هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T4
2023

Course Title:	**Introduction to Computing**
Course Code:	**COMP 111**
Program:	**BS in Computer Science** **BS in Information Technology** **BS in Computer and Network Engineering**
Department:	**Computer Science**
College:	**College of Computer Science and Information Technology**
Institution:	**Jazan University, Jazan**
Version:	**111**
Last Revision Date:	**20 September 2023**

Table of Contents:

A. General information about the course:

Course Identification					
1. Credit hours:	3				
2. Course type					
a.	University ☐	College ☐	Department☒	Track☐	Others☐
b.	Required ☒	Elective☐			
3. Level/year at which this course is offered: Level 1 / Year 1					
4. Course general Description This course introduces the fundamental concepts and features of Computer. It includes the basics of Computer Hardware, Software, Input / Output devices, Computer User / Client, Computer Architecture, Programming, Data Representation, and Utility Applications. This course also covers Python 3 programming language. This is an introductory course designed for all students of Computer Science. Students will use their problem-solving abilities with programming to implement basic programs in Python.					
5. Pre-requirements for this course (if any):					
6. Co- requirements for this course (if any):					
7. Course Main Objective(s) ● **Discuss the basic hardware and software components of personal computers and their applications.** ● **Explain the basic fundamentals of data representation, algorithms, flowcharts and computer programming languages.** ● **Explain the fundamentals of Python programming.** ● **Explain the use of procedural statements - assignments, conditional statements, loops, iterations, strings and lists.**					

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	60	100
2.	E-learning		
3.	Hybrid ● Traditional classroom ● E-learning		
4.	Distance learning		

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	26
2.	Laboratory/Studio	26
3.	Field	
4.	Tutorial	
5.	Others (specify) Exams and Revision	8
	Total	60
Other Learning Hours		
1	Study	
2	Assignments	
3	Library	
4	Project/ Research/ These	
5	Others (Specify)	
	Total	

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	**Describe the major components of a personal computer, including input, output and process, storage, communications hardware and describe their functionalities.**	K1	• Lectures/Presentations • Media Lectures	-MidTerm -Assignment- 1 -Final Theory Exam
1.2	**Define the fundamentals of Programming using procedural statements, use of conditional statements and Data Types.**	K1	• Lectures/Presentations • Media Lectures	-MidTerm -Assignment- 2 -Final Theory Exam
2.0	Skills			
2.1	**Compare various types of Computers and Input / Output Devices.**	S1	• Lectures /Presentations • Media Lectures • Tutorials • Case Studies	•MidTerm •Assignment - 1 •Final Theory Exam
2.2	**Design algorithms and flowchart for a basic given problem.**	S2	• Lectures /Presentations • Media Lectures • Tutorials	•MidTerm •Assignment - 1 •Final Theory Exam
2.3	Develop a program to solve a given problem using the language syntax and semantics.	S3	• Lectures /Presentations • Media Lectures • Tutorials	•MidTerm •Assignment - 2 -Lab Exam -Lab Exercise •Final Theory Exam
3.0	Values			
3.1	Ability to work in a team to solve a given problem.	V2	-Group Discussion	-Lab Exercise

C. Course Content

No	List of Topics	Contact Hours
1.	**Introduction to the worlds of computers** **What is a Computer? Hardware Data vs. Information, Software, Computer Users, End users, Programmers, Computer categories.**	2T+2P
2.	**The System Unit: Processing and Memory** **Data and Program Representation, Digital Data Representation, Byte, Bit,Bit pattern, Data Types, Data representation: Coding Systems for Text-Based Data, Image representation methods, Audio representation, and Video representation. The Binary Numbering System: Binary Number, Decimal Number, Hexadecimal Number, Octal Number, Binary to Decimal Conversion, Decimal to Binary Conversion, Inside the System Unit, The Motherboard, The CPU, Memory.**	2T+2P
3	**Programming** **Algorithms, Flowchart, Pseudo Codes, Programming Languages, Machine Languages, Low Level Languages, High Level Languages, and Natural Languages.**	2T+2P
4	**Variables, Expressions and Statements** **Values and types, Variable names and keywords, Statements, Operators and Operands, Order of Operations, Modulus Operator, String operations, Asking the user for input, Comments and Converting User Input with Python.**	4T+4P
5	**Conditional Execution** **Boolean expressions, Logical Operators, Conditional Execution, Chained Conditionals, Nested Conditionals, More Conditional Execution Steps and Patterns and Catching exceptions using try and except.**	4T+4P
6	**Loops & Iteration** **While loops (Indefinite), Infinite loops, Using break, Using Continue, None constants and variables, For Loops (Definite), Iteration Variables, Loops Idioms, Largest or smallest.**	6T+6P
7	**A String is a Sequence, Getting the length of a string using len, Traversal through a String with a loop, String Slices, the in operator, String comparison, searching a String, Parsing and Replace, Prefixes.** **Lists Constant, List Collections, Lists and Definite loop, Mutable Lists, Range Function, List Slicing and Building List from Scratch. Dictionaries and files, Looping and dictionaries and Advanced text parsing. Tuples Assignments, Comparing Tuples, Using Tuples as Keys in Dictionaries and Multiple Assignment with Dictionaries.**	3T+3P
Total		23T+23P

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1	Assignment - 1	3th Week	10%
2	Assignment - 2	7th Week	15%
3	Midterm Exam	8th Week	15%
4	Lab Exam	9th Week	20%
5	Final Theory Exam	11th Week	40%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	• Python Crash Course: A Hands-On, Project-Based Introduction to Programming by Eric Matthes, No Starch Press, 1 edition (November 1, 2015), ISBN-13: 978-1593276034 • Think Python: How to Think Like a Computer Scientist by Allen B. Downey O'Reilly Media; 2 edition (December 28, 2015), ISBN-13: 978-1491939369 • Learn Python 3 the Hard Way: A Very Simple Introduction to the Terrifyingly Beautiful World of Computers and Code (Zed Shaw's Hard Way Series) by Zed Shaw 1st Edition, Addison-Wesley Professional; 1 edition (July 7, 2017), ISBN-13: 978-0134692883
Required Textbooks	• Understanding Computers Today and Tomorrow, Deborah Morley, Charles S. Parker, Course Technology, Cengage Learning, 15th Edition, 2015, ISBN: 9781285767277. • Python for Everybody: Exploring Data in Python 3 by Dr. Charles Russell Severance (Author), Sue Blumenberg (Editor), Elliott Hauser (Editor), Aimee Andrion (Cover Design) 2nd Edition, 2016, ISBN-13: 978-1530051120
Electronic Materials	• https://www.codecademy.com/learn/python • https://learnpythonthehardway.org/book/ • https://developers.google.com/edu/python/ • https://code.tutsplus.com/articles/the-best-way-to-learn-python-- net-26288

	• http://www.bestechvideos.com/2007/03/02/advanced-python-or- understanding-python • http://www.cs.hmc.edu/csforall/ • http://www.swaroopch.com/notes/python/ • http://opentechschool.github.io/python-beginners/en/index.html
Other Learning Materials	

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Blackboard
Technology equipment (projector, smart board, software)	Blackboard
Other equipment (depending on the nature of the specialty)	

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Sufficiency of resources and Students facilities for students	Students	Course evaluation survey form
Effectiveness of students assessment	Students	Course evaluation survey form
Quality of learning resources	Program leaders / CRC	Review meetings and star rating with suggestions for further modification and improvements
The extent to which CLOs have been achieved	Course Teachers / QAU	CLO assessment template that is further verified at course coordinator and QAU level.
Other		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	