



Time: 2:00 PM

Date: 17th and 19th April 2017 (Monday and Wednesday, Week 13)

Venue: 522

Duration: 7-8 Minutes + 2-3 Minutes (Q&A) per group

Overview

This final examination is a chance for you to research an ethical topic that interests your team. Your team will choose a case from a given list of engineering ethics cases, conduct research on the case, analyze the situations presented in the case, and then present your analysis to the class in an oral presentation.

Assignment Detail:

The following is a detailed layout of the process leading up to the oral presentation on ethics:

1. Selection of Possible Ethics Cases

Teams are required to choose ONE ethics case from the 15 that are provided at the end of this document. The chosen cases should be those that are of most interest to your group; consider the related engineering field(s). The cases provided are a mix of hypothetical and real-world situations.

2. Ethics Case Analysis and Oral Presentation

After you have selected the case, your group is required to complete an analysis of your ethics case. The information in the completed analysis should provide the base of the content for your presentation. Make sure to include as much detail as possible, including assumptions you may have made. You will be evaluated based on your ability to:

- Address each of the issues and points of ethical conflict presented in the case or problem. Include any assumptions made about this case.
- Identify what engineering field(s) this ethics case is related to.
- Identify the protagonist. Describe the general duties or obligations of the protagonist, which are grounded in moral considerations.
- Consider each interested party's legitimate expectations of the protagonist.
- Identify all possible actions and recognize the positive and negative consequences of each action.
- Provide a selected action and rationale.
- Provide at least a total of two references, not including Wikipedia.

Your presentation must be 7-8 minutes long and you will be allotted an additional 2-3 minutes for questions. When giving your presentation, you should dress professional for a business casual environment. You are welcome to use notecards when presenting, but keep in mind that you should not read directly from the cards (or the screen!). Each team member should participate equally in giving the presentation. You are highly encouraged to practice ahead of time to make sure information flows well and that your group stays within the 7-8 minute time limit. Presentations will occur over two class periods.

Your presentation should reflect your analysis of the case. Because you have already completed the analysis, creating the presentation should just require documenting your existing work and focus on layout of material. Be sure to include background information on the case so your audience (the class) can understand your analysis. When building your presentation, make sure your slides clearly convey your information and that the audience will be able to easily read all information on the screen. You are encouraged to include visuals in your presentation. There is no required number of slides for this presentation.

Ethics Cases:

This section of the document contains the ethics cases your group can choose to research. Please choose **ONE** case that interest your group. While reading these cases think about what majors each focus on. Your team must find and reference at least one more source, in addition to the one provided, for your presentation; you may not use Wikipedia.

1	<p>Gifts from Contractors/Suppliers [Hypothetical]:</p> <p>Scott Bennett is the engineer assigned to deal with vendors who supply needed parts to the Upscale Company. Larry Newman, sales representative from one of Upscale's regular vendors, plays in the same golf league as Scott. During a game, Scott mentions he is in the process of planning a vacation to Florida. Larry has an uncle who owns a condo in Florida and offers Scott a discounted price on it. New Company Policy at Scott's engineering firm: "accepting incentives from vendors is strictly prohibited". What should Scott say and do? Extracted from Gifts from a Supplier at:</p> <p>http://www.onlineethics.org/Resources/Cases/condo.aspx</p>
2	<p>Data Selection, Legitimate or Illegitimate [Hypothetical]:</p> <p>Elton, an engineer, is conducting graduate research at a major university. In order to complete his graduate studies and produce an advanced degree, Elton must develop a research report. The vast majority of data obtained strongly support not only his report's conclusion, but also the conclusions of others. However, a small proportion of the data differs from the data consistent with Elton's conclusion. Even though his report is sound containing all of the data Elton does not include the inconsistent figures in the final report. Extracted from Data Selection, Legitimate or Illegitimate (adapted from NSPE Case No. 85-5) accessed at:</p> <p>http://www.onlineethics.org/Resources/Cases/ec85-5.aspx</p>
3	<p>Dissent about Quality [Hypothetical]:</p> <p>Several senior engineers recommend catalyst A for use by Larom, Inc. Bernie, a new employee, believes catalyst B may actually be best based on testing he has been doing. Bernie needs more data to be sure, but he doesn't have enough time to conduct the trials. What recommendation should Bernie offer, if any? Extracted from Dissent About Quality accessed at:</p> <p>http://www.onlineethics.org/Resources/Cases/Dissent.aspx</p>
4	<p>Hooked On Electronic Services [Hypothetical]:</p> <p>The Banking Industry was one of the earliest to adopt to the use of computers and other Information Technologies to support their operations. The pioneers within the Banking Industry gained a competitive advantage by providing customers with unique services. Once these new services became widespread practice, from a customer's perspective, there was no advantage of</p>

