Instructional Design

Software Engineering 2009 – 2010
University of North Dakota – Emanuel S. Grant

Course: CSci463 Software Engineering - Spring 2010

Lecture: The lectures are for 50-minute durations, three times per week – Monday, Wednesday, and Thursday. Each lecture will be comprised of the following 40 minutes of lecture (usually a MS Power Point presentation), and 10 minutes of activity. The lecture activity may be in the form of a pop quiz, or an individual or group activity. The pop quiz or individual/group activity will be based on the material presented in the immediately previous and the current lecture session.

The lecture material will be delivered, in the chapter sequence of the class text, and the lecture presentation slides will be drawn from the required and recommended class text resource site. The sequencing of the chapter material will be exploited to provide the class with the theoretical coverage, in advance of the class application of the theory on the class team project.

Students are encouraged to ask questions and make comments during the lectures; this requires a fair amount of time management on the part of the lectured, to ensure that all the required material is delivered in a timely manner. Questions may be posed to the class and in some instances, individuals will be asked to respond to questions or descriptions of situations.

In the individual lecture activities, pop quizzes will be used to determine the class comprehension of key/fundamental software engineering concepts or principles presented in the lecture material. The individual or group activities are intended to determine the level of the student's ability to apply these software engineering concepts and principles. Some of these concepts and principles may be more suited to group or individual situations.

Design Sessions: At least three design sessions will be conducted during the semester. The design sessions are lecture sessions in which the class separates into the group project teams – by moving into circles for discussion. Each team is expected to use these sessions as actual team meeting sessions and conduct the activities that would be involved with for the particular stage of the project development.

During these design session the lecture will visit with each team for a few minutes, listen in on the conversation and making input to guide the discussions. The lecturer may visit teams multiple times to observe any changes in the way the group is operating. The goal is to have some input and guidance on group dynamics that occurs outside of the class sessions. It is also a means of observing the level of participation of each student in his/her respective groups.

These design sessions will be for 4- minute durations, with the remaining 10 minutes used to setup the start of the sessions and summary comments and questions and answers at the end

"Does just what it says on the tin"

of each session. The summary comments from the lecturer will b to address common issues for all the groups, and encourage he teams to meet and work as frequently as possible to achieve greater productivity within the groups.

Examinations: There are two scheduled regular examinations for the semester, mid term and final examinations. Both examinations will be take home examinations. The questions will be taken from the class required-text, and may be modified to fit a current or particular situation that had been covered during the class sessions.

The examinations are intended to assess the level of the students' ability to understand and apply the software engineering concepts and principles presented in the lectures. Both examinations will be based on material covered in the lectures, up to the time of the examination. The lecture session, immediately prior to the each examination will be used as a review session. Students are expected to come to those sessions with questions on lecture material, which may not have been understood, or request review of particular topic covered in the lectures.

A take home examination is preferred over an in class examination because the material covered in this course, and the goals of the course is not t be able o select correct or incorrect answers, but is intended to teach the student when and where a particular approach may be more suitable than an alternative approach. Conducing exercises of that type require timely analysis of the described situation, which cannot be reasonable, conducted in a 50-minute examination environment.

Team Project: The class will be divided into teams of no less than two and no more than four students each. The teams will operate as independent entities, with the purpose of developing a team project within the specified timeframe. The teams will each elect a team-leader, who will be responsible for submitting deliverables for the team. Team members will select a name for their team. Project teams that include graduate student will have to include two additional *approved* system functionalities for each graduate student in the team.

The purpose of the team project is to immerse the students in a quasi-real world (industrial environment) to concretize some of the software engineering concepts and principles presented in the lectures. The students are expected to treat this project, to the best of their knowledge and the guidance provided by the lecturer, as if it were a real project, they were employed to work on. The teams are required to record hours spent working on various phase of the project, and submit, at the end of he project, an invoice for the work done.

 The students are required some of the social and personal issues that arises in conducted work on this project. At the end of the semester the teams make a presentation of the work they conducted on the project as well as a demonstration of the system developed. The presentation is done before the entire class and is open to critique from their fellow students and the lecturer. The presentation covers description of the software engineering concepts and principles applied in carrying out the work on the project. This includes: descriptions of the project artifacts, statements of the lessons learnt on the project, statements of major issues that were encountered on the project and how theses issues were resolved, descriptions of what worked well and what did not, and a conclusion of he team's assessment of their work.

Project Progress Report: Each project team is required to submit three progress reports of the work being done on the team project, over the semester. The project progress reports will

"Does just what it says on the tin"

document: (1) what has been accomplished since the last report; (2) planned tasks for the next progress report; and (3) problems encountered and solutions implemented.

The rationale for this item is to ensure that the teams are progress with the work in a timely manner. It also facilitates periodic guidance from the lecturer to the teams on the direction, and inputs and outputs of their projects. It also mimics the real world (industry practice) of periodic reporting on on-going projects.

Reading Assignment: Three reading assignments will be given over the semester. Students are expected to read each article and compile a, 1 – 2 page, written report on each article. Graduate students will compile a five page written report on each article.

The purpose for this work is to increase the students' awareness of some of the current issues and occurrences in the field of software engineering. Reading will be taken from academic and industrial journals, and the news media. It will also improve the students analytical and reading skills, which is a necessary software skill for conducting system requirements elicitation and analysis.

"Does just what it says on the tin"