MICHIGAN STATE UNIVERSITY

09/12: Schedule and Teamwork

The Capstone Experience

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From Students…
…to Professionals

Schedule and Teamwork

- Schedule
- Teamwork

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 systems working.
    - Hardware
    - Software

Schedules

- Schedules > Weekly Schedule
- Schedules > Major Milestones
  - 09/10: Status Report Presentations
  - 09/17: Project Plan Presentations
  - 10/10: Alpha Presentations
  - 11/14: Beta Presentations
  - 12/01: Project Videos
  - 12/04: All Deliverables
  - 12/06: Design Day
  - 12/11: Capstone Wrap Up
    (10:00 a.m. – 12:00 p.m.)

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 → 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

Very Important

High Priority Risks Get High Priority Scheduling

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
- Every team must use MSU’s GitLab.
  - Manage All Project Code
  - Instructors must have access.
  - Project sponsors may be granted access.

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 TMs
  - Identify Slippage
  - Hold Each Other Accountable (or Contact TMs)
  - Set Corrective Action
  - Adjust Schedule

Schedule and Teamwork

✓Schedule

➢Teamwork

Team Organization

- Up to Each Team
- Organize into Roles
  - Sponsor/Client Contact
  - Program Manager
  - Developer Roles
    - Web
    - Mobile
    - Back End
    - Front End
    - Etc.
  - Tester
  - Systems Administrator
  - Etc…
- Everyone must make significant technical contributions, including significant software contributions. ← **Fair Warning**

Team Dynamics

- Key to Success
- Significant Component of Course Grade
- Potential Teammate Problems
  - Not Attending Team Meetings
  - Not Being Involved
  - Not Responding
  - Not Completing Tasks On Time
  - Submitting Poor Work
  - Leaving Your Work for Others
  - Lying to Teammates about Task Status
  - Etc…
- Address Problems Immediately
  - Within Team
  - With Dr. D., James, Luke, Griffin, Sam
- Be Ready to Discuss During Interviews

Grading

[1 of 5]

- Team (70%)
  - Project Plan Document & Presentation 10
  - Alpha Presentation 10
  - Beta Presentation 10
  - Project Video 10
  - Project Software & Documentation 30
  - Total 70
- Individual (30%)
  - Technical Contribution 10
  - Team Contribution 10
  - Team Evaluation 05
  - Meeting Attendance, Preparation & Participation 05 ← Can Be Negative
  - Total 30

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.

Grading

[3 of 5]

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					

Grading

[4 of 5]

- Every student must earn the following required minimal grades in each grading category.
- Failure to earn the required minimal grades in any of the grading categories is grounds for receiving a final grade of 0.0 for the course.
- 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 15.0 / 30.0
- 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 & Participation 0.0 / 05.0

Grading

[5 of 5]

- In the capstone course, absence does not make your teammates' hearts grow fonder.
  - Nonresponsive
    - Email
    - Slack
    - Microsoft Teams Messages
  - Miss Meetings
    - All-Hands
    - Triage
    - Client
    - Team
  - Miss Work ← **Key**
    - In Lab and/or Online with Teammates
    - During Sprints
    - Before Major Milestones
  - Miss Deadlines
    - Other team members may be forced to do your work.
    - We may tell other team members they no longer need to assign you work.

NB: Your teammates will be evaluating you weekly and at the end of the semester.

GitLab

- Every team must use MSU's GitLab.
  - Manage All Project Code
  - Instructors must have access.
- Access by External Project Sponsors
  - Can Accommodate
  - Contact James
- To Receive Credit for Code, Student Must
  - Commit Code
  - Using Student's GitLab Account
- Read the syllabus.

Team Contribution

- Based on Variety of Factors Including But Not Limited to…
  - Attendance and Participation
    - Team Meetings
    - Project Sponsor Meetings
    - All-Hands/Split-Hands Meetings
  - Completion of Tasks
    - Correctly
    - On Time
  - Willingness to Take on New Tasks
  - Making Significant Technical Contribution
- Read the syllabus.

Technical Contribution [1 of 3]

- Required of Everyone
- Significant Work and Code
- Does Not Include Code…
  - Committed to GitLab by Someone Else
  - That Does Not Work
  - That Was Copied from the Internet
  - Not Included In The Project
  - For CheckInCount = 1 to 100 {Modify Code Slightly; Checked Code In Again}
  - Etc…
- Necessary, but Not Sufficient
  - Doing Research
  - Creating UI/UX Designs
  - Creating Documents
  - Giving Presentations
- Read the syllabus.

