BIRZEIT UNIVERSITY

Faculty of Engineering and Technology
Department of Computer Science

Introduction to Computers and Programming
(Comp 133/ 2nd Semester 2020/2021)

Course Information

COURSE TITLE	**Introduction to Computers and Programming**		
COURSE CODE	**Comp133**	**CREDIT VALUE**	**3**
INSTRUCTORS	**Bassem Sayrafi, Hafez Barghouthi,Nael Qaraeen, Radi Jara, Wahbeh Mousa**		
DEPARTMENT	**Computer Science Department**		

RELATIONSHIP WITH OTHER COURSES

Co-requisites	NONE	Pre-requisites	Comp131

COURSE DESCRIPTION

This course reviews algorithms and the process of writing pseudo code. For the main part, this course serves as an introductory course in computer programming, which explores different operators, types, conditional statements, looping structures, functions, pointers, arrays, and strings. The course also discusses recursion, structures, as well as file processing.

COURSE OBJECTIVES:

Upon completion of this course, the students will have a good understanding of the main programming structures and concepts.

The student will also be able to:

1. Identify and utilize the different programming structures to write useful programs.
2. Implement a given algorithm using the C programming language.
3. Recognize and use the different tools provided by the CodeBlocks compiler.

COURSE OUTLINE:

Lectures 1wk=2L	*Ch. Title*	*Topics*
3	Overview of C	Introduction to C Programming, A simple ***Algorithm*** + program, Data and Error types, memory Concept, and Arithmetic Operations. Intro. to Text File I/O.
3	Top-Down Design w. Functions	Library Functions, Top-Down Design, Functions without Arguments, Functions with Input Arguments and return value.
3	Selection Structures: If and Switch	Relational and logical operators. The **if statement** and the **switch statement.** Compound if + Nested if.
3	Repetition and Loops	The **while, for,** and **do-while statements**. Break and continue. Nested Loops.
4	Pointers and Modular Programming	Pointers. Functions with simple output parameters, multiple calls to a function with input/output parameters, and formal output parameters as actual arguments. Scope Rules (global, local, static).
5	Arrays	Declaring and referencing **Arrays,** array subscripts, array arguments, searching and sorting. Enum types. Pointer arithmetic. Parallel arrays. Multidimensional arrays
2	Strings	String basics, string library functions, Arrays of pointers.
2	Recursion	The nature of recursion, tracing and writing simple recursive functions.
3	Structures	User-Defined structure types, structure type data as input and output parameters, and functions whose result values are structures.
2	Text and Binary File Processing	Input/output text and binary files.

SPECIAL REGULATIONS

- *Late Assignments will **NOT** be accepted for any reason.*
- *There will be **NO** makeup quizzes.*
- ***Attendance** is mandatory. University regulations will be strictly enforced.*

TEACHING AND LEARNING STRATEGY

Lectures introduce concepts, techniques and information about computers and programming. Practical labs provide practice using the C compiler.

INDICATIVE ASSESSMENT

No.	Assessment method	Weighting %	
1	Mid Term Exam	30%	
2	Final Exam	40%	
3	Project	10%	
4	assignments	15%	
5	Lab works (Quizzes)	5%	

COURSE PASSING REQUIREMENTS

To pass the module, the student must attain an average of at least 60%.

RESOURCES

This course requires a lab of computers, a printer, CodeBlocks software, and an LCD.

TEXT BOOK AND LEARNING SUPPORT MATERIAL

- Problem Solving and Program Design in C, 8th Ed., by Jeri R. Hanly and Elliot B. Koffman

- COMP. 133 LAB Manual

Lab Outline

Lab No.	Lab# in workbook	List of Experiments
1	1	Algorithms Review
2	2	C Building Blocks
3	3	Functions in C-Language programming
		Quiz #1 (Simple C program)
4	4	Decision making the if, if-else, Switch case, and conditional operators
5	5	Looping constructs in C-Language and nested loops
6		**Quiz #2 (C prog with Functions + if)**
7	6	Modular Programming **Quiz #3 (Loops)**
8	7	Arrays in C (single dimensional)
9	8	Arrays in C (Multidimensional) and string functions
10	9	Recursion
		Quiz #4 (Arrays)
11	10	Structures
12	11	Filing in C-Language