

Developing Curriculum of Computer Education for Prospective Teachers

By

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Abstract

By keeping the important role of curriculum in mind it would be easy to say that education reshapes the future of a society both by changing the present situation as well as by transmitting the cultural heritage of a society. Computer and computer systems has changed the overall system of education, which ultimately had great impact in the advancement of society. Therefore, it is required to train the prospective teachers, so that, they could be able to adopt and utilize the modern technological resources to achieve educational objectives expressively. Therefore, this article aimed to develop a curriculum in the subject of Computer Education for prospective teachers to meet the need of the society. In this regard, fourteen specimens of curricula from different public and private sector universities and other institutions were collected which were offering M. Ed. and M. A. Education programs. The required professional knowledge and skills related to computer education were collected through a simple questionnaire from 94 prospective teachers, 75 working teachers and 50 head of the departments/schools/institutions. In the light of collected data, proposed curriculum was drafted, reviewed, and revised after consultations with the experts available in the university. The draft was sent for comments to the Heads of all Institutions, Organizations, IERs, Directors, and Principles of the Colleges for Elementary Teachers, and University of Education Campuses in Punjab and federal area. In the light of the results, some of the major headings or sub-headings and topics or sub-topics were added in and/or replaced from the proposed draft of the course outlines.

Keywords: *Computer in Education, Improving Classroom Teaching, Curriculum Design and Curriculum Development.*

1. Introduction

Historically the term “Curriculum” could be traced around 1820 which ‘generally’ meant by a textbook, guide or course of study and ‘professionally’ including a set of global intentions, a plan or organizational structure, and any one of the delivery media, while “Curriculum Development” is concerned with overall design or plan of structuring the environment with the elements of learning e.g., time, space, materials, equipment and personnel (Wiles & Bondi, 1993). McGee (1997) quoted a simple definition of curriculum from Taba that “curriculum is a plan for learning”. The success of curriculum largely depends on the teacher who is primarily responsible for providing the actual learning situations (Oliver, 1977). The relationship between curriculum and teacher illuminates that curriculum facilitates for effective teaching. Commonwealth of Learning and The South African Development Community Ministries of Education (2000) quoted from Farrant that “curriculum is a set of decisions about what is taught and how it is taught, which determines the general framework within which lessons are planned and learning takes place”.

Curriculum is not only limited to decide or plan about teaching, learning and medium of instruction but in fact curriculum is an important pillar of an educational system (Khalid, 2001) which is expected to improve the overall quality of education. Khalid further explained the importance of curriculum, which represents the distilled thinking of society, what it wants to achieve through education. Curriculum tends to mirror society itself, reflecting its aims, values, and priorities. McNeil (2006) expanded the role of curriculum as the most potent and influential tool, which affects and forces society, schools, classrooms, students and parents in shaping students' identity, expectations, and life long trajectory. By keeping the important role of curriculum in mind it would be easy to say that education reshapes the future of a society both by changing the present situation as well as by transmitting the cultural heritage of a society (Rushby and Howe, 1985).

Information and communication technologies (ICTs) had great impact on societal changes. According to Wiles and Bondi (1993) "innovation of the 21st century that has had a major affect on both society and schools is the computer". Computers and Computer Systems are encompassing the means of communicating, storing, retrieving, and categorizing information (Merrill, et. al, 1986). Reduction in prices and versatility of computers rapidly changing the trends of teaching and learning i.e., computers are used to teach, learn and evaluate in all subjects from literature to engineering, therefore, neither children nor their teachers can afford to be unaware of the computer (Goodlad, 1971). Ortega and Bravo (2002) quoted Ortega Cantero that computer is a tool not a subject; its knowledge should be integrated transversely in all the disciplines, not only in Computer Sciences. The ICTs had also a deep impact on education. According to Oak (2008), "computer education forms a part of the school and college curricula, as it is important for every individual today, to have the basic knowledge of computers". Computer and its related technologies make it possible for teachers and learners to share their knowledge and experience with each other without any barrier of space and time (Albalooshi, 2003). They are at least as good at transmitting information, as teachers (Brown & Atkins, 1988), and are probably more accurate and fast. Even then it is not used up to the optimum extent in our educational institutions (Jamil, 1999). Keeping in view the importance of computer in education, most of the universities offering teachers training programs in all over the world have added a subject to train their prospective teachers for using computer as a teaching – learning aid.

