Software engineering - Lecture 1

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1 Module outline

The instructor of this module is Shereen Fouad:

Room 227

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Item hours Mondays (2pm - 3pm)

Grading

- 20% of continuous assessment (1 team exercises + 2 individual online tests)
- 80% of examination mark

2 Introduction to SE

Software engineering deals with delivering high quality software within a limited amount of budget and time. But what is software?

Software is a product that contains computer programs, libraries and their associated documentation such as requirements, design models and user manuals. The attributes of a good software are:

- high quality: maintainable, dependable and acceptable
- budget consideration
- respect of deadline

Software engineering is an engineering discipline that is concerned with all aspects of software production. Software engineering techniques are vital and very useful when dealing with large scale problems.

In software engineering we define four figures:

- **Customer**: Requires a computer system to achieve some business goals by user interaction or interaction with the environment in a specified manner

- **User** of the system
- **Software engineer**: To understand how the system-to-be needs to interact with the user or the environment so that customer's requirement is met and design the software-to-be
- **Programmer**: To implement the software-to-be designed by the software engineer

An important point is the difference between computer science and software engineering. CS is dealing with the theoretical aspects of computation whereas software engineering is concerned with the design of high quality software.

3 Contents of this module

- Software Process Models
- Software Testing
- Software Design using UML class diagrams
- Structured Design
- Use cases
- Agile process models
- State Machine Diagrams
- Sequence Diagrams
- Refactoring