	<p>doing business with a particular bank. This situation presented managers with the challenge of how to attract and retain their customer-base. Step One - General Focus: Students may suggest a wide range of non-specific strategies. Step Two - Information Technologies Focus: Students may suggest various IT based strategies. Step Three - Specific Focus - Students evaluate specific IT based strategies, e.g. Automated Teller Machines and Electronic Banking. Extracted from Hooked On Electronic Services accessed at:</p> <p>http://www.onlineethics.org/Resources/Cases/hooked.aspx</p>
5	<p>All in the Interpretation [Hypothetical]:</p> <p>Kate is a graduate student in Professor Bigwig's lab. She started a project examining the effects of certain video games in children during her first year of graduate school. She is excited to see a clear trend in her data that indicates a positive effect of educational video games, but the effect washes out after about a year or two, and she is unsure how to interpret it. Dr. Bigwig did not like the results and conclusion section of her first report draft so she eliminated most of the inclusive data and highlighted the strong trends. Dr. Bigwig liked this new draft and it was published and was successful at gaining funding. What are the ethical issues surrounding the published report? Extracted from All in the Interpretation accessed at:</p> <p>http://www.onlineethics.org/Resources/Cases/Interpretation.aspx</p>
6	<p>Cheating (MIT): Responsibilities for Reporting and Taking Disciplinary Action [Hypothetical]:</p> <p>I am a senior at a well-known educational institution. This term, I am the grader for a course called Probabilistic Systems. My sorority sisters J and K are taking this course. One day at the sorority house library I see J and K obviously copying answers from past problem sets - in fact, they don't deny the fact when I confront them. J says that copying is not a big deal since grades from problem sets are only counted in the case of borderline grades. Although I feel what they are doing is wrong, I also realize that many other students are probably using bibles and problem sets are not a large part of their grade. What should I do? Extracted from Cheating@MIT: Responsibilities for Reporting and Taking Disciplinary Action accessed at:</p> <p>http://www.onlineethics.org/Resources/Cases/cheating.aspx</p>
7	<p>Beyond Expertise: One Person's Science, Another Person's Policy [Hypothetical]:</p> <p>Dr. Debra Reams works in the field of environmental chemistry and focuses on the oxidation and reduction reactions of the heavy metal jekylhydium in water and soil. Jekylhydium is used in many industrial processes and is known to exist in nature primarily in two oxidation states. The oxidized form is extremely toxic; the reduced form is harmless. The Environmental Protection Agency (EPA) is concerned about the toxicity and potential for human exposure to jekylhydium. The Agency is alarmed by news of the possibility of transformation from the less toxic to the more toxic form and asks Reams to help rewrite the regulatory limits for jekylhydium in soils and water based on her findings. Reams declined to rewrite regulations even though she was person to</p>

