FACC 100 Introduction to the Engineering Profession

Fall 2023

**Assignment 4 – Resolving an Ethical/Professional Dilemma in Engineering**

Assigned: Sep 22

**Due:** **Oct 27** (in-class peer review)

**Nov 3** (submission in Peerceptiv or Eduflow)

**Nov 17** (peer evaluations)

**Nov 24** (back and self evaluations)

**Overview**

In this assignment, you will have two roles: (1) author and (2) reviewer. As an ***author***, you will write a paper and receive feedback on it. You can use the feedback as you see fit to revise your paper and/or improve your writing for the future. You will also be able to respond to and rate the feedback that you receive (back evaluation). As a ***reviewer***, you will read papers that are assigned to you and score them in specific categories according to a pre-defined rubric.

**Objectives**

The objectives of this peer review assignment are three-fold: (1) to develop your critical thinking, analysis, and assessment skills (in your roles as an author and reviewer), (2) to learn how to provide useful and meaningful feedback to others (in your role as a reviewer), and (3) to learn how to accept and what to do with feedback and criticism from others (in your role as an author).

Note that you may, of course, disagree with some (or all) of the feedback from your peers. The feedback, though, is meant to help you improve your paper and/or future writing. As such, you may benefit by considering carefully the comments/feedback provided as there may be aspects of your written work that you may have overlooked. Ultimately, it is up to you to decide what aspects of the feedback you wish to address in revising your paper and/or in your future written work.

**Paper Topic**

You run EV+, a very successful engineering design firm that specializes in highly efficient and sustainable batteries and power supplies for a wide range of vehicular applications. In the past two years, business has boomed and the number of your clients has tripled. However, it has been difficult to fill engineering positions at EV+ due to the lack of qualified individuals (e.g., licensed professional engineers). As a result, you recently hired a number of junior engineers / engineers-in-training (EIT).

Because of all the work, you have fallen behind on the timetable/deliverables of a project from a major industrial player (Company A). As a result, you hand the project to one of the recently hired EIT. In a desperate bid to accelerate the design process, the EIT uses ChatGPT, an advanced generative artificial intelligence platform, to complete the complex design specifications. ChatGPT produces a design that seemingly satisfies all of the requirements and so the EIT submits the design to you. Due to lack of experience, the EIT fails to detect a design flaw. As you are pressed for time, you also fail to detect the design flaw. You then sign the design specifications and submit them to Company A. A short while later, Company A issues a joint press release with EV+ publicizing a new technology and how it promises to increase the lifetime and sustainability of batteries and power sources for vehicles, which in turn can lead to significant reductions in greenhouse gas emissions.

A few months after production on the design has begun, you review the design specifications and detect the design flaw. The design flaw will not lead to serious consequences (e.g., danger or risk to the public); however, it will not deliver on the lifetime and sustainability objectives promised. What do you do?

Do you remain silent about the flaw as there are no serious consequences (and perhaps, you can attribute the failure to meet the lifetime and sustainability objectives to an issue in production)?

Do you disclose the flaw to Company A? If so, do you further disclose having used ChatGPT and/or having the design specifications completed by an EIT?

Make use of ethical theories, the ethical decision-making process, and the 3 tests of an ethical decision in justifying your chosen course of action.

This is a reflective exercise and at the end of the assignment, I hope that you will have a better appreciation of how the different approaches (ethical theories and the 3 tests for an ethical decision) can help you in your decision-making when faced with an ethical/professional dilemma.

**Instructions**

Your paper must meet the following requirements:

* Be typed using 12 point font, single-spaced, with 1” (2.54 cm) borders.
* Not exceed 1 page.
* Be in .pdf format for electronic submission.
* **Not include your name or student ID anywhere on your document.**

To submit your paper, click on the Peerceptiv or Eduflow (Assignment 4) icon in the Table of Contents in myCourses.

**Tasks and Deadlines**

The table shows the different tasks and their submission deadlines. **Please note the deadlines carefully.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Role** | | **Submission Deadline** |
| **Task** | **Author** | **Reviewer** |
| **Phase 1 : in-class** | | | |
| **1\*** | Have an electronic version of the first draft of your paper ready. |  | Oct 27 |
| **2\*** |  | Evaluate one or two drafts and provide feedback to the authors. An evaluation form will be given in class. | Oct 27 |
| **Phase 2 : Peerceptiv/Eduflow on-line** | | | |
| **3** | Revise (as necessary) your paper according to the feedback and comments received during the in-class peer review exercise. Submit electronically the revised version of your paper. |  | Nov 3 (11:59 pm) |
| **4** |  | Evaluate the 5 papers that have been assigned to you for review using the scoring rubrics described below. Provide comments and justification for the scores that you give. | Nov 17 (11:59 pm) |
| **5** | Perform a self-evaluation and respond to and rate the feedback given to your paper (back evaluation). |  | Nov 24 (11:59 pm) |

**Assessment**

* Your grade will be based on the following components from Phase 2 (note that any grade you might see in Peerceptiv or Eduflow does not correspond to your actual assignment grade):

|  |  |
| --- | --- |
| **Component** | **Weight** |
| **Task score**  Completing all tasks of the assignment by the deadlines, including (1) submission of the paper, (2) reviewing papers assigned to you, (3) performing a self-evaluation, and (4) evaluating the reviews received after the review process (back evaluation). Simply completing the various tasks by their deadlines will earn you 55% of the grade.  **Late penalties**: You may submit your paper, complete your reviews, and/or complete the self-evaluation and back evaluation up to 24 hours past the submission deadlines indicated above without penalty. If you miss the deadline, you will need to contact me and a late penalty of 20% for each late task will be incurred.  **Important note**: If you do not submit a paper, you cannot complete any reviews and your overall assignment grade will be ‘0’. | 55% |
| **Submission score**  Quality of the paper: this will be based on a weighted score from 5 reviewers in the review process. | 30% |
| **Self-evaluation score**  Quality of your self-evaluation: this will be based on your response to the self-evaluation question. | 5% |
| **Feedback score**  Quality of your reviews: this will be based on the authors’ back evaluation of your reviews (i.e., the usefulness/helpfulness of your comments). | 10% |

**The peer review process is anonymous: you will not know who is reviewing your paper and the authors will not know you are their reviewer.**

* The following scoring rubric will be used (both for the in-class peer review as well as in Peerceptiv or Eduflow). You should consider these criteria carefully when writing your paper. All evaluation criteria are weighted equally. You will be asked to provide a comment or to justify your evaluation for each criteria.

|  |
| --- |
| **Presentation**  The overall presentation is professional and ‘publication-ready’, i.e., it is free of spelling mistakes; the document is well-formatted, e.g., in its use of paragraphs or subsections; the quality of writing is high; and the 1 page limit is respected.  0 – Strongly disagree (the paper is completely unprofessional in its presentation)  1 – Somewhat disagree (some of the presentation criteria are satisfied; however, there are major issues)  2 – Neither agree nor disagree (the paper generally meets most of the presentation criteria; however, there are a few minor issues)  3 – Somewhat agree (the paper satisfies the above presentation criteria, with a few minor issues, e.g., a few typos)  4 – Strongly agree |
| **Content:  action**  The paper describes in detail different solutions/actions that can be taken in view of the situation and recommends one clear plan of action.  0 – Strongly disagree (no solutions/actions nor a plan of action have been identified)  1 – Somewhat disagree (possible solutions/actions have been identified but are not described in detail; a clear plan of action is absent)  2 – Neither agree nor disagree (descriptions of possible solutions/actions and a plan of action are somewhat vague)  3 – Somewhat agree (possible solutions/actions and a plan of action have been identified but their overall descriptions need to be articulated more clearly)  4 – Strongly agree |
| **Content: justification**  The action(s) taken is (are) justified with reference to one or more of the following: (1) appropriate ethical theories, (2) 3-tests for an ethical decision, and (3) the 6-step process.  The justification is easy to follow and is presented in a logical manner.  0 – Strongly disagree (the action taken is not justified and is very difficult to follow, i.e., there is no flow to the justification)  1 – Somewhat disagree (the action taken is justified weakly with limited reference to ethical theories, the 3-tests, or the 6-step process; the justification is generally difficult to follow)  2 – Neither agree nor disagree (the justification for the action taken lacks in some detail and is sometimes hard to follow)  3 – Somewhat agree (the action taken is justified but lacks in some detail)  4 – Strongly agree |

* The self-evaluation allows you to consider and reflect on the feedback received from your peers. You will be asked to respond to the question ‘What would you change if you could redo this submission?’.
* The back evaluation is provided by the authors and reflects how good you (in your capacity as a reviewer) are at giving feedback. Your back evaluation (feedback score) is based on the reactions you receive. Each author will be asked to answer the following question:

*How useful is the feedback?*

* Not useful at all
* Not very useful
* Somewhat useful. Could be more elaborate.
* Very useful. Minor things could be better.
* Extremely useful.

Each author can also provide additional comments to the reviewer.

* As a reviewer, you must evaluate all 5 papers assigned to you. As an author, you must back evaluate all of your reviewers. You will only get full credit for the task completion score if you complete fully all assignment tasks.

**FAQs**

* *Why do I have to do a peer review exercise?*

Peer-review of writing is an instructional strategy used to develop students’ critical thinking skills, writing competence, and as a way of engaging students as active agents in their learning process. Learners consider and specify the level, value, or quality of a product or performance of other equal-status learners. Are you curious to know more about peer assessment? If so, please consult the following references:

John C. Bean, *Engaging ideas: The professor's guide to integrating writing, critical thinking, and active learning in the classroom*. John Wiley & Sons, 2011.

Nancy Falchikov, "The place of peers in learning and assessment." *Rethinking assessment in higher education: Learning for the longer term*. Edited by David Boud (2007): 128-143.

Keith J. Topping, "Peer assessment between students in colleges and universities." *Review of Educational Research* 68.3 (1998): 249-276.

* *What have previous FACC 100 students said about doing peer review?*
  + *I received some good constructive criticism on my paper, which helped me understand my writing a bit better.*
  + *I was able to see the level of work of my peers, and learn from their ideas.*
  + *The criticism I have received both as an author, and as a reviewer was extremely helpful as it pointed out the flaws in my essay and helpfulness of my comment on my peers' articles, respectively.*
  + *The subject of the assignment was interesting and required reflection. The feedback provided by peers was very helpful to improve my paper. Also, reviewing peer's papers made me discover solutions to the dilemma that I had not thought about.*
* *What happens if there is inconsistency in the feedback received?*

The entire process in Peerceptiv or Eduflow will be monitored by the TAs and the instructor. Large inconsistencies will be examined and outlier grades may be de-emphasized when determining your submission score.

* *What if I disagree with the feedback that I get?*

As mentioned in the Objectives, it is possible that you disagree with the feedback. However, the rating that you give to your reviewer **should not** reflect your level of agreement/disagreement with the feedback provided.