CS204362 – Object-Oriented Design

# Midterm Review

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# Logistics

- วันจันทร์ที่ **15 มกราคม 2567**
- เวลา: **12:00 – 15:00 น.**
- ห้อง: **CSB 201**

# Exam Format

- Short answers
- Drawing UML diagrams
- Making sense of UML diagrams
- Multiple choice questions

- ในแต่ละข้อจะมีคะแนนกำกับไว้

**Closed-note**
**(ไม่อนุญาต**ให้นำ review sheet เข้าห้องสอบ)

# Materials Covered

เนื้อหาครอบคลุมทุกหัวข้อที่เรียนมาตั้งแต่ต้นเทอม

1. Software design and architecture
2. 4 main object-oriented design principles
3. More design principles
4. Requirements Elicitation
5. Modeling concepts
6. UML activity diagrams
7. UML state machine diagram
8. UML use case diagram and specification

# Chapter 1: Introduction to Software Design

- Software design
- Software design in SDLC
- Good software design vs physical items
- Software entropy
- Planning for change vs over-design
- The aims of software design
- Architecture vs detailed design

# Chapter 2: OOD Principles

- 4 object-oriented design principles
  - **Abstraction**
    - Levels of details
  - **Encapsulation**
    - Information hiding
  - **Modularity**
    - Relationships between classes
  - **Hierarchy**
    - Generalization/Specialization
    - Polymorphism

# Chapter 3: More Design Principles

- Other Design Principles
- SOLID Principles
  - Single Responsibility
  - Open/closed
  - Liskov Substitution
  - Interface Segregation
  - Dependency Inversion

# Chapter 4: Requirements

- **Types of Requirements**
  - Functional
  - Non-functional
  - Constraints

- **Requirements Elicitation Techniques**
  - Background reading
  - Interview
  - Survey/Questionnaire
  - Observation
  - Document Sampling
  - Passive Crowdsourcing

# Chapter 5: Modeling Concepts

- Models
- Diagrams

# Chapter 6 & 7 & 8: UML Diagrams

- UML Activity Diagrams,
- UML State Machine Diagrams,
- UML Use-case Diagrams
- What and How
- Notations
- Common Mistakes