

# CIS573 Software Engineering

Summer 2009 V 4.0

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TEXTS: Sommerville, I., Software Engineering Eighth Edition, Addison-Wesley, 2007, ISBN 0-321-31379-8, (S); Andersson, E. Greenspun, P. and Grumet, A. Software Engineering for Internet Applications, MIT Press, 2006, ISBN 0-262-51191-6, (A); Brooks, F., The Mythical Man Month, Addison-Wesley, 1995, ISBN 0-201-83595-9, (B).

*The concern for man and his destiny must always be the chief interest of all technical effort. Never forget it between your diagrams and equations.*

--Albert Einstein (as reported by Andersson, et.al. 2006)

The purpose of this course is to enhance your skills in work environments where software is a crucial component of your engineering life. This course will examine the challenges of conceiving, designing, and perhaps even creating and maintaining software that does significant things, is useful by other people and is enjoyed and celebrated by everyone - users, managers and yourself. It will explore assembling and providing requirements, understanding what is behind software schedules, practicing effective risk management, deciding whether to buy or build and, if buying, how to manage vendors and recognizing when the software component of a project is taking a turn for the worse

Lecture 1 - July 7<sup>th</sup>

Development for school, fun and profit: Software process models, agile development. (B) chapters 1, 7, 10 & 14, (S) chapters 1, 4 & 5.

Lecture 2 - July 9<sup>th</sup>

What to do?: Requirements and Information Architecture. Project Review (B) chapters 2&8, (S) chapters 6, 7, 26

Lecture 3 - July 14<sup>th</sup>

Utility, Durability and Charm: Software Architecture, Buy or build decisions.  
Project Review (B) chapters 3-6 & 9, (S) chapter 11.

Lecture 4 - July 16<sup>th</sup>

"I love it when a plan comes together!": Software Design, Vendor management.  
Project Review (S) chapter 14, (A) chapters 1-2

Lecture 5 - July 21<sup>st</sup>

"It can only be attributable to human error." - HAL 9000: Quality, Risk  
management. Project Review (S) chapter 27

Lecture 6 - July 23<sup>rd</sup>

MidTerm

Lecture 7 - July 28<sup>th</sup>

"Measure twice, cut once": Software tools, configuration, build management and  
environments . (A) chapter 7, (S) chapter 29

"who codes, decides": buy or build decisions redux, coding, software metrics, unit  
testing.

Lecture 8 - July 30<sup>th</sup>

"Software and other testing": software testing. Project Review. (S) chapters 22 &  
23

Lecture 9 - August 4<sup>th</sup>

"software humane society" HCI Project Review (S) chapters 2&16, (A) chapter 16.

Lecture 10 - August 6<sup>th</sup>

"is it safe?": Real time, reliability, SOA and security. Project Review (S) chapters  
15, 30,31, (B) 16-end, (A) chapter 14, **Logbooks due**

Lecture 11 - August 11<sup>th</sup>

**Project Presentations**

Lecture 12 - August 13<sup>th</sup>

Final

Alternate topic 1

"this old software": legacy systems, downstream systems, software archeology.  
(S) chapters 21 & 28

Alternate topic 2

"modern environments": cluster computing, utility computing, grid computing, scientific computing and analytics, new web architectures (service oriented architectures). Readings TBD

Grading policy: There will be a mid-term and a final each worth 25%. Homework, class participation and a log book recording your reflections on the course and your computing life will be worth 25% of the grade and a class project will be worth 25% of the grade.