Technical Contribution [2 of 3]

- Pair Programming
  - Writing Code Together
  - Not Watching Someone Else Write Code
  - Must Decide When Committing Who Gets Credit for What
  - Receive Credit Only for Code Checked Under Your Account
- Demonstrating and Explaining Software
  - By Author
  - Any Time
  - In-Person
    - Lab iMacs
    - Person Laptop
  - If Not Able, Assume Not Working

Technical Contribution [3 of 3]

- Significant Effect on Team Contribution
- Project Software == 43% Team Grade
- No Significant Technical Contribution
  - No Credit for Project Software
  - Maximum of 57% of Team Grade
  - Maximum Team Contribution of 5.7/10.0
  - Most Likely Will Not Pass CSE498
- Read the syllabus.

Team Problems

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

We don’t have one of these.

Schedule and Teamwork

✓Schedule

✓Teamwork

Office 365 on Windows

- Optimal
  - Download Template
  - Edit Template Using Only Office 365 On Windows
  - The version of Office on the VM will work
- Possible
  - Download Template
  - Make Copy of Template
  - Edit Copy of Template Using Teams PowerPoint Editor
  - Edit Original Template Using Office 365 On Windows
  - Copy-and-Paste From Copy to Original Template
- Don’t
  - Use Web Version of Office
  - Use Mac Version of Office
  - Use Mac Version of Office and Export to Windows Version

What's ahead? [1 of 2]

- Upcoming Meetings
  - ~~09/03, Tu: Risks and Prototypes~~
  - ~~09/05, Th: Project Plan~~
  - ~~09/10, Tu: Team Status Report Presentations~~
  - ~~09/12, Th: Schedule and Teamwork~~
  - 09/20, Fr: Team Photos (8:00 a.m. – 5:00 p.m.)
  - 09/17, Tu: Team Project Plan Presentations
  - 09/19, Th: Team Project Plan Presentations
  - 09/24, Tu: Team Project Plan Presentations

10% of Team Grade

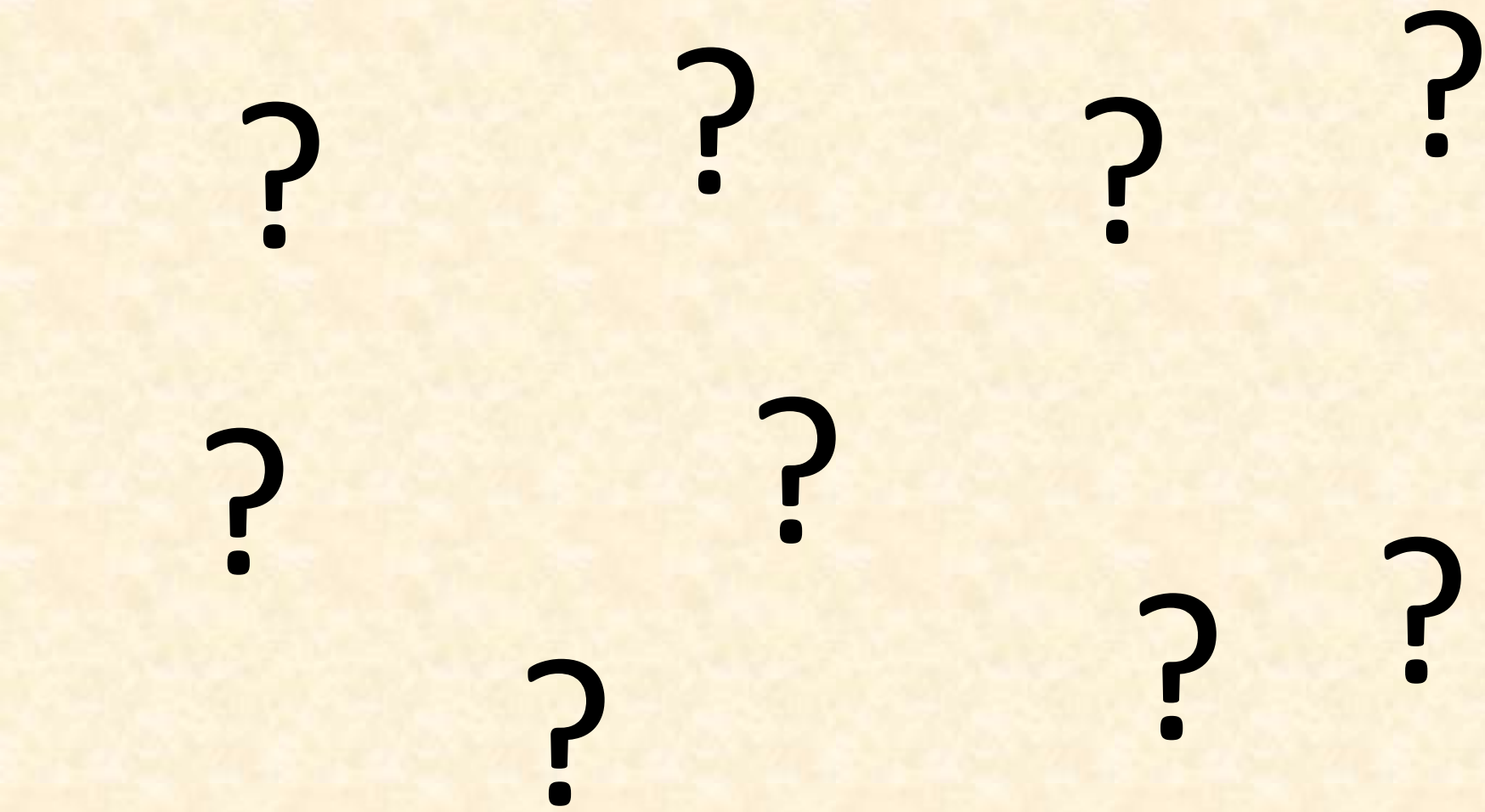
What's ahead? [2 of 2]

