



BAHRIA UNIVERSITY

Computer & Software Engineering Department
FALL 2015, WEEKLY COURSE BREAKUP PLAN

Course Title: **COMPUTING FUNDAMENTALS**

Course Code: **CSC-110**

Credit Hours: **2+1**

Prerequisite: **NONE**

Course: **BCE-1**

Section: **A**

Instructor: **ENGR. ALI AHMED**

Email: aiahmed@bimcs.edu.pk

COURSE OBJECTIVES AND DESCRIPTION:

Computing fundamentals is designed to familiarize students with computers and their applications. It will also emphasize the use of computers and technology. Students will learn fundamental concepts of computer hardware and software and become familiar with a variety of computer applications, including word processing, spreadsheets, databases, and multimedia presentations. Students will also investigate Internet-based applications, working with email and learning how to browse the web. They will also explore social and ethical issues related to computers.

This course will develop students' knowledge of:

- *the concepts, capabilities and limitations of computers and identify its basic components.*
- *the conversion from one number system to another number system.*
- *the differences and advantages of the two most commonly used operating systems: DOS and Microsoft Windows operating systems.*
- *the Microsoft Windows environment, desktop, and properties.*
- *the importance of algorithm and flowcharting in preparation to programming courses.*

LEARNING OUTCOMES:

Upon successful completion of the course the students will be able to:

- *identify computer hardware and peripheral devices*
- *become familiar with software applications*
- *understand file management*
- *accomplish creating basic documents, worksheets, presentations and databases*
- *distinguish the advantages and disadvantages of networks*
- *work with email and recognize email netiquette*
- *explore the Web and how to conduct research*
- *identify computer risks and safety*



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Week	Starting Date	Lecture Number	Tentative Course Plan	Chap
1	07 th Sep – 11 th Sep	01	Introduction to Computer Fundamentals, The Language of Computers, Different Terminologies	01
		02	The Components of the System Unit	01
		03	To get Familiar with Test Editor, Graphics and Working with Templates by using MS Word - LAB	
2	14 th Sep – 18 th Sep	04	The Von Neumann Architecture	03
		05	Decimal Number System, Binary Number System	03
		06	To get Familiar with Smart Art, Charts Equation Editor and Shortcuts by using MS Word - LAB	
3	21 st Sep – 25 th Sep	07	Number Base Conversions (Decimal to Binary, Binary to Decimal, Octal to Binary, Binary to Octal)	03
		08	Number Base Conversions (Hexadecimal to Binary, Binary to Hexadecimal, Decimal to Octal, Octal to Decimal, Decimal to Hexadecimal, Hexadecimal to Decimal)	03
		09	To get Familiar with Mail Merge - LAB	
4	28 th Sep – 02 nd Oct	10	Binary Addition, Binary Subtraction	03
		11	Binary Multiplication, Binary Division	03
		12	To get Familiar with Creating Power Point Presentation, Working with Slide Layout, Slide Background, Slide Style, Slide Transition and Buttons - LAB	
5	05 th Oct – 09 th Oct	13	1's Complement, 2's Complement	03
		14	The Operating System, The User Interface, OLE Linking and Embedding	04
		15	To get Familiar with Cell Referencing, Entering Data, Using Basic Mathematical Operations, Adding Borders and Comments by using MS Excel - LAB	
6	12 th Oct – 16 th Oct	16	Productivity Software, Personal Information Management Software	04
		17	Storing and Retrieving Information, The File Allocation Table	04



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		18	To get Familiar with Working with Charts, Advance Formula, Applying Conditional Formatting and Drop Down List by using MS Excel - LAB	
7	19 th Oct – 23 rd Oct	19	Viruses and Virus Protection, Types of Computer Viruses, Sources of Computer Viruses, Virus Protection	04
		20	The Internet, The Internet Address	15
		21	To get Familiar with Creating Flowcharts, Network Diagram etc. by using MS Visio - LAB	
8	26 th Oct – 30 th Oct	22	HTML, Internet Browsers, Internet Servers and Addresses, Internet Applications	15
		23	Web 2.0, Social Networking Sites, Blogs, Video Sharing Sites, File Sharing Service	15
		24	To get Familiar with Templates to Create Brochures, Invitation and Websites by using MS Publisher - LAB	
9	02 nd Nov – 06 th Nov	MID TERM EXAMINATIONS		
10	09 th Nov – 13 th Nov	25	XHTML, Basic Syntax, HTML Document Structure, Basic Text Markup, Images, Hypertext Links	15
		26	Lists, Tables, Forms	15
		27	To get Familiar with Creating Simple Database, Working with Tables and Relationships by using MS Access - LAB	
11	16 th Nov – 20 th Nov	28	Internet Technologies, Servers, Clients, Types of Ports, Connections	15
		29	Protocols, Network Architecture, Encryption and Decryption, File Compression	14
		30	To get Familiar with Creating Forms using Wizard and Design View by using MS Access - LAB	
12	23 rd Nov – 27 th Nov	31	Databases, Database Management Systems, Query Languages, Database Forms, Database Reports	09
		32	Introduction to Flowcharting, Basic Flowchart Symbols, Flowchart Structures	06



