



University/Academy: Arab Academy for Science, Technology & Maritime Transport
Faculty/Institute: College of Engineering & Technology
Program: B.Sc. Computer Engineering

Form no. (12): Course Specification

1- Course Data

Course Code: CC213	Course Title: Programming Applications	Academic Year/Level: 2nd year / 3rd semester
Specialization: Computer Engineering	Credit Hours: 3 Lecture: 2 Lab: 2	Prerequisite ----- CC112

2- Course Aim

To help students develop engineering skills to design and solve problems using C structured programming

3- Intended Learning Outcomes

a- Knowledge and Understanding	<p>Through knowledge and understanding, students will be able to: a1. Concepts and theories of mathematics and sciences, appropriate to the computer engineering.</p> <ul style="list-style-type: none"> • Define functions and the input arguments. • Describe how to build functions using pointers. • Explain the declaration and referencing of arrays. • Describe how to use array elements as function arguments. • Explain the declaration and referencing of multi-dimensional arrays. • Define the searching and sorting algorithms. • Describe the binary search algorithm. • Describe the bubble sort algorithm. • Explain the Strings manipulation in C. • Describe how the pointer mechanism in C works. • Explain the structure and its declaration and using. • Explain the use of standard input, standard output and program-controlled text files. • Show how to use text files by using functions.
b- Intellectual Skills	<p>Through intellectual skills, students will be able to: b2. Think in a creative and innovative way in problem solving and design using the latest technologies and solve engineering problems, often on the basis of limited and possibly contradicting information while identifying symptoms in problematic situations.</p> <ul style="list-style-type: none"> • Detect the scope of validity of variables in functions in C. • Apply arrays in c programs. • Apply multi-dimensional arrays in c programs <p>b3. Combine, exchange, and assess different ideas, views, and knowledge from a range of sources...</p> <ul style="list-style-type: none"> • Discover the binary search algorithm. • Apply the bubble sort algorithm. <p>b4. Assess and evaluate the characteristics and performance of components, systems and processes and investigate their failure.</p> <ul style="list-style-type: none"> • Apply strings as arguments in functions. • Demonstrate using the importance of using pointers in many applications.

c- Professional Skills	<p>Through professional and practical skills, students will be able to: c1. Professionally merge the engineering knowledge, understanding, and feedback to improve design, products and/or services.</p> <ul style="list-style-type: none"> • Compare between different searching algorithms • Compare between different sorting algorithms. • Manipulate using strings by the functions.
d- General Skills	<p>Through general and transferable skills, students will be able to: d3. Demonstrate efficient IT capabilities.</p> <ul style="list-style-type: none"> • Verify theory with practical programs.

4- Course Content

Week No.1	Revision.
Week No.2	Functions and the input arguments.
Week No.3	Functions using pointers.
Week No.4	Declaration and referencing of arrays.
Week No.5	Declaration and referencing of multi-dimensional arrays.
Week No.6	Searching and sorting algorithms.
Week No.7	7 th Week Exam + Searching and sorting algorithms
Week No.8	Strings manipulation in C.
Week No.9	Pointer mechanism in C.
Week No.10	Structures.
Week No.11	Standard input, standard output and program-controlled text files.
Week No.12	12 th Week Exam.+ Standard input, standard output and program-controlled text files.
Week No.13	Using text files by using functions.
Week No.14	Presentation of projects
Week No.15	Presentation of projects
Week No.16	Presentation of projects and Final Exam.

5- Teaching and Learning Methods

<ul style="list-style-type: none"> • Lectures • Tutorials • Reports & sheets • Laboratories • Seminars

6-Teaching and Learning Methods for Students with Special Needs

<ul style="list-style-type: none"> • Lectures • Tutorials • Reports & sheets • Laboratories • Seminars <p>The academic advisors of each student, as well as dedicated department TAs monitor the students' progress and solve any problem he/she may encounter</p>

7- Student Assessment

a-Procedures used	<p>1-Written Examinations to assess The Intended Learning Outcomes.</p> <p>2-Class Activities (Reports, Discussions, -----) to assess The Intellectual Skills.</p>
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b- Schedule:	Assessment 1 Assessment 2 Assessment 3 Assessment 4	7 th Week Written Exam 12 th Week Written Exam Continuous Assessments 16 th Week Final Written Exam
c- Weighing of Assessment	7 th Week Examination 12 th Week Examination Final-term Examination Oral Examination Practical Examination Semester Work Total	25 % 15 % 40 % 00 % 10 % 10 % 100%

8- List of References:

a- Course Notes	• Available on the moodle http://lms.aastmt.org
b- Required Books (Textbooks)	• C Program Design for Engineers By: Jerry R.Hanly & Elliot B.Koffman
c- Recommended Books	• The C programming language By: Brian Kerning & Dennis Ritchie • Programming with C By: Byron S. G. Hfield
d- Periodicals, Web Sites, etc.	N/A

Course Instructor:
Dr. Ihab Abd Alla

Program Manager:
Prof. Dr. Mohamad AbouEl-Nasr

Dean of College of Engineering and Technology of AASTMT
Name: **Prof. Moustafa Hussein Aly**
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