

EE/CpE 415/423

Senior Design Project

Fall 2002

Course Introduction

- Logistics:
 - Instructor: Prof. Bruce McNair
 - Office: Burchard 206
 - Phone: 201-216-5549
 - email: bmcnair@stevens-tech.edu
 - Office hours: Tuesday ~9:30 - ~11 (other hours, TBD and TBA)
 - TA: Y. Chen: ychen5@stevens-tech.edu
- Class schedule:
 - Tuesday 3 – 5:50 pm, as needed for coordination, presentations
- Class web site:
 - <http://koala.ece.stevens-tech.edu/~sd2001>
(this will be changed in the future to make it more generic for ongoing classes, but current page will redirect to new page)

A personal perspective

- My perspective on senior design
 - As a '71 student
 - As an AT&T/Bell Labs technical recruiter from 1982-1996
 - As a faculty member

Your three tasks

- Figure out what your job (project) is
- Do it
- Tell people about it

Senior Design course flow

- Project selection
 - Is it interesting?
 - Is it doable?
 - Is it meaningful?
 - Sponsored projects
- Group formation/selection of Group Leader
 - ~3 students/group
 - Equal share in outcome of project
 - Group leader keeps project on target (time and direction) and is responsible for reporting
- Faculty Advisor
 - Member of ECE, CS, or Physics Departments
 - Evaluates written reports

Senior Design course flow (continued)

- Project/Advisor Form
 - Completed after project and advisor are selected.
 - Faculty advisor signs, group submits to course coordinator (me)
 - I assign a group number that is used in all future reports
- Advisor-Group Meetings/Oral and Written Progress Reports
 - Meet with advisor at least once every two weeks
 - Advisor provides technical guidance, advice to group
 - All students must attend advisor-group meetings
- Weekly Status Reports
 - Due from group leader to course coordinator (me) an electronic one page summary of project status.
 - Due Monday morning via email
 - Format on web site

Senior Design course flow (continued)

- Logs
 - Every student must maintain an up-to-date laboratory notebook, recording time spent on project.
 - Must be made available on request to advisor, coordinator, other faculty
- Documentation required
 - Individual project web site (I'm looking for consistency, will provide guidelines)
 - Project/Advisor form – first semester
 - Project Proposal – first semester
 - Final Design report – first semester
 - Project Oral Presentation – first semester
 - Interim Progress report – second semester
 - Poster/Project demonstration – second semester
 - Final Report – second semester

Senior Design course flow (continued)

- Class Meetings
- Grades
 - 80% assigned by advisor
 - 20% assigned by course coordinator
- Awards
- Materials

Technical Advisors and their Research Areas

<p>Francis T. Boesch</p> <ul style="list-style-type: none"> • Network Design • Network Reliability • Applications of Graph Theory 	<p>Rajarthanam Chandramouli</p> <ul style="list-style-type: none"> • Networked Communications • Wireless Communications • Multimedia Computing and Security • Energy Efficient Coding for Wireless Communications 	<p>Sumit Ghosh</p> <ul style="list-style-type: none"> • Asynchronous Distributed Decision-Making Algorithms • Networking and Network Security • Computer-Aided Design of Digital Systems • Modeling and Simulation of Complex Systems • Intelligent Transportation
<p>Harry Heffes</p> <ul style="list-style-type: none"> • Integrated Broadband Communications Networks • Overload Controls for Distributed Switching Systems • Queuing and Teletraffic Theory and Applications • Computer Performance Modeling and Analysis • Mobile Communications and Congestion Control for High Speed Networks 	<p>Gerald J. Herskowitz</p> <ul style="list-style-type: none"> • Long-Distance High-Capacity Single-Mode Optical Fibre Communications Systems • Integrated Video, Data, Voice Networks • Optical Sensing Systems for Processing and Environmental Controls 	<p>Hongbin Li</p> <ul style="list-style-type: none"> • Signal Processing for Communications • Channel Identification and Equalization • Transmit/Receiver Diversity • CDMA and OFDM Systems • Stochastic Signal Processing • Sensor Array Processing • Detection and Estimation • Spectral Analysis and System Identification • Radar and Medical Imaging
<p>Hong Man</p> <ul style="list-style-type: none"> • Image Compression • Video Compression • Error Resilient Data Compression • Wireless Data Communications 	<p>Bruce McNair</p> <ul style="list-style-type: none"> • Wireless Communications • Computer and Network Security • Signal Processing for Communications • Software-Defined Radios • OFDM Wireless Systems • Wireless LANs 	<p>K.P Subbalakshmi</p> <ul style="list-style-type: none"> • Joint Source-Channel Coding • Image and Video Coding • Error Resilient Multimedia Communications • Multimedia Networking
<p>Stuart K. Tewksbury</p> <ul style="list-style-type: none"> • VLSI and ULSI Digital Systems • System Interconnects & Packaging • Communications for Concurrent Computing • Reconfigurable Computing Systems • Computation Science & Engineering 	<p>Uf Tureli</p> <ul style="list-style-type: none"> • CDMA-Based Wireless Systems • Wireless Testbeds • OFDM Wireless Systems • Signal Processing for Communications 	<p>Yu-Dong Yao</p> <ul style="list-style-type: none"> • Microcellular Wireless Architectures • Equalization for Co-Channel Interference • Spread Spectrum for Indoor and Mobile Wireless • Mobile Satellite Communications