STSO 4100
Professional Development – Technical Issues & Solutions
Summer 2023, Term 2
Dr. Allison Hoffman

Course Schedule:

Monda
May 2

Sectio
Monda
8:00 a

Sectio
Monda
10:30

Section 03 -
Monday & Thursday
1:30 pm - 3:35 pm

J-ROWL 2C22

Course Description

This course focuses on increasing students' knowledge

How to Succeed in this Course:

Come to each session (and participate): Success in this course requires regular attendance and active participation.

Come to each session prepared: This means having completed the readings and responded to the key questions on the weekly assigned readings, before the due dates.

Please don't wait until it's too late. If a problem arises, make an appointment to see me ASAP (in person or via virtual office). If you wait until the end of the semester, there will be very little I can do to help you (and your grade).

with the technology's ultimate usage. In addition, the resulting impact of the disaster/event on society will be examined.

Student Learning Outcomes

- Students will demonstrate their knowledge of the potential consequences of engineering solutions in a global, economic, environmental, political and social-cultural context by examining events and reading/discussing case examples.
- Students will develop their verbal and written communication skills by actively participating in classroom discussions, completing assignments and project work, and delivering a group or individual presentation.

ABET Criteria

This course will address key ABET criteria including:

- An understanding of process and solutions to meet specific needs with consideration for public health and safety, and global, cultural, social, environmental and economic factors.
- An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and social contexts.
- An ability to communicate effectively with a range of audiences.

Instructor Information:

man

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:

ebEx

Meeting Room:
https://rensselaer.webex.com/meet/hoffma3

Teaching Assistant Information:
Jackson Anderson
Anderj15@rpi.edu

Academic Integrity and Professional Class Behavior

Student-teacher relationships are built on mutual respect and trust. Students must be able to trust that their teachers have made responsible decisions about the structure and content of the course, and that they are conscientiously making their best effort to help students learn. Teachers must be able to trust that students do their work conscientiously and honestly, making their best effort to learn. Acts that violate this mutual respect and trust undermine the educational process.

The Rensselaer Handbook of Students Rights and Responsibilities defines various forms of Academic Dishonesty, and you should make yourself familiar with these. In this class, all assignments that are turned in for a grade must represent the student's own work.

On the first assignment where cheating or plagiarism is detected, a grade of zero will be given and it will be reported to the Dean of Students. If there is a subsequent infraction, the student will receive a grade of F for the course. If a student has any questions concerning this policy before submitting an assignment, please ask for clarification.

It is important that you maintain a professional demeanor in class. RPI expects this from you, as do future employers. The classroom is the perfect place to practice interacting in a manner appropriate to a professional setting. This includes all verbal and non-verbal interactions with all class members (including the professor).

RPI-LMS and Email Communication

LMS is used in this course for posting of all grades, and any updates to the syllabus or course. Students will use LMS to access readings and assignments, and to submit work (e.g., weekly reading responses).

Students will be contacted directly via their RPI email addresses throughout the semester. When communicating via email, use professional etiquette. Include an appropriate subject heading that contains the class and section, your name, and a brief description of the purpose of the email, e.g., "PD- Section 02; Smith- question about WRR#3." Be sure to include your name in the title of any attachments. Also, please refrain from using the "text messaging" format when emailing.

Changes to Schedule

During the course of the semester, there might be reasons to modify the schedule. In these cases, all changes will be announced in class and posted on LMS under "Announcements". It is your responsibility to become aware of any such changes.

Course Grading

- *Attendance **(5%)*** **10 points**
- *Class Participation* **(15%)** **30 points**
  - *Participation in classroom discussions*
- *Writing Assignments:*
  - *Weekly Reading Responses* **(40% – 8 @ 10 points each)** **80 points**
  - *Final Assignment* **(15%)** **30 points**
- *Group or Individual Presentation* **(25%)** **50 points**

Total **200 points**

Grade	Range	Grade	Range	Grade	Range	Grade	Range
A	182-200 points	**B+**	166-175 points	**C+**	148-153 points	**D+**	128-133 points
A-	176-181 points	**B**	160-165 points	**C**	140- 147 points	**D**	120-127 points
		B-	154-159 points	**C-**	134-139 points	**F**	< 120 points

Grade Appeals - Grade appeals should be presented to me in writing, with a logical and coherent argument as to why you think your grade is incorrect.

Attendance (5%) and Participation (15%)

- **Regular and Timely Attendance**: You are expected to attend each session and be prompt and fully prepared. Excused absences are processed by the Student Experience office (4th floor Academy Hall, x8022, se@rpi.edu). Excused absences must be followed up by appropriate documentation and must be reported to the instructor in a timely fashion. Moreover, norms of professional behavior demand that students show up on time to class meetings. You will lose credit if you are habitually late for class.
- **Participation**
  - **In-class -** Students will come to class having read the assigned reading materials and be prepared to discuss the information. Class participation consists of, but is not limited to, involvement in class discussions, asking intelligent and relevant questions, sharing viewpoints and experiences, respectfully challenging statements made by the professor or fellow classmates, and interacting with others in a civil and professional manner.
- Failure to attend and participate regularly decreases your grade. I will be taking attendance and expect that you will be present and engage in all discussions. You will lose points if you miss more than 1 class without an excused absence, or if you attend regularly but do not engage.
- If you are unable to attend a class, you MAY be able to attend a different section, but please don't make a habit of it. If you miss a class, you are responsible for completing any missed class work and obtaining any lecture/discussion notes for the class.