Given the importance of the use of computer in everyday life and in education, curriculum in computer studies acquires great importance. In order to make meaningful use of computer in the classroom, teacher needs orientation in Computer Education. Therefore, the purpose of this research study was to draw outlines for a curriculum in the subject of Computer Education for prospective teachers in the department of Education, Bahauddin Zakariya University Multan, Pakistan.

2. Literature Review

Curriculum development is not something that happened by chance. It is a step-by-step process which follows a model or analogy. Wiles & Bondi (1993) clarified the 'analogy' in curriculum development with the help of an example related to architecture, who cannot design a home until certain information about style and functioning are known. Grier (2005) quoted from Posner that curriculum development process is based on two necessary and complementary steps: curriculum development technique and curriculum conscience. Where curriculum techniques are "nuts and bolts" used to arrive at the curriculum, while models describe procedures to develop curriculum. And some of the eminent curriculum development models were referred by McGee (1997), McNeil (2006), Smith (2000), Howard (2007), Duan (2004), and Burkett (2002) are briefly reviewed as under to construct the curriculum:

In 1949, Ralph Tyler identified some fundamental questions that must be answered during development process. Its approach was relatively pragmatic and straightforward which closes the loop between curriculum development and assessment. His theory of curriculum development was simple, logical and rationale but fell out of favors as educators began to view learning experiences more holistically and

assess outcomes that were not easily measurable. Tyler considered following four consideration in curriculum development:

1. Formulating educational purposes,
2. Selecting educational experiences
3. Organization of education experiences and
4. Determining the extent to which purposes are being attained.

While Hilda Taba (1962) believed that teachers who teach or implement the curriculum should participate in developing it. Her advocacy was commonly called “grassroots approach” where teachers could have a major input. This model was designed for social studies but also applied for other subjects as well. She presented seven major steps in curriculum development. These included all the four phases of Tyler’s Rational Model while the most prominent and important was the diagnosis of learners need and expectations of the larger society.

Regarding to the Cyclical Model presented by Nicholls and Nicholls (1978), curriculum development is a continuing activity because of the new information and advancements. A new element called situational analysis was introduced in 1970s based on Taba’s diagnosis of needs. It included a detailed description and analysis of the context in which a particular curriculum is to be implemented. It was flexible and more useful model emphasizing on situational analysis which provides starting point to school teachers in curriculum development. But a major drawback of this model was that the situational analysis needed long time.

Walker introduced new model for curriculum development in 1992 and called it ‘Naturalistic’ because of his emphasis upon the natural school environment where it was more important to understand what teachers do rather than what they are supposed to do. His observations, based on the several years of experiences in the Kettering Art Project, Walker becomes aware that each teacher bring their own beliefs and values which affect curriculum decision. His model was based on several phases. The major difference of Walker’s model was that he favored explicit and implicit design: the former consisted of the conscious decisions and the latter the actions that are taken automatically. This phase culminate in the production of teaching materials or plans. It was more realistic, flexible, providing opportunity for discussions and sharing of views and recognizes the diversity of factors affecting curriculum development. But it was more appropriate for large-scale projects than small-scale projects; moreover lot of time is required for discussions and making conclusions.

McNeil (2006) introduced the Futuristic Model that stressed to the need to prepare the citizen for future. By keeping the importance of future need, efforts have been made to develop educational objectives consistent with this realization and implying necessary action. This model favored to involve educationists, politicians, economists, medical psychologists to discuss possible future developments that could affect curriculum planning. After rating social consequences, educators are required to decide what items in the present curriculum prepare students for future world and support to keep them up for future curriculum. At the end, a group of writers prepare two descriptions i.e., one for assessing the effects of actions and implementations on learners and second description is related to describe changes in subject matter, learning activities, curriculum organization and methods. The major difficulties of this model were to predict future problems; and participation of non-educationists to be expected for understanding the factors affecting the school curriculum.

Beside of these models many other were also reviewed, for example: The Vocational or Training Model; Action Research Models; and Model of Needs and Assessment Technique. Along with these models some model curriculums were also reviewed, for example: ‘A Model Curriculum for Computer Aided Design (CAD) Associate Degree Program’ by Duan (2004), ‘A Model Curriculum for a Doctor of Psychology (Psy. D.) Programme’ by Allon, Gauthier, Doyle, and Hutcheon (2004), ‘A Curriculum Model for Transferable Skills Development’ by Chadha (2006) and ‘Constructing a Workable Computer

Information Science/Computer Science Curriculum: A Template for Developing a Cross-Discipline Model' by Burkett (2002).

