MICHIGAN STATE
U N I V E R S I T Y

01/12: Capstone Overview

The Capstone Experience

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Department of Computer Science and Engineering
Michigan State University

Spring 2015

From Students…
…to Professionals

Capstone Overview

✓Course Logistics

✓Client Projects

➢Course Logistics (Continued)

Urban Science Capstone Lab Machines

- Four Per Team
  - One Rack-Mounted Dell Server
    - Connected to the Outside World
    - Keep Secure
  - Two 27" iMacs
  - One 13" MacBook Pro (Optional)
- Operating Systems on iMacs and MBPs
  - Run OS X Yosemite
  - Install VMware Fusion (from here)
  - Create Virtual Machines As Needed
    - Windows XP, Vista, 7, 8, 10
    - Linux

Capstone Lab Miscellany

- Security
  - Keep lab doors closed.
  - Do not open doors for strangers
  - Do not give out door key code to others.
  - Do not invite non-capstone students to work in the lab with you.
  - Email Dr. D. if door becomes unlocked.
- Wireless
  - SSID: CSE498
  - Key: ??????
- Coffee
  - Some Provided by Dr. D.
  - Bed, Bath & Beyond (Get 20% Off Coupon)
- Game Playing / Video Watching
  - Not On Monitors Facing Hallway
  - Not If Other Team Members Need Machine

Capstone Lab Miscellany

- Wires, Cables and (Black Grommets)
  - Do <u>not</u> "maniac" them.
  - Do <u>not</u> play with the (black) grommets.
- Keep the lab neat and clean.
  - Lived In, Okay.
  - Messy, Not Okay.
- Respect other teams' spaces.
- Garbage Containers
  - Empty the small one by the coffee maker into a larger one.
  - Put larger ones out in the hall at night if near full.
  - Put back in the lab in the morning.
- Turn the lights out if you're the last one out.
- Be careful with cabinet drawers; don't "maniac" them.

Mobile Devices Available

- For Capstone Project Use
- By Team for the Semester
- iOS
  - 4 iPads
  - 1 iTouch
- Android
  - 1 Tablet
  - 1 Phone
- Surface Pro 3

Expectations & Workload

- Extremely High For Both

- Your MSU Career Capstone

- Addition to Your Personal Portfolio

- Experience Viewed Like an Internship

- Interview Talking Points

- Leverage Into a Job Offer

Schedules

- Schedules > All-Hands Meeting
- Schedules > Major Milestones
  - 01/28: Status Report Presentations
  - 02/02: Project Plan Presentations
  - 02/23: Alpha Presentations
  - 04/06: Beta Presentations
  - 04/27: Project Videos
  - 04/29: All Deliverables
  - 04/30: Design Day Setup
  - 05/01: Design Day

- Attendance is required.
- No excuses are accepted.
- Do not schedule anything including during these times interviews, travel home, etc.

Meeting Attendance

- Required
  - All-Hands (Class) Meetings
  - Team Triage Meetings
- 5% of Final Grade
- Late == Absent
- Almost No Excuses Accepted
  - One or Two Excused Possible for Interviews
  - Must Provide Information In Advance
    (Date, Company, Recruiter Name & Contact Info)
- Must Attend (No Excuses Accepted)
  - Your Team Presentations
  - All Project Video Viewing
  - Design Day

Do NOT schedule interviews.
Do NOT schedule ANYTHING.
Do NOT buy plane tickets.

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 Malcolm

- 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   05
  - Total   70
- Individual (30%)
  - Technical Contribution   10
  - Team Contribution   10
  - Team Evaluation   05
  - Meeting Attendance   05
  - Total   30

- 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

- We reserve the right to make changes with sufficient notice.
- No special consideration will be given for final grades including but not limited to
  - status in any academic program including CSE,
  - financial aid,
  - rank in the armed forces,
  - job,
  - graduation,
  - mortgage,
  - wedding,
  - visa status,
  - or anything else.

Integrity of Scholarship

- MSU's policies will be enforced.

- Individual and team work must be original.

- Violators…
  - …will be referred to the appropriate deans.
  - …may receive a grade of F in the course.

IP & NDA's

- IP: Intellectual Property
  - By Default, Owned by You
  - Client May Request
    - Right to Use
    - Assignment of Ownership
    - Etc.
- NDA: Non-Disclosure Agreement
  - May Be Required by Client
  - You will…
    - …respect/protect intellectual property.
    - …respect/protect source code.
    - …etc.
- Normally Not an Issue
- Always Contact Dr. D. Before Signing Anything

Using Resources

- Ok For "Help"
  - People
    - Past Capstone Teams
    - Other Capstone Teams
    - Faculty Members
  - Articles
  - Sample Code
  - Etc...
- Not Ok For "Entire" Project
- If Unsure, Ask Dr. D. and/or Malcolm

Using Existing Code

- Ok
    - Examples
    - Prototypes
    - Open Source Code
        - Fragments
        - Libraries
        - Utilities
- Not Ok
    - Vast Amounts of Your Project
    - Not Open Source
- Ask Client in Advance
- Document and Report All Existing Code Used
- Be Careful!
- If Unsure, Ask Dr. D. and/or Malcolm

Design Day

- College of Engineering Event
  - Engineering Building
  - Friday, May 1, 2015
- Displays (Booths) of Design Projects
  - CSE Capstone
  - ECE Capstone
  - ME Capstone
  - Etc…
- Presentations and Awards
  - Panel of Judges
  - CSE Team Project Videos

VISA

- Verified Individualized Services and Accommodations

- Let us know immediately.

- We will work with you.

Office Hours

- Any Time…
  - Visit: 3149 EB
  - Call: 353-5573
  - Email: (dyksen@cse.msu.edu)
- Make Appointment

Capstone Overview

✓Course Logistics

✓Client Projects   Questions?

