MICHIGAN STATE UNIVERSITY

# 3/10: Ethics and Professionalism

## The Capstone Experience

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*From Students…*
*…to Professionals*

# Caveat Emptor

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

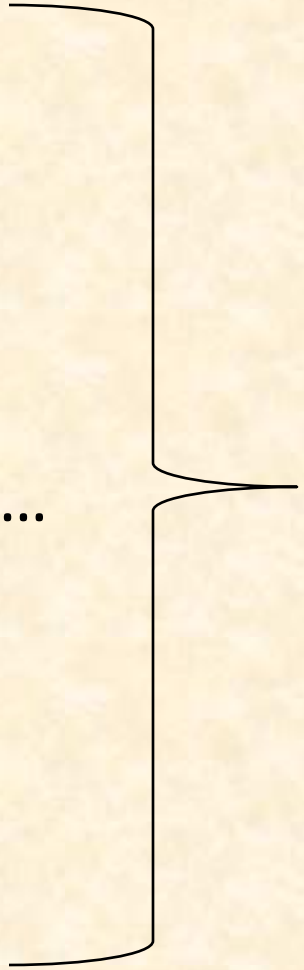
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# Ethics vs Law

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

# 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

# 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…

# Resources

- National Society of Professional Engineers
- ACM
- IEEE
- Royal Academy of Engineering

(Google “engineering ethics”)

# ACM

[1 of 5]

- Code of Ethics and Professional Conduct

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

# ACM

[2 of 5]

1. General Moral Imperatives
    1. Contribute to society and human well-being.
    2. Avoid harm to others.
    3. Be honest and trustworthy.
    4. Be fair and take action not to discriminate.
    5. Honor property rights including copyrights and patent.
    6. Give proper credit for intellectual property.
    7. Respect the privacy of others.
    8. Honor confidentiality.

# ACM

[3 of 5]

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

# ACM

[4 of 5]

3. Organizational Leadership Imperatives
    1. Articulate social responsibilities of members of an organizational unit and encourage full acceptance of those responsibilities.
    2. Manage personnel and resources to design and build information systems that enhance the quality of working life.
    3. Acknowledge and support proper and authorized uses of an organization's computing and communication resources.
    4. 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.
    5. Articulate and support policies that protect the dignity of users and others affected by a computing system.
    6. Create opportunities for members of the organization to learn the principles and limitations of computer systems.

# ACM



4. Compliance With The Code
    1. Uphold and promote the principles of this Code.
    2. Treat violations of this code as inconsistent with membership in the ACM.

# 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;

# 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.

# School World vs. Work World

What happens if you break the “rules”?

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

# Ethical / Legal Issues

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

# Use of Email

[1 of 2]

- Institutional vs. Personal
- Policies/Legalities

  May be…
  - Against Company Policy
  - Public Information (FOIA-able)
  - Subpoena-able
  - Etc.
- Etiquette

  Watch…
  - To Whom You Write
  - What You Write
  - How You Write
  - To Whom You cc and bcc
  - Reply All
  - Etc.

# Use of Email

[2 of 2]

- Never Compose or Send Email When Mad
- If Mad…
  - Create and write a Word document.
    (Do not create a draft using a mail client.)
  - Let it sit for 24 hours.
  - Edit it after 24 hours.
  - Ask someone you trust to read it.
  - Evaluate the pros and cons of sending it.
  - Be careful whom you cc and bcc.

# Use of Social Media

- Your Social Media Presence
  - Clean Up
  - Be Very Careful
  - Avoid?
- Including
  - Discord
  - Facebook
  - Twitter
  - Instagram
  - TikTok
  - Personal Web Pages
  - Etc...

- Can Get You Fired
- Even if Not Your Post
- Be Cognizant of Who's Around
  - Public
  - Private

HR people will and do check these things out.

What about your 1st Amendment rights?

# Use of Hardware/Software

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

# Ethical/Legal Scenario

- Your manager 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 manager for inclusion in your company’s new product.
- Is this ethical? Legal? Who owns what?



# Ethical/Legal Scenario

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

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

# Ethical/Legal Scenario

- For your English literature class you are assigned a paper on Emily Bronte's novel Wuthering Heights. You buy a paper on termpaper.com and submit it.
- 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?
- Are these ethical? Legal?

# Ethical/Legal Scenario

- You work at a company that stores sensitive data (SSNs, 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?