Research Design: Based on Literature Review

By comparing the stated models – in order to design the current curriculum properly - it was found that Tyler’s Model (1949) linked the purposes of curriculum development with assessment. This aspect of the model was followed for the present study. Grassroots Approach of Taba (1962) was applied to diagnose learners’ needs. Situational analysis introduced by Nicholls and Nicholls (1978) could not be included in the study due to a lengthy procedure, but it is being recommended for future studies. Walker’s Model (1992) was followed in the form of ‘Experts’ Panel’ in which 75 Working Teachers were involved to include their own beliefs and values, which affect curriculum decisions. The Futuristic Model provided the idea of Five Point Likert Scale and inclusion of 94 Prospective Teachers and 50 Employees from different institutions for the first time in Pakistan in Curriculum Development. All collective efforts gave rise to the New Design. Despite of strengths and weaknesses of these models, authors of the study concluded the above discussion pictorially as:

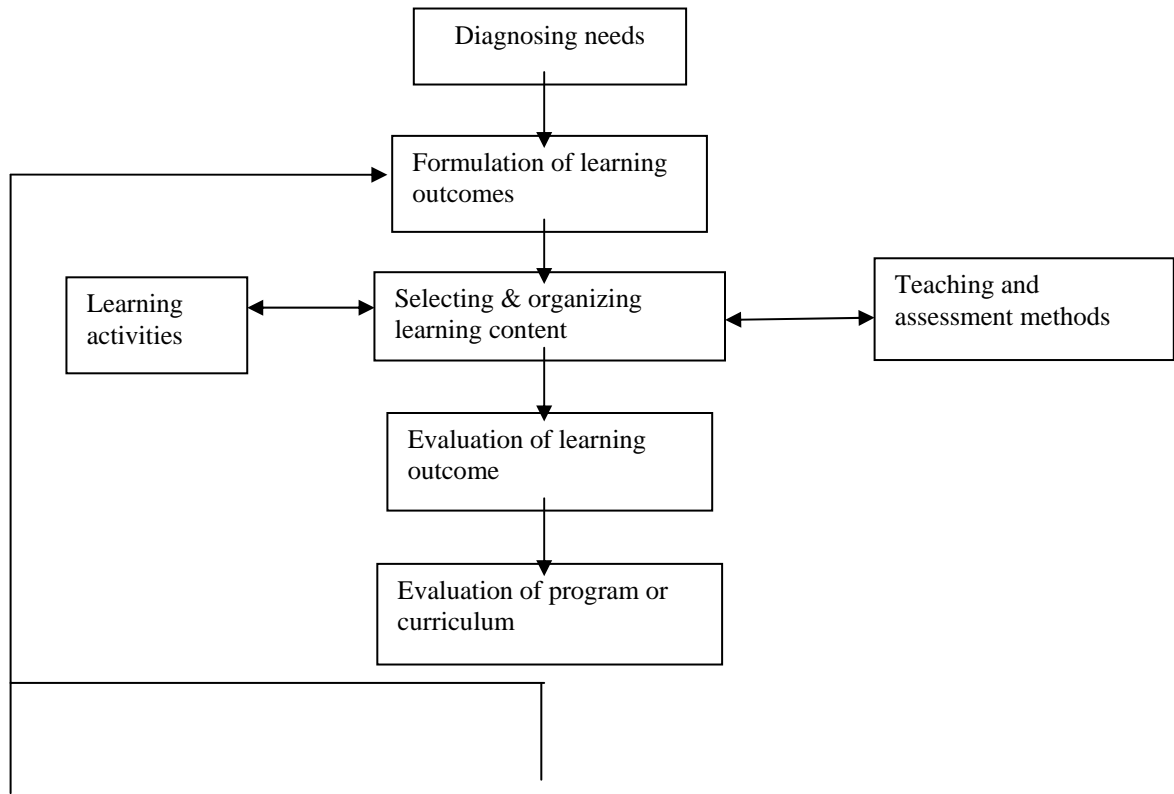


Figure 1: Curriculum Development Process

3. Research Methodology

Based on literature review, following steps were taken to develop the curriculum:

1. *Identifying the Panel of Experts.* Three different panel of experts were designed to validate the proposed curriculum:
 - a. The working teachers in Higher Secondary Schools who were using computer directly or indirectly in teaching and learning process.
 - b. The prospective teachers, who will be using computer personally or professionally.

