

CMPU4021 Distributed Systems

Course Introduction
Dr Edina Hatunic-Webster

Lecturer

- Lecturer
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Module Aims

- Give a thorough understanding of issues involved in designing distributed systems.
- To give an understanding of the fundamentals and advanced aspects of distributed systems
- To provide students with the skills necessary to develop distributed systems.

Module content

- Distributed System Fundamentals:
 - Architectural models for distributed systems; concurrency, failure models, replication, naming and directory services, impact of underlying networks characteristics, internetworking, middleware.
- Advanced Distributed Systems Issues
 - Processes and scheduling, time, security issues and securing distributed systems.
 - Concurrency: synchronization, transaction management.
- Distributed objects and remote invocation
 - Communication between distributed objects, distributed object model, Remote Method Invocation (RMI), events and notifications, web services.

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 - Indirect communication
- Middleware
 - Purpose of middleware in distributed systems, middleware platforms.
- Java in Distributed Systems
 - Java interface definitions, Java Remote Method Invocation (RMI), concurrency and multithreading, Java security, serialisation.

Assignments

- One assignment
- The assignment will contribute 30% to your overall mark for the module.
 - The examination will contribute the remaining 70%.

Main Texts

- George Coulouris, Jean Dollimore and Tim Kindberg (2011), Addison-Wesley, **Distributed Systems: Concepts and Design, 5/E**
 - <http://www.cdk5.net>
- Supplemental Texts
 - Relevant supplemental references will be indicated during the teaching of the module.

Useful Links

- <http://docs.oracle.com/javase/tutorial/>
- **T**he Java tutorial is an excellent reference and will be used extensively throughout the course; especially Networking
 - <http://docs.oracle.com/javase/tutorial/networking/index.html>

Lecture Location

- Brightspace

<http://www.dit.ie/brightspace/>

- If you are registered and can not see the module
 - Email me your student number
 - I will add you to the Module