

**Maulana Abul Kalam Azad University of Technology, West Bengal**  
**(Formerly West Bengal University of Technology)**  
**Syllabus for B. Tech in CSE (Artificial Intelligence and Machine Learning)**  
**(Applicable from the academic session 2020-2021)**

**Object Oriented Programming**

**Code: PCC-CS503**

**Contacts: 3L**

Name of the Subject:		<b>Object Oriented Programming</b>	
Course Code: PCC-CS 503		Semester: V	
Duration:6 months		Maximum Marks:100	
<b>Teaching Scheme</b>		<b>Examination Scheme</b>	
Theory:3 hrs./week		Mid Semester exam: 15	
Tutorial: NIL		Assignment and Quiz : 10 marks	
		Attendance: 5 marks	
Practical: hrs./week		End Semester Exam:70 Marks	
Credit Points:		3	
Unit	Content	Hrs/Unit	Marks/Unit
1	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.	8	
2	Features of object-oriented programming. Encapsulation, object identity, polymorphism –but not inheritance.	8	
3	Inheritance in OO design. Design patterns. Introduction and classification. The iterator pattern.	6	
4	Model-view-controller pattern. Commands as methods and as objects. Implementing OO language features. Memory management.	6	
5	Generic types and collections GUIs. Graphical programming with Scale and Swing . The software development process	6	

**Text book and Reference books:**

1. R.S. Salaria, Mastering Object Oriented Programming Using C++, Khanna Publishing House.
2. Rambaugh, James Michael, Blaha – "Object Oriented Modelling and Design" – Prentice Hall, India
3. Ali Bahrami – "Object Oriented System Development" – Mc Graw Hill
4. Patrick Naughton, Herbert Schildt – "The complete reference-Java2" – TMH
5. R.K Das – "Core Java For Beginners" – VIKAS PUBLISHING
6. Deitel and Deitel – "Java How to Program" – 6th Ed. – Pearson
7. Ivor Horton's Beginning Java 2 SDK – Wrox
8. E. Balagurusamy – " Programming With Java: A Primer" – 3rd Ed. – TMH