

University: Alexandria
Faculty: Science
Program: Computer Science

**Form no. (12)
Course Specification**

1- Course Data

Course Code: CS 311	Course Title: <i>Intermediate Software Design and Engineering</i>	Academic Year/Level: Third level (First semester)
Specialization: Computer Science	No. of Instructional Units: Lecture <input type="text" value="2"/> Lab <input type="text" value="1"/>	

2- Course Aim	<ul style="list-style-type: none"> • This course is designed to encourage in students a sense of interest for Component Software Design and its application in different contexts • Provide a solid foundation in the major areas of Component Software Design • Provide education and training of high quality in Component Software Design
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3- Intended Learning Outcome

a- Knowledge and Understanding	a1. Describe the main concepts, definitions of Component Software Design a2. Review theories and concepts used in Design Patterns a3. Identify an understanding of the contribution and impacts of Component Software Design in scientific, social, economic, environmental, political and cultural terms. a4. The component interface and CBSE a5. The component testing for all Component Software a6. The different types of design patterns
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b- Intellectual Skills	<p>b1. Manipulate and apply appropriate theories, principles and concepts relevant to Component Software Design</p> <p>b2. Critically assess and evaluate the literature within the field of Component Software Design</p> <p>b3 Deduce and interpret information from a variety of sources relevant to Component Software Design</p>
c- Professional Skills	<p>c1. Plan, design and execute practical activities using techniques and procedures Appropriate to Component Software Design</p> <p>c2. Execute a piece of independent research using Component Software, computer media and techniques;</p>
d- General Skills	<p>d1. Develop appropriate effective written and oral communication skills relevant to the specific course of Component Software Design</p> <p>d2. Demonstrate the ability to work effectively as part of a group</p> <p>d3. Solve problems relevant to Component Software Design using ideas and techniques some of which are at the forefront of the discipline.</p> <p>d4. Solve problems relevant to applications in real life in computer science using Component Software and design patterns some of which are at the forefront of the discipline;</p>
4- Course Content	<ul style="list-style-type: none"> • Introduction to software engineering • Software design and architecture • Data flow diagram and UML • Software coding and implementation • Project management and risk analysis • Component based software • Reuse component software • Component software design and process • Component testing • Design patterns • Creational design patterns • Structural design patterns • Behavior design patterns • Applications

5- Teaching and Learning Methods	Lecturers – Home works - Oral discussion - Quizzes
6- Teaching and Learning Methods for Students with Special Needs	NONE
7- Student Assessment:	
a- Procedures used:	Lecturers – tutorials- homework – oral discussion - Quizzes
b- Schedule:	Mid-Term exam... Week 10 Final exam Week 17
c- Weighing of Assessment:	Term work (exam + home works) 20% Oral exam 10% Final exam 70%
8- List of References:	Object oriented and classical software engineering, schach, 2002 Design patterns, Gamma, 1996
a- Course Notes	Course notes provided by the Faculty member of Computer Science Division, Math department, to be handled at the beginning of the semester.

b- Required Books (Textbooks)	
c- Recommended Books	
d- Periodicals, Web Sites, ..., etc.	

Course Instructor: Dr. Yasser Fouad

Head of Department: Prof. Dr. Wagdy Gomaa.

Date: 1/10/2014