Types of Network
- Analog and Digital Transmission
- Data Processing
- Data Processing Cycle
- Data Processing as a Business Need

Operating Systems
- Desktop/Interface
- Taskbar and Properties

WINDOWS XP Professional

Word Processing MS-Word (2007)
- **All Menus**

Spreadsheet Microsoft Excel (2007)
- **All Menus**

Microsoft Power Point (2007)
- **All Menus**

Internet
- History of Internet, Surfing the net, services, terms, terminologies of Internet.

Recommended Books:
1. Dr. Liaqat Ali Chaudhry and Syed Asghar Ali Bukhari. **Computer Application in Business,** Syed Mobin Mahmud & Co., Lahore.
2. Srivastava, C. **Fundamentals of Information Technologies**, Kalyani Publisher, New Delhi.
3. Norton, P. et al. **Microsoft Office**. Techmedia, New Delhi-2.

4. Nuqoosh Software Learner. **Short & Simple Guide: Find what you need fast**, Nuqoosh, Lahore.
5. Robert A. Szmaski. **Introduction to Computer & Information System.**
6. Raymond Mcleod Jr. **Management Information System, (International Edition).**
7. Richard D. Irwin. **Computer Information System.**
8. Microsoft Office .
9. Computers by H.L.Capron
10. Computers by Nancy Long

Code	Subject Title		Cr. Hrs	Semester
COMP-201	Computer-III		3	III
Year	Discipline			
2	Statistics-II, Islamic Education			

1. **Static WWW**
   b. What does dynamic means
   c. What are pros and cons of static www
   d. Uses of Static www
   e. Developing static web sits using HTML
1. **Dynamic WWW**
   1. What does dynamic means
   2. What are pros and cons of dynamic www
   3. Uses of dynamic www
   4. Developing dynamic web sites using Java script
2. **Introduction to tools and Technology**
   a. What is Tool
   b. What Technology?
   c. Language introduction and OOP concepts
   d. What is Java
   e. Introduction of JSP
3. **Database and Database Connectivity**
   a. What is database
   b. What is connection
   c. Database connectivity and its need
   d. How JAVA provides database connectivity using JSP

**Recommended Books*:*
- Java 2 complete reference

Code	Subject Title	Cr. Hrs	Semester
COMP-202	Computer Lab-III	1	III
Year	Discipline		
2	Statistics-II		

1. **Static WWW**
   a.   HTML
   b.   Macromedia Flash
   c.   Dream weaver and Front Page
   d.   Dynamic WWW
   e.   Java Script
   f.   Java and JSP
   g.   JDBC (Java Database Connectivity)

Recommended Books:
1.   Java 2 complete reference

Code	Subject Title		Cr. Hrs	Semester
COMP-203	Computer-IV		3	IV
Year	Discipline			
2	Statistics-II, Islamic Education			

1. **Visual Programming:**
    a. Visual components of VB IDE
    b. Interpreter and compiler
    c. VB Project
    d. Logical and syntax errors
2. **Forms**
    a. Components of forms
    b. Events and methods
    c. VB MDI
3. **VB Basics**
    a. Data and data types
    b. Variables
    c. Operators
    d. Build-in functions
4. **Input and Output**
    a. Dialog and output
    b. Message Box
    c. Modality
5. **Arrays**
    a. Types of arrays
    b. Declaring arrays
    c. Entering data in arrays
    d. Multi dimensional array
6. **Control Statements**
    a. Types of Control Statement s
    b. Go to statement, if then, if then else; nested if, seek structure
    c. Loop structure
    d. Do while until loops
    e. Do while until loops
    f. Nested loops
7. **Basic Actives Controls**
    a. Introduction of controls
    b. Command button, label control, the timer, text box, check boxes, option buttons, frames, list box control, combo box control, scroll bar control, file controls
8. **Database programming**

Recommended Books:
1. Mastering VB by BOP publication, Aikman series VB Program

Code	Subject Title		Cr. Hrs	Semester
COMP-204	Computer Lab-IV		1	IV
Year	Discipline			
2	Statistics-II			

Building a project in VB IDE
1. Building forms
2. Database connectivity in forms
3. Taking input and giving output in projects
4. Using Control statement in projects
5. Using Actives controls
6. Using Arrays
7. Forming project using VB which has practical applications
8. Implementing database in project (DAO, SQL)

Recommended Books:
1. Mastering VB by Bpb publication, Aikman series VB Program

Code	Subject Title		Cr. Hrs	Semester
COMP-211	Computer Science-I		4	III
Year	Discipline			
2	Physics			

Fundamentals of a digital computer, hardware and software concepts, operating systems (DOS, Windows, Unix). Algorithm development, introduction to a scientific language (FORTRAN or C++) and lab for writing small programs.

Books Recommended:
1. Numerical Recipes: The Art of Scientific Computing by William H. Press, Brian P. Flannery, Saul A. Teukolsky, and William T. Vetterling Cambridge University Press, Cambridge, 1988.
2. Mathematical for Physics by Robert L. Zimmerman Addison Wesley Publishing Company, 1994

Code	Subject Title		Cr. Hrs	Semester
COMP-212	Computer Science-II		4	IV
Year	Discipline			
2	Physics			

Program organization and control structure, solution of linear algebraic equations, interpolation and extrapolation, integration of functions. evaluation of functions, random numbers, sorting, root finding and non-linear sets of equations, statistical description of data, modeling of data, boundary value problems, partial differential equations.

Computer as a tool, arithmetic and algebra, functions and procedures. calculus, graphics, problems in general *physics:* projectile motion, *electricity* and magnetism, electric *circuit* analysis, oscillating systems, Lagrangians and Hamiltonians, electrostatics, quantum mechanics, relativity and cosmology.

Recommended Books:
1. Numerical Recipes: The Art of Scientific Computing by William H. Press, Brian P. Flannery, Saul A. Tcukolsky, and William T Vetterling Cambridge University Press. Cambridge, 1988.
2. Mathematica for Physics: Robert L. Zimmerman Addison Wesley Publishing Company, 1994.

BS (4 Years) for Affiliated Colleges

Code	Subject Title	Cr. Hrs	Semester
COMP-121	**Introduction to Computers (revised)**	**3**	**II**
Year	**Discipline**		
1	Applied Psychology		

Course Objectives

This course is designed in view of the application of computers in wide range of areas. This course would familiarize students with basics of computer. The course will cover introduction to computer software related to psychology.

Course Outcome

After having completed this course students would be able to use window software such as MS office including MS Excel, MS Word and Power point.

Course Contents

Introduction to Computers
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Basic Units of Personal Computers

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Starting up
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Managing Files and Folders
Managing the Desktop
Change Settings

Introduction to MS Word
Basic features of MS Word
Typing, editing, formatting text
Saving and printing
Making Tables in Word

Introduction to MS Excel
Basic features
Everyday Worksheet Tasks
Creating and Formatting Charts
Printing Worksheet

Introduction to Power Point
Basic Features
Preparing presentations using Power Point

Using Computer for online Literature Search
E-books
E-journals
Data Bases

<u>Recommended Books</u>

Maran, R. (1995).*Windows 95 simplified*. Foster City, C.A: IDG Books World Wide, Inc.
Maran, R., & Wing, K. (1997).*Teach yourself word 97*, Foster City, C.A: IDG Books world
       wide, Inc.
Nelson, K.Y. (1996). *Windows 95 is driving me crazy*. Berkeley, CA: Peach Pit Press.
Person, R. (1993).*Using Excel Version 5 for windows*. Indianapolis: Que Corporation.