MICHIGAN STATE UNIVERSITY

09/22: Schedule and Teamwork

The Capstone Experience

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From Students... ...to Professionals

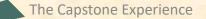
Schedule and Teamwork

➢ Schedule

➢ Teamwork

Google Form Attendance Check

ተተተተተ Only An Example



Capstone Work Requirements

- Every team member should be working all the time.
- Work on all parts in parallel.
 - Hardware / Software
 - Front End / Back End
 - Web / iOS / Android
- Work in advance.
 - Mitigate risks.
 - Get hardware working.
 - Install and test systems.
 - Write Hello World tests.

Schedules

- Schedules > All-Hands Meeting
- Schedules > Major Milestones
 - = 09/15: Status Report Presentations
 - 09/27: Project Plan Presentations
 - 10/18: <u>Alpha Presentations</u>
 - 11/15: Beta Presentations
 - 12/06: Project Videos
 - 12/08: <u>All Deliverables</u>
 - 12/10: <u>Design Day</u>

Are there fixed milestones in the "real" world?

Project Parts

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

Building A Project Schedule

- Start With Fixed Course Milestones
 - See Schedules > Major Milestones
 - Read About Each
- 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

Version Control

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

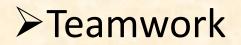
Can Be Serious Problem

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 Instructors
 - Identify Slippage
 - Hold Each Other Accountable (or Contact Instructors or Dr. D.)
 - 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 significant technical contributions to their team's project, including significant software contributions. (NB: Newly Added to Syllabus.)

Team Dynamics

- Key to Success
- Significant Component of Course Grade
- Address Problems Immediately
 - Within Team
 - With Dr. D. and/or Instructors
- 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>05</u>
 Total 	70
Individual (30%)	
Technical Contribution	10
Team Contribution	10
 Team Evaluation 	05
 Meeting Attendance & Preparation 	<u>05</u>
 Total 	30



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- 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.

Grading

Effect of Team Contribution						
Technical Contribution	Team Contribution	Team Evaluation	Meeting Attendance	Team Total	Grand Total	
10	10	5	5	70	100	
10	9	5	5	70	92	
10	8	5	5	70	84	
10	7	5	5	70	76	
10	6	5	5	70	68	
10	5	5	5	70	60	
10	4	5	5	70	52	
10	3	5	5	70	44	
10	2	5	5	70	36	
10	1	5	5	70	28	
10	0	5	5	70	20	

Nota Bene: Assumes Perfect Score In Every Other Category

The Capstone Experience

Schedule and Teamwork

Grading

• In order to be eligible to earn a non-zero final course grade, you must earn at least 50% in every one of the grading categories given above. That is, in order to be eligible to earn a non-zero final course grade, you must earn at least the minimal grades given below.

Minimal Team Grade Requirements

Project Plan Document & Presentation	5.0 / 10.0
 Alpha Presentation 	5.0 / 10.0
 Beta Presentation 	5.0 / 10.0
 Project Video 	5.0 / 10.0
 Project Software & Documentation 	12.5 / 25.0
 Design Day 	2.5 / 05.0
Minimal Individual Grade Requirements	
 Technical Contribution 	5.0 / 10.0
 Team Contribution 	5.0 / 10.0
Team Evaluation	2.5 / 05.0
 Meeting Attendance & Preparation 	2.5 / 05.0



- In the capstone course, absence does <u>not</u> make your teammates' hearts grow fonder.
 - Nonresponsive
 - o Email
 - o Texts
 - Microsoft Teams Messages
 - Miss Meetings
 - All-Hands
 - o Triage
 - o Client
 - o Team
 - - In Lab and/or Online with Teammates
 - During Sprints
 - Before Major Milestones



Unacceptable Excuses for Not Contributing

- They never asked me to do anything.
- They never let me do anything.
- I wrote 1000's of lines of code, but they weren't included in the project.
- My features were not included in the project.
- I work 40 hours per week at my job.
- I live 60 minutes from MSU.
- I didn't want to work on this project team.
- I ranked this project last.
- I did a lot of research about stuff we never used.
- I was busy interviewing.
- Etc...



- We reserve the right to make changes with sufficient notice.
- No special consideration will be given for final grades, including but not limited to
 - effect on GPA,
 - status in any academic program including CSE,
 - financial aid,
 - rank in the armed forces,
 - job while a student at MSU,
 - job after anticipated graduation from MSU,
 - graduation,
 - mortgage,
 - wedding,
 - visa status,
 - effect on graduate school application,
 - or anything else.

