

EEL 6883: Software Engineering II Spring 2002

Classroom: Thur. 6:00 to 8:30, ENGR 227
Instructor: Dr. Fernando Gonzalez
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Office hours: Mondays and Wednesdays 2:30 to 4:30, Thursday 3:30 to 5:30
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References: Classical & Object-Oriented Software Engineering, Stephen Schach, Irwin Pub., latest Edition.

Software Metrics: a Rigorous & Practical Approach, Norman E. Fenton & S. L. Pfleeger, Chapman & Hall (London), 2nd edition, 1997.

Understanding robust and exploratory data analysis, D. Hoaglin, F. Mosteller, J. Tukey (Eds.), 3. Wiley & Sons, Inc., 1983.

Goals: Each student will gain an understanding of the theory and application of software metrics (e.g., for identifying error-prone software modules), software reliability (e.g., predicting the number of defects during testing), software testing models (e.g., Markov chain usage models), and applicable statistical techniques (e.g., use of robust statistics) thru class lectures and discussions of relevant material from recent software engineering papers, theses and texts.

Topics:

- Software metrics
- Robust statistics
- Software testing models
- Software reliability
- Effort estimation approaches
- Discussion of relevant journal papers, theses, texts and software tools

Grading:

- 20% One Exam. The exam will be made up of questions from the topics covered in the homework and journals. Arrangements must be made in advance if you cannot be present for the exam
- 80% Homework/Project-Oriented requirements (e.g., application of techniques discussed in class to the solution of a software engineering problem, including documentation and presentation of results to the class) and other class presentations (e.g., presentations of results from journal papers). Each group must submit a report with each homework and one member from each group must present the results in class. In addition each group will submit a report on a related journal of their choice and present in class. Late homework may not be accepted; attendance during presentations is required

More information about homework:

For every homework assignment, each group is required to hand in a typewritten report (the body of each report must be divided into sections/subsections, with each section/subsection given a title and a number; equations and algebraic symbols may be handwritten) containing

- title (briefly indicating what was required and/or accomplished in the assignment),
- abstract (expansion of the title and must mention most important conclusions/results),
- table of contents (including titles and page numbers for all numbered sections),
- numbered list of figures (including titles and pg. numbers),
- numbered list of tables (including titles and pg. numbers),
- discussions of all important results,
- discussions of how these results were obtained (including a section on “hand calculation checks” of any numerical approaches employed),
- conclusions section (the last major section; in this section, the most important results should be summarized, referred to and discussed in a comprehensive fashion) and
- list of references

Each homework report page must be numbered (by hand is fine), and the front (cover) page must contain:

- the homework title
- the group’s number (each group will be assigned a number),
- homework number,
- homework due date and course number (EEL6883), and
- each group member’s name who should receive credit for this homework assignment.

All important numerical results must be in Tables and/or Figures, each Table/Figure must be given a number and a title/legend, and each Table/Figure must be referred to in the text immediately before its appearance in the text (i.e., Tables/Figures should not be grouped together at the end of the report; instead, they should appear immediately after they are first referred to in the text). Each group must be prepared to present & discuss in class the results shown in a report on the date a report is due.

Each group member may consult only with other members of his/her own group or the instructor about an assignment; group members should not discuss their work with other groups and should hand in only work done by their own group members.

Each group should keep a backup copy of all homework material handed in.

Each group must be prepared to undergo a critical analysis of each homework report in class at any time. A critical analysis entails a review, led by the instructor, of a group’s entire homework report (while being presented by a group), page-by-page, with a goal of improving the technical writing skills of every member of the class.

Each homework-related presentation (e.g., presentation of results of an assignment, a journal paper or a critical analysis presentation) is worth about 20% of a homework grade.