

**EE/CpE 423**

**Senior Design**

**Fall 2007**

**Class 2 – 9/4/07**

# Agenda

- Problem definitions
- Announcement, issues
- Directions and more logistics.

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  - explore gizmos
  - program a thingamabob
  - design a doohickey

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- Widgets are too expensive for everyday users
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- Focus on user/customer needs:  
Functions, Size, Performance, Power, Cost

# A Few of Our Student's Problems

- Proper soil moisture level for home gardens
- Walking through the city (navigating around tourists, homeless, vendors) (led to 2004-2005 project)
- Couch-potatoes/computer desk-potatoes need remote lighting controls (led to 2006-2007 project\_)
- Over utilized USB/underutilized Centronics printer port
- House keys-finder
- Laundry status checking
- Recreational facilities status checking
- Shoes that don't untie (**double knot!**)
- Cell phones that know when to give up looking for signals
- TV automatic loudness control
- On-campus mail tracking (like USPS registered mail)
- Parking spot location/street cleaner tracking
- Electronic filing of paper documents
- Electronic sorting of CD/DVD collections
- Environmental energy harvesting for portable devices



# Project Status

Group #	Project	Team members	Advisor
1			
2			
3			

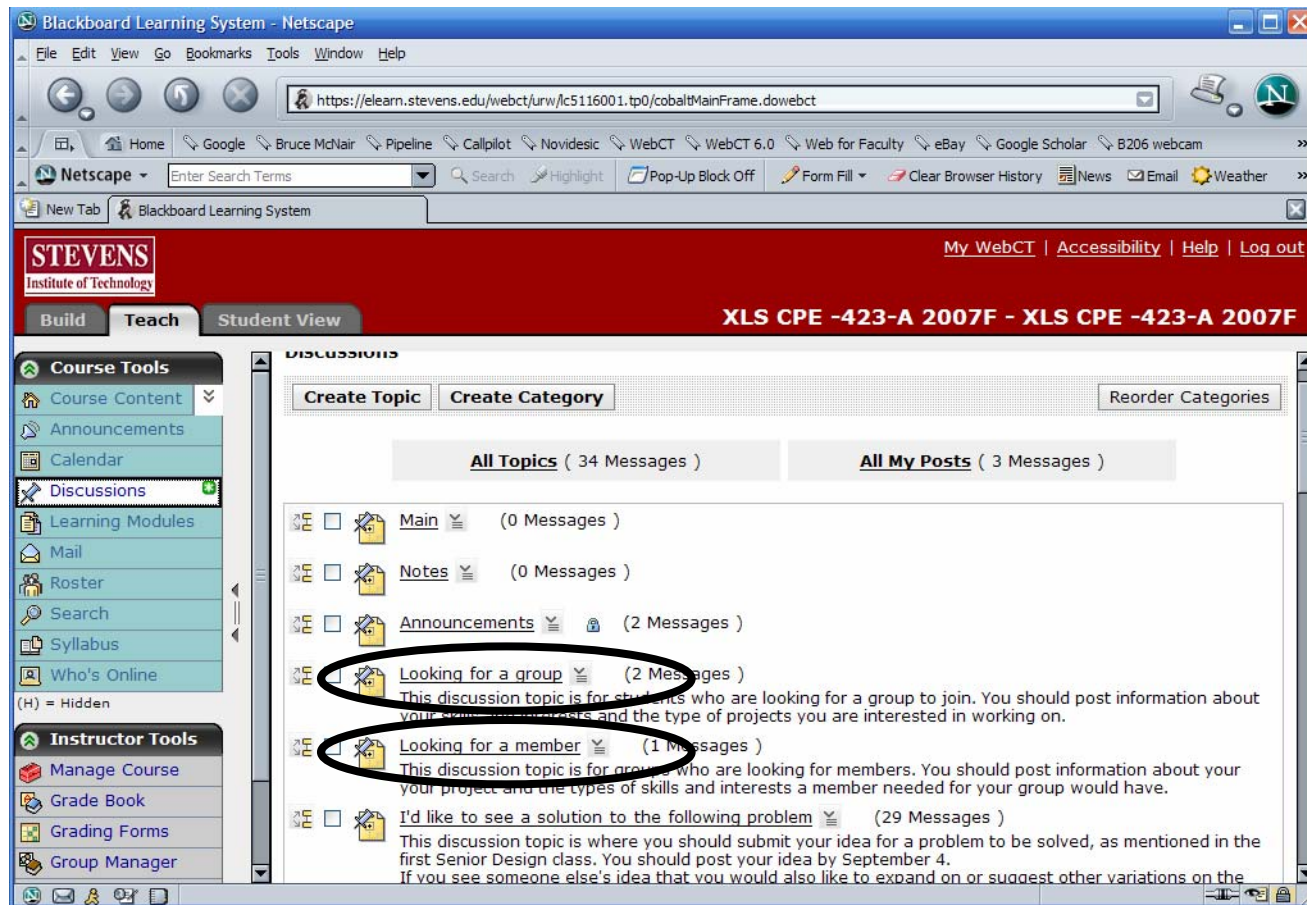
[http://www.ece.stevens-tech.edu/~bmcnair/senior\\_design-07-08/groups.html](http://www.ece.stevens-tech.edu/~bmcnair/senior_design-07-08/groups.html)

