

Assumption University

Vincent Mary School of Science and Technology

Course Outline

CSX3002/ITX2001 Object-Oriented Concepts and Programming

Semester 2/2021

Course status: CSX3002 Major Required Course
ITX2001 Basic Course

Number of credits: 3 credits

Pre-requisite: CSX3001/ITX3001 Fundamental of Computer Programming (or)
CS1202 Computer Programming II (or) equivalent

	Sec. 541	Sec. 542
Instructors:	A. Pawut Satitsuksanoh	A. Kiratijuta Bhumichitr (Fair)
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Class Meeting:

Tue. 13:30-16:30 hrs. Online via MS Teams

Textbooks:

1. **Object-Oriented Thought Process.** Matt A. Weisfeld. 4th Edition, Addison-Wesley, 2011.
2. **Object-Oriented Analysis and Design with Applications.** Grady Booch, Robert A. Maksimchuk, Michael W. Engle and Bobbi J. Young. 3rd Edition, Addison-Wesley, 2007.

References:

- **How to Program Using Java.** Tony Jenkins & Graham Hardman, 2004.
- **Java Documentation.** <https://docs.oracle.com/en/java/>
- **Extra Java Coding Problems.** <https://codingbat.com/java>

Course Description:

Different software development methods emphasizing on object oriented methods, fundamental concepts of object oriented programming, inheritance, polymorphism, encapsulation, object oriented programming tools, class libraries, application development using object oriented concept, analysis and design of object-oriented data architecture.

Course Objectives:

The course aims to provide students essential concepts on analyzing and designing object-oriented systems. Students will learn key design issues concerning object-orientation along with design patterns that are adopted in the real-world applications.

Schedule:

Week	Date	Topic
1		Introduction & Reviews <ul style="list-style-type: none">• Introduction to the course, syllabus, and specifications.• Reviews of topics in Fundamentals of Computer Programming I/O Manipulation
2		Data Types & Control Structures <ul style="list-style-type: none">• Data types & expressions, primitive & reference data types.• Control structures & algorithm runtime.
3		Classes & Objects <ul style="list-style-type: none">• Understanding classes & objects.• Defining & implementing attributes & methods.
4		Class Member Specifications <ul style="list-style-type: none">• Understanding encapsulation & access modifiers.• Constructors, accessors, mutators, and method overloading.
5		Quiz I (9:00-10:30) Class Design & Definition
6		Class Design & Relationships (Part 1) <ul style="list-style-type: none">• Overview of object associations.• Problem-solving using object associations.
7		Class Design & Relationships (Part 2) <ul style="list-style-type: none">• Overview of object aggregations and composition.• Problem-solving using object aggregations and composition.
Midterm Examination January 18 th , 2022(15:00-17:00)		
8		Inheritance & Polymorphism (Part 1) <ul style="list-style-type: none">• Understanding inheritance.• Problem-solving using inheritance.
9		Inheritance & Polymorphism (Part 2) <ul style="list-style-type: none">• Understanding polymorphism.• Problem-solving using polymorphism.
10		Introduction to Design Patterns Creational Design Patterns
11		Quiz II (9:00 – 10:30) Structural Design Patterns
12		Structural Design Patterns
13		Behavioral Design Patterns
14		Behavioral Design Patterns
15		Project Presentation
Final Examination March 21 st , 2022(13:00-16:00)		

Marks Allocation:

Programming Exercises	25%
- Class Exercises	15%
- Homework	10%
Quizzes	10%
Project	25%
- Design	5%
- Implementation	10%
- Report	5%
- Presentation	5%
Online Midterm Exam	20%
Online Final Exam	20%

Online Midterm Exam

Online midterm exam will be conducted on January 18th, 2022 via Microsoft Teams. Students are required to keep the video camera on during the entire period of the exam.

Online Final Exam

Online final exam will be conducted on March 21st, 2022 via Microsoft Teams. Students are required to keep the video camera on during the entire period of the exam.

Programming Exercises

Programming exercises will be given each week and they are normally due by midnight of every Sunday of the week that they are assigned. **Late submission will not be accepted.**

Project

Students may work in teams of two on the term project.

Class Regulations

1. 80% attendance is required to be eligible in taking the final examination.
 - Students are allowed up to 9 hours (3 classes) of absence.
2. Late assignments will not be accepted nor graded.
3. Submission of copies/clones of programming exercises is considered as cheating.
 - All cheating cases will be reported to the department and taken seriously.
These include copying work from the classmates or the Internet.
 - No credits will be given on any copies as well as the originals.