



## 1. Course Overview

CSE 498, Collaborative Design

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## S CSE 498

- Collaborative Design  
"Senior Capstone"
- Dr. Wayne Dyksen (Dr. D.)  
Matthew Luciw
- Lecture  
MW, 3:00-3:50pm, Anthony 1257
- Labs, 3352 EB **New**  
TT, 3:00-4:50pm  
WF, 8:00-9:50am  
WF, 12:40-2:30pm

## S Web Site

- Details
  - URL: [www.cse.msu.edu/~cse498](http://www.cse.msu.edu/~cse498)
  - User name: cse498
  - Password: TBD
- Check it Often for
  - What's new?
  - Meeting Notes
  - Team Projects
  - Useful Links

## S Course Objectives

- Learn to build a software system (from scratch)
- Learn (modern) tools and environments
- Learn to build and administer systems
- Integrate your computer science knowledge
- Learn to work in a team environment
- Develop your communication skills
- Develop some interview talking points
- Etc...

## S Team / Project Generalities (1 of 3)

- Clients
  - Vary in Size and Type
  - Client contacts/mentor(s) are "volunteers".
- Team Contact Person
  - Picked By Team
  - Main Point of Contact for Client

## S Team / Project Generalities (2 of 3)

- Project Level of Difficulty
  - Hard Enough
  - But Not too Hard
- Deliverable
  - To the Client
  - By the Due Date
- Documentation
  - System Administration Manual
  - Users Manual

## S Team / Project Generalities (3 of 3)

- Challenges
  - Very Short, Unforgiving Time Line
  - Client Contact
  - Team Dynamics
  - Architecture / Specifications (in Three Weeks)
  - Entirely New...
    - Languages
    - Environments
    - APIs
    - Processes
    - Protocols
  - Project Management
  - Etc...

0-7

## S Project Specifics (1 of 7)

- Vary
  - Type
  - Current State of Specificity
- Challenge
  - Connect with Client
  - “Nail Down” the Project
    - Hard Enough
    - Not too Hard
  - Course Feature, Not Bug

0-8

## S Project Specifics (2 of 7)

1. Auto-Owners Insurance
  - Web-Based Java System for Materials Tracking
  - Education and Training Department
  - Track Library and Training Materials
  - Check Out / Check In / Automated Routing / Reservations
  - Inventory Control With Automated Ordering
  - Multiple Web Views (Administrator, User, Etc.)
  - Multiple Reports
  - Java and SQL
  - Etc...

0-9

## S Project Specifics (3 of 7)

2. Boeing (St. Louis)
  - Viz Sim Tool 2006
    - Viz Sim Tool
      - Flight Simulators (F/A-18 E/F, EA-18G, F-15, Etc.)
      - Records / Replays Simulator Events
      - Existing Software
    - Distributed Interactive Simulation (DIS)
      - Simulation Message Passing Protocol
      - Link Multiple Simulators at Multiple Locations
    - Open Scene Graph
      - Tool For Generating Real-World Terrains
      - Terrain Used by Viz Sim Tool
    - Enhancements to Viz Sim Tool
      - Navigate Time During Flight
      - Open Terrain Databases
      - DIS Capability
    - Etc...

0-10

## S Project Specifics (4 of 7)

3. Ford
  - Ford Buzz Index: Mining of Blogs for Market Intelligence
  - Harvest Information From Blogs
  - Market Research Tool
    - Buzz About New Products
    - Buzz About New Markets (e.g., iPod)
    - Research on Competitive Products
    - Research on Public Perceptions
    - Gain Insights
  - Components
    - Search
    - Filter
    - Aggregate
    - Present
  - Must Be Usable by Ford Management
  - Etc...

0-11

## S Project Specifics (5 of 7)

4. IBM
  - C++ Code Generator from Simics Device Modeling Language
    - SIMICS
      - By Virtutech Corporation
      - Modeling Environment for Designing ASICs (Application Specific Integrated Circuits)
    - D - Device Modeling Language (DML)
    - Generates C from DML
    - DML to C++ Generator
      - Generate C++ From DML
      - Header Files To Correspond To Hardware Registers
      - C++ To Be Used in Runtime Firmware
      - Tagged Commentary Language (Not Available Within DML)
    - Etc...

0-12

## S Project Specifics (6 of 7)

### 5. Motorola

Graphical Model Editing Framework

- Create Framework for Graphical Model Editor
  - UML or UML-Like
  - Network Topology
  - Etc.
- Based on Patterns
  - Decorator
  - Composite
  - Eclipse Model-Provider
  - Presenter
- Geared Toward Modeling as an Eclipse Plug-In
- Etc...

0-13

## S Project Specifics (7 of 7)

### 6. TechSmith

TIVO for the PC

- Recording
  - Records PC Screen Activity
  - Notices and Records "Interesting" Events
    - ❖ Foreground Application Changes
    - ❖ Mouse Clicks
    - ❖ Input Focus Changes
    - ❖ Etc.
- Playback
  - View Recorded Activity
  - Indexed by "Interesting" Events
  - Exporting
  - Etc...

