



What's left?

- 11/30: Ethics and Professionalism
- 12/05: Project Videos
 - By 3:00pm
 - Via USB Stick
 - Pooled For Design Day Judges Immediately After Meeting
- 12/07: All Project Deliverables
 - By 3:00pm
 - Via USB Stick:
 - Source Code (Check Out of Repository)
 - Project Plan
 - Project Video
 - ☞ Canvas Project Folder
 - ☞ .wmv and Other Formats
 - Manuals
 - Etc.
- 12/08: Team Evaluation Form
 - By 3:00pm
 - Via Email
 - See Submission Instructions at End of Form
- 12/08: Design Day Setup, 3:30pm
- 12/09: Design Day, 7:00am
 - Dress is business.
 - Make "wake-up" call and/or transportation arrangements.
- 12/12: Project Videos, 3:00pm-5:00pm

The Capstone Experience Ethics and Professionalism 1

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

The Capstone Experience Ethics and Professionalism 2

Today

- Graduation Breakfast
- Design Day Equipment Requests
- Ethics and Professionalism
- 13" MacBook Pro

The Capstone Experience Ethics and Professionalism 3

MICHIGAN STATE UNIVERSITY

11/30:
Ethics and Professionalism

[The Capstone Experience](#)

Dr. Wayne Dyksen
Department of Computer Science and Engineering
Michigan State University
Fall 2011



The Capstone Experience Ethics and Professionalism

Caveat Emptor

- Opinions Expressed
 - My Own
 - Do Not Represent MSU
- Not an Attorney
- No Warranty

THIS LECTURE IS GIVEN IN THE HOPE THAT IT WILL BE USEFUL, BUT WITHOUT ANY WARRANTY. IT IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LECTURE IS WITH YOU. SHOULD THE LECTURE PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

The Capstone Experience Ethics and Professionalism 5

Ethics vs Law

- Ethics
 - "Good" vs "Evil" or "Right" vs "Wrong"
 - Moral Judgment
 - Choice
- Law
 - Legal vs Illegal
 - Legal Judgment
 - No Choice

The Capstone Experience Ethics and Professionalism 6



Professional/Corporate Ethics

- Set by...
 - Professional Society
 - Licensing Agency
 - Government
 - Company
 - Etc...
- Must obey if you want to...
 - ...be a member
 - ...be licensed
 - ...do business
 - ...keep your job
 - ...etc

Really More Like Law

The Capstone Experience Ethics and Professionalism 7

Lots of Variables

- Who Your...
 - ...Employer Is
 - ...Customers Are
- Very Different Rules/Laws/Policies
 - Industry
 - Privately Held
 - Publically Held
 - Government
 - Government Contractor
 - Educational Institution
 - Etc...

The Capstone Experience Ethics and Professionalism 8

Resources

- University of Virginia
 - <http://repo-nt.tcc.virginia.edu/ethics/index.htm>
- Texas Tech
 - <http://www.niee.org/pd.cfm?pt=NIEE>
- ACM
 - <http://www.acm.org/constitution/code.html>
- IEEE
 - <http://www.ieee.org/portal/pages/iportals/aboutus/ethics/code.html>

The Capstone Experience Ethics and Professionalism 9

ACM (1 of 5)

- Code of Ethics and Professional Conduct
 - <http://www.acm.org/constitution/code.html>

1. General Moral Imperatives
2. More Specific Professional Responsibilities
3. Organizational Leadership Imperatives
4. Compliance with the Code

The Capstone Experience Ethics and Professionalism 10

ACM (2 of 5)

1. General Moral Imperatives
 - a. Contribute to society and human well-being.
 - b. Avoid harm to others.
 - c. Be honest and trustworthy.
 - d. Be fair and take action not to discriminate.
 - e. Honor property rights including copyrights and patent.
 - f. Give proper credit for intellectual property.
 - g. Respect the privacy of others.
 - h. Honor confidentiality.

The Capstone Experience Ethics and Professionalism 11

ACM (3 of 5)

2. More Specific Professional Responsibilities
 - a. Strive to achieve the highest quality, effectiveness and dignity in both the process and products of professional work.
 - b. Acquire and maintain professional competence.
 - c. Know and respect existing laws pertaining to professional work.
 - d. Accept and provide appropriate professional review.
 - e. Give comprehensive and thorough evaluations of computer systems and their impacts, including analysis of possible risks.
 - f. Honor contracts, agreements, and assigned responsibilities.
 - g. Improve public understanding of computing and its consequences.
 - h. Access computing and communication resources only when authorized to do so.

The Capstone Experience Ethics and Professionalism 12



ACM (4 of 5)

3. Organizational Leadership Imperatives

- a. Articulate social responsibilities of members of an organizational unit and encourage full acceptance of those responsibilities.
- b. Manage personnel and resources to design and build information systems that enhance the quality of working life.
- c. Acknowledge and support proper and authorized uses of an organization's computing and communication resources.
- d. Ensure that users and those who will be affected by a system have their needs clearly articulated during the assessment and design of requirements; later the system must be validated to meet requirements.
- e. Articulate and support policies that protect the dignity of users and others affected by a computing system.
- f. Create opportunities for members of the organization to learn the principles and limitations of computer systems.

The Capstone Experience Ethics and Professionalism 13

ACM (5 of 5)

4. Compliance With The Code

- a. Uphold and promote the principles of this Code.
- b. Treat violations of this code as inconsistent with membership in the ACM.

