WORKING TOGETHER AS A TEAM

Why Should I Care?
- Crucial Activities for Team
- Undercurrents
- Stages of Team Growth
- Recipe for a Successful Team
- Working Through Group Problems
  - Constructive Feedback
  - General Guidelines
  - Ten Common Problems and Solutions
- Team Decision Making

Why Should I Care?
- The Nature of Contemporary Design
- Individual and Team Accomplishment
- Evaluation in 554

Nature of Contemporary Design
- Shorter and Shorter Design Times
  - Parallel Performance of Tasks More Essential
- Large Projects
  - Division of Design Effort among Many
- Small Projects
  - Team Size Increasing
  - Individuals and Teams of Two Disappearing

Individual Accomplishment - Desirable Traits
- Knowledgeable
- Creative
- Proactive

? Accomplishment
**Team Accomplishment - Added Trait**

- Interactive - Subtraits?
- Positive Interaction - Whole More than Sum of Parts
- Negative Interaction - Whole Less than Sum of Parts

**Evaluation in 554**

- Individual
  - Effort Report in Final Report
    - Not just something you submit, but consensus of team members
  - Project Log (optional)
    - A detailed record of activities and accomplishments
    - On-line and up-to-date
- Team
  - Project Demonstration
  - Technical and Presentation
  - Project Final Report
  - Technical and Presentation

**Undercurrents**

- Personal Identity in the Team
  - Membership, inclusion
  - Influence, control, mutual trust
- Relationships between Team Members
  - What kind of relationships?
  - Interaction of members of different ranks
  - Friendly and informal or strictly business?
  - Open or guarded?
  - Work well together or argue and disagree?
  - Like me? Like them?
- Loyalty to Team
  - Loyal to team or self
  - Team responsibility versus other obligations
  - Influencing outsiders

**Recipe for Successful Team**

- Beneficial Team Behaviors
- Clarity in Team Goals
- An Overall Project Framework
- Clearly Defined Roles
- Clear Communication
- Well-Defined Decision Procedures
- Established Ground Rules
- Awareness of the Group Process
<table>
<thead>
<tr>
<th>Harmful Behaviors</th>
<th>Beneficial Behaviors</th>
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<tbody>
<tr>
<td><strong>Exclusion</strong> – blocking one or more team member or members from participation</td>
<td><strong>Seek diversity in team constituency, both technical and otherwise</strong></td>
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<td><strong>Harassment</strong> – any actions whether verbal, written or physical that makes a team member feel uncomfortable</td>
<td><strong>Foster involvement and participation of all team members</strong></td>
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<tr>
<td>• Targets the person rather than the problem</td>
<td><strong>Understand to a degree, variations in contribution by team members</strong></td>
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<td>• Possibly based on race, gender, ethnicity, religion, or country of origin</td>
<td><strong>Transfer team resources to solve the problems that appear most difficult</strong></td>
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<td><strong>Academic misconduct</strong></td>
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<tr>
<td>• Inappropriate design reuse</td>
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<tr>
<td>• Interference with another teams efforts</td>
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<tr>
<th>Constructive Feedback</th>
<th>Problem-Handling Guidelines</th>
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<tr>
<td><strong>Acknowledge need for feedback</strong></td>
<td><strong>Anticipate and prevent group problems whenever possible.</strong></td>
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<td><strong>Give both positive and negative feedback</strong></td>
<td><strong>Think of each problem as a group problem.</strong></td>
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<td><strong>Understand the context</strong></td>
<td><strong>Neither over-react nor under-react</strong> - Leader options:</td>
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<td><strong>Know when to give feedback</strong></td>
<td>• <strong>Do nothing</strong></td>
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<td><strong>Know how to give feedback</strong></td>
<td>• Off-line conversation (minimal intervention)</td>
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<tr>
<td><strong>Know how to receive feedback</strong></td>
<td>• Impersonal Group Time (low intervention)</td>
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<td>• Off-line Confrontation (medium intervention)</td>
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<td>• In-group Confrontation (high intervention)</td>
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<td></td>
<td>• Expulsion from team (do not use; instead:)</td>
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<td></td>
<td>• Contact course team</td>
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Ten Common Problems
- Floundering
- Overbearing participants
- Dominating participants
- Reluctant participants
- Unquestioned acceptance of opinions as facts
- Rush to accomplishments
- Attribution
- Discounts and “Plops”
- Wanderlust: Digression and Tangents
- Feuding Team Members

Crucial Activities for Team
- Get Organized
- Maintain Communications
- Fix Obvious Problems
- Document Progress, Problems, and Rationale
- Have a process in place for major team decisions

Team Decision Making
- Goal: To reach consensus
  - Consensus is: Finding a proposal acceptable enough so that all members can support it; no member opposes it.
  - Consensus is NOT: A unanimous vote; a majority vote; everyone totally satisfied.
- Requires: Time, active participation, communication skills, creative thinking, and open-mindedness
- Techniques
  - Brainstorming
  - Multivoting
  - Nominal Group Technique

Brainstorming
- Goal - to examine as broad a range of options as possible
- Rules - Encourage free-wheeling - No discussion - No judgment - Allow hitch-hiking - Write visibly all ideas
- Sequence
  - Review the topic (as a question)
  - Minute or two of silence to think
  - Call out and write down ideas
Multivoting

- Goal - Select most important or popular ideas from a list with limited discussion and difficulty.
- Generate list and number.
- Combine similar items if agreed.
- If necessary, renumber.
- Have all members vote for several items to discuss by writing down numbers; about 1/3 of items per member.
- Tally votes using secret ballot if necessary.
- Eliminate items with fewest votes (less than about 25%).
- Repeat until only a few items - if no clear favorite discuss or vote again.

Nominal Group Technique - Part 1

- Goal: Generate and narrow a list of options with “nominal” level of interaction.
- Define task in form of a question.
- Describe purpose of discussion and rules.
- Introduce and clarify question.
- Generate ideas in silence.
- List ideas using “round robin” priority.
- Clarify and discuss ideas.

Nominal Group Technique - Part 2

- Reduce list to no more than 50 items.
- Give each participant number of cards equal to about 20% of size of list; typically even number.
- Members make selections, one per card.
- Members assign points to each selection based on the number of cards. Maximum number of points equal number of cards. May reuse point values.
- Collect cards and tally votes.
- Select item with highest point total.
- Review results and display - Surprises? Objections? Lobbying? Another Vote?

Application to ECE 554 Project Teams

- Have a team leader - will reduce your grades if you don’t!
- Make sure goals are clear
- Use a deployment chart for planning
- Use decision techniques in architectural step and for other major or controversial decisions
- Watch for team problems and pitfalls
- Deal with interpersonal problems