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		33	To get Familiar with Working with Queries and Reports by using MS Access - LAB	
13	30 th Nov – 04 th Dec	34	Flow Chart Connectors, Modules	06
		35	Algorithms, Algorithms versus Programs, Complexity Analysis, Algorithm Analysis	06
		36	Introduction to Visual Studio, Input Statements, Output Statements and Arithmetic Operators - LAB	
14	07 th Dec – 11 th Dec	37	Programming Paradigms, Procedural Programming, Encapsulation and Modular Programming, Abstract Data Types and Object-Based Programming	06
		38	Syntax and Semantics, Language Translation, Imperative Programming, Data and Computation, Pointers, Expressions and Statements, Modules and Program Structure	06
		39	To get Familiar with Conditional and Logical Operators, If-Else, Switch-Case and Loops - LAB	
15	14 th Dec – 18 th Dec	40	C (Basic) Data Types, User Defined (Data) Types, Derived (Data) Types	13
		41	Understanding Unstructured Spaghetti Code, Understanding the Three Basic Structures, Using a Priming Input to Structure a Program	06
		42	To get Familiar with Functions and Arrays - LAB	
16	21 st Dec – 25 th Dec	43	Understanding the Reasons for Structure, Recognizing Structure, Structuring and Modularizing Unstructured Logic	06
		44	Conditional Structures, Conditional Control	06
		45	A Small Project - LAB	
17	28 th Dec – 01 st Jan	46	Functions, Library Functions, User Defined Functions, Function Declaration, Function Definition, Function Call, Passing of Arguments to the Function, Passing Arrays to Function	06



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		47	Scope of Variables, Storage Classes, Types of Storage Classes, Recursive Functions, The Mechanics of Recursive Call, Base Case, Comparison of Recursion and Iteration	06
		48	A Small Project - LAB	
18	04 th Jan – 08 th Jan	FINAL TERM EXAMINATIONS		

NOTE:

- This schedule is subject to revisions as conditions may warrant.*
- Topics will be covered in sequence no matter if city observes any planned or unplanned holidays.*
- The information in this course outline is subject to revision as conditions may warrant.*

METHOD OF INSTRUCTION:

Methods of instruction may include, but are not limited to, the following:

- Classroom lectures by the instructor
- Presentations by the students (*max. two students in a group*)
- Seminar by the guest speaker
- Assignments
- Research Assignment (*Mandatory*)

SKILLS TO BE DEVELOPED:

This course helps students in developing the following skills:

#	Skill	Through (Instrument)
1	Communication (<i>oral and written</i>)	Assignments, Case Study Discussions, and Presentations
2	Analytical	Case Studies, Research Assignments and Examinations
3	Team Work	Case Studies, Group Work, and Group Presentations
4	Creative Thinking	Assignments, New Developments, Discussions, and Examinations
5	Adaptability to Change	Case Studies and Examinations.
6	Ethics	Lectures and Individual Assignments
7	Use of IT	Use of Internet and Multimedia/Reference of E-Books
8	Modern Issues/Trends	Assignments, Research Paper, and Discussions



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GROUP WORK AND ITS ACCEPTABLE RULES:

- Whole class will be divided into groups of two members of your choice and each group will be assigned a **PROJECT** to work on.
- Upon completion of the project each group member will honestly evaluate the participation and contribution of other member within the same group.
- There will be no such thing like group score. Every member of the group will be assessed individually, that is, within the same group every member may attain a **DIFFERENT SCORE** based on his/her work.

ACADEMIC HONESTY:

- Each student in the class is expected to develop his/her assignment alone. **COLLUSION** occurs where a student knowingly submits as entirely his/her own work done in collaboration with another person; or collaborates with another student in the completion of work which (s)he knows is intended to be submitted as that other student's own unaided work; or knowingly permits another student to copy all or part of his or her own work and to submit it as that student's own unaided work.
- Do not share assignment, or assignment parts, with your classmates.
- No to **PLAGIARISM**. Do not copy and paste online material, consult study materials from reliable sources and reproduce them in your own words. **PLAGIARISM** is the deliberate and unacknowledged insertion into a student's work of material taken from the work, published or unpublished, of another.
- Assignments are thoroughly checked for similarities upon the submission.
- Violators of this policy will be held responsible for academic dishonesty, and will bear consequences in accordance to the rules and regulations of Bahria University.

