

# Computer Science 3307A

Object-Oriented Design and Analysis

# Instructor

- Michael Katchabaw, Associate Professor  
Department of Computer Science, Western University
- Contact information:
  - Office hours: 1:30-2:30pm Tuesdays and 9:30-10:30am Thursdays, MC 28H
  - E-mail: [katchab@csd.uwo.ca](mailto:katchab@csd.uwo.ca)
  - Phone: Western extension 84059

# Context for the Course

Suppose you needed a bridge ...

# Context for the Course



# Context for the Course

But what if you needed something bigger ...

# Context for the Course



# Context for the Course

Are you the first one to see your problem?

# Context for the Course



# Context for the Course

You don't have to reinvent the wheel ...

# Context for the Course



# Texts and References

- Recommended texts:
  - The C++ Programming Language, 4th Edition by Bjarne Stroustrup.
  - Programming Principles and Practice Using C++, 2nd Edition by Bjarne Stroustrup.
  - Design Patterns: Elements of Reusable Object-Oriented Software by Erich Gamma, Richard Helm, Ralph Johnson, and John Vlissides.
  - UML Distilled: A Brief Guide to the Standard Object Modeling Language, Third Edition by Martin Fowler.
  - Object-Oriented Analysis and Design with Applications, Third Edition by Grady Booch, Robert A. Maksimchuk, Michael W. Engle, Bobbi J. Young Ph.D., Jim Conallen, Kelli A. Houston.
  - Exploring Raspberry Pi: Interfacing to the Real World with Embedded Linux by Derek Molloy. Published by Wiley, 2016.

# Course Topics

- The course will address as many of the following topics as time will allow:
  - Overview of Object-Oriented programming
  - Programming in C++
  - The Unified Modeling Language (functional, structural, and behavioural modelling)
  - Architectural patterns
  - Design patterns (creational, structural, behavioural, ...)
  - Object-Oriented metrics and other software metrics
  - Quality Assurance (inspections)
  - Enterprise-Scale software and collaboration tools (Jira, Confluence, Bitbucket, ...)

# How to Keep Informed

- Course website: <http://owl.uwo.ca>
  - Lecture notes
  - Assignment and project information
  - Class updates and other important information
- Your Western e-mail account (@uwo.ca)
  - Important notices
  - Group project contact
  - Forward your e-mail if you don't check it regularly!
  - Configure your spam filters!

# Student Evaluation

- Assignments
  - Single individual assignment, worth 15%
- Projects
  - Group project, worth 55%
  - Consists of an initial stage (worth 5%), two intermediate stages (worth 10% each), final project submission (worth 25%), and final documentation (worth 5%)
- Final exam
  - Worth 30%

# Student Evaluation

- To receive a passing grade or higher:
  - Final  $\geq 40\%$
  - Assignment and project  $\geq 40\%$
- To receive a C or higher:
  - Final  $\geq 50\%$
  - Assignment and project  $\geq 50\%$

# Ethical Conduct

- You should read the definition and penalties of scholastic offenses at:  
[http://www.csd.uwo.ca/current\\_students/undergraduate\\_students/scholastic\\_offences.html](http://www.csd.uwo.ca/current_students/undergraduate_students/scholastic_offences.html)
- Students are expected to adhere to the Rules of Ethical Conduct to use the computing facilities of the Department:  
[http://www.csd.uwo.ca/current\\_students/undergraduate\\_students/rules\\_of\\_ethical\\_conduct.html](http://www.csd.uwo.ca/current_students/undergraduate_students/rules_of_ethical_conduct.html)