ENED 1100 – Fall 2021
Homework 1.1

Submitted to your CANVAS **Section Site** by Sept 2nd at 7:00pm

INDIVIDUAL ASSIGNMENT: See the course syllabus for a definition of what constitutes an individual assignment.

When completed, submit your assignment to your Canvas Section Site using the following file name: HW_1p1_6+2.docx or **HW_1p1_6+2.pdf** (where 6+2 is your UC username, meaning the string of characters that comes before the @mail.uc.edu in your email address).

Task 1 (of 4)

Many students at college are tempted to cheat. In the past year, the number of academic misconduct rulings at UC increased by over 140% and the number of students who were expelled from their college increased by over 60%. The purpose of this exercise is for you to think about some of the cheating scenarios and to make a plan now how not to get involved with cheating.

> *"…there is a relationship between self-reported rates of cheating in high school and decisions to cheat in college and to violate workplace policies … Thus, this exploratory study demonstrates connections between decision-making about both academic and professional dishonesty."* Taken from: Carpenter et al. (citation at end of document).

(a) In the article cited above (Carpenter et. al), students indicated that the top reason they were tempted to cheat was due to "*not enough time* to complete assignments, reports, etc.: What specific things can you do to eliminate this cause of temptation to cheat?

Check the course syllabus at the beginning of the semester and note the due dates in the calendar, document the amount of time spent on each activity per day, work with organized students that will remind them about the upcoming deadlines, talk with professor and teaching assistants to clarify the questions before the deadlines.

(b) In past sections of ENED 1100, students have received academic misconduct when one student messaged another student during an exam and asked them for an answer. Both the students received a zero on the exam. How can you protect yourself from being in the situation where a classmate asks you for an answer during an exam?

I won't be taking a mobile phone to the exam which keeps me focused during the exam without any distractions from notifications. I will be focusing on my exam so that I won't have time to look at other students but if the student keeps on asking questions I will notify the exam invigilator.

(c) In past sections of ENED 1100, students have received academic misconduct when a student asked another student to see their assignment so they could get an idea how to do the assignment. The student then turned in the exact same assignment. Both students received a 0 on the assignment. How can you prevent this from happening to you?

Have a strict policy that when you're doing assignments try to do it alone, if the student asks to show the assignment try to clear the doubts instead of showing the assignment or direct the student to Professor or Teaching Assistant for further clarification.

Task 2 (of 4)

UC has a detailed process for dealing with academic misconduct. The process is overseen by the CEAS Assistant Dean of Academics. Dean Albright has made a video for ENED 1100 students that discusses what is considered academic misconduct and outlines the process when a student is accused of academic misconduct. The purpose of this exercise is to become familiar with the different forms of academic misconduct and the academic misconduct process.

Watch the **Task 2 Video: Academic Integrity** which is included with this HW assignment link on the CANVAS Community Page and then answer the following questions:

a) What are the categories of academic misconduct?

Aiding and abetting misconduct, Cheating, Fabrication, Plagiarism, Violating Ethical or Professional Standards

b) If your Instructor sends you a Notification Form, what are your options?

Accept responsibility and agree to my instructor's recommended sanction(s)

Accept responsibility but challenge my instructor's recommended sanction(s) and request a meeting with my instructor (must be scheduled within five days of instructor's receipt of Notification form back from student)

Deny responsibility and request a meeting with my instructor (must be scheduled within five days of instructor's receipt of Notification form back from student)

c) How is the integrity of the degrees earned at UC affected by academic misconduct?

University of Cincinnati wants alumni to be Ethical and Competent in their chosen profession to reflect well back on University of Cincinnati. By doing academic misconduct It directly impacts the value of the degree at University of Cincinnati.

The value of your degree: Reputation, Accreditation.

Accreditation sources such as ABET, sets minimum standards to student outcomes, maintain the accreditation of the degree and value out of the education

Academic integrity is the cornerstone of a university education. Academic dishonesty diminishes the university as an institution and all members of the university community. It tarnishes the value of a degree.