✓Course Logistics (Continued)

What's ahead?

- Team Photos
  - Informal: After Meeting Today
  - Formal: After Each Project Plan Presentation
- Setup
  - Team Machines
    - Dell Server (Ask Malcolm)
    - Apple iMacs, MacBook Pro (Optional)
  - Team Software
    - Microsoft Office
      - Word and PowerPoint   ← Required.
      - Microsoft Windows Version   Get from Malcolm.
    - Web Server
    - Code Repository
    - SDK's
    - Etc.

What's ahead?

- All-Hands Meetings
  - ~~M, 01/12: Course Overview~~
  - W, 01/14: Project Plan
  - M, 01/19: Martin Luther King Day
  - W, 01/21: Risks and Prototypes
  - M, 01/26: Team Status Report Presentations
  - W, 01/28: Schedule and Teamwork
  - M, 02/02: Team Project Plan Presentations
  - W, 02/04: Team Project Plan Presentations
  - M, 02/09: Team Project Plan Presentations
  - W, 02/11: Team Project Plan Presentations

What's ahead?

- Team Status Report Presentations
  - PowerPoint Template
  - Due 4:00 a.m., Monday, January 26
  - Two Weeks ← Panic!
  - Email to Dr. D.
    - Subject: Team <Company Name>: Status Report
      Subject: Team Auto-Owners: Status Report
    - Attachment: team-<company-name>-status-report-presentation.ppt
      Attachment: team-urban-science-status-report-presentation.ppt
- Dr. D. Will Combine Into Single PowerPoint
  - To Speed Things Up During Meeting
  - Do NOT Modify Master Slide
- Each Team Presents
  - Using Dr. D.'s Laptop
  - At Most 5 Minutes (Rehearse Timing)
  - Single or Multiple Presenters (Your Choice)

What's ahead?

- Project Plan Presentations
  - PowerPoint Template
    - Download Now
    - Read the Read Me Slide (Over and Over and Over…)
  - Submission
    - Both Project Plan Document and PowerPoint Slide Deck
    - Due 4:00 a.m., Monday, February 2   ← Panic!
    - See Submission Instructions in Template
  - Presenting
    - 3 Teams Per Meeting Over 4 Meetings
    - Schedule Posted Sunday Evening
    - Strict 15 Minute Time Limit
    - Use Team Member Laptop
      - ❖ Bring Power Cord
      - ❖ Test In Meeting Room (in Advance)
    - Rehearse
    - 5% of Final Grade
    - Business Casual Dress
  - Formal Team Photos
    - Immediately Following Meeting
    - In Capstone Lab
  - Schedule Conflicts
    - Only for Interview Trips
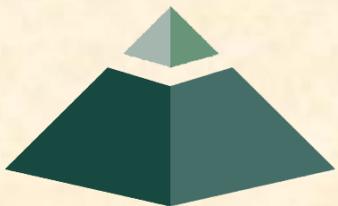   - Notify Dr. D. Well In Advance

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01/26: Team Status Reports

The Capstone Experience

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…to Professionals

Instructions

(Delete this slide before submitting.)

Delete this slide.

- Required Template
  - Do not edit the master slides.
  - Do not change the organization or number of slides.
  - Make your presentation fit within these four slides.
- Content
  - For the slide titles, replace <Company Name> with your company name as in "Team Auto-Owners".
  - All presentations will be posted on the course web site so do not include company confidential information or anything that your client would not want posted.
  - Delete this slide from the presentation.
- Presenting
  - The order of the presentations during our meeting will be team numerical order.
  - The time limit for your presentation is 5 minutes, which will be strictly enforced. Practice your presentation to ensure that you will finish within the allotted time.
- Submission by Email ⬅ **Read this carefully.**
  - All presentations are due via email to me by 4:00 a.m., Monday, January 26.
  - For subject, use "Team <Company Name>: Status Report" as in "Team Urban Science: Status Report".
  - Attach the PowerPoint source file named "team-<company-name>-status-report-presentation.pptx" as in team-auto-owners-status-report-presentation.pptx.

Team <Company Name>

Status Report

<Project Title>

- Project Description
  - Description Point 1
  - Description Point 2
  - Description Point 3
  - Description Point 4

- Project Plan Document
  - Status Point 1
  - Status Point 2
  - Status Point 3
  - Status Point 4

Include status information.
What's the status of your project plan document?
Have you started it?
How much have you written?
What percentage complete is it?
Delete this text box and the brace to the left.

Team <Company Name>

Status Report

<Project Title>

- Server Systems / Software
  - Description &/or Status Point 1
  - Description &/or Status Point 2
  - Description &/or Status Point 3
- Development Systems / Software
  - Description &/or Status Point 1
  - Description &/or Status Point 2
  - Description &/or Status Point 3

Include <u>status</u> information.
Are all systems up and running?
Have you tested everything?
Delete this text box and the brace to the left.

Team <Company Name>

Status Report

<Project Title>

- Client Contact
  - Status Point 1
  - Status Point 2

- Team Meetings
  - Status Point 1
  - Status Point 2

- Team Organization
  - Description Point 1
  - Description Point 2

Include <u>status</u> information.
Have you talked with/met with your client?
Have you scheduled a weekly conference call? When?
Have you schedule an in-person meeting? When?
How many times has your team met so far?
Have you scheduled team meetings? How often?
Delete this text box and the brace to the left.

Team <Company Name>

Status Report

<Project Title>

Risks

- Risk 1
  - Description
  - Mitigation

- Risk 2
  - Description
  - Mitigation

- Risk 3
  - Description
  - Mitigation

- Risk 4
  - Description
  - Mitigation