- c. The employees of different universities and other educational institutions who were directly or indirectly enabling the prospective teachers to use computer in their teaching in the age of information technology (IT).
- d. All of these stakeholders were selected on the basis of their availability or willingness to participate in the study. As a result:
- e. A group of 75 working teachers including 25 females responded out of 15 Higher Secondary Schools (HSS) for boys and girls from Multan.
 - a. The 94 prospective teachers were selected among the students of M. A. Education and M. Ed
 - b. From the department of Education, Bahauddin Zakariya University, Multan.
 - c. And 50 employees from 30 different institutions i.e., head of the departments from universities, principals of Government Colleges for Education, private colleges, semi-government colleges who were training teachers or prospective teachers for using computer professionally.
2. *Surveying Teachers' Need and Eliciting Computer Education Catalog.* A very simple questionnaire was designed and administered among all experts in order to enlist prospective teachers' required technology-based professional knowledge and skills. Meanwhile, all private and public sector universities of Pakistan, which were offering M. Ed or M. A. Education programs, were requested to provide curricula in Computer Education (if available). Moreover, the course outlines already in practice for Computer Studies to be taught at B. A / B. Sc and M. A / M. Sc levels in different departments and affiliated colleges of Bahauddin Zakariya University, Multan were also obtained and analyzed to draw the draft curriculum. In the same manner, the course outlines for B. Ed programs, which are the basic requirement for the admission in M. Ed., were also collected from five different campuses of University of Education (Ex Government Colleges of Education) in Punjab and Federal area. Furthermore, course outlines for Computer Studies for the classes of IX, X, XI and XII prescribed nationally were also collected to develop the draft curriculum.
3. *Evaluating the List of Required Knowledge and Skills.* On the basis of the feedback from experts, a list of required knowledge and skills for the proposed course outlines was drafted. The course outlines collected from all universities, colleges, institutions and schools were arranged to shape a list, which helped to relate topics and subtopics with required knowledge and skills.
4. *Developing Proposed Curriculum.* On the basis of the data collected for developing proposed curriculum, an initial draft was developed and dispatched for experts' opinion regarding the selection and sequencing the topics and subtopics and to point out shortfalls of the researchers after a thoughtful review.
5. *Validation of the Proposed Curriculum.* A brief questionnaire along with the proposed course outlines were sent to the experts for validation. As per the experts' opinion, total number of chapters, topics and/subtopics were finalized.
6. *Approval from the Advanced Board of Studies.* The finalized draft of the curriculum was then sent to the Advanced Board of Studies of Bahauddin Zakariya University for its official approval and appliance as a compulsory subject for M. Ed. Students.

4. Results

Appendix A (Table – 1) showed the nature and number of institutions which were requested to provide the required outlines if offered in the institutions. In all 37% universities and 10% Government Colleges and 20% Government Higher Secondary Schools responded to the researchers.

Total 14 different course outlines were received after requesting again and again. Collectively 27 major headings or topics were (Table 2) listed by merging all course outlines. List of sub-headings or sub-topics were ignored because of the length of the table.

Table – 3 provides summary of the feedback from sampled stakeholders to establish and formulate list of knowledge and professional skills required regarding the use of computer and related technologies. After

preparing the list, researchers categorized them into three main areas of Computer applications in Education as: (a) Computer Managed Instruction (CMI), (b) Computer Assisted Instruction (CAI) and (c) Computer Assisted Assessment (CAA). This information also helped to formulate learning objectives of the curriculum.

List of required skills and table of major headings or topics from different curricula were then compared and it was decided by the authors to:

- Ignore all programming languages in the proposed course outlines because prospective teachers were considered as 'users' not as 'professional programmers'.
- By ignoring all programming languages; the major topics of 'Data flow diagrams', 'Algorithms', 'Number system' and compiler and interpreter were automatically eliminated from the proposed course outline.
- By keeping the limited duration of the semester (i.e., 45 credit hours) in mind; it seems to be difficult to include 'history of computer' and 'Artificial intelligence' because of the nature and length of the content.