SUBMITTING YOUR ASSIGNMENT:

In order to be graded, you must adhere to the following:

- All assignments must be **HAND WRITTEN**.
- Only use assignment **TEMPLATE** provided to you for your assignments.
- Use only **BLUE** ink pen/pointer. This is to discourage submission of powder photo copy of someone else's work.
- Non compliance will result in a score of zero marks.

LATE AND MISSED SUBMISSIONS:

- Late assignments will not be accepted for any reason whatsoever.
- In case, you fail to show up, submit your assignment through an Email.
- Send **SCANNED** version of **HAND WRITTEN** assignments through Emails.
- Submission through an Email is only for those who are physically unable to attend the University on that particular day.



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- e. Either you submit personally or through an Email the submission deadline will remain the same, i.e., no assignment will be accepted after class timings (assignments must be in my inbox up to 4:30PM).
- f. You are advised to keep a copy of your submission in your own Email account (with the original time-stamp).
- g. For all electronic submission, use **DECENT** Email IDs in format like **your_name_reg.no@whatever.com**. For example, **aiahmed_1234@domain_name.com**. In the Email subject, type your semester and assignment title like **“BCE-3_Memory_Management”**. No Email will be entertained/checked violating this format or having fancy Email IDs (*like cool_guy/cool_princess etc.*) and such assignments will not be graded.

ACADEMIC INTEGRITY:

- a. Students are expected to promote honesty, trust, fairness, respect and responsibility.
- b. In case of any dispute over scores or grades student may file a formal appeal to the head of the concerned department or examination department as per Bahria University reassessment/rechecking/scrutiny policy.

ATTENDANCE POLICY:

- a. Punctuality and regularity shows your commitment and dedication.
- b. Attendance is online now, once entered into the system, cannot be changed later on even by the subject teacher.
- c. Please consult **STUDENT HANDBOOK** for allowed number of absences.

METHOD OF EVALUATION AND STRUCTURE:

A student's grade will be based on multiple measures of performance as mentioned below:

Evaluation Instruments	Marks
Quizzes	10
Project/Assignments/Class Presentation/ Programming/Case Studies/Class Participation	20
Mid Term Examination (Mostly MCQs/ Questions based on reasoning/scenarios)	20
Final Examination (Mostly MCQs/Questions based on reasoning/scenarios)	50
Lab Examination	50
Total:	150



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NOTE: Any change in this scheme/format will be communicated well in time.

GRADING SYSTEM:

Letter Grade (& meaning)		Percentage	Grade Point
A	Outstanding	87 – 100	4.0
B+	Very Good	80 – 86	3.5
B	Above Average	72 – 79	3.0
C+	Satisfactory	66 – 71	2.5
C	Barely Acceptable	60 – 65	2.0
D	Poor	50 – 59	1.5
F	Fail	Below 50	0.0
W	Withdrawal		
I	Incomplete Coursework		

NOTE: The minimum consequence for submitting a plagiarized (copied) or falsified assignment, test, report, project, or any evaluated material will award zero marks on that material.

COUNSELING HOURS:

- Students are encouraged to approach subject teacher beyond class hours to discuss academic or subject related problems.
- Arrange and confirm an appointment through email at: aiahmed@bimcs.edu.pk for an available time slot.
- Ensure your presence in your allocated time slot.

STUDENTS WITH SPECIAL PHYSICAL OR EDUCATIONAL NEEDS/CHALLENGES:

- Students with special physical and/or academic needs/challenges are entitled for extra attention and time beyond class timings.
- Such students are advised to inform this situation to their subject teacher (that's me in this course and other faculty members in other courses) at/before the beginning of the course either through an Email or personally for additional and convenient time slots beyond class hours.
- Special arrangement may also be made available after receiving requests based on specific needs/challenges.



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NOTE: The information in this course outline/lesson plan is subject to revision as conditions may warrant.

RESOURCES:

TEXT BOOKS:

1. Rajaraman V (2013), **Introduction to Information Technology**, 2 / e, Prentice Hall, PH, New Jersey
2. Pohan D P (2010), **Fundamentals of Computers**, Revised Edition, Himalaya Publishing House, HPS, Mumbai

REFERENCE BOOKS:

Brookshear J G (2011), **Computer Science: An Overview**, 11 / e, Prentice Hall, PH, New Jersey

ONLINE RESOURCES:

1. <http://web.cecs.pdx.edu/~harry/cs105/> - PORTLAND STATE UNIVERSITY
2. <http://www.ccs.neu.edu/home/tov/course/cs2500-sp10/> - NORTHEASTERN UNIVERSITY
3. <http://homepage.cs.uiowa.edu/~sriram/16/spring11/> - UNIVERSITY OF IOWA