	<p>clearly demonstrate the danger. Extracted from Beyond Expertise: One Person's Science, Another Person's Policy accessed at:</p> <p>http://www.onlineethics.org/Resources/Cases/expertise.aspx</p>
8	<p>Testing by a Co-Op Student [Hypothetical]:</p> <p>Stress tests were needed for a redesigned component and many departments are busy. Jack Jacobs is a Co-Op for the XYZ Company. Jack is assigned the task of completing the tests and indicates that the component successfully passes the stress tests after completing the assignment on time. Upon completion of the test report, Jack returned to school but a catastrophic failure of the component happened raising questions about the accuracy of the data. What ethical issues, if any, does this scenario raise? Extracted from Teaching Engineering Ethics: Testing by a CO-OP Student accessed at:</p> <p>http://www.onlineethics.org/Resources/Cases/co-op.aspx</p>
9	<p>Three Mile Island Nuclear Power Plant Disaster [Real-World]:</p> <p>The meltdown happened on Three Mile Island, PA on March 28, 1979. General Public Utilities and Metropolitan Edison were the companies responsible for the partial nuclear meltdown. Radioactive gases released to environment and the plant site was contaminated (14 year clean-up effort). The nuclear meltdown received a Level 5 on the International Nuclear Event Scale with Level 7 being the worst. A Combination of design and human error lead loss of coolant, which lead to a partial meltdown. Extracted from Backgrounder on the Three Mile Island Accident accessed at:</p> <p>http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/3mile-isle.html</p>
10	<p>The Case of the Killer Robot [Hypothetical]:</p> <p>Randey Samuels was a programmer at the Silicon Techtronic's Inc. who worked on programing robots. Bart Matthews was crushed to death when the robot he was operating malfunctioned and started to wave its hands violently. The Robot arm struck Matthews, throwing him against a wall and crushing his skull. They were both employees of Cybernetics Inc. in Silicon Heights when the accident occurred on February 16, 2006. Extracted from Case of the Killer Robot accessed at:</p> <p>http://www.onlineethics.org/Resources/19049/killerrobot.aspx</p>
11	<p>GM Ignition Switch [Real-World]:</p> <p>General Motors had to recall 2.6 million Chevy Cobalt vehicles. The ignition switch contained a design flaw that was demonstrated when owners placed weighted items on their key rings. The key would rotate into accessory mode and shut down all mechanical and electrical functions in the car including the air bags and power steering and brakes. This issue has caused at least 13 deaths. The problem was brought to the attention of GM in 2005, but engineers decided against</p>

	<p>a fix because it would take too long and cost too much money. Extracted from The Long Road To GM's Ignition Switch Recall accessed at:</p> <p>http://www.npr.org/2014/03/31/297312252/the-long-road-to-gms-ignition-switch-recall</p>
12	<p>Suspected Hazardous Waste [Hypothetical]:</p> <p>Alex is an engineering student employed for the summer by Environmental Engineering, a consulting firm. RJ, the engineer who supervises Alex, directs Alex to sample the contents of drums located on the property of a client. Alex believes the drums contain hazardous material, but RJ wanted Alex to tell the company that they contain questionable material. What can and should Alex, a student and a summer hire, do in this situation? Extracted from Suspected Hazardous Waste (adapted from NSPE Case No. 92-6) accessed at:</p> <p>http://www.onlineethics.org/Resources/Cases/ec92-6.aspx</p>
13	<p>New Technology – Who Is the Designer [Hypothetical]:</p> <p>Edgar Engineer is a licensed civil engineer and principal investigator on a university project researching environmental contamination problems. His work involves the sampling of groundwater and soil to determine the nature and extent of contamination at a local commercial site. Edgar saw the need to improve the sampling technology and he contacted a vendor, Fabio Fabricator. They worked together and met often to make improvements. The improvements were successful and a year later Edgar discovered that Fabio applied for a new patent for the equipment. Edgar was upset because most of the ideas were his and changes to existing equipment. I told him that I wanted to be listed on the patent, and he said that he'd 'keep me informed of the status.' I don't think that's good enough, and I would like some advice on how to proceed." Extracted from New Technology – Who Is the Designer? accessed at:</p> <p>http://www.onlineethics.org/Resources/Cases/technology.aspx</p>
14	<p>From Fundamental Physics to the Private Sector [Hypothetical]:</p> <p>Huge University and Ivy University emerged as the leaders in the new field of applying particle accelerators, matching each other patent for patent. Since the group at Ivy spearheaded the collaboration that wrote the original article in Popular Cross Disciplinary Research, they claimed the first patent, which secured the rights to the idea of using the technique for medical imaging. Groups at Ivy U. and Huge U. each began building an apparatus that would produce the specially treated gas to be used for the new MRI technique. Ivy finished first and patented its new machine. Huge finished a few months later, but its machine had the added capability of being able to produce and deliver the gas with the same machine. Huge also received a patent. Both universities are in positions to violate each other's patents. Extracted from From Fundamental Physics to the Private Sector accessed at:</p> <p>http://www.onlineethics.org/Resources/Cases/fundamental.aspx</p>

