



B. P. PODDAR INSTITUTE OF MANAGEMENT & TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
ACADEMIC YEAR: 2021-2022 [ODD SEMESTER]
CO-PO-PSO MAPPING DOCUMENT

Course: Object Oriented Programming
Code: PCC-CS503
Branch & Sec: CSE (Sec-A & B)

TABLE-1

After completion of the course students will be able to-

Unit.	Hrs	Sub-Topic (from syllabus)	Instructional Learning Outcome(ILO) (Cognitive Process /Knowledge Dimension)	Topic Learning Outcome(TLO)	Course Outcome(CO)
1	8	Abstract data types and their specification. How to implement an ADT. Concrete state space, concrete invariant, abstraction function. Implementing operations, illustrated by the Text example.	1.1 Explain the purpose of designing abstract data types PI: 1.4.1, 2.1.1 1.2 Explain different abstract data types and their use. PI: 1.4.1, 2.1.1 1.3 Explain Concrete state space, concrete invariant, abstraction function PI: 1.4.1, 2.1.1 1.4 Design Abstract data type and abstraction functions for a given problem statement. PI: 1.4.1, 2.1.1, 2.1.2, 2.1.3, 2.2.4, 2.2.5, 3.1.1, 3.2.1, 3.2.2	TLO1.1. Explain the concept and types of different ADT. TLO1.2. Develop suitable ADT for a given problem definition.	CO1: Implement operations of different ADTs (Apply) Assessment Tools: CT, OT, PS, Q
2	8	Features of object-oriented programming. Encapsulation, object identity, polymorphism – but not inheritance.	2.1 Explain basic features of object oriented programming PI: 1.4.1, 2.1.1 2.2 Use the features of object oriented programming to design solution for given problem statements.	TLO2.1 Explain different features of object oriented programming TLO2.2 Implement basic features of OOP in simple programs.	CO2: Design simple programs by using OOP concepts. (Create) Assessment Tools:



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			PI: 1.4.1, 2.1.1, 2.1.2, 2.1.3, 2.2.4, 2.2.5, 3.1.1, 3.2.1, 3.2.2		CT, PS,OT,Q
3	6	Inheritance in OO design. Design patterns. Introduction and classification. The iterator pattern.	<p>3.1 Illustrate the concepts of Inheritance and its types, method overloading, Dynamic method dispatch PI: 1.4.1, 2.1.1, 2.1.2, 2.1.3, 2.2.3, 2.2.4, 2.2.5, 2.4.3, 2.4.4, 3.1.1, 3.2.1, 3.2.2</p> <p>3.2 Compare abstract class and interface on different context. PI: 1.4.1, 2.1.1, 2.1.2, 2.1.3, 2.2.3, 2.2.4, 2.2.5, 2.4.3, 2.4.4, 3.1.1, 3.2.1, 3.2.2</p> <p>3.3 Implement different kind of inheritance using class and interface in simple programs. PI: 1.4.1, 2.1.1, 2.1.2, 2.1.3, 3.1.1, 3.2.1, 3.2.2, 4.2.1</p> <p>3.4 Explain different types of design patterns. PI: 1.4.1, 2.1.1, 2.1.2, 2.1.3, 2.2.3, 2.2.4, 2.2.5, 2.4.3, 2.4.4, 3.1.1, 3.2.1, 3.2.2</p> <p>3.5 Illustrate the operations of iterator pattern. PI: 1.4.1, 2.1.1, 2.1.2, 2.1.3, 2.2.3, 2.2.4, 2.2.5, 2.4.3, 2.4.4, 3.1.1, 3.2.1, 3.2.2</p> <p>3.6 Implement iterator pattern in simple programs. PI: 1.4.1, 2.1.1, 2.1.2, 2.1.3, 2.2.3, 2.2.4, 2.2.5, 2.4.3, 2.4.4, 3.1.1, 3.2.1, 3.2.2</p>	<p>TLO3.1 Design suitable solutions of a given problem using inheritance properties.</p> <p>TLO3.2 Compare abstract class and interface.</p> <p>TLO3.3 Explain the concept and advantage of design pattern.</p> <p>TLO3.4 Construct simple programs using iterator pattern.</p>	<p>CO3: Utilise common object-oriented design patterns and give examples of their use. (Apply)</p> <p>Assessment Tools: CT, PS,OT,Q</p>



