

Computer Integrated Surgery II

600.446/646/452

Spring 2009

Russell H. Taylor

Tu, Th 1:30-2:45

Course concept

- Combination:
 - Lectures on computer-integrated surgery and related subjects by instructor, guests
 - Projects
 - Seminar on current research
- Similar material to 600.445, but with greater implementation & project focus
- Prerequisite: 600.445 or my consent

Course Numbers and Credits

- 600.446 (3 credits)
 - Full course (lecture/seminar + project)
 - Advanced undergrads or grad students
- 600.646 (3 credits)
 - Same as 600.446 but intended for grad students doing more advanced projects
- 600.452 (1 credit)
 - Seminar only

Contact Information

- CA = TBD
- Office Hours = TBD

- My office hours
 - By appointment (see Alison in CSEB 117)
 - Will usually try to be in office 12-1 on class days

- My lab meeting is Wed. 4:00-5:00
- ERC/LCSR Seminars Wed. 12-1:00

Grades

- 600.446/646
 - 25 % seminar presentation/writeup
 - 15 % project plan
 - 10 % project checkpoint presentation
 - 10 % project final presentation (poster presentation)
 - 40 % project implementation & final report
 - Attendance can affect your seminar / presentation grades
- 600.452
 - Letter grade or Pass/Fail
 - Grade based on seminar presentation & critical summary of pertinent research papers

Date conflicts

- I will be out of town
 - 1/29, 3/24, 3/26
 - Possibly other dates later in year
 - Rajesh Kumar will talk about projects 1/29
- We may need to find make-up dates
 - Pick an evening (e.g., 5-7pm) or dawn (7-8am)
 - Evenings preferred

Seminar Presentations

- Select a single important paper or series of papers (2-5) relevant to your project or other interest
- Give short (typically, 20 minutes) talk
 - Critical summary of what paper says & its significance
- Bring hard copy of presentation materials to class to be put in your notebook
- Also, write a short (3-5 page) critical review
 - Due day before talk (give to my secretary for copying and distribution)
 - Will be flexible on due date for the first talks
- Copy of paper will go into your notebook & one to me
- Will be critiqued in class (in a friendly way)

Typical Outline (modify as appropriate)

- 1 slide statement of your project
- Paper selection and why
- Summary of problem & key result
- Significance of key result
- Necessary background
- Description of what the author(s) actually did
 - Theory, experiment, etc.
- Your assessment
 - Importance, relevance to you, good & bad points, etc.
 - Possible next steps for this work
- Conclusions

Rough Calendar

- 1/29, 2/3, 2/5, 2/10: Discuss projects in class + general material
- Pick project & seminar topics by 2/10 (preferably sooner)
- Approved project proposals by 2/10
- Project plan presentations 2/10 through early march
- Paper seminars March through April
- Project checkpoints mid-March through mid-April
- Project poster session during reading week (date TBD)
- Project final reports during exam week (date TBD)

Projects

- Typically will involve some substantial implementation/experimentation component
- Require a “mentor”
 - Me, colleague, or an end user
- Require funding/equipment support
 - Can come from me or end user
- Require a defined plan and budget
- Team projects encouraged

Project Notebooks

- Maintain a loose-leaf notebook with dividers
- One copy for me (keep in my secretary's office); at least one copy for you
- Divide into sections
- Sections for project proposals, all presentations, copies of background material, final report, etc.
- A place for me to keep grade records

Project Proposals

- “Closed” plan by 2/12 or before
- Approximately 3 page summary containing
 - Stated topic and goal
 - Team members, mentor
 - **Short** statement of relevance/importance
 - **Short** technical summary of approach
 - List of “deliverables” (min, expected, max)
 - Key dates & assigned responsibilities
 - List of dependencies & plan for resolving
 - Management Plan
 - Reading list

Project Checkpoint Presentation

- Approximately 20 minutes talk
- Given in late March, early April
- Summarize/update plan material
- Present work to date
- Present problems, exposures, dependencies
- Bring hard copy of presentation materials to class to be put in your notebook
- Will be critiqued in class (in a friendly way)

Project Final Presentation (Poster)

- Near end of semester
- Standard format
- Project should be done or nearly so
- Present/demo results
- Discuss work remaining to be done
- Discuss significance of work

- Discuss lessons learned
- Prizes awarded in various categories

Project Final Report

- Technical summary
 - Similar to a short conference paper
 - Explain background, problem, approach, results, significance, etc.
- Management summary (1 page)
 - Who did what
 - Discuss what was accomplished vs planned
 - Discuss what might be next
 - What you learned
- Technical appendices
 - Code, user's manual, etc.