15	<p>CITICORP Building [Real-World]:</p> <p>Structural Engineer Bill LeMessurier designed welded joints for the CITICORP building in Citicorp Centre, N.Y (fifth highest skyscraper) 1977. However the contractor, Bethlehem Steel, changed them to bolted joints. Tests proved that the diagonal wind loading (with a return period of 16 years) can lead to the failure of the critical bolted joints and therefore the building. Recalculation was not done to check what the construction change would do. The building was strengthened by welding two-inch thick steel plates over each of the 200 bolted joints. Extracted from:</p> <p>http://www.theaiatrust.com/whitepapers/ethics/study.php</p>
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Groups:

Group Number	Sl.	Student ID	Student Name
1	1	12-21128-1	IBRAHIM, MIRZA TAMANNA
	2	13-23265-1	ISLAM, TAMANNA
	3	13-23516-1	ALIF, SYFUL ISLAM
	4	13-23530-1	SULTANA, SANJIDA
	5	13-23599-1	HASAN, MD. ARIFUL
	6	13-23735-1	SHAKIL, ARIFUL ISLAM
2	7	13-24021-2	SHAHREEN, SYEDA SHABERA
	8	13-24060-2	ARA, HOSNE
	9	13-24135-2	ZOHA, SUMAYA TAZ
	10	13-24421-2	OISHY, TAMANNA RAHMAN
	11	13-24420-2	CHOWDHURY, RAKIB IBNA HAMID
	12	13-24439-2	MONY, MD. ZEHADUL-ISLAM-
3	13	13-24506-2	ISLAM, SAMIUL
	14	13-24536-2	RAJESH, MD
	15	13-24607-2	JAHAN, SUMAYA
	16	13-24656-2	RANI, SHAMSUL HUDA

	17	13-24666-2	NISHI, AFIZA NASHID
	18	13-24681-2	ISLAM, SUMAIYA
4	19	13-24940-3	UDAY, KAZI SHAHADAT HOSSAIN
	20	13-24947-3	HASSAN, ASIFBUL
	21	13-24958-3	SHOUROV, SHAK SUFIAN
	22	13-25166-3	AKTER, MARJAHAN
	23	13-25247-3	HOSSAIN, MD. JOBAER
	24	13-25253-3	RAHMAN, A.M. RAFAT
5	25	13-25316-3	HAQUE, ATIYA SALSABIL
	26	13-25329-3	SAHA, PRIANKA
	27	13-25406-3	CHOITY, ROMENA AFROSE
	28	13-25405-3	MEHEDI, ADIB
	29	13-25410-3	ISLAM, SUROVI
	30	13-25412-3	HOSSAIN, MD. JAKIR
6	31	14-25470-1	SHAHRIAR, RHYTHM
	32	14-25531-1	MARUF, H.M.
	33	14-25603-1	ESHA, ISHRAT JAHAN
	34	14-25627-1	FATIMA, FAINAZ
	35	14-25661-1	FAHIM, MD. IKRAM KHAN
	36	14-25703-1	KHANOM, MONJUARA
7	37	14-25901-1	NASRIN, FARZANA
	38	14-25986-1	HASINA, NUZHAT
	39	14-26232-1	BHUIYAN, MD. MAHBUB ISLAM

	40	14- 26261-1	TABASSUM, RADIA
	41	14- 26269-1	KHAN, IMRAN AHMED
	42	14- 26319-1	HOSSAIN, A.K.M LABIB

