INF 2108 - IS Development Frameworks and Methods

Course Name: Information Systems Analysis and Design

Number of Credits: 10

Duration: 15 weeks of classes

Number of contact hours: 3 lecture hours or its equivalent per week;

Prerequisites: Information system analysis and Design

Course offered by: Department of Computer Science and IT

Course Description:
This course extends the information system analysis and design course. It prepares students to analyse and compare different methodologies, methods and frameworks in this field. The course prepares in the system development field to compete in the job market. A project-based approach will be used to equip students in system development.

Upon the completion of this course, students should be able to:

- Describe different information systems methodologies and explain their contribution to systems development. Students will learn Object role-modelling techniques.
- Compare various approaches to systems development and explain their strengths and weaknesses (Object-Role Modelling with other methods)
- Use appropriate methods and techniques to produce an analysis of a given scenario;
- Evaluate methods and techniques of system development that may be used in a given context.
- Exploit cloud computing resources among solutions in system development projects.

Week 1-3: Introduction

- Overview of Information System and Development
- Process modelling
- Data modelling
- Tools of business process modelling
    - DFD
    - ORM
    - UML

Modelling assignment

Week 4: System Development Life cycle

- Techniques and tools

- Agile Methodologies
- Rapid application development (RAD)
- Lean Methodology

Compare and contrast different methodology

Week 5-7: System Development Frameworks

- Web frameworks
- Mobile Frameworks
- Database Frameworks
- Data Analytics frameworks

Group Assignment: Compare features between various frameworks

Week 8: Importance of cloud computing in system development

- Infrastructure as a Service (IaaS)
- Platform as a Service (PaaS).
- Software as a Service (SaaS).

Week 9-12: System Development and Deployment

- Cloud Computing and Service Oriented Architecture (SOA)
- How to access Big Clouds (such as the AWS Cloud, Google Cloud, Microsoft Azure Cloud, or IBM Cloud) via portals, APIs, and SDKs
- Software development Project
- Deployment to Cloud vendors

Week 14 - 15: Case study assignment Presentations

Method of Instruction: Mix of lectures, tutorials and practicals.

Assessment methods: The course assessment is based on individual and group assignments and tests. The coursework weighs 60%, and the final exams 40%. The coursework comprises an individual assignment (20 marks), a group assignment (20 marks) and a mid-semester test (20 marks). Final marks were graded from A to C as a pass and D and E as a fail.

Textbooks

References