List of required knowledge and skills clearly acknowledged that teachers were required 'practice-based' and 'applicable' knowledge and skills for their personal and professional life. Therefore, initially a course outline of 6 different chapters or units was drawn in the light of required professional knowledge and skills and also considering all 27 topics/subtopics from curricula collected from different institutions and sent to the 50 experts or educationists that were directly or indirectly serving or coordinating and/or managing the teacher training programs. Only three open ended questions were asked from all of the experts as: (a) What should be added? (b) What should be deleted? And (c) Are you satisfied with the proposed course outlines? Here, one thing is important to note that only those topics were deleted or added which were suggested by more than 50% of the experts.

Overall, 98% experts were satisfied with the proposed topics/sub-topics of Unit-1. And 80% suggested adding "characteristics of Computer", which was done in the final draft of the course outlines.

A total of 95% experts were satisfied with the proposed content of Unit-2. A good majority of the experts insisted to add applications of "WordPad, Notepad and Paint" in order to facilitate users to familiarize with the movement of Pointer and Cursor. These topics were added in the final draft.

Total 98% experts expressed satisfaction with the proposed content of Unit-3. But options (i.e. Sr. #) 2, 3 and 5 were added in the final draft.

Between 81 to 99% experts were satisfied with the proposed content of Unit-4, 5 and 6. Not a single topic/subtopic was proposed to be added in the final draft on this section.

All of the required changes suggested by the experts were finally added and deleted out of the final draft of the course outlines. Then correlation was computed between proposed and final draft of the course outlines, which was 0.98. Finally the course outlines (Final Draft of the Curriculum) was forwarded to Advanced Board of Studies, Bahauddin Zakariya University Multan to channelize the approval. In the meeting of advanced board of studies it was approved as a compulsory subject, so that all prospective teachers could get equal opportunities to learn advanced teaching and learning skills.

5. Discussions and Conclusions

A survey was conducted to understand teaching and learning needs to develop a curriculum in the subject of Computer Education. The intent of curriculum was to prepare prospective teachers by transferring basic computer skills and knowledge to fulfill some of their professional and personal requirements. The course outlines developed for M. Ed program assumed no previous training in the area of Computer Education. However, such courses are required to introduce at B. Ed level and other basic teacher training programs or workshops; if so; then the proposed outlines should be revised accordingly. Intentionally, it was important to keep the length of course outlines in mind to complete it within a semester.

To do this, a brief literature review was conducted by the researchers to develop a curriculum. Moreover, 219 experts were identified on the basis of their willingness and availability at first stage. Through a simple questionnaire, the experts were asked for required technology-based professional skills and knowledge. While, 14 curricula of Computer Education were collected from different public or private sector universities of Pakistan, which were offering M. Ed or M. A. Education in different institutions. After that proposed course outlines was prepared by considering all major heading/sub-heading and topics/sub-topics of the curricula collected from different universities and in the light of required professional skills and knowledge. Then, that proposed course outlines was sent to all stakeholders along with another simple questionnaire to validate it. An overwhelming majority of the experts (81% - 99%) were satisfied with proposed contents of the units. However, some of the topics were added and replaced according to the experts' opinion. The results of correlation co-efficient between proposed and final draft of the course outlines indicated experts' highest level of satisfaction. This course outline could be beneficial to prospective teachers, educators, prospective employers of the educational institutions and society at large.

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Developing Curriculum of Computer Education for Prospective Teachers

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APPENDICES

Table 1: Nature of Institutions Involved in the Study

Sr. #	Nature of the Institutions	Number	Percentages
1.	Universities	11	36.6%
2.	Government Colleges	03	10.0%
3.	Private Colleges	09	30.0%
4.	Semi-Government Institutions	01	03.3%
5.	Government Higher Secondary Schools	06	20.0%

Table 2: Major Headings or Topics from different Curricula received from the Requested Institutions

Sr. #	Major Headings
1.	Introduction of Computer System.
2.	Computer history.
3.	Need of computer literacy.
4.	Social impact of computer on society.
5.	Artificial intelligence.
6.	Input and output devices.
7.	Computer memory.
8.	Central Processing Unit (CPU).
9.	Classification of the Computer System.
10.	Speed, reliability and scope of the computer.
11.	Data flow diagrams.
12.	Algorithms.
13.	Number System: Binary, Octal and Hexa Decimal systems.
14.	Binary arithmetic.
15.	Introduction of Software (i.e., high level and low level languages)
16.	Compilers and interpreters.
17.	Introduction of DOS (Disk Operating System).
18.	Internal and external commands of DOS.
19.	Programming Languages (BASIC, COBOL, FORTRAN, FoxPro, C, C++)
20.	Windows operating system.
21.	Multimedia.
22.	Word processor.
23.	Spreadsheets.
24.	Designing presentations.
25.	Internet.
26.	Applications of computer in education.
27.	Applications of computer in business.

