Arab Academy for Science and Technology & Maritime Transport
College of Computing & Information Technology

University/Academy:	Arab Academy for Science and Technology & Maritime Transport
Faculty/Institute:	College of Computing and Information Technology
Program:	B.sc. in Computer Science

Course title	Introduction To Computers
Course code	CS111

Form no. (11A)
Knowledge and skills matrix for a course

Course content	Week study	Knowledge	Intellectual skills	Professional skills	General skills
Introduction to the World of Computers	1	• Understand why it's essential to learn about computers today. • Describe several uses for computers in business or personal life. •		Use the computer to do basic Word & Powerpoint documents	• Use computer-related terminology. Using Internet to increase Knowledge •
System and Application Software	2	• Differentiate between system software and application software • List the functions of the operating system • List the functions of utility programs • Identify the basic features of application software	•		• Use computer-related terminology.
Processing and Memory	3	• Identify some of the major components of a	• Convert between numbering systems.		• Use computer-related terminology.

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		computer system and explain their relationships to one another. • Understand the basic of computer networking			
Program Development and Programming Languages	4	• Identify the stages of the program development life cycle • Explain the importance of, and provide examples of, proper programming style and documentation • Explain the differences between syntax errors, runtime errors, and logic errors	• Solve given problems by drawing a flowchart		• Use computer-related terminology.
Introduction to Programing using Scratch	5	• Understand computer basics, programs, and operating systems • Explain the basic syntax of a Scratch program •	•	• Develop and run a simple program	
Elementary Programming	6	• Know how to obtain input from a program's user by using the **input** function • use identifiers to name variables • understand assigning data to variables • define named constants	• evaluate numeric expressions • evaluate numeric type conversion and rounding with the **int** and **round** functions		

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		• understand using use the operators **+**, **-**, *****, **/**, **and %** • understand using augmented assignment operators to simplify coding •			
7th week Exam	7	•	•		
Mathematical Functions	8	• Understand representing and process strings and characters • Understand to encode characters using ASCII and Unicode • Know to represent special characters using the escape sequence	• Solve mathematics problems by using the functions in the **math** module	• Use the **ord** to obtain a numerical code for a character and **chr** to convert a numerical code to a character •	
Strings and Objects	9	Know to read strings from the console • Understand to introduce objects and methods • Understand to format numbers and strings using the **format** function	•	• Solve common problems using programming	
Selection	10	• Understand to generate random numbers functions • To avoid common errors in **if** statements • Know To program with	•	• Develop programs with selection statements	

Course content	Week study	Knowledge	Intellectual skills	Professional skills	General skills
		selection statements • Understand To combine conditions by using logical operators (**and**, **or**, and **not**) • Know To use selection statements with combined conditions • Understand the rules governing operator precedence and associativity			
Loops(1)	11	• Understand the loop structures • Understand To control a loop with the user's confirmation • Know To control a loop with a sentinel value •	•	• use **for** loops to implement counter-controlled loops Develop programs nested loops • develop loops following the loop design strategy	
12th week Exam	12	•	•	•	
Loops(2)	13	• learn loops from a variety of examples	•		
Functions(1)	14	• Know To define functions • Know To invoke value-returning functions • Understand To invoke functions that does not return a value	•	• Develop programs with loops of different types •	

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		• Understand to passing arguments by values •			
Functions(2)	15	• Understand to determine the scope of variables • To define functions with default arguments • Know to return multiple values from a function	• design and implement functions using stepwise refinement apply the concept of function abstraction in software development		

Course Instructor

Name: **Dr. Hoda Mamdouh**

Signature:

Head of Department

Name: **Dr. Samah Senbel**

Signature: