

**Faculty of Computers & Information Technology**

**Computer Programming-2**

**Information :**

**Course Code :** CS213

**Level :** Undergraduate

**Course Hours :** 3.00- Hours

**Department :** Faculty of Computers & Information Technology

**Area Of Study :**

Explain the different object oriented programming concepts.  
Analyze a given requirement to match the object oriented programming concepts.  
Compare and select methodologies from range of techniques, theories and methods to develop an object oriented programming.

**Description :**

Object-oriented programming: data abstraction, encapsulation, classes, objects, templates, operator overloading, function overloading, inheritance, polymorphism, exception handling, and streams.

**Course outcomes :**

**a.Knowledge and Understanding: :**

1 -	Apply the basic concepts and theories of algorithms using pseudo-code.
2 -	Combine and evaluate different structured programming tools.
3 -	Use the concepts of inheritance, polymorphism, the Abstract classes, Interfaces and object oriented programming model.
4 -	Analyze the object oriented programming logic, techniques and use in practical applications.

**b.Intellectual Skills: :**

1 -	Illustrate a set of methods for a given problem associated with their results
2 -	Select appropriate methodologies and techniques for a given problem solution and setting out their limitations, restrictions and errors using object oriented programming.
3 -	Evaluate and justify different solutions using well-defined object oriented programming criteria's.
4 -	Compare and differentiate between algorithms, methods and techniques used in object oriented programming.

**c.Professional and Practical Skills: :**

1 -	Analyze, design, implement and test object oriented programming techniques to solve various problems.
2 -	Apply and design methodologies of object oriented programming different supporting tools.
3 -	Use human computer interaction principles in the construction and evaluation of user interfaces for object-oriented programming language applications.

**d.General and Transferable Skills: :**

1 -	Exploit a range of learning resources.
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2 - Utilize effectively general computing facilities

**Course Topic And Contents :**

Topic	No. of hours	Lecture	Tutorial / Practical
Introduction to Computer Programming	4	2	2
Fundamentals of a JAVA Program- Data Types and Operators	4	2	2
Control Structures - Creating Conditional Statements	4	2	2
Creating Iteration Statements	4	2	2
Methods	4	2	2
Arrays	4	2	2
The conceptual basis of Object Orientated Programming	4	2	2
Primitive data types and data types as objects. Data Abstraction and encapsulation	4	2	2
Mid Term Exam	2		
Classes and object as abstract data types	4	2	2
An object-oriented programming language syntax, creating objects from class definitions - Inheritance	4	2	2
OOP: Polymorphism, Abstract class, Interface.	4	2	2
Project presentation	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)

Case Studies

**Course Assessment :**

Methods of assessment	Relative weight %	Week No	Assess What
Assignments	5.00	4	
Final Exam	40.00	14	
Midterm Exam (s)	20.00	9	
Others (Participations)	5.00		
Presentations	5.00	12	
Quizzes	10.00	5	
Team Work Projects	10.00	12	

**Course Notes :**

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