Task 3 (of 4)

> "*Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.*" - National Society of Professional Engineers

When engineers make decisions it is important that they can look at the situation from view point of all the stakeholders and determine the most ethical action to take. This exercise is intended to give you practice looking at a scenario from different points of view, identifying the pressures engineers face, applying an ethical framework to the situation, and evaluating the final decision based on the Engineer's Code of Ethics.

Watch the **Task 3 Video: Ethics 3 (Frameworks)** which is included with this HW assignment link on the CANVAS Community Page. Using **one** of the scenarios below answer the questions shown after the scenarios.

Scenario 1: There is an RFP (request for proposal) for a new aircraft to shuttle packages and your boss has asked to prepare a proposal. You suspect the company will go with the lowest estimate. There are some design features that will make the plane safer but will add cost to the project. If you get the bid, you think you will be promoted to senior engineer and you will get a substantial bonus. You can either include the safety features in your design or not.

Scenario 2: You are designing a battery for your company's new electrical vehicle. The company believes their market share will be higher if their car can travel further on a charge than their competition. You are considering two designs. One design results in a higher number of miles

traveled on a charge, but once the battery is no longer functional the only way to dispose of it is to put it in a land fill. The chemicals in the battery would be harmful if they enter the ground water. The other design which is more expensive will not travel as far on a charge and when it is at end of life can be recycled and will not have a negative impact on the environment. You own part of the company and thus receive a profit-sharing check at the end of the year.

Scenario 3: You are redesigning a medical device which is similar to another device that your company already has on the market. The FDA requires full testing on new devices, but a different testing process when small modifications are made on an existing device. Your redesign falls into the small modification category, but you are concerned that the change could lessen its effectiveness, and you think additional testing should be completed. You bill by the hour for your services.

Scenario 4: Your team is designing the system on a self-driving vehicle that determines if there is an object coming towards the vehicle. You have the option to have a redundant system (multiple sensors that need to match before the vehicle continues), but this will cost more and lead to a more complicated program which will impact your completion time and ultimately delay the launch date already advertised by the company.

Questions to answer for the Scenario you selected above:

(a) Which Scenario number did you choses (1, 2, 3 or 4)?

Type answer here: 2

(b) State the problem

The company believes their market share will be higher if their car can travel further on a charge than their competition by designing a battery for the company's new electrical vehicle. There's two designs, one being a higher number of miles traveled on a charge, but once the battery is no longer functional the only way to dispose of it is to put it in a landfill. The chemicals in the battery would be harmful if they enter the groundwater. The other design which is more expensive will not travel as far on a charge and when it is at the end of life can be recycled and will not have a negative impact on the environment.

(c) List the stakeholders

Engineer, Owners/stockholders, employees, customers, people who depend on clean water.

(d) What issues are involved

1. Choosing the battery with a higher number of miles has a negative impact on the environment.

2. The other battery is more expensive and does not travel as far on a charge but at the end of life can be recycled and will not have a negative impact on the environment.
3. The company wants more market share by choosing the battery with a higher number of miles

(e) How could personal gain, profit, political pressure and/or pressure to perform exist and potentially impact the engineer's decision?

The company's decision to make more profit will put pressure on the Engineer to make the battery with the higher number of miles but as an ethical engineer he/she will try to convince the board of directors about the negative and the long lasting impact on the environment.

As the Engineer is part owner of the company, he's decision will carry a weight

(f) What are the options?

Option 1: Choose the battery design that is less expensive, having more miles, not recyclable and does have a negative impact on the environment.

Option 2: Choose the battery design that is more expensive, having less miles, recyclable and does not have a negative impact on the environment.

(g) Pick one of the ethical frameworks and test the options.

The Utilitarian Approach
The option that will produce the most good and least harm

Option 1: This option will have a negative effect on the environment because the chemicals in the battery would be harmful if they enter the groundwater. But the company will gain a high market share by designing this battery and having more miles. This option will do the most harm and least good.

