

5 Professionalism

This discussion is with respect to the paper titled “ Contextualizing Professionalism in Capstone Projects Using the IDEALS Professional Responsibility Assessment”, *International Journal of Engineering Education* Vol. 28, No. 2, pp. 416–424, 2012

5.1 AREAS OF RESPONSIBILITY

Pick one of IEEE, ACM, or SE code of ethics. Add a column to Table 1 from the paper corresponding to the society-specific code of ethics selected above. State how it addresses each of the areas of seven professional responsibilities in the table. Briefly describe each entry added to the table in your own words. How does the IEEE, ACM, or SE code of ethics differ from the NSPE version for each area?

Table 1: The seven areas of professional responsibility in the assessment instrument

Area of Responsibility	Definition	NSPE Canon
Work Competence	Perform work of high quality, integrity, timeliness, and professional competence.	Perform services only in areas of their competence; Avoid deceptive acts
Financial Responsibility	Deliver products and services of realizable value at reasonable costs	Act for each employer or client as faithful agents or trustees.
Communication Honesty	Report work truthfully without deception and understandable to stakeholders	Issue public statements only in an objective and truthful manner; Avoid deceptive acts
Health, Safety, Well-Being	Minimize risks to safety, health, and well-being of stakeholders	Hold paramount the safety, health, and welfare of the public
Property Ownership	Respect property, ideas, information of clients and others.	Act for each employer or client as faithful agents or trustees.
Sustainability	Protect the environment and natural resources locally and globally.	Hold paramount the safety, health, and welfare of the public
Social Responsibility	Produce products and services that benefit society and communities.	Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.

Area of Responsibility	ACM Code of Ethics
Work Competence	<p>1.3 Professionals must be honest about their qualifications and their technical competence, including any limitations.</p> <p>2.2 Professional competence includes both technical competence as well as soft skills such as communication, problem solving, and leadership.</p>
Financial Responsibility	<p>1.7 Professionals must protect confidentiality in all situations except those that are unethical or illegal. Examples of confidentiality include client data, financial information, patents, etc.</p>
Communication Honesty	<p>2.1 and 2.2 Professionals must be transparent in their communication within their organization as well as with the general public.</p>
Health, Safety, Well-Being	<p>1.1 and 3.3 Professionals should work towards minimizing any potential threats to the health, safety, privacy, and personal security of the general public, clients, and employees.</p>
Property Ownership	<p>1.2 and 1.5 Professionals must avoid any unnecessary or unjustified damage to any property or reputation. They also cannot claim private ownership of any body of work that is considered public or owned by another individual or organization.</p> <p>1.6 Professionals must avoid taking credit for clients and others' information and designs, even in cases where copy-right has not been protected.</p>
Sustainability	<p>1.1 Professionals must protect and promote environmental sustainability in all aspects of business and development. This should include both local sustainability as well as a global footprint.</p>
Social Responsibility	<p>3.2 Organizations affect broader society. Organizations through procedures oriented toward quality, transparency, and the welfare of society- reduce harm to the public. Leaders should encourage full participation of computing professionals in meeting social responsibilities. Discouraging tendencies do otherwise.</p> <p>3.1 Organizations should produce more towards</p>

	the quality and welfare of society, reduce the harm to individual of public, and encourage the participation in meeting those responsibility
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5.2 PROJECT SPECIFIC PROFESSIONAL RESPONSIBILITY AREAS

For each of the professional responsibility area in Table 1, discuss whether it applies in your project's professional context. Why yes or why not? How well is your team performing (High, Medium, Low, N/A) in each of the seven areas of professional responsibility, again in the context of your project. Justify.

Work Competence: It applies well to our project. The main goal of senior design is to prepare ourselves to be able to use the skills and knowledge we have gained at Iowa State and adapt them to be able to function in an engineering team. Work competence is a key professional responsibility of a high performing teammate. This semester we have been performing adequately but as next semester begins and each teammate takes on more high-stakes responsibilities, work competence will turn into a high demand responsibility area.

Financial Responsibility: It applies well to our project, we have a budget for the project and it should be spent carefully and strategically so it is not wasted. Our team is performing High in this aspect.

Communication Honesty: It applies well to our project, we have a lot of communication with our client and how things are progressing with respect to different milestones. Our team is performing High in this aspect.

Health, Safety, Well-Being: There is a loose application to our project. There is not a lot of risk involved with our project at its current stage, but ensuring we follow FAA regulations when flying the drones will be a priority when the time arises. Overall, our team is currently performing N/A on this aspect, and we hope to have a High rating when applicable.

Property Ownership: We have applications of this responsibility in our project. Respecting and noting resources for our research on drones as well as various software recommendations has been a part of our planning since the start of our project. Rating: High

Sustainability: There will be an application to our project in the future. Our project aims to test battery usage and flight time amongst other things, and getting accurate readings early on without repetitions will be our way of observing this responsibility. Currently N/A.

Social Responsibility: This responsibility plays a role in our project. We hope to help many different fields by making our project usable in general situations, and leaving it to the

specifications of our users. However, the specifics of actual integration haven't been strongly planned out yet. Current rating: Medium

5.3 MOST APPLICABLE PROFESSIONAL RESPONSIBILITY AREA

Identify one area of professional responsibility that is both important to your project, and for which your team has demonstrated a moderate or high level of proficiency in the context of your project. Briefly describe what this responsibility means to your project, the ways in which your team has demonstrated the responsibility in the project, and specific impacts to the project that you have observed

Work competence is important for our project and our group has demonstrated a high level of proficiency in it because our project is entirely based on the data that conducted research provides. We have had to conduct research on drones, simulation frameworks, and algorithms in order to satisfy the requirements and goals of our projects. Without conducting the research for these topics our project goal would be meaningless, without research we would not have a data backed way to improve drone battery life with regard to system efficiency. We will also have had to conduct the research in a timely manner due to the second semester being the beginning of production for the simulation application.