

# HUST

TRƯỜNG ĐẠI HỌC BÁCH KHOA HÀ NỘI  
HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY

## *System Analysis and Design*

IT3120E

ONE LOVE. ONE FUTURE.

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# Course overview

ONE LOVE. ONE FUTURE.

- Course:
  - Course: System Analysis and Design
  - Course code: IT3120E
  - Teams code: wopu1j7
- Instructor
  - PhD. Đoàn Thị Ngọc Hiền
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# Objectives

- Understand the fundamental concepts in information systems development process
- Understand object model and object-oriented perspective in the analysis and design of information system
- Can analyze and design an information systems development project
  - Build analysis models (system requirements modeling, functional modeling, structural modeling, behavior modeling)
  - Build design models (class design, database design, interface design, etc.)
- Use tools that support the development documentation

Week	Lecture
1	<u>Part 1: General concepts</u> Systems development life cycle Object-oriented systems analysis and design Unified Modeling Language UML
2	<u>Part 2: System analysis</u> Project Management
3-4	Requirements determination
5-8	Functional analyzing and modeling
9-11	Structural modeling
12-14	Behavioral modeling
15-16	<u>Part 3: Design modeling and system construction</u> Design models, System construction and deployment
17	Case Study: Final evaluation

# Requirements for students

- Attend all the classes.
- Self-study.
- Practice:
  - Big project
    - Do step-by-step following the SDLC in weeks
    - Submit the reports on Teams in weeks
    - Presentation in class in weeks

- References

- [1] Dennis, Alan, Barbara Haley Wixom, and David Tegarden. **Systems analysis and design: An object-oriented approach with UML**. John Wiley & Sons. 4th edition 2012.
- [2] Doug Rosenberg and Matt Stephens, 2007, **Use Case Driven Object Modeling with UML, Theory and Practice**, Apress
- [3] D. Budgen. **Software Design, 2nd Edition**. Addison-Wesley. 2004
- [4] Philippe Kruchten (2003), **The Rational Unified Process** (3rd edition), Addison-Wesley
- [5] Eric Gamma, Richard Helm, Ralph Johnson, John M. Vlissides (1994), **Design Pattern: Elements of Reusable Object-oriented Software**, Addison-Wesley
- [6] Đặng Văn Đức (2002), **Phân tích và thiết kế hướng đối tượng bằng UML**, NXB Giáo dục.
- [7] Nguyễn Văn Ba (2005), **Phát triển hệ thống hướng đối tượng với UML 2.0 và C++**, NXB Đại học quốc gia Hà nội.

- Tools:
  - **Star UML**
  - ArgoUML, Astah, Red Koda, Magic Draw, EDraw Max, Enterprise Architect, Poseido for UML, Rational Rose, Visio, Power design, Smart Draw



- Process grade: 30% of final grade
- Final examination grade: 70% of final grade