CSC 510 Software Engineering
An introduction to software life cycle models, size estimation, cost and schedule estimation, project management, risk management, formal technical reviews, analysis, architecture, design, coding and verification methods, configuration management, and change control, software architectures, and CMMI. Emphasis on software-intensive development projects. An individual research project required that describes state-of-the-art methodologies, approaches, or techniques in the Software Engineering field. Three (3) credit hours.

Course Evaluation

HOMEWORK: [total 30%]
There will be three (3) Assignments. These will build on each other and will be individual. The value of each assignment will be 10% each for a total of 30% for all three assignments.

EXAMINATIONS: [total 50%]
There will be a Mid-term exam (20%) and Final cumulative Exam (30%). Exams will be in principle closed book.

SOFTWARE DEVELOPMENT:
During this course there will not be any software to be developed.

RESEARCH PROJECT: [total 20%]
There will be one research project individually oriented (20%). Students will propose a topic in Software Engineering by September 28th and the instructor will accept or reject the topic. In case of rejection, the student may select from a cluster of topics that the instructor will provide. The Research Project will have a minimum of 25 pages (main text of the paper not including pages for table of contents, title, references, appendices, etc.) double spaced and will involve reading the state-of-the-art papers in the selected topic. The research project will contain at least 20 references (conference papers, journal papers, books) in addition to any web site references. The primary sections for the project will include: (a) Introduction to the topic; (b) literature review on latest work published in the topic; (c) analysis of the topic by the student; (d) analysis on how the topic is relevant to the practice of software engineering; (e) areas where
the student sees potential for future research work; (f) conclusions.

Added to any topic you may be interested, potential topics for the course include:

(a) Managing geographically distributed software development teams
(b) Current state-of-the-art in Agile software development
(c) “In-sourcing” software development
(d) State-of-the-art in Software Security
(e) What is Empirical Software Engineering?
(f) How to use Software Engineering practices in the Video-Game industry in commercial software development

Instructor  Dr. Aldo Dagnino
Software Architectures Group
Principal Research Scientist
US Corporate Research Center – ABB Inc.
940 Main Campus Drive
Raleigh, NC 27606, US

Telephone: (919) 807-5731
Email: adagnin@unity.ncsu.edu