0-14

## S Course Environment

- Business-Like
- Team = Startup Company
- Dyksen & Luciw
  - Your
    - Venture Capitalists
    - Board of Directors
  - Expect
    - ROI
    - Results

0-15

## S Team Dynamics

- Organize as See Fit
  - Really Hard Stuff
  - Really Important Stuff
- Board of Directors...
  - Hires
  - &
  - Fires
- (Be Ready to Discuss During Interviews)

0-16

## S Project Deliverables

- Technical Specification Document
- Prototype Demonstration
- Progress Reports & Demonstrations
- Final Demonstration & Project Video
- Administrator & User Manuals
- Project Management
- Project Web Site

0-17

## S Class Meetings

- Format
  - Lectures
  - Team Reports & Demonstrations
  - Formal Team Presentations
  - Professional
- Attendance
  - Required
  - No Excuses
  - "On-Time" Not Good Enough (Be Early)
  - Factor (5%) in Grade

0-18

## S Meeting Agendas

1. 08-28: Course Overview / Skills Inventory	16. 10-23: Ethics
2. 08-30: Technical Specifications / Team Assignments	17. 10-25: Intellectual Property and Copyright
3. 09-06: Project Schedule & Risk	18. 10-30: Teams: Progress Reports & Demos
4. 09-11: Teams: Progress Reports	19. 11-01: Teams: Progress Reports & Demos
5. 09-13: Project Management	20. 11-06: Teams: Progress Reports & Demos
6. 09-18: Teams: Technical Specifications / Schedule	21. 11-08: Teams: Progress Reports & Demos
7. 09-20: Teams: Technical Specifications / Schedule	22. 11-13: Teams: Progress Reports & Demos
8. 09-25: Prototyping	23. 11-15: Camtasia Demo
9. 09-27: Teams: Issues Roundtable	24. 11-20: Teams: Progress Reports & Demos
10. 10-02: Resume Writing & Interviewing	25. 11-22: Teams: Progress Reports & Demos
11. 10-04: Teams: Progress Reports	26. 11-27: Teams: Progress Reports & Demos
12. 10-09: Teams: Prototype Demos	27. 11-29: Teams: Progress Reports & Demos
13. 10-11: Teams: Prototype Demos	28. 12-04: Teams: Final Presentations
14. 10-16: Teams: Prototype Demos	29. 12-06: Teams: Final Presentations
15. 10-18: Teams: Prototype Demos	30. 12-12: Teams: Final Presentations

0-19

## S CSE498 Lab

- 3352 EB
- Door Lock
  - Electronic Keypad
  - Code = #### Bell
- Systems
  - Two PC's per Team
    - Server
    - Development Machine
  - Team 100% Responsible
    - Building
    - Maintaining
    - Securing
    - Backing Up
- Books

0-20

## S Schedule Lab Times

- No Formal Lab Sessions
- Placeholders for Team Meetings
- Teams may meet at any time.
- Students must be available during their scheduled lab time.

0-21

## S Expectations & Workload

- Extremely High For Both
- Your MSU Career Capstone
- Addition to Your Personal Portfolio
- View Like an Internship
- Interview Talking Points
- Leverage Into a Job Offer

0-22

## S 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

0-23

## S NDA: Motorola Example

- To not use, retain or disclose Motorola Software or other Motorola confidential information, except in the course of participating in this class and for other University educational purposes approved in writing by Motorola. You may identify and describe your participation in your curriculum vitae or to prospective employers.
- To consult with Motorola, through the undersigned Motorola representative, before using any confidential information of Motorola outside of your coursework, so we can take steps to protect any Motorola confidential and other proprietary rights.
- That the Motorola Software is being provided on a temporary basis for Motorola's benefit and your educational use for this class only, and may not be used in any other context. This software must not be installed on a shared drive accessible by individuals not involved in the class. You must delete this software when your participation in the class has ended unless you obtain further written permission from Motorola. All derivative works to Motorola Software are created on a work-for-hire basis, and will be retained by Motorola.
- That by this Agreement you grant Motorola a perpetual and irrevocable right, on a nonexclusive basis, to use and otherwise commercially exploit independent code and related documentation that you develop in the course of this program.

0-24

## S Grading (1 of 2)

- Team (70%)
 

– Technical Specification Document	10
– Prototype Demonstration	10
– Progress Reports & Demonstrations	15
– Final Demonstration & Project Video	15
– Administrator & User Manuals	10
– Project Management	5
– Project Web Site	5
	70
- Individual (30%)
 

– Technical Contribution	10
– Team Contribution	10
– Team Evaluation	5
– Class Meeting Attendance	5
	30

## S Grading (2 of 2)

- 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,
  - marriage, or
  - visa status.

## S 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.

## S 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.

## S Using Existing Code

- Ok
  - Examples
  - Prototypes
  - Open Source Code
    - Fragments
    - Libraries
    - Utilities
- Not Ok
  - Vast Amounts of Your Project
  - Not Open Source
- Be Careful!
- If Unsure, Ask Dr. D.

## S VISA

- Verified Individualized Services and Accommodations
- Let us know **immediately**.
- We will work with you.

## S Office Hours

### Your Choice

- Either
  - Any Time...
    - Visit
    - Call
    - Send Email
  - Make Appointment If Necessary
- Or
  - Two Hours Per Week, Period
  - Make Appointment If Necessary

0-31

## S First Assignments

- Check out the Lab
  - See if you can find it.
  - See if you can get in.
- Check out the Web Site
  - See if you can log in.
  - Check out the links.
- Research Clients

0-32

## S What's Next? Wednesday

- Teams
  - Assignments
  - Meeting
  - Organization
- Client
  - Contact
  - Project Review
- Technical Specification
  - Examples on Course Site

0-33