# Students Not in Groups

Fatimah Abd Halim	Arturo Dizon	Boris Kocherov	Shreyas Seshamani
Anirudh Agarwal	Christopher Dunderdale	Thomas Kopin	Humza Shahid
Sitifatihah Ahmad	Norasyikin Fadilah	Nikola Koprivica	Brian Simms
Francisco Alba	Christopher Falato	Jimmy Latorre	Rajwinder Singh
Amanda Allen	Michael Fischer	Dae Lee	Denny Sosa
Michelle Attilio	David Fritsche	Kevin Lee	Johnathan Spaulding
Louis Avila	Timothy Garner	Michael Lutkenhouse	Jason Stultz
Morgan Baron	Craig Gordon	Ryan Marone	Imrul Sumit
Joseph Battaglia	Xin Gu	William McGuire	Kaden Sun
Sharmin Bennett	Robert Hudson	David Mraz	Edwin Tagoe
Michael Berry	Robert Iannacone	Evan Ng	Joseph Tiseo
Michael Bocchinfuso	Ahmadnizam Isa	Rangarirai Ngwerume	Vershima Tivzenda
Derek Boltja-Parker	Derek Ives	Andrew Numa	Jason Travis
Georgios Braimakos	Michael Ivey	William Nyquist	Mark Vizthum
Katherine Casella	Vijay Jadav	Neil Patel	Cesar Yunda
Jin Choi	Philip Jou	Justin Rodriguez	Elias Zakkak
Daniele Di Iorio	Thomas Kaufmann	Joseph Salomon	

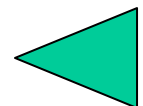
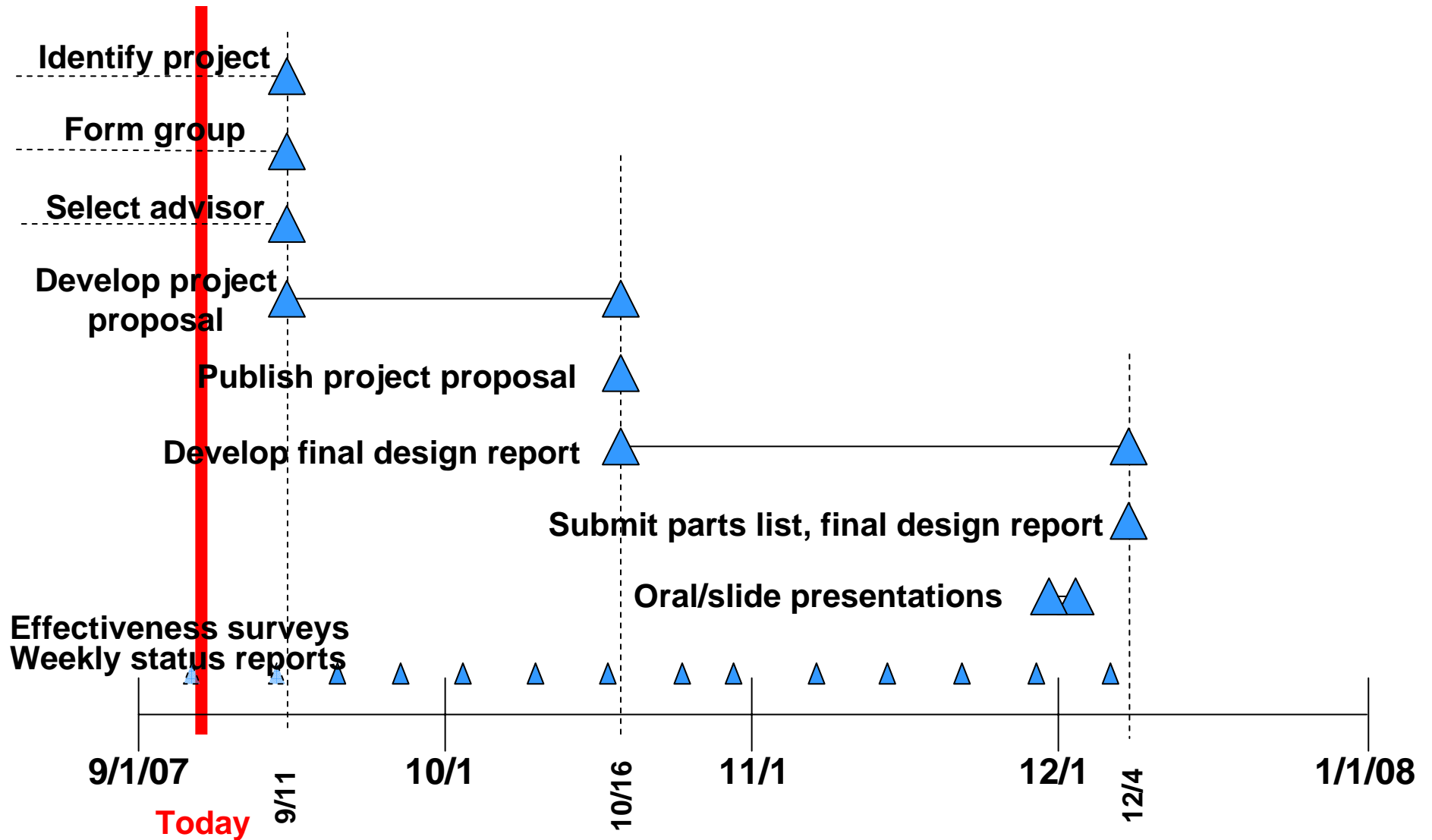
# There is a typically a shortage of formed groups and a surplus of students without groups