Weekly Reading Responses (WRRs) (40%)

- Students will write a complete (approximately 1-2 page) response to key questions on the assigned readings and submit the responses via LMS. Reading responses are due on the course LMS **before** the class meeting. There are 10 weekly reading responses and you may **choose any 8 out of the 10.** Each is worth up to 10 points.
- Some sample questions that you may answer in your weekly reading response, AND be prepared to discuss in class are:
  - What are the main technical and "non-technical" (e.g., human factors, social, economic, cultural, political, environmental, ethical) causes/explanations for the event/disaster?
  - What are the different sides/perspectives on the issue?
  - How could this event/disaster have been prevented? / How could the design be improved?
  - What was the impact of the event/disaster on society?

Final Assignment (15%)

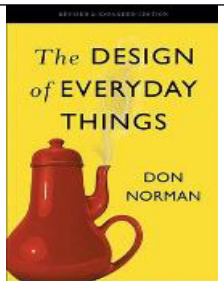
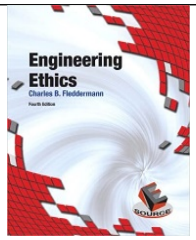
- Students will write a detailed response (approx. 3–4-page paper) to address key questions (which will be provided) related to the topic. Students will use the assigned readings along with additional relevant information. See Course Calendar for due date.

Presentation (Group or Individual) (25%)

- The presentation format (Individual or Group) will be determined after the 2nd class and will be based on the number of students in each section (e.g., sections with <10 students - individual presentations; 11-20 students – small groups; >20 students- large groups)
    - Small Group Presentation (3-4 people in each group; 4-5 topics)
    - Large Group Presentation (5-6 people in each group; 6 topics)
- Each student will self-select into one of the groups/topics from a pre-determined list of topics.
- Presentation has 2 components:
    1. Presentation slide deck (e.g., Google slides, PowerPoint) with annotations in speaker notes and
    2. Live presentation in classroom
- Presenters will conduct additional research (beyond the articles assigned by the Professor) and include the articles in their discussion/presentation.
- Presentation may include brief videos.
- Each presenter will contribute to the presentation including creation of the slides and live delivery. Verbal presentation should be approximately 5-10 minutes per group member; 10-15 minutes for individual presenters.
- Evaluation criteria- Presenters will be evaluated on:
    - Their contribution to the presentation (including content and design of slides)
    - Verbal communication and presentation skills including communication style and ability to respond to questions from the audience
    - Perceived knowledge about the topic
- Presentation rubrics will be posted on LMS.
- For groups
    - Group members will meet at the end of class and/or at other times outside of the classroom prior to the presentation.

Course Readings

Various articles/case studies will be provided electronically throughout the semester including select chapters from the following books**.** Additional articles and videos will be selected from various on-line news sources.

Casey, S.M. (1998). *Set phasers on stun: and other true tales of design, technology, and human error*. Aegean Publishing Company.			Norman, D. (2013). *The design of everyday things.* Basic Books.	
Fledderman, C. (2012). *Engineering Ethics.* Pearson.			Perrow, C. (1999). *Normal Accidents: Living with High-Risk Technologies.* Princeton University Press.	

Course Calendar with Key Due Dates

Class #	Date (Mondays & Thursdays)	Topics and Readings[1]			Assignments[2]
1	5/22	**Introduction to Class** **Review of Syllabus**			
2	5/25	**Basic Principles of Design -** **Human Factors/Human Centered Design** Donald Norman – *The Design of Everyday Things,* chapter 1			Weekly Reading Response 1
3	5/31 (Wednesday)	**Human Error and Other Non-Technical Issues** Articles from "*Set Phasers on Stun"* Case Study- *Therac-25*			Weekly Reading Response 2 Sign-up sheets for presentations (in class/on LMS)
4	6/1	**Complexity in Design** Charles Perrow- Normal Accident Theory Case Study- Space Shuttle Challenger **Discussion of Presentations** **1st Group Breakout Meeting**			Weekly Reading Response 3
5	6/5	**Engineering Ethics and Responsibility** Case Studies - Hyatt Regency Collapse and Citicorp Building			Weekly Reading Response 4
6	6/8	**Corporate Ethics** Case Study- Boeing 737 Max			Weekly Reading Response 5
7	6/12	**8:00 am – Section 1**	**10:30am– Section 2**	**1:30 pm– Section 3**	Weekly Reading Response 6
		Class Discussion- Deepwater Horizon	***Class Discussion- Deepwater Horizon***	***Group Presentation- Day 1- Deepwater Horizon***	
8	6/15	***Small Group Presentation Day 1- Nuclear Disaster***	***Class Discussion- Nuclear Disaster***	***Group Presentation- Day 2 - Nuclear Disaster***	Weekly Reading Response 7
9	6/19	***Small Group Pres- Day 2- Apollo/Space Mission***	***Individual Presentations- Day 1*** ***3-4 students***	***Group Presentation- Day 3*** ***Apollo/Space Mission***	Weekly Reading Response 8
10	6/22	***No classes***	***No classes***	***Group Presentation- Day 4-*** ***Flint Water Crisis***	Weekly Reading Response 9
11	6/26	***Small Group Presentation- Day 3- Manhattan Project***	***Individual Presentations- Day 2*** ***3-4 students***	***Group Presentation- Day 5-*** ***Manhattan Project***	Weekly Reading Response 10
12	6/29	***Small Group Presentation- Day 4- Boston Molasses***	***Individual Presentations- Day 3 OR Review Class***	***Group Presentation- Day 6-***	Final Assignment due

				Boston Molasses	

Please note: this schedule is tentative and subject to change.

[1] All readings will be posted on LMS or sent via email.

[2] Assignments are due BEFORE class unless otherwise specified.