Option 2: This option will have a positive effect on the environment because when the battery is at the end of life can be recycled and will not have a negative impact on the environment. But the company will gain less market share by designing this battery and also having less miles. This option will do the least harm and most the good.

(h) Pick one the best option and give your reasoning.

Option 2: It's important to make sure the products that company designs are environmentally friendly, at this instance designing a battery that is recyclable will benefit everyone in the long run. Climate change is of particular significance because it is unequivocally the result of human activity since the mid-20th century and proceeding at a rate that is unprecedented over millennia. It is undeniable that human activities have

warmed the atmosphere, ocean, and land and that widespread and rapid changes in the atmosphere, ocean, cryosphere, and biosphere have occurred. As a visionary company it's really important to be responsible and lead by example to inspire other companies to make smart decisions when making products in the future that will benefit all humankind.

(i) How is your decision supported by the Engineers Code of Ethics?

- Hold paramount the safety, health, and welfare of the public.
- Engineers are encouraged to participate in civic affairs; career guidance for youths; and work for the advancement of the safety, health, and well-being of their community.
- Engineers are encouraged to adhere to the principles of sustainable development in order to protect the environment for future generations.
- Engineers shall avoid all conduct or practice that deceives the public

Task 4 (of 4)

> "Effective time management is associated with greater academic performance and lower levels of anxiety in students; however, many students find it hard to find a balance between their studies and their day-to-day lives." (Adams & Blair, 2019)

Watch the following Ted talk: Laura Vanderkam: How to gain control of your free time? (11:42 minutes). Laura Vanderkam is the author of several time management and productivity books, including Off the Clock, I Know How She Does It, What the Most Successful People Do Before Breakfast, and 168 Hours.

After you have watched the TED talk, think about the 3 areas discussed (career, self, and relationships) and complete Table 1 by documenting a few goals in each of the three areas for this semester and during your 5 years at UC.

Table 1: Goals

	Fall 2021 semester	5 Year
Career/academic	• Maintain a 4.00 GPA • Undergraduate Research • Join into clubs and organizations	• Keep maintain a 4.00 GPA • Publish a research paper • Be a leader in one of the organizations • Get ready to apply for graduate school
Self	• Improve Time Management Skills • Practice Meditation	• Become self-independent • Get the driver's license • Make my own food

	• Get Organized • Read books often • Eat healthy	• Know how to invest in the stock market effectively • Becoming a banking expert • Write a book
Relationship	• Make new friends • Keeping in touch with parents and close friends	• Building an extended network of friends. • Keeping in touch with parents and close friends.

Then for each goal in Table 1 write in Table 2 a few action items you can do this semester to help you work towards your goals. If they are important, you should be willing to include the time to complete the action items in your weekly schedule.

Table 2: Action items that you will work into your schedule this semester

	Fall 2021 semester
Career/academic	• Maintain a 4.00 GPA (Study 42 hours per week) • Start reading research papers (7 hours per week)
Self	• Meditation (Morning and Night: 30 minutes each per day) • Make a chart of healthy foods available at dining menus and try learning how to prepare healthy meal often (Learn how to cook in the weekends)
Relationship	• Call parents everyday morning and night • Have zoom calls with friends in the weekend

Note: If you think you need help in developing time management skills, the Learning Commons offers one on one help session (https://www.uc.edu/campus-life/learning-commons.html)

References

- Adams, R. V., & Blair, E. (2019). Impact of time management behaviors on undergraduate engineering students' performance. *SAGE Open*, *9*(1), 2158244018824506.
- Ch. 10 Nicomachean Ethics By Aristotle (Translated by J A Smith). (2020, March 12). Retrieved July 18, 2021, from https://human.libretexts.org/@go/page/47337
- Carpenter, D. D., Harding, T. S., Finelli, C. J., & Passow, H. J. (2004). Does academic dishonesty relate to unethical behavior in professional practice? An exploratory study. *Science and engineering ethics*, *10*(2), 311-324.
- National Society of Professional Engineers (July 2019). *Code of Ethics*. https://www.nspe.org/resources/ethics/code-ethics