The Capstone Experience Ethics and Professionalism 14

IEEE (1 of 2)

We, the members of the IEEE, in recognition of the importance of our technologies in affecting the quality of life throughout the world, and in accepting a personal obligation to our profession, its members and the communities we serve, do hereby commit ourselves to the highest ethical and professional conduct and agree:

1. to accept responsibility in making decisions consistent with the safety, health and welfare of the public, and to disclose promptly factors that might endanger the public or the environment;
2. to avoid real or perceived conflicts of interest whenever possible, and to disclose them to affected parties when they do exist;
3. to be honest and realistic in stating claims or estimates based on available data;
4. to reject bribery in all its forms;
5. to improve the understanding of technology, its appropriate application, and potential consequences;

The Capstone Experience Ethics and Professionalism 15

IEEE (2 of 2)

6. to maintain and improve our technical competence and to undertake technological tasks for others only if qualified by training or experience, or after full disclosure of pertinent limitations;
7. to seek, accept, and offer honest criticism of technical work, to acknowledge and correct errors, and to credit properly the contributions of others;
8. to treat fairly all persons regardless of such factors as race, religion, gender, disability, age, or national origin;
9. to avoid injuring others, their property, reputation, or employment by false or malicious action;
10. to assist colleagues and co-workers in their professional development and to support them in following this code of ethics.

The Capstone Experience Ethics and Professionalism 16

School vs. Work World

What happens if you break the "rules"?

- School?
 - Slap on the Wrist
 - Flunk an Assignment or Course
 - Kicked out of School (...but Go to a New School)
 - Etc...
- Work World?
 - Fired
 - Blacklisted
 - Prosecuted
 - Fined
 - Go to Jail
 - Etc...

The Capstone Experience Ethics and Professionalism 17

Ethics / Legal Issues

- Is it...
 - ...ethical
 - ...legal
- ...for...
 - ...University
 - ...Employer
 - ...Government
- ...to monitor...
 - ...email?
 - ...internet usage?
 - ...text messages?
 - ...phone usage?
 - ...twitter?
 - ...Facebook?

The Capstone Experience Ethics and Professionalism 18



Use of Email

- Institutional vs. Personal
- Policies/Legalities
 - May be...
 - Against Company Policy
 - Public Information (FOIA-able)
 - Subpoena-able
 - Etc.
- Etiquette
 - Watch...
 - What You Write
 - How You Write
 - Who You cc and bcc
 - Reply All
 - Etc.

Use of Social Networking

Clean up your web presence.

- Facebook
- Personal Web Pages
- Flickr
- Twitter
- Etc...

HR people will and do check these things out.

What about your 1st Amendment rights?

Use of Hardware/Software

- Institutional vs. Personal
- May Be Specific Policies
 - Use
 - Loading Software
 - Etc.
- Software “Borrowed” From...
 - Relative or Friend
 - Bit Torrent
 - Open Source
 - Etc.

Ethics/Legal Scenario

- Your boss asks you to write a library in C# to handle linked lists, including functions like insert, delete, sort, search, etc.
- You google “C# linked list” and find a very well written, very well documented library that does most of what you need.
- The web site explicitly says that everyone and anyone is free to use the library for any purposes whatsoever for free and forever.
- You download the library, add a bit of functionality, and submit it to your boss for inclusion in your company’s new product.
- Is this ethical? Legal? How owns what?

Ethics/Legal Scenario

- You miss a meeting for your capstone team. You were at Midnight Madness, but you tell your teammates that you were sick. Is this ethical? Legal?
- You are being deposed under oath and you say that you missed your capstone meeting because you were sick when you were really at Midnight Madness. Is this ethical? Legal?

(Note: Rules and consequences change after graduation. Be careful!)

Ethics/Legal Scenario

- For your English literature class you are assigned a paper on Stephen Crane’s novel The Red Badge of Courage. You buy a paper on termpaper.com and submit it. Ethical? Legal?
- You work for a consulting firm and are assigned the task of evaluating routers and writing a whitepaper for a client. You google and find performance data and writing, which you use in your paper. How about if you just use a great overview of routers and router technology? Ethical? Legal?



Ethics/Legal Scenario

- You work at a company that stores sensitive data (medical records, social service records, etc.). You have access to data, and download them to your notebook computer, and bring it home to finish a report. You also back up a copy of the data to your home computer in order to work at home.

Is this ethical? Legal? Against company policy?

Ethics/Legal Scenario

You work as a software engineer on an medical equipment. The project is late and the software does not work to specifications. You think the issues are safety critical, but your boss, who has managed these kinds of projects for years, says it's of no concern. And, after all, the project is late and over budget.

What should you do? What would you do?

Ethics/Legal Scenario

You are a consultant, asked to evaluate designs and recommend a solution for a company. You conclude that one particular company has the best solution. However, you do not mention that you have a significant financial interest in the company you recommended.

Is this ethical? Legal?

Ethics/Legal Scenario

You have an idea for a company and a web site. You hire another MSU student to do some design work and initial programming. The student never does any work for you. Instead he/she goes off and start his/her own competing company and web site based on your ideas. His/her web site is a phenomenal hit. His/her company is valued at over \$33.7B. Your company is valued at \$0.

Is this ethical? Legal?

Ethics/Legal Scenarios: Freebies

From a customer and/or vendor can you accept...

- ...shirts? SWAG?
- ...lunch or dinner?
- ...golf outing in Florida?
- ...golf clubs?
- ...educational cruise in the Bahamas?
- ...consulting contract for you?
- ...consulting contract for a family member?
- ...job for a family member?
- ...etc...?