- Split-Hands Meetings
  - Used On Presentation Days
    - 09/10: Team Status Report Presentations
    - 09/17,19,24: Team Project Plan Presentations
  - Three Locations
    - Luke: 115 International Center
    - Griffin: 1281 Anthony
    - Sam: 1130 STEM
  - Find the rooms in advance.
  - Attendance Taken As Usual Including Lateness

Misc. Notes

- Talk With your TM About Adapters for Presentations
  - We Will Order Any Adapters That You Might Need
- Please Remember That Photos Will Be Posted On The Capstone Website and in the Design Day Booklet

Questions?



Grading

[1 of 2]

- Team (70%)
  - Project Plan Document & Presentation 10
  - Alpha Presentation 10
  - Beta Presentation 10
  - Project Video 10
  - Project Software & Documentation 30
  - Total 70
- Individual (30%)
  - Technical Contribution 10
  - Team Contribution 10
  - Team Evaluation 05
  - Meeting Attendance, Preparation & Participation 05 ← Can Be Negative
  - Total 30

Grading

[2 of 2]

- 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.

Meeting Attendance, Preparation & Participation (MAPP) [3 of 6]

MAPP Point Deductions

- All-Hands / Split-Hands
  - Meeting-Ready≤ 3:00:00 p.m.
    - Present
    - -0.0 MAPP Points
  - 3:00:01 p.m. ≤ Meeting-Ready ≤ 3:05:00 p.m.
    - Late
    - -0.5 MAPP Points
  - Meeting-Ready > 3:05:00 p.m.
    - Absent
    - -1.0 MAPP Points
  - Leave Meeting Before Ended by Instructor
    - Must Swipe Spartan ID Cards with TM, Leaving and Returning
    - Must Leave and Reclaim Mobile Devices with TM (Approved by University Ombudsperson)
    - -1.0 MAPP Points if (Fail to Swipe and/or Leave Mobile Devices) or (Extended Period)
  - Weekly Triage Google Form and Google Slides
    - Late or Not at All
    - -0.5 MAPP Points
  - MAPP grade may become negative.

Meeting Attendance, Preparation & Participation (MAPP) [1 of 2]

- Excused Meeting Absences
  - Job Interviews with Documentation
  - Sickness Including COVID with Documentation
  - Grief Absence with Request and Approval
  - Some MSU Events
- Cannot Accommodate Most Conflicts
- No Accommodations for Personal Reasons
- Will NOT Be Excused from Doing Work

Meeting Attendance, Preparation & Participation (MAPP) [2 of 2]

- Requesting Excused Absences
  - Handled by James and TM
    - Email James and TM
    - CC Dr. D.
      (Dr. D. will not forward or respond.)
- Taking or Retaking Capstone in Spring 2025
  - Due to Dropping or Failing
  - Extremely Limited Enrollment
  - First-time eligible students will get first priority.
  - You may not be able to take capstone in the spring. **←Note**
    - Re-enroll After Dropping
    - Re-take After Failing

Team Contribution

- What % of Team Grade (70 Points) Does Student Deserve
- Based on Variety of Factors Including But Not Limited to…
  - Attendance and Participation
    - Team Meetings
    - Project Sponsor Meetings
    - All-Hands/Split-Hands Meetings
  - Completion of Tasks
    - Size and Number
    - Correctly
    - On Time
  - Willingness to Take on New Tasks
  - Making Significant Technical Contribution
- Read the syllabus.

