MICHIGAN STATE UNIVERSITY

# 10/07: Schedule and Teamwork

#### **The Capstone Experience**

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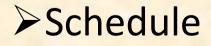
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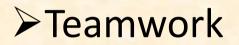
Fall2013



From Students... ...to Professionals

## Schedule and Teamwork







## Where do you start?

- Project Plan
- Prioritized Risks
- Feature Set(s)
- Fixed Milestones
  Course
  Client

Tradeoffs... Features vs. Time

Are there fixed milestones in the "real" world?

# Major Milestones

- 09/11: <u>Status Report Presentations</u>
- 09/16: Project Plan Presentations
- 10/14: Alpha Presentations
- 11/11: <u>Beta Presentations</u>
- 12/02: Project Videos
- 12/04: <u>All Deliverables</u>
- 12/05: Design Day Setup
- 12/06: Design Day

#### **Project Parts**

- Break Down Project
  - Main Parts
  - Sub-Parts
  - Sub-Sub-Parts
  - Etc...
- Categorize
  - Risks
  - Dependencies (Particularly Risk Dependencies)
  - Priorities
- Worry About
  - Interfaces Between Parts
  - Integration of Parts

## **Building A Project Schedule**

- Start With Fixed Course Milestones
- Estimate Times for Tasks for Parts
  - Building
  - Integrating
  - Testing
- Assign Tasks to Team Members
- Must Keep Everyone Busy All the Time
- Use "Short" Deadlines (E.g., 2-3 Days) Why?
- Document and Track
  - Microsoft Project?
  - Collaboration Tool?

# **Estimating Time for Tasks**

- Rough Estimate
  - Intuition
  - Experience
- Refined Estimate
  - Prototype or Partial Build
  - Extrapolation
  - E.g., 2 Days to Build  $1 \rightarrow 6$  Days to Build 3
- Keys
  - Be Realistic
  - Include Buffer Time if Unsure
- Adjust Schedule Accordingly

# **Typical Build Cycle**

#### Until Project Done Do

- 1. Divide Next Big Task Into Little Tasks
- 2. Assign Little Tasks to Team Members
- 3. Complete Little Tasks
  - a. Implement
  - b. Test
- 4. Integrate Little Tasks Into Big Task
- 5. Test Big Task

High Priority Risks Get High Priority Scheduling

The Capstone Experience

Schedule and Teamwork

## **Revision Control**

- Versioning
  - Discrete "Internal" Versions (States)
  - May Correspond to Builds
- Revision Control Systems
  - Check Code In and Out
  - Mark Specific States as Versions
- Motivation
  - Build Breaks System
  - Revert to Earlier Build
  - Avoid Bridge Burning
- Examples
  - Visual SourceSafe
  - GNU RCS (Revision Control System)

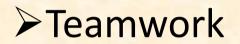
Can Be Serious Problem

## Living Schedule

- Schedule Is Dynamic
  - Unforeseen Problems
  - Added Features (Avoid Feature Creep)
  - Etc..
- Track Your Progress
  - Microsoft Project?
  - Collaboration Tool?
- Revisit Schedule Often
  - Weekly Team Meetings
  - Weekly Triage Meetings with TA
  - Identify Slippage
  - Hold Each Other Accountable (or Contact TA or Me)
  - Set Corrective Action
  - Adjust Schedule

## Schedule and Teamwork

#### ✓ Schedule





## **Team Organization**

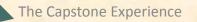
- Up to Each Team
- Organize into Roles
  - Client Contact
  - Program Manager
  - Developer
  - Tester
  - Systems Administrator
  - Etc...
- Everyone Must Make Technical Contributions

#### **Team Dynamics**

- Key to Success
- Significant Component of Course Grade
- Address Problems Immediately
  - Within Team
  - With Dr. D. and/or TA
- Be Ready to Discuss During Interviews

# Grading

• Team (70%)	
Project Plan Document & Presentation	10
Alpha Presentation	10
Beta Presentation	10
Project Video	10
Project Software & Documentation	25
Design Day	<u>5</u>
<ul> <li>Total</li> </ul>	70
Individual (30%)	
Technical Contribution	10
Team Contribution	10
Team Evaluation	5
<ul> <li>Meeting Attendance</li> </ul>	<u>5</u>
Total	30



(1 of 2)

# Grading

- Final Grade Sum Of...
  - Individual Total
  - % of Team Total Based on Team Contribution
- Grand Total =
  - (Individual Total)

+

- (Team Total) \* (Team Contribution) / 10.0
- *Nota Bene*: Your Team Contribution will have a very significant effect on your final grade.

## **Team of Peers**

**Effective Team Members** 

- Relate as Equals
- Have Specific Roles and Responsibilities
- Respect Specific Roles and Responsibilities
- Empowers Individuals in Their Roles
- Have Specific Skills
- Hold Each Other Accountable
- Drive Consensus-Based Decision-Making
- Give All Members a Stake in the Project

## **Potential Problems**

#### Over and/or Under

- Bearing
- Qualified
- Achiever
- Etc...

## **Mutual Responsibility**

- You are your "brother's/sister's keeper".
- Responsible For
  - Your Contribution

#### and

- Your Teammates' Contributions
- What Won't Work
  - "They never asked me to do anything."
  - "They never let me do anything."
  - "He/she never asked to do anything."
  - "He/she never wanted to do anything."

Etc...

# **Team Evaluation Form**

- 5% of Final Grade
- Rate Each Team Member
  - Technical Contributions
  - Overall
    - Effort
    - Performance
- Other Questions
  - 8. Describe the contributions of each team member, starting with you. Be specific. Include comments about your/their individual technical contributions as well as your/their contributions to the team as a whole.
  - 9. Whom do you feel did the best (either in effort or overall contribution to the team)? Why? Be specific.
  - I0. Whom do you feel did the worst (either in effort or overall contribution to the team)? Why? Be specific.

## **Team Problems**

- Can Be
  - Really Hard
  - Awkward
  - Frustrating
  - Etc...
- Addressing Problems
  - ASAP
  - Directly
  - Respectfully
  - Maturely
- Resolving Problems
  - Internally First
  - See Dr. D. and/or Malcolm Next but ASAP (Don't Wait)
- "Bad" Team Not an Acceptable Excuse

Potential For Bad Effect on 70% of Your Grade

## Schedule and Teamwork

#### ✓ Schedule

#### ✓ Teamwork

