ECE/MAE7360. Robust and Optimal Control.
Electrical and Computer Engineering, Utah State University

FISP (Focused Independent Study Project)

Requirements: You are asked to focus on a specific topic related to "Robust and Optimal Control" and perform an independent study. Then you will give a presentation (20 min plus 5 min discussion) to the class. If you fail to do well in FISP, you cannot get an "A" or even "A-".

Schedule: Choose a topic by March 12, 2007. Dates of presentation: 4/16 (3 presentations), 4/18 (3 presentations), 4/23 (3 presentations), 4/25 (3 presentations)

Topics:
- You are encouraged to pick a topic by reading current issues of IEEE Transactions on Automatic Control or Automatica.
- Better to decide a topic that is closer to your thesis topic.
- Note that you should know that all the journal articles are available from http://www.ieeexplore.ieee.org/ from 1998 – present. You also use Citeseer site http://citeseer.nj.nec.com/ to get more online papers.
- However, your selected topic is subject to the instructor's approval. Feel free to consult the instructor for a suitable FIST topic of yours.
- Listed below are the topics suggested by the instructor who can provide you the right references.

Suggested FISP topics.
1. LMIs (linear matrix inequalities) based robust control
2. Structured uncertainties: beyond LFT framework (Kharitonov's Theorem)¹
3. Extending $H^\infty$ control to nonlinear systems
4. Polynomial Toolbox for Robust Control²
5. Robustness analysis of sensor networks
6. Interval analysis for robust control
7. Multiobjective robust control
8. Fragility analysis of robust controllers.
9. $L^1$ control

¹ Edge theorem. See http://www.polyx.com/
² See http://www.polyx.com/