Essay #1: New Trends

ABET Goals
- **An ability to analyze the local and global impact of computing on individuals, organizations, and society**
- **Recognition of the need for and an ability to engage in continuing professional development**

In many of the courses you have taken during your study you will recall that the instructor took pains to discuss the impact of computing in the world, with examples, case studies and exercises. It is little exaggeration to say that computing may be the defining technology of our time, and that we are (still) living in the information age.

Likewise, in many of the courses you have taken during your study you will recall that the instructor emphasized the need to engage in continuing professional development for the rest of your professional career. As computer science and computer engineering are constantly evolving, computing professionals are faced with the need to keep abreast of new tools, techniques, trends, technologies, law and regulations etc.

In this exercise we would like you practice and demonstrate what you have learned from the above. Consider a recent:

- **Product**: Google Glass, Nao robot, Lytro (light field camera), consumer-priced drone aircraft, bendable devices, wearable tech devices, self-driving cars, personal hoverboards, Mars Curiosity robot, ...

- **Practice**: sponsored content for cellular data, cloud computing, NFC and mobile payments, voice control for mobile devices, HTML5, multi-core CPUs, platform as a service (PaaS), infrastructure as a service (IaaS), Big Data, crowdsourcing, universities moving to massive open online courses (MOOC), ...

- **Event**: The Arab Spring (widely acknowledged to have been facilitated by social media), the 2012 Presidential election (it is believed that Big Data/Data mining provided an advantage), widely publicized incidences of cyberbullying that lead to suicides of young teens, ...

Now consider some of the professional organizations in computing/engineering, including: ACM - Association for Computing Machinery, IEEE - Institute of Electrical and Electronics Engineers, ISACA - Information Systems Audit and Control Association, NASCE - National Association of Communication Systems Engineers, Institute for Women and Technology, CPSR - Computer Professionals for Social Responsibility (this is only a small representative list).

Take *any* product, practice or event (PPE) in computing/computer engineering that interests you (it does not have to be from the list above), and write a 1,000 word essay it. In particular, consider the role that a professional organization has taken (or, in your view, *should take*) in reference to the product, practice or event. You essay should have some element of advocacy. That is to say you

should argue for or against some trend with your chosen PPE, or argue that some PPE is good or bad for everyone/people in developing communities/the taxpayer/animal rights/the disabled etc.

Hand In: An essay, with six or more cited sources, on the topic(s) discussed above. You may want to run your idea by the instructor before you begin your research. Your topic may be closely tied to your project, or totally independent.

Due Date: Feb. 15, 2018 at 11:59pm

	Poor-1	2	3	Excellent-4
Awareness of global effects of the PPE etc.	Seems to have considered only effects on immediate users;	Some awareness of the more extended effects of the PPE;	Good understanding of the widespread effects of the PPE but with somewhat limited perspective about long-term factors;	Deep understanding of the immediate and long-term issues involving the PPE on users and non-users locally and globally.
Understanding of economic factors	Little or no understanding of economic factors involved in the creation and/or use of the PPE;	Some understanding of these economic factors as applied to this PPE;	Good understanding economic factors as applied to this PPE and how it affects other related PPE's etc.	Deep understanding of economic factors applied to this and related products and the impact they may have on the economy at large as well as long term trends.
Awareness of implications to society at large	Little or no understanding of (or interest in?) implications to society involved in the creation and/or use of the PPE;	Moderate understanding of the implications to society in the creation and/or use of the PPE;	Good understanding of the implications to society in the creation and/or use of the PPE, as well as its relation to general societal issues;	Deep understanding of the immediate and longterm implications to society in the creation and/or use of the PPE, and the overall potential benefits and risks to society.
Awareness of (other) contemporary issues (political, cultural, ...)	Little or no understanding of (or interest in?) contemporary issues directly related to the creation and/or use of the PPE;	Moderate understanding of the main relevant contemporary issues directly related to the creation and/or use of the PPE;	Good understanding of all the relevant contemporary issues directly related to the creation and/or use of the PPE;	Deep understanding of all the relevant contemporary issues related to the creation and/or use of the PPE, as well as of issues that may be only tangetially related; good analysis of all these issues and how they might impact the general acceptance of the PPE and how this might affect the future development of similar PPE's.
Understanding of ethical and professional issues	Little or no understanding of professional/ethical issues even where there are serious questions involved;	Some consideration of professional, ethical issues raised directly by the PPE;	Good understanding of all the essential issues related to the PPE; reasonable analysis of the relevant issues;	Deep understanding of the professional issues involved and the ethical implications of the PPE; careful, convincing analysis of all relevant factors.
Presentation of ideas and organization of the paper	Bland presentation; sequencing and pace of topics seems random; doesn't lead up to any clear conclusions;	Some of the ideas are presented well; others are lacking; offers plausible conclusion(s);	Ideas are well organized and help the reader move along; the key points are presented but does not demonstrate in-depth understanding; leads up to convincing conclusion(s);	The paper is clear and focused; relevant, quality details give the reader important information; helps the reader develop *insight* into the topic.
Style	Occasional problems with word choices and sentence structure, leaving the reader unsure of the meaning; often resorts to jargon/cliches;	Words and sentences are adequate in general but lack energy; reader has to struggle to keep reading to the end;	Good writing style; sentences flow smoothly and evenly;	Compelling writing style; connects strongly with the reader and keeps him or her engaged right to the end.