

CS504070 / Chapter 00

Course Introduction

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Outline

- Course description
- Syllabus
- Textbooks
- Teaching materials
- Assessment
- Policies
- Teaching staffs

Course description

- This course serves as an introduction to the notion of Service Oriented Architecture (SOA) and its most fundamental building block - the **service**.
- It illustrates how systems and solutions can utilize SOA to enable increased business flexibility and responsiveness to marketplace challenges and opportunities.
- Participants will develop a solid understanding of service orientation and learn how to design services in SOA fashion.

Course description

- The course provides participants not only with the big picture, but also with a foundation for applying directly the tools, processes, and methods to design cases.
- Web Services, which provide the most well-known technology platform for realizing SOA such as Amazon Web Services, will be introduced as part of the course.
- Participants will also have an opportunity to participate in hands-on practice sessions on designing and implementing services.

Tentative Syllabus

Week	Subject
1	Java Review
2	Introducing the REST Architectural Style
3	Introducing the JAX-RS API
4	RESTful Practice #1 - Hello World (Pure Java Servlet)
5	<ul style="list-style-type: none">Advanced Features in the JAX-RS APIsSeminar
6	<ul style="list-style-type: none">Introducing JAX-RS Implementation Framework ExtensionsSeminar
7	<ul style="list-style-type: none">Securing RESTful Web ServicesMongoDB Introduction (Lecture + Homework)Seminar
8	Mid-term Report
9	<ul style="list-style-type: none">Description and Discovery of RESTful Web ServicesMongoDB Exercises #1Seminar

Tentative Syllabus

Week	Subject
10	<ul style="list-style-type: none">▪ RESTful API Design Guidelines▪ MongoDB Exercises #2▪ Seminar
11	<ul style="list-style-type: none">▪ Spring Boot for Microservices▪ MongoDB Exercises #3▪ Seminar
12	<ul style="list-style-type: none">▪ Dropwizard for Microservices▪ Seminar
13	<ul style="list-style-type: none">▪ WildFly Swarm for Microservices▪ Seminar
14	<ul style="list-style-type: none">▪ Deploy Microservices at Scale with Docker and Kubernetes▪ Seminar
15	Final Project Report

Textbooks

1. Bogunuva Mohanram Balachandar. RESTful Java Web Services - Third Edition (2017). Packt Publishing Limited.
2. Christian Posta. Microservices for Java Developers (2016). O'Reilly Media.
3. Chris Richardson. Microservices Patterns With examples in Java (2018). Manning Publications Co.
4. Michael Hofmann, Erin Schnabel, Katherine Stanley. Microservices Best Practices for Java (2016). International Business Machines Corporation (IBM).

Textbooks

5. Alex Giamas. Mastering MongoDB 4.x (2019). Packt Publishing Limited.
6. MongoDB Tutorials (1) - <https://www.softwaretestinghelp.com/mongodb/>
7. MongoDB Tutorials (2) - <https://www.tutorialspoint.com/mongodb/>
8. Thomas Erl. SOA Design Patterns (2009). Pearson Education, Inc.
9. Nicolai M. Josuttis. SOA in Practice (2007). O'Reilly Media.

Teaching Materials

- All resources (lectures, exercises, etc.) are available on the following sites:
 - <https://duonghuuphuc.com/teaching/cs504070>
 - Google Classroom

Assessment

- **10%** Exercises (on-class + homework)
- **20%** Mid-term Project (~2 weeks)
- **20%** Seminar
- **50%** Final project

Assessment

- **Mid-term Project**

- Each group will be assigned a mini project and need to finish in 2 weeks before the beginning of Mid-term Examination
- After the Mid-term Examination, we will host a presentation and score the project of each group
- The project must be implemented in SOA-based approaches

Assessment

- **Seminar**

- Each group will study several materials assigned by the instructor
- Prepare and make presentation and lead classroom discussion
- The seminar will start from 7th week
- Recommend using *English* for report document, slide, oral presentation

Assessment

- **Final Project:**

- The topics will be chosen in consultation with the instructor
- Using LaTeX format for both documents and slides
- Recommend using *English* for report document, slide, oral presentation
- The project must be implemented in SOA-based approaches

Plans

- 30/12 – 5/1: group registration
- 6/1 – 19/1: assigning seminar topic (instructor) and registering final project topic (students)
- 3/2 – 9/2: assigning Mid-term project (instructor)
- From 10/2 (Week 5): begin presentation of Seminar / System Requirements, System Analysis and Design [Final Project – 50%]
- From 9/3 (Week 8): begin Mid-term presentation
- Last 2 sessions of Lecture: Final Project presentation

Policies

- You are allowed to absent **3** sessions for lecture hours.
- Exercises, assignment and final project must be submitted by the due date. No late submission will be accepted.
- For seminar, mid-term and final projects, all members of group must submit the works together.

Policies

- About collaboration, you may discuss with other students on the review reports. However, you must write up the reports on your own *independently*.
- You need to be *honest* in all academic work and understanding that failure to comply with this commitment will result in disciplinary action.

Teaching Staffs

- **Phuc H. Duong, *M.Sc.***
 - Email: phuc@it.tdt.edu.vn
 - WWW: www.duonghuuphuc.com
 - Office: Room C.112, TDTU Campus
- [And my excellent students and alumnus]

Contact Info

- Contact Form (*Don't send email to me!*)
 - <https://forms.gle/rs8sYA5YRz5HvqS57>
- Absence Request Form
 - <https://forms.gle/oHVz9k1z6ziSGqC67>

Too much information!



When the world goes to sleep, developers stay up to chase their dreams.

-- Apple WWDC 2019