# Ethical/Legal Scenario

- You work as a software engineer on medical equipment. The project is late, and the software does not work to specifications. You think the issues are safety critical, but your manager, 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?



# Ethical/Legal Scenario

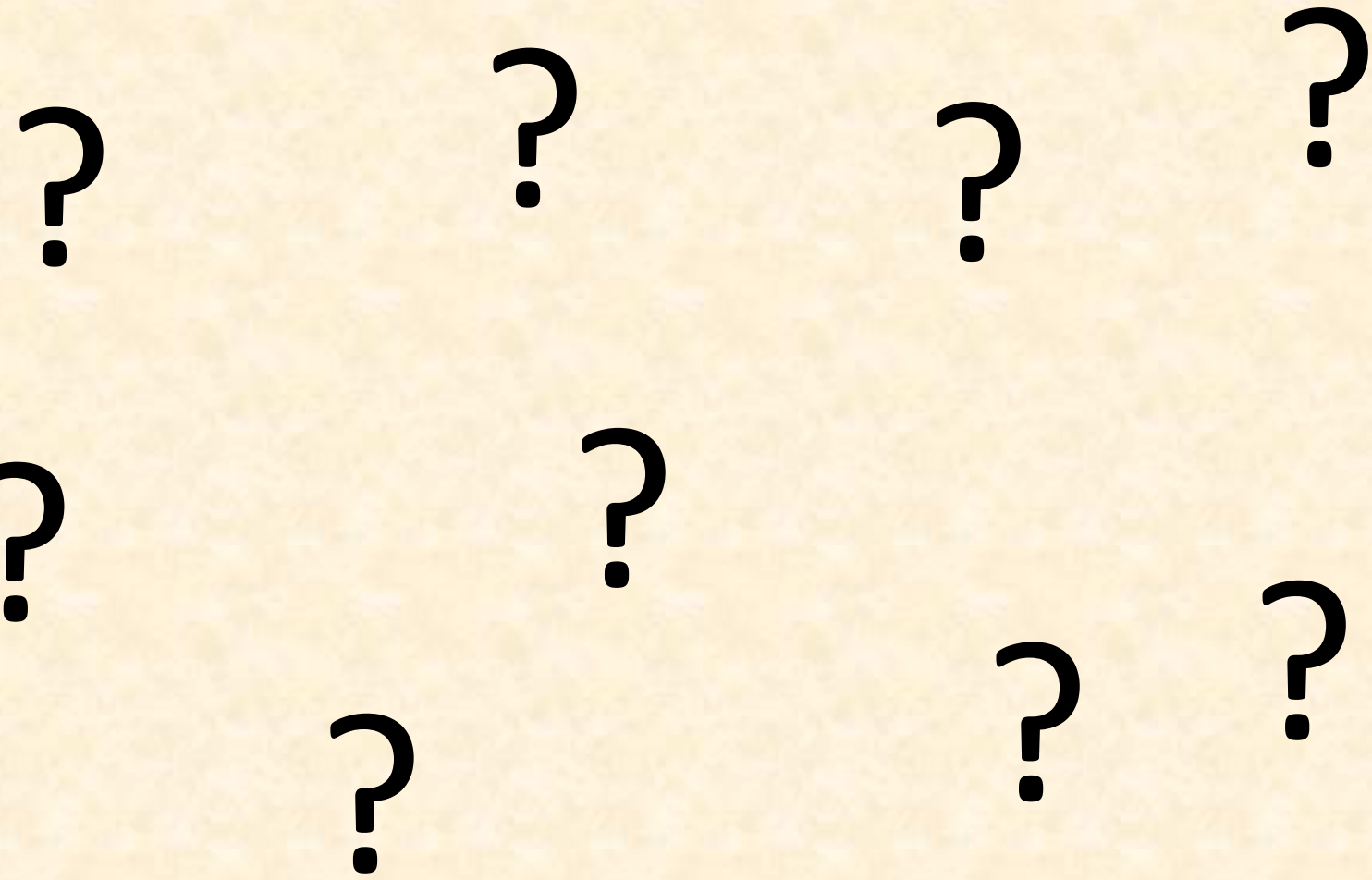
- You have an idea for a company and a web site. You hire another MSU student to do some design work and initial programming.
- The student never does any work for you. Instead, he/she goes off and start his/her own competing company and web site based on your ideas.
- His/her web site is a phenomenal hit. His/her company is valued at ~ $255B. Your company is valued at $0.
- Is this ethical? Legal?

