



Electrical and Renewable Energy Engineering Program

Course Specification - (2025-2026)

Computer Programming – CCE112

Academic Year	2025/2026	Semester	Fall
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1. Basic Information

Course Title (according to the bylaw)	Computer Programming				
Course Code (according to the bylaw)	CCE112				
Prerequisite:	Computing in Engineering - CCE011				
Department/s participating in delivery of the course	Electrical and Renewable Energy Engineering				
Number of credit hours/points of the course (according to the bylaw)	Credit Hours	Contact Hours			
		Lecture	Tutorial	Practical	Total
	3	2	0	2	4
Course Type	Compulsory - Major Requirements of Electrical and Renewable Energy Engineering				
Academic level at which the course is taught	Second Level				
Academic Program	Bachelor of Engineering of Electrical and Renewable Energy				
Faculty/Institute	Faculty of Engineering				
University/Academy	Nahda University				
Name of Course Coordinator	Dr. Hend Fathy				
Course Specification Approval:	Department council		Faculty council		
Date of Approval of the course Specification:	13 / 9 / 2025		16 / 9 / 2025		



2. Course Overview

This course introduces the fundamentals of Python programming, covering basic programming concepts such as variables, data types, operators, and control structures. It focuses on working with Python data structures including lists, tuples, dictionaries, and sets, along with their common operations. The course also covers built-in and user-defined functions, function calling, passing arguments, returning values, and basic function overloading concepts using default and variable-length arguments. In addition, students are introduced to file handling, exception handling, and basic input/output operations

3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with program outcomes POs (NARS/ARS)

Program Outcomes (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	Text	Code	Text
A2	Develop and conduct appropriate experimentation and/or simulation, analyze and interpret data, assess, and evaluate findings, and use statistical analyses and objective engineering judgment to draw conclusions.	CLO2	Identify appropriate programming languages to use.
		CLO3	Apply the fundamentals of programming language.
		CLO4	Build independent blocks or functions that can be used in other programs.
		CLO5	Plan, design, implement and test computer programs and applications
B5	Adopt suitable national and international standards and codes to: design, build, operate, inspect and maintain electrical/electronic/digital equipment, systems and services.	CLO1	Describe formal syntax and high-level semantics of a programming language.
		CLO2	Identify appropriate programming languages to use.
		CLO5	Plan, design, implement and test computer programs and applications.



4. Teaching and Learning Methods

1. Interactive Lectures
2. Self-Learning
3. Experimental Learning
4. Research and Reports
5. Problem Solving

Course Schedule

Number of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Expected number of the Learning Hours				
			Lecture Hours	Tutorial Hours	Practical Hours	Self-learning (Ass/ Project)	Other
1	Lecture: Review on the main concept of the computer programming. Lab: Variables assignments, precedence, and basic math operations.	6	2	0	2	2	-
2	Lecture: Print Operation and Get User input. Lab: Prepare a complete program design.	6	2	0	2	2	-
3	Lecture: Strings, Lists, and Dictionaries data types. Lab: Write an example python programs for array.	6	2	0	2	2	-
4	Lecture: Booleans, Tuples, sets data types. Lab: Write an example python programs for pointers.	6	2	0	2	2	-
5	Lecture: Comparison, logical operators, if Statements. Lab: Prepare a complete program.	8	2	0	2	2	Quiz 1 (2 Hr)
6	Lecture: For and While Loops. Lab: Prepare a complete program.	6	2	0	2	2	-
7	Lecture: List Comprehensions. Lab: Prepare a complete program.	6	2	0	2	2	-
8	Lecture: Nested Loop. Lab: Prepare a complete program.	6	2	0	2	2	-
9	Lecture: Built-in Function.	6	2	0	2	2	-



	Lab: Write an example python programs for functions.						
10	Lecture: Functions. Lab: Program for calling the functions.	8	2	0	2	2	Quiz 2 (2 Hr)
11	Lecture Filters, Lambda. Lab: Program for passing arguments to functions.	6	2	0	2	2	-
12	Lecture: CSV files operations. Lab: Text files operations.	6	2	0	2	2	-
13	Lecture: Program for returning values from functions. Lab: Program for overloaded functions, classes.	6	2	0	2	2	
14	Lecture: Introduction to object-oriented programming. Lab: Prepare a complete program design.	6	2	0	2	2	-
15	Revision	6	2	0	2	2	-
16	Final Term Exam						

5. Methods of students' assessment

No.	Method of assessment	Assessment Timing (Week Number)	Marks	Percentage of total course Marks
1	Quiz (1)	Week 6	10	10 %
2	Quiz (2)	Week 13	10	10 %
3	Midterm exam	Week 7	20	20 %
4	Final Practical Exam	Week 15	5	10 %
5	Final Oral Exam	Week 15	5	10 %
6	Final written exam	Week 17	40	40 %



6. Learning Resources and Supportive Facilities

Learning resources (books, scientific references, etc.)	The main (essential) reference for the course	Muhammad H. Rashid, Power Electronics: Devices, Circuits and Applications, Pearson Education, 4 th . Edition, 2014.
	Other References	S. B. Dewan and A. Straughen, Power Semiconductor Circuits, J. Wiley & Sons, 1975.
	Electronic Sources	www.ekb.eg
	Learning Platforms	https://lms.nub.edu.eg/login/index.php
	Other (to be mentioned)	-
Supportive facilities & equipment for teaching and learning	Devices/Instruments	Data Show System
	Supplies	White Board
	Electronic Programs	Python
	Skill Labs/ Simulators	Lab Facilities
	Virtual Labs	-
	Other (to be mentioned)	Library

Dr. Hend Fathy
Course Coordinator

Dr. Hend Fathy

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Program Coordinator