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4	6	<p>Model-view-controller pattern. Commands as methods and as objects. Implementing OO language features. Memory management.</p>	<p>4.1 Explain and use Model-view controller pattern. PI: 1.4.1, 2.1.1, 2.1.2, 2.1.3, 2.2.3, 2.2.4, 2.2.5, 2.4.3, 2.4.4, 3.1.1, 3.2.1, 3.2.2</p> <p>4.2 Use Commands as methods and as objects PI: 1.4.1, 2.1.1, 2.1.2, 2.1.3, 2.2.3, 2.2.4, 2.2.5, 2.4.3, 2.4.4, 3.1.1, 3.2.1, 3.2.2</p> <p>4.3 Implement memory management in simple programs. PI: 1.4.1, 2.1.1, 2.1.2, 2.1.3, 2.2.3, 2.2.4, 2.2.5, 2.4.3, 2.4.4, 3.1.1, 3.2.1, 3.2.2, 4.2.1</p>	<p>TLO4.1 Construct Solution of a given problem statement using Model-view controller pattern. TLO4.2 Utilise the concepts of memory management, commands and methods as objects to write efficient codes.</p>	<p>CO4: Use model view controller pattern, memory management to write efficient programs. (Apply)</p> <p>Assessment Tools: CT, PS, TP, Q</p>
5	10	<p>Generic types and collections GUIs. Graphical programming with Scale and Swing . The software development process</p>	<p>5.1 Use the concepts of Generics and collections to write efficient programs. PI: 1.4.1, 2.1.1, 2.1.2, 2.1.3, 2.2.3, 2.2.4, 2.2.5, 2.4.3, 2.4.4, 3.1.1, 3.2.1, 3.2.2</p> <p>5.2 Construct suitable graphical user interface using Swing and Scale. PI: 1.4.1, 2.1.1, 2.1.2, 2.1.3, 2.2.3, 2.2.4, 2.2.5, 2.4.3, 2.4.4, 3.1.1, 3.2.1, 3.2.2</p> <p>5.3 Explain the concept of software development process PI: 1.2.1, 1.4.1, 2.1.1, 2.1.2, 2.1.3, 2.2.3, 2.2.4, 2.2.5, 2.4.3, 2.4.4, 3.1.1, 3.2.1, 3.2.2</p>	<p>TLO5. Apply generics and collection to write efficient programs. TLO5. Use the knowledge of SDLC swing scale to design simple applications.</p>	<p>CO5: Design applications with event driven graphical user interface. (Create)</p> <p>Assessment Tools: CT, PS, TP, Q</p>



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TABLE-2

COURSE OUTCOMES

SNO	DESCRIPTION	BLOOM LEVEL
PCCCS503.1	Implement operations of different ADTs	Apply
PCCCS503.2	Design simple programs by using OOP concepts.	Create
PCCCS503.3	Utilise common object-oriented design patterns and give examples of their use.	Apply
PCCCS503.4	Use model view controller pattern, memory management to write efficient programs.	Apply
PCCCS503.5	Design applications with event driven graphical user interface.	Create



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TABLE-3

SUMMARY OF COS AND POS RELATION

CO	% of POs (PIs) related with COs
CO1	PO1- 1(20%), PO2- 5 (38%), PO3- 3 (21%)
CO2	PO1- 1 (20%), PO2- 5 (38%), PO3- 3 (21%)
CO3	PO1- 1(20%), PO2- 8 (62%), PO3- 3 (21%), PO4- 1 (13%)
CO4	PO1- 1(20%), PO2- 8(62%), PO3- 3 (21%), PO4- 1 (13%)
CO5	PO1- 2(40%), PO2- 5(38%), PO3- 3(21%)

TABLE-4

COURSE OUTCOMES VS POs MAPPING

(HIGH: 3; MEDIUM: 2; LOW: 1): [Level1: 1%-19%, Level2: 20%-49%, Level3: 50% or above]

SNO	PO1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2
PCCCS503.1	2	2	2	-	-	-	-	-	-	-	-	-	3	1
PCCCS503.2	2	2	2	-	-	-	-	-	-	-	-	-	3	2
PCCCS503.3	2	3	2	1	-	-	-	-	-	-	-	-	3	2
PCCCS503.4	2	3	2	1	-	-	-	-	-	-	-	-	3	2
PCCCS503.5	2	2	2	-	-	-	-	-	-	-	-	-	3	2
PCCCS503	2	2.4	2	0.2	-	-	-	-	-	-	-	-	3	1.8



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