PURPOSE OF THE ASSIGNMENT: The goal of this assignment is to cause the student to delve deeply into a focused area of software engineering in order to gain an indepth understanding of the area and a carefully balanced view of the advantages and disadvantages of the technical ideas and approaches.

THE ASSIGNMENT: The student will prepare a research paper about 10-15 pages in length that addresses work in a specific area of software engineering covered by the lectures in CS 620. The research paper might be a careful survey of research done in some area, or an indepth analysis of the nature, contribution, strengths and weaknesses of some particular software engineering idea or technology. The paper should demonstrate that the student has read relevant literature in the area and has then applied analytic and evaluative thinking about the literature to reach reasoned opinions and judgments about the work in the area.

Here are some examples of areas in which students might consider writing a research paper. These are only a few examples. Students should feel free to identify other topics to explore in this paper.

- A survey and comparison of different software development lifecycles
  - Boehm’s Spiral Model
  - Statemate
  - Petri Nets
  - RUP (the Rational Unified Process)
  - Jackson System Design (JSD)
  - The KAOS requirements engineering approach
- A survey and comparison of different Architecture Definition Languages (ADLs)
- An indepth analysis of a specific ADL (e.g. Rapide, Acme)
- Pair Programming
- The Scrum agile development method
- Parnas’s Rational Development Method (RDM)
- Booch Object-Oriented Design (BOOD)
- The Z specification language
- The Kepler scientific workflow language
- The Japanese Software Factories

DEADLINES AND DUE DATES:
You must submit a prospectus, identifying the subject of the paper that you propose to write by 11:59PM on Monday, 25 March 2013. Your prospectus should be between 0.5-1.0 pages long. Submit your prospectus to ljo@cs.umass.edu

Your final paper is due by 11:59PM on 2 May 2012.