Course Code | CE/CZ2002
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Course Title | Object Oriented Design & Programming
Pre-requisites | CE/CZ1007: Data Structure
No of AUs | 3

Course Aims

The object-oriented paradigm to the design of software is one major successful approach to address complexity and maintainability issues in software systems. We want students to establish an object-oriented mindset and to gain valuable insights into how software can be developed using the object-oriented approach. This course should not be interpreted to be a pure programming language course. Rather, the programming language serves to illustrate, via practical examples, the concepts learnt in the course.

As a student of this course, you will learn essential object-oriented concepts such as encapsulation, the separation of design from implementation; the use of inheritance and polymorphism. You will discover how to describe these concepts using appropriate UML diagrams. Finally, you will also learn good design principles for reuse, and to realise these principles using object-oriented programming languages such as Java and/or C++.

Intended Learning Outcomes (ILO)

Upon completion of the course, you should be able to:

1. Explain the concepts of object-oriented methodology and demonstrate it in developing software programs.
2. Design simple software programmes using good design principles with consideration for reuse and maintainability, to solve problems.
3. Implement a given design in Java and/or C++.
Course Content

<table>
<thead>
<tr>
<th>Topics</th>
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<tr>
<td>1. Introduction to Object Orientated Programming</td>
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<td>2. Class and Object</td>
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<td>3. Inheritance in Java</td>
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<td>4. Exception Handling &amp; Persistent Objects (E-Learning)</td>
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<td>5. Polymorphism in Java</td>
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<td>6. Object Relationships</td>
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<td>7. Object Collaboration</td>
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<td>8. Modelling OO Application</td>
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<td>9. Designing for Reuse</td>
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<td>10. C++ Programming Language</td>
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Assessment (includes both continuous and summative assessment)

a) Final Examination: 60%

b) Clicker/Java Quiz (Participation): 5%

c) Laboratory Assessment: 5%

d) Assignment: 30%

Note:
School reserves the right that content and assessment criteria may be adjusted during a given semester possibly because of circumstantial reasons. Any such changes will be discussed with the students enrolled in a given semester.

Reading and References

References:

6. Lecture notes created for the course by the lecturers, as well as other reading materials and online resources curated by the lecturers.