



Course Outline Introduction to Programming CS161 BSCS- I Fall 2017

Department of Computer Science and Engineering
AIR UNIVERSITY MULTAN CAMPUS (www.aumc.edu.pk)

Course Title	<u>Introduction to Programming</u>		
Course Code	CS-161		
Credit Hours	4	Lab	Yes
Year	2017 (Fall)	Semester	I
Course Instructor	Ahmad Mohsin	Email	ahmad@aumc.edu.pk
Lab Instructor	Ahmad Mohsin	Email	
Office Hours	01:00 TO 002:00 PM	Office	Faculty Office at 5 th floor
Pre-requisite	NILL	Pre-requisite for	CS162 -OOP

Textbooks	Starting Out with C++ from Control Structures to Objects Book by Tony Gaddis 7 th Edition : Pearson	
Reference Material	<ul style="list-style-type: none">• <i>Bjarne Stroustrup, "Programming: Principles and Practice Using C++"</i>• <i>"Introduction to Computer Programming in C++ " by Robert Lafore 4th Edition</i>• <i>C++ How to Prgram 7th Edition or 6th by Dietel & Dietel</i>	
Objectives	This course provides a basic introduction to computers and fundamental programming concepts and methods. Emphasis is on problem solving using algorithmic development methods; good programming practices and style. C++ is used as tool in learning programming. Designed to be a first course for students with little or no prior programming experience	
Lectures	Three weekly lectures of 60 minutes duration each One weekly lab session of 180 minutes duration	
Grading Scheme	Final Exam 45% Mid Term Exam 20% Quizzes 7% (Unannounced) Assignments 8% Term - Project 10% Lab Assessment 10%	

Lecture Plan	Week #	Module	Topics
	1	Introduction To Computers	Computer Hardware and Software, Number system, Computer data : Binary notation, Bits & Bytes, ASCII coding system, Computer Organization, Memory concepts, Files, Operating system
	2	Introduction To Programming Languages	High level / Low-level Languages, Compilers, Linkers, Prog. And Problem solving, Algorithms, Flow charts, Program design process: problem solving phase & Implementation phase, Program errors: Syntax / Runtime / Logic errors, Introduction to C++, Layout of a simple C++ program, A sample C++ program explained. Introduction to Dev C++ environment
		C++ Basics	Data Types, Basic I / O, Constants, Variables, Arithmetic Operators, Operator precedence
	4	Control Structures I (selection)	Relational Operators, Logical Operators and Logical Expressions, Selection: if stmt., Switch stmt
	5	Control Structures I (selection)	while, for, do-while loops, Nested control structures.
	6	User-Defined Functions I	Definition, Arguments, Returning a value
	7	User-Defined Functions II	Scope rules, Call by value, Call by reference, Inline Functions
	8	Mid-term Exam.	
	9	Arrays and Strings	Declaration, Initialization, Accessing and processing one-Dimensional Arrays
	10	Arrays II: Applications and Extensions	List Processing: Searching, Sorting, Multidimensional Arrays
	11	user-Defined Simple Data Types, Namespaces, and string Type	Enumeration Type, Namespaces, and string operations
	12	Pointers I	Declaring, Dereferencing, Initializing Pointer variables, Functions and Pointers
	13	Pointers II	Pointer expressions and arithmetic
	14	Records(structs)	Accessing, assignment, comparison, I/O, Arrays versus Structs, Structs in Arrays
	15	Input / Output Streams	I/O streams, Output formatting, File Input/Output
	16	Semester Project	Project submission and presentation
	Final Exam		



Rules and Regulations:

Plagiarism: No Student shall submit the words, ideas, images or information of another person as his/her own in any academic writing, presentation or project in a course of study.

Cheating: Cheating is not only unethical but is also against the university's rules and regulations. If anyone is caught in a cheating case in any examination or assessment activity, an appropriate action will be taken as per the university's regulations.

Attendance: Students **must** maintain **atleast 75% attendance** in class and lab sessions or he/she will not be allowed to take course exam as per the university policy

Disruption: No Student shall disrupt a Class in such a way that interferes with the normal process of the session or the learning of other Students.

Punctuality and Regularity in all theory and lab sessions are required.
No makeup quizzes shall be taken

Deadlines: Request for change in deadlines of class activities, assignments, presentations and projects etc. shall not be entertained. At least 5% marks shall be deducted for late submission within 24 hours of the deadline.

IDE Tool:

We shall be using Dev C++ IDE DEV C++ / CODE BLOCKS for Programming purposes

Note: It is desirable to take 50% Marks in both Exams (Midterms & Final Terms) along with 50 % Marks in Assignments, Quizzes, and Projects etc.