Table 3: List of Professional Knowledge and Skills Needed

Sr. #	Knowledge and Skills Needed	N	Percentages
a.	Computer Managed Instructions (CMI)		
1.	Lesson Planning	98	44%*
2.	Maintain attendance record.	113	52%
3.	Maintain admission records.	70	32%
4.	Prepare merit lists.	80	36%
5.	Keep and update records of official correspondence.	119	54%
6.	Prepare and maintain stock registers.	55	25%
7.	Prepare and maintain employees' portfolios.	70	32%
b.	Computer Assisted Instruction (CAI)		
1.	Use computer as an audio visual aid in classroom activities.	145	66%
2.	Deliver lessons with the participation of their students in the classrooms.	135	62%
3.	Search the research material by using computer.	114	52%
4.	Analyze data as per the requirement for proper interpretations.	108	49%
5.	Compose research reports/articles/lectures.	99	45%
6.	Prepare and deliver presentations.	140	64%
c.	Computer Assisted Assessment (CAA)		
1.	Formation and composing question papers.	145	66%
2.	Develop an item bank.	70	32%
3.	Maintain the secrecy of examination records.	54	24%
4.	Calculate and declare students' grades and positions in the class or school or department.	122	56%
5.	Prepare students' reports (i.e., feedback).	129	59%

*44% = $(98 \div 219) \times 100$

(Final Draft of the Curriculum)

M. ED. COURSE OUTLINE

Department of Education, Bahauddin Zakariya University Multan

COURSE TITLE: COMPUTER EDUCATION

Course Code: EDU 501

Credits: 4

PREREQUISITES: None.

COURSE DESCRIPTION

This is an introductory course and is specifically focused on educators wanting a hands-on approach to learning new technology skills. It is designed to provide elementary school teachers and administrators with an understanding of the ways that current and emerging technologies can be used to facilitate teaching, learning, and managing instruction. Discussions will focus on issues, trends, and current uses of technology in education. Lab sessions will focus upon gaining practical experiences of working on computers, learning software applications with Microsoft Office, evaluating educational software, designing technology-enhanced lessons, and utilization of internet-based technologies in education.

COURSE GOALS

The primary objective of this course outlines is to enable the prospective teachers to understand, adopt and apply technology-based resources and materials professionally and personally.

LEARNING OUTCOMES

At the end of this course, prospective teachers will be able to:

- Acquire knowledge on historical evolution of computer in education and its hardware and software components.
- Acquaint with the aims and objectives of teaching “Computer Science” in Secondary and Higher Secondary Schools and help them to plan learning activities according to those objectives.
- Acquire skills relating to planning lessons and presenting them effectively.
- Acquire skills of developing and maintain Item Bank and formatting question papers.
- Prepare and maintain portfolios.
- Automate admission system.
- Analyze data graphically and numerically.
- Effectively search, download and upload required content.

LEARNING MATERIAL

Teachers will provide handouts, web-based resources, Model lessons on CDs, and reference books.

COURSE CONTENT OUTLINES

- 1. Computer Fundamental**
 - 1.1 Computer and their effects on our society and Education
 - 1.2 Computer: Hardware and Software
 - 1.3 Hardware: Input Devices, Output Devices, Memory, Processor
 - 1.4 Software: Application Software and System Software
 - 1.5 Virus: Introduction and Protection
 - 1.6 Ethics of using computer and related technologies.
- 2. Introduction & Applications of GUI**
 - 2.1 Introduction of GUI
 - 2.2 Features of MS Windows
 - 2.3 Managing and manipulating Files and Folders
 - 2.4 Windows explorer
- 3. Word Processor**
 - 3.1 Working with files
 - 3.1.1 Creating and opening documents
 - 3.1.2 Saving and deleting document

