

# Object Oriented Programming (OOP) Design

## Lecture 1 : Course Overview

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## Course Overview

### ■ Course Topics

- OOP Concepts
  - Data Abstraction/Encapsulation
  - Inheritance
  - Polymorphism
  - Generic Programming and STL (Standard Template Library)
- Advanced C++
- UML (Unified Modeling Language)
  - Modeling Object-Oriented Software Systems

### ■ Course Objectives

- Understand OOP concepts and apply it to real programming
- Improve the ability of using advanced OOP features of C++
- Conduct Team Projects (Large Software Development)
  - Design/Implementation/Documentation

## Reference Books

- No Required Textbook.
- Reference Books
  - *"C++ : Effective Object-Oriented Software Construction : Concepts, Practices, Industrial Strategies and Practices"*, Kayshav Dattari, 2<sup>nd</sup> Edition, 1999 (Page 1 ~ Page 574)
  - *"Thinking in C++, Volume One: Introduction to Standard C++(2<sup>nd</sup> Edition)"*, Bruce Eckel, Prentice Hall, 2000
  - *"Thinking in C++, Volume Two: Practical Programming"*, Bruce Eckel and Chuck Allison, Prentice Hall, 2004
  - Full text of "Thinking in C++" is available as pdf files
    - [http://www.cs.ust.hk/~dekai/library/ECKEL\\_Bruce](http://www.cs.ust.hk/~dekai/library/ECKEL_Bruce)
- Some of online materials will be used.

## Evaluation

- Midterm Exam : 35%
- Final Exam : 35%
- Assignments + Projects : 25%
- Class Participation and Attendance : 5%
- You may get F grade if you miss ¼ of the whole classes

## Instructor Information

- Name : Bong-Soo Sohn
- Office : 208-501
- Email : bongbong@cau.ac.kr
- Tel : 820-5843
- Office hour : anytime office visit or individual appointment
- Please feel free to contact me for any of class issues.

## Announcement

- **Class Website**
  - <http://cau.ac.kr/~bongbong/oop13>
  - Class information such as lecture notes is accessible through this website
  - We will also use **e-Class** for the submission of homework and project results.
- **Individual Programming Assignments**
  - I encourage you to study and discuss together for doing programming assignments.
  - However, you must do programming YOURSELF.
  - You must not share any of source code with other students.
  - Academic dishonesty (e.g. cheating, plagiarism, and etc.) is seriously prohibited. Heavy penalty may be imposed for that.

## Schedule

1	Course Overview
2	OOP Introduction, Data Abstraction
3	Class and Encapsulation
4	Inheritance , Project 1
5	Polymorphism
6	Case Study : Bank Account, Billiard
7	Template , Project 2
8	Midterm Exam

## Schedule

9	Advanced Template
10	STL (Standard Template Library)
11	STL, Reusability
12	UML Introduction , Project 3
13	UML diagrams
14	UML practice
15	Term Project Presentation
16	Final Exam

## Remarks

- We will mainly use C++ in our lecture.
  
- Project/Programming Based Course
  - This course assumes that students have basic knowledge of C and C++ grammars and programming ability.
  
  - We will have significant amount of programming assignments including team projects and presentation. If your programming ability is not good enough, it may be difficulty to follow the class.
  
- English Lecture + English Student Presentation  
( Asking question in korean language is OK )

## Projects Plan

- Make up a team
  - Deadline : 11:59pm on Sep. 10<sup>th</sup> (Tuesday)
  - The leader of each team needs to post an article (name/email/student-id# of team members, mark the team leader) in eClass 과제방
  - Expected Team Size : around 6 students per team
  
- There will be 4 programming projects during the semester. (2 projects will be done individually, the other 2 projects will be done in team.)
- We expect to have about 10~12 teams in our class.
- Each of 3~4 teams will present project 1 , 2 , and 3 respectively.
- All teams should conduct the final term (4<sup>th</sup>) project and give presentation.