FUTURE UNIVERSITY IN EGYPT
جامعة المستقبل

Faculty of Computers and Information Technology

Advanced Programming

Information :

Course Code :	CS224	**Level :**	Undergraduate	**Course Hours :**	3.00- Hours

Department :	Faculty of Computers and Information Technology

Instructor Information :

Title	Name	Office hours
Lecturer	AMIRA SAYED ABDELAZIZ ALI	1
Teaching Assistant	Fatmaelzahra Hamdi Abdallah Mohamed	

Area Of Study :

Explain the different object-oriented programming (Java) concepts.
Design software programs using object oriented patterns (Java).
Implement solutions to problems using an object-oriented programming language (Java). Implement a full GUI Program
Use socket programming for designing multi-user programs
Implement a programs using file I/O Streams

Description :

This course is designed to give the student a deep view to object oriented programming. It also covers many topics related to creating rich desktop applications. Students get involved in practical applications regarding the implementation of GUI Components, File Streaming, Threading and Basic Socket Programming.

Course outcomes :

a.Knowledge and Understanding: :	
1 -	Outline the OOP (Java) concepts.
2 -	Explain the OOP (Java) concepts (Encapsulation, Inheritance, Polymorphism, Abstraction and Interfaces).
3 -	State the different GUI design methods and tools for OOP (Java).
4 -	Identify the different I/O stream methods for OOP (Java).
b.Intellectual Skills: :	
1 -	Analyze a given problem to design a system using OOP (Java) concepts.
2 -	Select appropriate OOP (Java) methodologies and GUI components for a given problem solution and setting out their limitations, restrictions and errors.
3 -	Differentiate between algorithms, methods and techniques used in I/O streams for OOP (Java).
c.Professional and Practical Skills: :	
1 -	Design, implement and test for OOP (Java) techniques to solve various problems.
2 -	Apply OOP (Java)concepts for implementing a computer based system.
3 -	Create a complete user interface programs for OOP (Java).

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4 -	Use I/O streams libraries and socket for OOP (Java).
d.General and Transferable Skills: :	
1 -	Exploit a range of learning resources.
2 -	Work on a team

ABET Course outcomes :	
1 -	Demonstrate adequate understanding of object-oriented programming concepts.
2 -	Design and develop software programs using patterns of an object-oriented programming language.
3 -	Implement solutions to problems using an object-oriented programming language.
4 -	Design and develop full GUI applications.
5 -	Use socket programming to design and develop multi-user applications.
6 -	Design and develop file I/O streams applications.

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Classes and Objects	4	2	2
OOP : Encapsulation and Inheritance	4	2	2
OOP: Polymorphism (static and dynamic binding)	4	2	2
OOP: Abstraction and Interface.	4	2	2
Graphical User Interface (GUI): ÅGUI Class Hierarchy ÅFrames and panels	4	2	2
Graphical User Interface (GUI): ÅGUI Components	4	2	2
Graphical User Interface (GUI): ÅDrawing , Using Colors, Fonts, and Font Metrics, Geometric Figures	4	2	2
File Streams	4	2	2
Mid Term Exam	2		
File Streams	4	2	2
Socket Programming	4	2	2
Socket Programming	4	2	2
Course Project	4	2	2
Final Exam	2		

Teaching And Learning Methodologies :
Interactive Lectures including discussion
Practical Lab Sessions
Self-Study (Project / Reading Materials / Online Material / Presentations)
Problem Solving

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Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
Assignments	10.00	3	
Final Exam	40.00	14	
Midterm Exam (s)	20.00	9	
Quizzes	10.00	5	
Team Work Projects	20.00	7	

Course Notes :

Course Notes are available with all the slides used in lectures in electronic form on Learning Management System (Moodle)

Recommended books :

Poo, Danny, Kiong, Derek, Ashok, Swarnalatha , ñObject-Oriented Programming and Javaò(last version), 978-1-84628-963-7

Web Sites :

https://docs.oracle.com/javase/tutorial/java/concepts/

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