- To address this need:
  - The WebCampus shell for EE/CpE-423 has two discussion groups to connect students and groups:

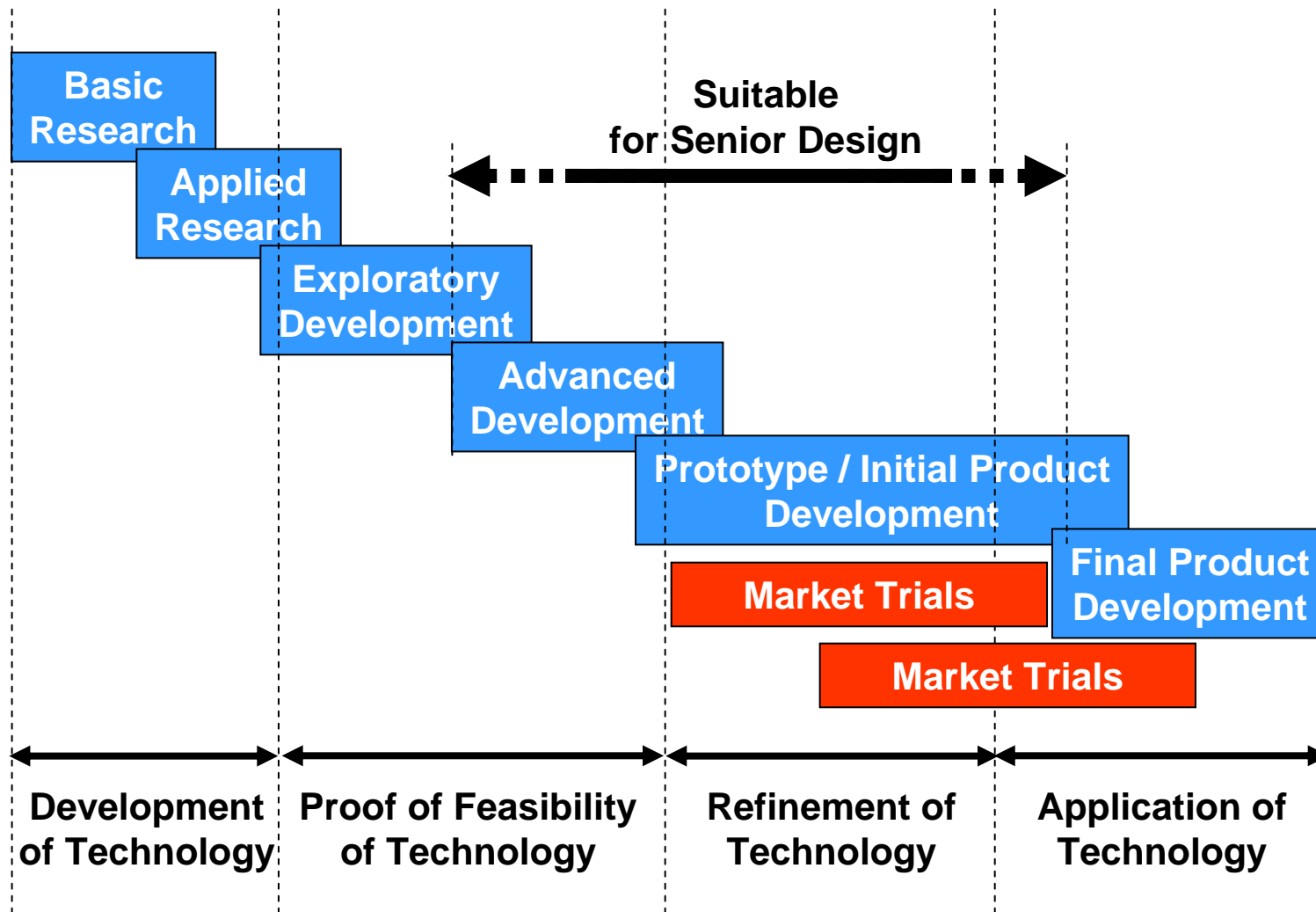


- Post specific group needs, specific student skills, interests

# Senior Design Tasks – Fall '07



# Stages in Development Cycle



# Constraints That Can (Should?) Be Relaxed For Prototype

- **Physical size**
    - Level of integration (VLSI vs. FPGA,  $\mu$ C, LSI/MSI, etc.)
  - **Implementation platform**
    - simulating a Palm on a laptop,
    - simulating functions in software that would normally be in hardware, and vice versa
  - **Feature set**
    - What is essential to demonstrate concept, vs. what could be imagined/assumed
    - What is known to be doable vs. what is to be demonstrated
  - **Performance**
    - Speed, capacity, etc.
  - **Environmental constraints**
    - Operating temperature range, shock, vibration, etc.
- Focus on *key* attributes of end design, not every detail

# Now that you've (hopefully) formed a group...

- Weekly reports due Monday by Noon
  - Use **ONLY** the template provided to ensure consistent format:
  - Template is on Senior Design web site (below)
  - Team leader is responsible for submission of weekly report (electronically)\*\*
  - **Group grade will be influenced by timeliness, completeness of reports**

EE/CpE 423-424 WEEKLY STATUS REPORT						
Group #	XX	Week ending:	XX/XX/XX	Report #	XX	
Project Title:						
Group Leader:			Advisor:			
Sponsor/Client:						
Total number of person-hours spent on project by group during past week:						
Is project on schedule?						
			Yes	[ ]	No	[ ]
Weekly status:						
Weekly report is due to Senior Design Coordinator by Noon Monday						
<small>Template version: 9/1/03</small>						

# Now that you've formed a group...

- Group Effectiveness Survey
  - Use ONLY the template provided to ensure consistent format:
  - Template is on Senior Design web site (see below)
  - **EACH** group member must submit survey **EACH** week (electronically)
  - **Group grade will be influenced by timeliness, completeness of reports**
  - Individual grades will NOT be influenced by content of these reports
  - I encourage (but do not require) that you share content with your other team members
  - **DO NOT SEND EFFECTIVENESS REPORTS TO ADVISOR!!!**
  - The tutor doesn't need to see these reports
  - If your group has non-ECE members, do not include them in group effectiveness totals.