# Ethical/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…?

# Questions?



# What's ahead?

[1 of 2]

- Upcoming Meetings and Due Dates
  - ~~W09, 03/10,Tu: Ethics and Professionalism~~
  - W09, 03/10,Tu: DD Booklet Proof Feedback
    - Every Team Must Respond
    - Due by 6:00 p.m. Today ← **Note**
  - W09, 03/12,Th: Toby Hall
  - W10, 03/17,Tu: Design Day
  - W10, 03/19,Th: Rick Grubb
  - W10, 03/19,Th: Artwork Updates ← **Note**
    - Wait for email instructions from Dr. D.
    - Due by Midnight
  - W11, 03/24,Tu: Resume Writing and Interviewing
  - W11, 03/26,Th: Intellectual Property
  - W12, 03/31,Tu: Team Status Report Presentations
  - W12, 04/02,Th: Beta Presentations

# What's ahead? [2 of 2]

- Upcoming Meetings and Due Dates
  - W13, 04/07,Tu: Beta Presentations
  - W13, 04/09,Th: Beta Presentations
  - W14, 04/14,Tu: Project Video Status Reports
  - W14, 04/16,Th: Team Status Report Presentations
  - W15, 04/19,Su: Project Videos Due
  - W15, 04/21,Tu: Project Videos
  - W15, 04/22,We: All Deliverables Due
  - W15, 04/23,Th: Project Videos
  - W15, 04/23,Th: Design Day Setup
  - W15, 04/24,Fr: Design Day
  - W16, 05/01,Fr: Capstone Wrap Up

# Meeting Attendance, Preparation & Participation (MAPP)

- Almost No Excuses Accepted
  - One or Two Excused Possible for Interviews
    (Many are remote. Schedule them around Capstone.)
  - Must Provide Information
    - Date, Company, Recruiter Name & Contact Info
    - In Advance
    - To Instructors
- Must Attend (No Excuses Accepted)
  - Your Team Presentations
  - All Project Video Viewing
  - Design Day
  - Capstone Wrap Up
- Read the syllabus.
  - Meeting Attendance, Preparation and Participation (MAPP) Grade
  - Meeting Attendance Policies and Procedures

Do NOT schedule interviews.
Do NOT schedule ANYTHING.
**Do NOT buy plane tickets. ←Note**

**-5.0 MAPP Points Per Absence**

# Team Contribution

- What % of Team Grade (70 Points) Did Student Earn?
- 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
  - Interactions with Teammates ← Note
- Read the syllabus.



# Technical Contribution

- Required of Everyone
- Significant Work and Code
- Does Not Include Code…
  - Committed to GitLab by Someone Else
  - That Does Not Work
  - Copied from the Internet
  - Generated by ChatGPT or any AI/LLM tool or any tool. (Not Allowed)
  - Simple Front-End Work: HTML and/or CSS
  - Not Included in The Project
  - Not Relevant to 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 Presentations and/or Documents
  - Giving Presentations
- Read the syllabus.

# Technical Contribution

## Syllabus
## Section 20. Final Course Grades

- To be considered as part of a student's Technical Contribution grade, all of the student's project software must be
  - a) committed to the main branch of the team's Git repository,
  - b) integrated with the team's project software system,
  - c) working correctly, and
  - d) demonstrated and explained to the instructors

    by the date of the first Beta Presentation. ← **Take Note**

# Beta Presentations

[1 of 2]

- Start
  - Thursday, April 2
  - 3.0 Weeks From Thursday ← **Note**
- Slide Decks
  - Due Wednesday, April 1
  - Upload to “Beta Presentation Slide Decks”
- Demonstrate Working
  - Software
  - Hardware
- 100% Feature Complete ← **Note**
- 10% of Final Grade
- Test
  - Everything
  - In Presentation Room
  - In Advance



# Beta Presentations [2 of 2]

- Outline
  - Brief Project Overview (Elevator Pitch)
  - (Skip Architecture Diagram and Screen Shots Slides)
  - Software Demonstration
    - ❖Three Use Cases
    - ❖Follow Marshall Plan
      - » What
      - » So What
      - » Now What ← Nota Bene
  - Brief Summary of What's left to do?
- Use Entire 14 Minutes



# Questions?

