Name of the Programme: MCA
Course code: CSA-505
Title of course: Object Oriented Programming Lab
Number of credits: 2 (0L-0T-2P)
Effective from AY: 2022-23

Prerequisites for the course	Basic Programming Skills	
Objectives	To impart programming skills using object oriented paradigms.	
Content	**Understanding Object Oriented Programming** Suggested sample (non-exhaustive) assignments using an OO visual programming platform like Greenfoot/Alice:- ● Given a game scenario and conditions, create a game and check/modify the OO code generated (e.g. Racing game, Archery, etc.) Suggested sample (non-exhaustive) assignments using an OO language like Java/C++/C# (No CLI input. All values hardcoded in the main method.):- ● Write a procedural program in the OO language (to familiarize with the syntax) and convert the same to an OO code	12 hours
	Applying Object Oriented Principles Suggested sample (non-exhaustive) assignments using an OO language like Java/C++/C# (No CLI input, all values hardcoded in the main method.):- ● Write source code for OO design of a board game (e.g. Chess, Solitaire, etc.) ● Write source code for OO design of an outdoor game (e.g. Football, Tennis) ● Write source code for OO design of your house and allow navigating in the house.	24 hours
	Leveraging the OO features provided by languages Various lab assignments can be given demonstrating the use of the feature and advanced features in the attached 'Object Oriented Concepts' course.	12 hours
	Mini-Project	12 hours
Pedagogy	Hands-on assignments / pair programming / group project/ git project management.	
References/ Readings	**Main Reading** 1. Timothy Budd, "An Introduction to Object Oriented Programming", Pearson Education, Latest Edition. 2. Brett D. McLaughlin, Gary Pollice & David West, "Head First Object-Oriented Analysis Design", O'Reilly, Latest Edition. 3. Ken Arnold, James Gosling, David Holmes, "The Java Programming Language", Addison-Wesley Professional, Latest Edition 4. Stanley Lippman, "C++ Primer", Addison Wesley, 2012 5. Cay S. Horstmann, "Core Java Volume I—Fundamentals", Pearson, 2018 6. Herbert Schildt, "Java: The Complete Reference", Oracle Press, latest edition 7. Joshua Bloch, "Effective Java", Addison Wesley 8. Kathy Sierra & Bert Bates, "Head First Java", O'Reilly, 2012 9. Bjarne Stroustroup, "The C++ Programming Language", Addison Wesley, Latest Edition	

	10. https://www.tutorialspoint.com/java/index.htm	
Course Outcomes	1. Learner will be able to write good object oriented code 2. Learner will understand object-oriented principles 3. Learner will be able to design object oriented softwares	