IT314 Software Engineering (3-0-3-4.5)
Semester II, 2020-2021

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Course Prerequisite - Basics of Programming, OOP concepts.

Course Objective
The course intends to teach complete life cycle of software develop. The course covers Software Processes and SDLcs; Requirements Engineering; Software Testing, Verification and Validation; Software Evolution; CASE Tools; Introduction to Software Project Management, Appreciate Software Reliability and Risk Assessment; Software Quality Standards and Quality Assurance.

Preamble
Writing programs to fulfill some academic requirements for an academic degree is a radically different exercise compared to how state-of-art software is developed in industry. The main objective of this course to understand and learn how complexity and change is engineered during large software development. Here, we would focus on the methodologies (processes), techniques (methods), and tools that can be used to successfully design and validate large software. Wherever possible, we will make use of UML/SySML and DevOps to represent various aspects of software development.

Marking Scheme
In-Semester Exam - 20%;
End-Semester Exam - 30%;
Course Project Work - 30%;
Lab, assignments (or presentations), experiements – 20%

Course Project Artifacts
Specific to the software process model chosen for development of the course project.

For example, for Agile Process Model (SCRUM)
1. Requirements in the form of user story (both functional and non-functional)
2. Acceptance Criteria
3. Burn-down chart
4. Daily SCRUM planning and development of spirints.

Marking Scheme for Projects:
1. The group mark is everybody's mark, i.e., individual assessment of 15% and group assessment of 15%.
2. Everybody reports what they personally did, and separate marks are given to those components by the instructor. This can be done by using either a dossier of rough work or a division of labor report produced by team members.
3. Other group members report (confidentially or openly) the relative contributions of other group members to allow for an adjustment of the final grade.
4. Pop quizzes in class to ensure that students know the intimate details of the project.
5. Cross-validating with the results of individual work (possibly reducing the weight of group work for students who perform poorly on exams or individual assignments).