Technical Contribution

- Significant Effect on Team Contribution
- Project Software == 43% Team Grade
- No Significant Technical Contribution
  - No Credit for Project Software
  - Maximum of 57% of Team Grade
  - Maximum Team Contribution of 5.7/10.0
  - Most Likely Will Not Pass CSE498
- Read the syllabus.

Meeting and Work Expectations

- Meetings
  - In Person
  - Possibly Excused but Very Limited
  - If Miss Team Presentation, Must Give Presentation to Instructors
- Work
  - Entire Semester
  - Cannot Excuse Work Even if Meeting is Excused
- Example
  - Miss Entire Week
    - Attendance
      - Excused: -0
      - Unexcused:
        - -3.5+ MAPP Points == 3.5+% of Final Grade
        - -10 MAPP Points == 10% of Final Grade
    - Work
      - Attendance Excused or Unexcused
      - At Least -7% of Team Contribution Grade == At Least -4.9% of Final Grade
      - Maximum Possible Grade = 10.0 + 9.3 +

Final Grade Scenario 1

[1 of 4]

- Scenario
  - Missed Week
  - Attendance Excused
  - Missed Work
  - All Other Grades Perfect ← **NOTE: 0% Chance**
  - Maximum Possible Grade
- Team (70%)
  - Project Plan Document & Presentation 10.0
  - Alpha Presentation 10.0
  - Beta Presentation 10.0
  - Project Video 10.0
  - Project Software & Documentation 30.0
  - Total 70.0
- Individual (30%)
  - Technical Contribution 10.0
  - Team Contribution 9.3 ← **Maximum Grade. Most Likely Less.**
  - Team Evaluation 5.0
  - Meeting Attendance, Preparation & Participation 4.5
  - Total 0.93*70 + 10 + 9.3 + 5 + 4.5 93.9 ← **Maximum Grade. Most Likely Less.**

Final Grade Scenario 2

- Scenario
  - Missed Week
  - Attendance Not Excused
  - Missed Work
  - All Other Grades Perfect ← **NOTE: 0% Chance**
  - Maximum Possible Grade
- Team (70%)
  - Project Plan Document & Presentation 10.0
  - Alpha Presentation 10.0
  - Beta Presentation 10.0
  - Project Video 10.0
  - Project Software & Documentation 30.0
  - Total 70.0
- Individual (30%)
  - Technical Contribution 10.0
  - Team Contribution 9.3 ← **Maximum Grade. Most Likely Less.**
  - Team Evaluation 5.0
  - Meeting Attendance, Preparation & Participation 1.5
  - Total 0.93*70 + 10 + 9.3 + 5 + 5 90.9 ← **Maximum Grade. Most Likely Less.**

Final Grade Scenario 3

- Scenario
  - Minimal Technical Contribution
  - All Other Grades Perfect ← **NOTE: 0% Chance**
  - Maximum Possible Grade
- Team (70%)
  - Project Plan Document & Presentation 10.0
  - Alpha Presentation 10.0
  - Beta Presentation 10.0
  - Project Video 10.0
  - Project Software & Documentation 30.0
  - Total 70.0
- Individual (30%)
  - Technical Contribution 5.0
  - Team Contribution 7.8 ← **Maximum Grade. Most Likely Less.**
  - Team Evaluation 5.0
  - Meeting Attendance, Preparation & Participation 5.0
  - Total 0.78*70 + 5 + 7.8 + 5 + 5 77.4 ← **Maximum Grade. Most Likely Less.**

Final Grade Scenario 4

- Scenario
  - No Technical Contribution
  - All Other Grades Perfect ← **NOTE: 0% Chance**
  - Maximum Possible Grade
- Team (70%)
  - Project Plan Document & Presentation 10.0
  - Alpha Presentation 10.0
  - Beta Presentation 10.0
  - Project Video 10.0
  - Project Software & Documentation 30.0
  - Total 70.0
- Individual (30%)
  - Technical Contribution 0.0
  - Team Contribution 5.7 ← **Maximum Grade. Most Likely Less.**
  - Team Evaluation 5.0
  - Meeting Attendance, Preparation & Participation 5.0
  - Total 0.57*70 + 0 + 5.7 + 5 + 5 59.9 ← **Maximum Grade. Most Likely Less.**

Grade Appeal

- Students Must Demonstrate
  - Rights Violated
  - Base on Preponderance of the Evidence
- Steps to be Completed In Order
  - Meet with Instructors
  - Meet with Professor Owen
  - Request a Hearing
- If Hearing Board Finds Rights Violated
  - Case Returns to CSE
  - Grade Decided by CSE Professor(s) Appointed by Chairperson
- Nota Bene: Hearing Timing
  - Lengthy Process to Resolve
  - Two or More Months After Semester End
- Read the syllabus.