

Maulana Abul Kalam Azad University of Technology, West Bengal

(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Electrical Engineering

(Applicable from the academic session 2018-2019)

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| Name of the course | OBJECT ORIENTED PROGRAMMING |
| Course Code: OE-EE-501B | Semester: 5th |
| Duration: 6 months | Maximum Marks: 100 |
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| Teaching Scheme | Examination Scheme |
| Theory: 3 hrs./week | Mid Semester Exam: 15 Marks |
| Tutorial: 0hr/week | Assignment & Quiz: 10 Marks |
| Practical: hrs./week | Attendance: 05 Marks |
| Credit Points: 3 | End Semester Exam: 70 Marks |
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Objective:

1. To understand simple abstract data types
2. To understand features of object-oriented design such as encapsulation, polymorphism, inheritance
3. To understand common object-oriented design patterns
4. To design applications with an event-driven graphical user interface.

Pre-Requisite

1. Programming for problem solving (ES-CS 201)

| Unit | Content | Hrs | Marks |
|-------------|---|------------|--------------|
| 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. | 08 | |
| 2 | Features of object-oriented programming. Encapsulation, object identity, polymorphism – but not inheritance. | 08 | |
| 3 | Inheritance in OO design. Design patterns. Introduction and classification. The iterator pattern. | 08 | |
| 4 | Model-view-controller pattern. Commands as methods and as objects. Implementing OO language features. Memory management. | 08 | |
| 5 | Generic types and collections GUIs. Graphical programming with Scale and Swing . The software development process | 08 | |

Text books:

1. Object Oriented Modelling and Design, Rumbaugh, James Michael, Blaha Prentice Hall India.
2. The complete reference-Java2, Patrick Naughton, Herbert Schildt, TMH
3. Core Java For Beginners, R.K. Das, VIKAS PUBLISHING
4. Java How to Program, Deitel and Deitel, 6th ED, Pearson

Reference books

1. Object Oriented System Development, Ali Bahrami, McGraw Hill.
2. Ivor Horton's Beginning Java 2 SDK – Wrox
3. Programming With Java: A Primer, E. Balagurusamy 3rd Ed., TMH

Course Outcome:

After completion of this course, the learners will be able to

1. specify simple abstract data types.
2. recognise features of object-oriented design such as encapsulation, polymorphism, inheritance, and composition of systems based on object identity.
3. apply common object-oriented design patterns
4. specify uses of common object oriented design patterns with examples.
5. design applications with an event-driven graphical user interface.

Special Remarks (if any)

The above-mentioned outcomes are not limited. Institute may redefine outcomes based their program educational objective.