CIE5029 Object Oriented Programming

- Today's course materials: http://tiny.cc/zbcvkz

- Lecturer: Albert Chen albertchen@ntu.edu.tw

- Course webpage cool.ntu.edu.tw

- **Demanding course, and should not be your first programming course.**

- Course seat limit: 50

- Welcome to audit

- Syllabus (see note)

Course Objective

- Learn the whole world of **modern C++** including its object-oriented and non-object-oriented features.

Modern C++

- The low-level language, largely inherited from C
- More advanced language features (class, template) that allow us to define our own data types and to organize large-scale programs and systems
- The standard library (STL), which uses these advanced features to provide a set of useful data structures and algorithms
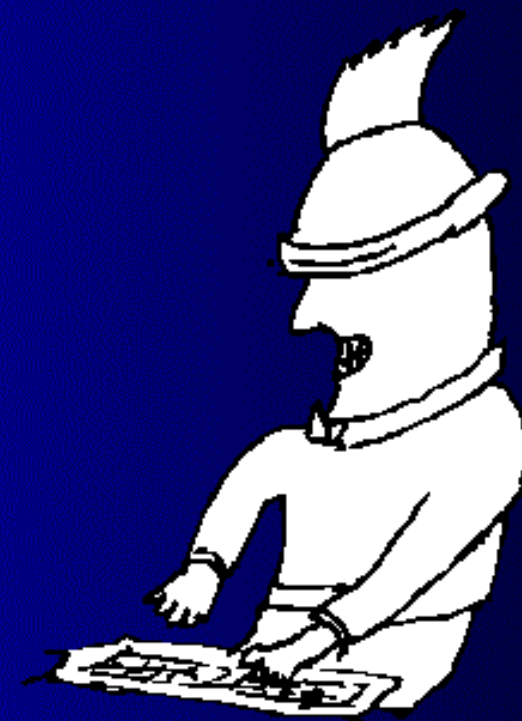- **C++11/14/17** (2011/2014/2017 C++ Standard)

Why Learn C++?

- C++ supports key concepts and techniques used in real world applications.

- C++ poses the balance between elegancy and efficiency.

- C++ programming concepts can be used directly in other languages (C, C#, Fortran, Java and Python).

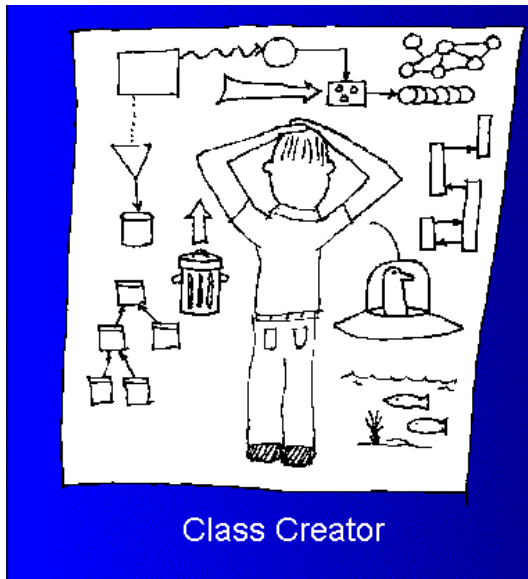# Modern C++ Teaching Method
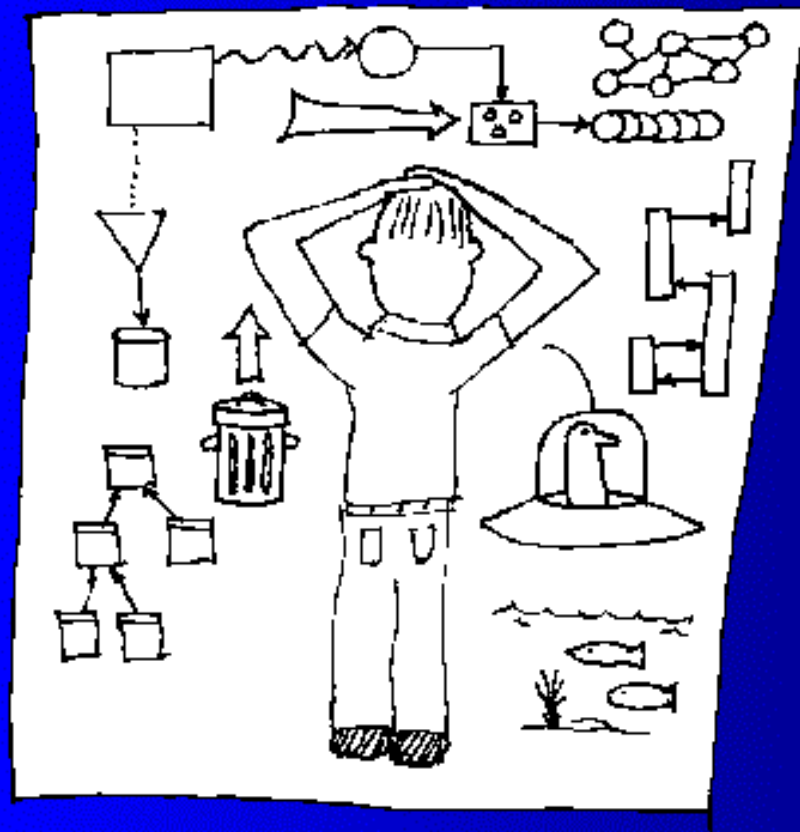
Class Creator

Class User
(Client Programmer)

4

- Basics
- C++ Library (IO, Containers, Algorithms, Dynamic Memory)

Class User
(Client Programmer)
4

Learning Objectives

- Learn how to write C++ programs

- Learn how to use the abstractions from the library

- Imitate STL and understand how to build your own types

Class Creator

- Tools for Class Authors (Class, Operator Overloading, Object-Oriented, Template and Generic Programming)

Learning Objectives

- Learn how to write your own **types** in C++.

Philosophical Note on Learning C++

- You need to understand the principles (原則/理論).

- You need to have your hands dirty to fully appreciate (瞭解/體會) it.

- Skills come with practice!

- This is a **demanding** course but …

- Your efforts pay off,
- and the course should be a good one to take.