- 3.1.3 Working on multiple files
- 3.2 Working with text
 - 3.2.1 Typing and inserting text
 - 3.2.2 Selecting and deleting text
 - 3.2.3 Formatting Toolbar
 - 3.2.4 Format Painter
- 3.3 Formatting Paragraph
 - 3.3.1 Paragraph attributes
 - 3.3.2 Moving, copying and pasting text
- 3.4 Lists
 - 3.4.1 Bulleted and numbered lists
 - 3.4.2 Nested list
 - 3.4.3 Formatting list
- 3.5 Tables
 - 3.5.1 Inserting or Drawing a table
 - 3.5.2 Inserting rows and columns
 - 3.5.3 Moving or resizing tables
 - 3.5.4 Tables and Borders toolbar
 - 3.5.5 Table properties
- 3.6 Graphics
 - 3.6.1 Adding a Clip Art
 - 3.6.2 Editing Graphics
 - 3.6.3 AutoShapes
- 3.7 Proof reading a document
 - 3.7.1 AutoCorrect
 - 3.7.2 Spelling and Grammar check
 - 3.7.3 Synonyms
 - 3.7.4 Thesaurus
- 4. Data Analysis Techniques**
 - 4.1 Spreadsheet basics
 - 4.1.1 Screen elements
 - 4.1.2 Adding and renaming worksheets
 - 4.1.3 Difference between Spreadsheet and Worksheet
 - 4.1.4 Inserting data in a worksheet
 - 4.2 Modifying a Worksheet
 - 4.2.1 Moving through cells
 - 4.2.2 Adding worksheets, rows and columns
 - 4.2.3 Moving and Copying cells
 - 4.2.4 Selecting, rows, columns and sheets
 - 4.2.5 Freeze panes
 - 4.3 Formatting Cells
 - 4.3.1 Formatting toolbar
 - 4.3.2 Format Cells dialog box
 - 4.3.3 Styles
 - 4.3.4 Style dialog box
 - 4.3.5 Conditional Formatting
 - 4.3.6 AutoFormat
 - 4.4 Formulas and Functions
 - 4.4.1 Relative and absolute referencing
 - 4.4.2 Basic functions and formulas
 - 4.5 Sorting and Filtering
 - 4.5.1 Basic ascending and descending sorts

- 4.5.2 Complex sorts
- 4.5.3 AutoFill functions
- 4.6 Charts
 - 4.6.1 Chart wizard
 - 4.6.2 Resizing a chart
 - 4.6.3 Moving a chart
 - 4.6.4 Chart formatting toolbar
- 5. Designing & Preparing Presentations**
 - 5.1 Working with Slides
 - 5.1.1 Inserting new slide
 - 5.1.2 Applying design template
 - 5.1.3 Changing slide layout
 - 5.1.4 Reordering slides
 - 5.1.5 Hide slide
 - 5.2 Adding Contents
 - 5.2.1 Resizing and deleting textbox
 - 5.2.2 Text box properties
 - 5.2.3 Bulleted and numbered list
 - 5.2.4 Adding notes
 - 5.3 Working with Text
 - 5.3.1 Adding and Editing text
 - 5.3.2 Formatting text
 - 5.3.3 Line space
 - 5.3.4 Spell check
 - 5.3.5 Color Schemes
 - 5.3.6 Background
 - 5.4 Graphics
 - 5.4.1 Adding Clip Art
 - 5.4.2 Editing graphics
 - 5.4.3 AutoShapes
 - 5.4.4 WordArt
 - 5.5 Slide Effects
 - 5.5.1 Action Button
 - 5.5.2 Slide animation
 - 5.5.3 Slide transition
 - 5.5.4 Slide show options
- 6. Searching & Browsing**
 - 6.1 Network and Networking: LAN, MAN and WAN
 - 6.2 Internet: Internet Explorer, Web Page, URL, Home Page, Search Engines
 - 6.3 Methods of searching required information

EVALUATION/GRADING PROCEDURE

Students will be evaluated and grades will be awarded on the following criteria:

Attendance; Participation/Assignments; Quiz and Intermediate test scores; and Final Exams.

Grading will confirm to the semester rules and policies set forth by the Controller Examinations, Bahauddin Zakariya University Multan.

PLANNED TEACHING METHODS/LEARNING STRATEGIES

- | | |
|--|--|
| <input type="checkbox"/> Lecture Method | <input type="checkbox"/> Special Projects (Assignments) |
| <input type="checkbox"/> Computer Laboratory | <input type="checkbox"/> Multimedia and Overhead Projector |