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...

Team Evaluation Form

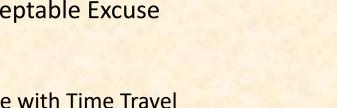
5% of Final Grade

Rate Each Team Member

- Describe the technical contributions (or lack thereof) of each team member. That is, describe what each team member contributed as a software developer to your project. Be specific. Contributions may include things like architecture, design, algorithms and code. Include comments about the quality of their work.
- Describe the team contributions (or lack thereof) of each team member. That is, describe what each team member contributed as a team member to your team. Be specific. Include comments about attendance at meetings, timeliness of completing work, commitment to the project, reliability and effort put forth.
- In the table above, you rated one of your team members as the worst team member. Why? Be specific.
- In the table above, you rated one of your team members as the **best** team member. Why? Be specific.

Team Problems

- Can Be
 - Really Hard
 - Awkward
 - Frustrating
- Addressing Problems
 - ASAP
 - Directly
 - Respectfully
 - Maturely
- Resolving Problems
 - Internally First
 - Instructors Next
 - Dr. D and Instructors Next
- "Bad" Team Not an Acceptable Excuse
- Dr. D. and Instructors
 - Can Help
 - Have Limited Experience with Time Travel





We don't have one of these.

The Capstone Experience

Schedule and Teamwork

✓ Schedule

✓ Teamwork



- Upcoming Meetings
 - = 09/20:Project Plan
 - = 09/22:Schedule and Teamwork
 - 09/27: Team Project Plan Presentations
 - 09/29:Team Project Plan Presentations
 - 10/04: Team Project Plan Presentations

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- Major Milestones
 - 09/27: Team Project Plan Presentations
 - 10/18: Team Alpha Presentations
 - 11/15: Team Beta Presentations
 - 12/06: Project Videos
 - 12/17: All Deliverables

- Names and Hometowns
 - Posted on Team Project Page
 - Will Be Used in Design Day Booklet
 - Email Corrections to James or Luke
 - Fair Warning: Last Chance to Change
- Meeting Attendance
 - Excused Absences
 - One for Job Interviews
 - Not Reschedulable and Verifiable
 - Do not schedule anything else during our meeting times.
 - Late, Attendance Check Failure, Leave Early
 - No Excuses
 - Contact Instructor

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- Project Plan Document and Slide Deck
 - Due Sunday, September 26
 - Read Submission Instructions Carefully
- Project Plan Presentation Schedule
 - Every Team Must Be Prepared to Present on First Day
 - Schedule Posted Evening Before First Presentation
- Project Plan Presentation Conflicts
 - Request from Dr. D. via Email
 - For Interview that Can Be Verified and Cannot be Scheduled Another Time
 - Due by COB Today
- Split All-Hands Meetings
 - Split by James' and Luke's Capstone Teams
 - Two Microsoft Teams Channels
- Each Team Presents
 - One team member will use Microsoft Teams to...
 - Share PowerPoint Presentation
 - Advance the PowerPoint Slide Deck
 - All Team Members Audio and Video On
 - At Most 14 Minutes Including "Setup" Time (Rehearse Timing)
 - Multiple Team Speakers
 - Rehearse

COVID Considerations

- MSU On-Campus Requirements
 - Completed Vaccination
 - Indoors Wear Mask Covering Nose and Mouth
- Capstone Lab In-Person Use Requirements
 - Completed Vaccination Two Weeks Prior
 - Wear Mask Covering Nose and Mouth
 - Providing false information including about vaccination status will be considered a violation of MSU Integrity of Scholarship policy. See the syllabus for details.

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COVID Considerations

- Protect your health.
 - Get vaccinated.
 - Ensure social distancing.
 - Wash your hands frequently.
 - Carry and use hand sanitizer.
 - Avoid "social gatherings."
 - Any and All
 - Even 25 or Less People
- Protect your teammates' health.
 - Sanitize your team's Capstone lab areas and devices before and after use.
 - Do NOT work with your teammates in person if you have ANY symptoms of ANY sickness.

Capstone Overview

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COVID Considerations

- It is not possible to receive a grade of "incomplete" in CSE498, Collaborative Design.
- Missing a significant amount of time during the semester for whatever reason will most likely result in the need to retake the course.

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