  - Check your arithmetic:  $\Sigma = 100$

EE/CpE 423-424 GROUP EFFECTIVENESS SURVEY					
Group #	XX	Week ending:	XX/XX/XX	Report #	XX
Project Title:					
Report Submitted By:					
<p>Assign a score between 0 and 100 to each team member (<i>including yourself and the team leader</i>) to indicate how much YOU believe that team member contributed to the overall accomplishments of the group for the week. The total number of points assigned must total 100.</p>					
Team member's name		Score (0-100)			
Sum of scores		100			
<p>Comments on team effectiveness:</p> <div style="border: 1px solid black; height: 150px; width: 100%;"></div>					
Does the team regularly assess its effectiveness?		Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Have you shared your thoughts on the team's effectiveness with the rest of the team?		Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
<p>Report is due to Senior Design Coordinator by Noon Monday</p> <p style="font-size: small;">Template version: 9/1/03</p>					

# Emailing submissions

There are 4 different ways to send weekly submissions:

1. Send to            bmcnair@stevens.edu            (me)  
                             mschurgo@stevens.edu            (TA)
2. Send to sd@koala.ece.stevens-tech.edu
3. Mail from within WebCT to Mary and me
4. Send to the WebCT group “Assignments”

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no permanent record in mailbox
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Mail is permanently saved in WebCT folder

WebCT (and koala) are UNIX- based.

They mess up attachment file names that come from Windows  
(use no spaces in file name – use \_ or - instead)

**Students frequently forget to press the button to attach a file**

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**The attached file name must indicate:**

**course number (423 or SD is sufficient),**

**group number (this will be supplied when group is formed),**

**due date (Monday’s date), and**

**what the attachment is (“weekly report” or “effectiveness survey”)**

**Failure to do so will probably result in uncredited submissions, which**

**might influence group’s final grade**

# Other Resources

- Circuit Cellar Magazine
- [http://www.ece.stevens-tech.edu/~bmcnair/senior\\_design-07-08/hw\\_sw.htm](http://www.ece.stevens-tech.edu/~bmcnair/senior_design-07-08/hw_sw.htm)

