



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: CC501	Course Title: Graduation Project I	Academic Year/Level: 5th year / 9th semester	
Specialization: Computer Engineering	No. of Instructional Units	Lecture	Practical
	3	2	2

2- Course Aim

The objective of this course is to realize a design-based computer engineering project containing phases of the product life cycle. The course leads the students to use the knowledge they gained during their education in the department and present their work. Students will be able to apply computer-based project design and development. This will address the skills of modeling, design, realization of literature survey, project documentation, presentation of project's progress, mathematical formulation, and the typical phases of the system development life cycle. Moreover, communication skills and the soul of team work will be highlighted.

3- Intended Learning Outcomes

a- Knowledge and Understanding	<p>Through knowledge and understanding, students will be able to:</p> <ul style="list-style-type: none"> • List the main objectives of the project • Demonstrate relevance of methodology. • Define the problem • Demonstrate the motivation of work • Explain and identify the applications of the projects and its link and implicate with real and industrial life. • Distinguish among different related models in Literature. • Tabulate references to other related applied methods. • Understand advances in related models and architectural design. • Identify the system model • Illustrate the characteristics of System Level Modeling for Hardware/Software Systems • Demonstrate the system design process • Identify the model process diagram • Describe project phases, process functions, input and output interactions. • Describe design process • List different architectural design. • Identify project model components - Identify System Level Language requirements. • Show the available resources and data collection. • Define High level abstraction of object-based software design • Describe the design process • Identify the project component costs • Summarize the conclusions of the Phase I of the project. • List recommendations for Project II phase. • Demonstrate the ability of student to explain, demonstrate knowledge, and achieve appropriate response.
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b- Intellectual Skills	<p>Through intellectual skills, students will be able to:</p> <ul style="list-style-type: none"> • Demonstrate the expected outcomes of the project • Demonstrate the parametric model and construct the mathematical model Formulation • Apply comparisons between different related models in Literature • Report the strength and limitations of different applied methods. • Survey on different technologies. • Demonstrate different design issues. • Analyze process phases • Plan the selection of components and tools particular project. • Relate different resources and classify dataset categories.. • Demonstrate different design issues. • Determine the project components cost and classify different up-to-date related technologies. • Construct models for initial phases of the project • Apply initial experiments with different architectures. • Report conclusions • Demonstrate the tasks achieved during Project I.
c- Professional Skills	<p>Through professional and practical skills, students will be able to:</p> <ul style="list-style-type: none"> • Distinguish among different models in Literature. - Classify the main categories of applied sub-systems in related projects in Literature. Classify different models • Classify related software and/or hardware design processes. - Analyze different design models. • Prepare datasets, circuits components and project facilities allocation • Design with different models • Analyze the cost of various project phases, total project cost, and cost optimization. • Implement initial Circuits, level design of basic elements as well as of some larger blocks. • Initialize experiments with some applications. • Analyze and discuss the Achievement of stated aims.
d- General Skills	<p>Through general and transferable skills, students will be able to:</p> <ul style="list-style-type: none"> • Communicate with students to survey on the main background and sketch comparative literature among different related models and techniques in Literature. • Sketch system model. • Propose different models for software and/or hardware design phases. • Communicate with different technologies and verify cost estimates • Verify design issues. • Practice with some validation of the system model • Communicate for further enhancements • Estimate the expected time for the achievement of Goals.

4- Course Content

Week No.1	State the project aim and objectives,
Week No.2	Formulation / definition of the problem.
Week No.3	Motivation and Applications
Week No.4	Literature Survey
Week No.5	System Level Modeling for Hardware/Software sub-Systems
Week No.6	System design process and Formulation of the Model process diagram

- Week No.7** Project phases description and formulation
- Week No.8** Model Components, categories of hardware/ software required tools.
- Week No.9** Datasets and resource allocation facilities
- Week No.10** Design Process.
Cross-section views of the design field, from the bare bone details to High level abstraction of phase design
- Week No.11** Cost estimates
- Week No.12** Start phase I implementation of project Hardware and/or software modules
- Week No.13** Conclusions and recommendations
- Week No.14** Oral presentation

5- Teaching and Learning Methods

- Lectures
- Tutorials
- Reports & sheets
- Laboratories
- Seminars

6-Teaching and Learning Methods for Students with Special Needs

- Lectures
- Tutorials
- Reports & sheets
- Laboratories
- Seminars

The academic advisors of each student, as well as dedicated department TAs monitor the students' progress and solve any problem he/she may encounter.

7- Student Assessment

a-Procedures used	1-Class Activities (Reports, Discussions, seminars, presentations -----) to assess The Intellectual Skills.	
	2-Written Report to assess the Intended Learning Outcomes.	
b- Schedule:	Assessment 1	7 th Week presentation and draft report #1
	Assessment 2	12 th Week presentation, discussion and draft report #2
	Assessment 3	Continuous
	Assessment 4	15 th Week Final Oral presentation and discussion through seminars.
c- Weighing of Assessment	7 th Week Examination	30 %
	12 th Week Examination	20 %
	Final-term Report Writing	20 %
	Oral seminar exam	20 %
	Practical Examination	00 %
	Semester Work	10 %
	Total	100%

8- List of References:

a- Course Notes	
b- Required Books (Textbooks)	

c- Recommended Books	
d- Periodicals, Web Sites, etc.	

Course Instructor:
Assoc. Prof. Dr. Sherin M. Youssef

Program Manager:
Prof. Dr. Mohamad AbouEI-Nasr

**Dean of College of Engineering and
Technology of AASTMT**

**Executive Manager of Quality Assurance
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Name: **Prof. Moustafa Hussein Aly**

Name: **Prof. Aziz Ezzat**

Signature:

Signature: