	American International University- Bangladesh (AIUB) **Faculty of Engineering**		
Course Name:	Engineering Ethics and Environmental Protection	**Course Code:**	EEE 2215
Semester:	Fall 2024-25	**Section:**	G
Item:	**CO3: Apply professional codes of ethics and standards for analyzing public safety and the impacts of engineering activity on economic, social, cultural and environmental sustainability. (P.h.1.C3)**		
Student Name:		**Student ID:**	
Student's Department:		**Serial:**	**Submission Date: 16.01.2025**

Rubric:

Category	Proficient [6]	Good [5]	Average [3-4]	Poor [2-1]	Secured Marks
Format of the code of conduct	An excellent explanation of issues with respect to many existing codes of ethics, IEEE, ACM, NSPE, IEB etc.	Followed code of conducts with linking to some of the IEEE, ACM, NSPE, IEB etc.	Followed code of conduct with some reference to the IEEE, ACM, NSPE, IEB etc.	Not followed any Code of conduct for example, IEEE, ACM, NSPE, IEB etc.	
Comprehension of the role of engineering in society (K7)	Comprehension of the role of engineering in society is stated clearly and described comprehensively, delivering relevant information necessary for full understanding.	Comprehension of the role of engineering in society is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Comprehension of the role of engineering in society is stated, but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined,	Comprehension of the role of engineering in society is stated without clarification or description.	
Issues in engineering practice (K7)	Issues in engineering practice is stated clearly and described comprehensively, delivering relevant information necessary for full understanding.	Issues in engineering practice is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issues in engineering practice is stated, but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined,	Issues in engineering practice is stated without clarification or description.	
Engineering responsibility to public safety and Environment (K7)	Engineering responsibility to public safety and environment is stated clearly and described comprehensively, delivering relevant information necessary for full understanding.	Engineering responsibility to public safety and environment is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Engineering responsibility to public safety and environment is stated, but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined,	Engineering responsibility to public safety and environment is stated without clarification or description.	
Importance of 'Sustainability' to social, cultural, economic development (K7)	Importance of 'Safety' to social, cultural, economic and sustainable development is stated clearly and described comprehensively, delivering relevant information necessary for full understanding.	Importance of 'Safety' to social, cultural, economic and sustainable development is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Importance of 'Safety' to social, cultural, economic and sustainable development is stated, but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined.	Importance of 'Safety' to social, cultural, economic and sustainable development is stated without clarification or description.	
		For complete Similarity with other (Negative Marking will be imposed)			
Comments:			**Total Marks (Out of 30):**		

An environmental engineer, referred to as Engineer A, employed within the state environmental protection division, receives instructions to draft a construction permit for a power plant to be built at a manufacturing facility. His superior emphasizes the need for prompt action on the permit, urging him to avoid encountering any technical obstacles. However, Engineer A holds the belief that the proposed plans are insufficient to comply with regulatory standards. He considers external scrubbers are essential to mitigate sulfur dioxide emissions, without which the permit issuance would breach certain air pollution regulations mandated by the 1990 Clean Air Act. Contrary to Engineer A's stance, his superior is confident that plans incorporating a fluidized boiler process involving limestone mixed with coal would adequately address the issue, removing up to 90% of the sulfur dioxide emissions, thus meeting regulatory requirements. Feeling a professional obligation, Engineer A reaches out to the state engineering registration board for guidance. Based on the information provided, the board warns him of potential consequences, including the suspension or revocation of his engineering license, if he were to proceed with issuing a permit that violates environmental regulations. Faced with this dilemma, Engineer A refuses to issue the permit and forwards his concerns and findings to his superior. Despite his objections, the department authorizes the issuance of the permit. The case had received widespread publicity in the news media and is currently being investigated by state authorities.

Based on the concept of Social and Environmental Ethics, identify, discuss, and analyze the following issues from the given case:

(a) What are the adverse effects of the issuance of the construction permit that affect the safety and welfare of the public and the environment from the above discussed case study? **(Hint: Indicate the Risk and safety issues from the above discussion about that affect the environmental safety and sustainability)**

(b) What are the social and environmental impacts of power plant waste on the sustainable development of a country's economy? (Hint: **Discuss the role of sustainable engineering techniques for power plant waste management [whether the plant is run by solid, liquid or gas fuel] for the development of society and ecosystem)**

(c) What are the ethical issues in the engineering practice of the above case study? **(Hint: Identify the violations of standard ethical practices in engineering of the case study**)

(d) What is the engineering responsibility in designing a sustainable recycling system ensuring public safety, which can be directly responsible for global warming? (Hint: **Evaluate the engineering responsibility to public safety and environment in the development of power plant waste management system [i.e. how do they can achieve that])**

(e) Discuss the importance of establishing a sustainable engineering waste management system to support the development of a country **(Hint: Discuss the importance of 'Engineering Safety' to social, economic and sustainable development)**

Instructions for submission:

1. Use this page as a cover page.

2. Handwritten answers will be accepted only until **16 January**.

3. **The submission will not be considered if the instructions are not followed and after 16 January.**