Requirements Engineering

Course Objectives

- **Knowledge - understand**
  - The concepts of software requirements, system requirements , Requirement engineering
  - Why these requirements should be written in different ways;
  - Differences between functional and non-functional requirements;
  - How requirements may be organized in a software requirement document;
  - Principal requirements of engineering activities and their relationships: domain understanding and elicitation, evaluation and negotiation, document and specification, validation
  - Concepts of behavioral, data and goal-oriented modeling;
  - How dependability, safety, security and reliability requirements for critical systems can be identified and generated;
  - Understand Goal-oriented System Models techniques for requirement engineering
- **Skills - can perform the following activities**
  - Write and presentation fully done on software requirement documents
  - Practice & improve on group problem solving and communication skills.
  - Building System Models

Syllabus

W	Main Topic	W	Main Topic
1	- Chapter 1: Setting the scene:	6	Chapter 7: Goal Orientation in Requirements Engineering
2	- Chapter 2: Domain Analysis and Requirements Elicitation	7	-Chapter 8: Modeling System Objectives with Goal Diagrams - Progress Test 2
3	- Chapter 3: Requirements Evaluation - Progress Test 1	8	Chapter 10: Modeling Conceptual objects with Class diagrams
4	- Chapter 4: Requirements Specification and Documentation	9	Chapter 11: Modeling System Agent and Responsibilities
5	- Chapter 5: Requirements Quality Assurance	10	- Chapter 12: Modeling System Operations - Progress Test 3 - Final exam

Assignments

#	Item	Start	Due
1	Assignment 1- Requirements Documents	W1	W5
2	Assignment 2- System Modeling	W6	W10
3	Exercises		

Grading Policies

Item	Weight	Notes
Assignments	30%	2 assignments
Progress Test	30%	Progress Test 1: Chapter 1,2, 3 Progress Test 2: Chapter 4, 5,7,8 Progress Test 3: Chapter 10,11,12
Final exam	40%	60 single answer choice or fill blank questions, in 60 minutes

Notes:

- For the Assignments submission, subtract 50% of grades for one-day late submit, get zero for more than one date late submit or no submit
- Completion Criteria: (Final Result >=5) & (Final Exam Score >=4)

Class rules

- Only use laptop for lesson, not for the other purposes
- No private talk
- No sleep in the class
- Go on time, not late after 10'. Do not allow to do progress test if late 5'
- Read chapters in textbook before each session
- Do chapter exercises given.
- Progress test will be set zero if no exercise submit or too careless
- Marks of progress test can be adjusted basing on questioning in the lessons

References

- Requirements Engineering
  (From System Goals to UML Models to Software Specifications)
  Axel Van Lamsweerde
- Requirement Engineering – Processes and Techniques
  - covers all aspects of the software requirements engineering process
  - http://www.comp.lancs.ac.uk/computing/resources/re/index.html
- Software Engineering, 8th Ed, chapter 6-10
  - General overview of software engineering
  - http://www.comp.lancs.ac.uk/computing/resources/IanS/SE8/index.html
- Requirement Engineering – A good practice guide
  - guidelines which are aimed at practitioners who want to improve their requirements engineering processes
  - http://www.comp.lancs.ac.uk/computing/resources/re-gpg/
- CMU/SEGVN articles and/or public lectures on tendency of SE in the world http://www.segvn.org/forum/mvnforum/index

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