Blake Johnson
9663980

Essay #1
Prompt # 2
Choice A
760 words

Engineers should not be required as professionals to inject political and social concerns into their work. Many believe that it is the individual engineer's responsibility to take into account political and social issues when designing products. However, it is the company which must be held accountable, and policy changes should come from the company down to the engineers, without engineers taking matters into their own hands, as changing designs at the whim of only one or two individuals can have unforeseen consequences that a larger group of engineers might think through. Engineers have not been trained to consider all social aspects when making design decisions and therefore might not be prepared to take political and social change into their own hands. The company should take care of ethical dilemmas and hire people who are experts on making good, moral decisions, and pass the specifications to the engineers for design. If there is a disaster, the company and governmental regulators should ultimately be responsible, not the individual engineer.

In the World Trade Center attack, the lead engineer should not be held responsible for the lives of the innocent victims and the heroes who tried to save them. Instead, the lack of security screening at the time was a governmental shortcoming, as it was not the engineer's or their company's responsibility to make sure no terrorists ever commandeered a plane. However, the company did not set the design specifications to include a fire in the event of a plane crash. This overlooked aspect of the design is what led to the collapse of the trade center towers. Because the fire-resistant coating on the steel was blown off, the steel beams were directly subjected to non-uniform heat (NOVA Documentary). This caused a loss of strength and distortion of the steel and angle clips, which lead to the collapse of the towers in an almost free fall of 200km/h (Eager and Musso 4, 5). In addition to the major shortcomings of the government, the engineers were not responsible for this, because they could not anticipate this amount of fuel for the fire. This was not a normal situation where there would be mostly office supplies, furniture, and computers burning. Instead there was plenty of fuel from the planes to keep the fire going. This situation could not be anticipated by engineers, and they should not be held responsible for not anticipating future foreign threats against the united states.

Similarly, when considering the topic of E-Waste, the government and the companies that create electronics should be held accountable for the waste that is created when electronics are disposed of, and not the engineers that designed the electronics. This is because an engineer is not trained on the disposal practices of society, or the political aspects and pressures that come into play in cleanly and securely disposing of electronic waste. The process of designing should be encapsulated in the company, and the process of handling waste should be abstracted and left in the hands of government employees and company experts that specialize in E-Waste, leaving the engineers to specialize in their designs. The other factor to

take into consideration is theft of information from E-Waste. In 2010, 290,000 tons of hard drives were thrown away (Electronics TakeBack Coalition 2). These hard disks can retain information about the previous owner and help malicious adversaries perform more successful attacks on individuals and corporations. To reiterate that an engineer should not be held accountable for this situation is that an engineer does not have control over where individuals throw away their used electronics. However, the company and the government can have an impact on these issues. Processes and resources can be put into place to help individuals dispose of their waste properly and educate individuals about digital information theft and how to protect themselves as best as possible.

Clearly, there are strides that need to be made on many fronts to combat the current social and political issues of today. However, these changes need to be made by the government and companies, and when issues arise as a result of poor governmental and company planning, engineers should not be made into scapegoats. When dealing with issues like E-Waste, the government should educate people on the dangers of data theft and how to dispose of their waste properly. Companies should understand their carbon footprint and try to reduce it, while also helping educate the public on the dangers of data theft and proper disposal of E-Waste. This will leave the engineers to do what they are trained to do.

Essay #2
1261 words

When considering a perfect credo upon which to build my ethical code, I was confronted with a few dilemmas. I wanted to make my code as fair as possible to all parties involved, while still assuring the health, safety, and rights of the underprivileged and underrepresented. In today's world, there are a lot of factors in politics that are trying to give companies more freedom to operate as they choose, and to suppress the voices of the individuals. This comes in the form of tax breaks, lobbying, and corporate media influences. To combat these unfair pressures, I have developed a credo and corresponding code of ethics to guide engineers in their work, so that individuals and the environment are protected. My code of ethics also protects individual engineers, as I believe the company that employs the engineers should be more responsible for ethical failures than the engineers. Companies also have more resources to combat bigger issues than individuals, and therefore they have a responsibility to do the right thing, in terms of society, the environment, and their employees.

I believe in a pragmatic approach to ethics, and whatever is most practical should be followed. I also believe the government has a duty to keep companies and individuals within societally agreed upon values and make sure the underrepresented and underprivileged do not have their voices silenced. The government should act as a facilitating presence between those pushing the envelope in terms of design and those who must suffer the environmental, social, health, and/or monetary impacts of these designs. This will allow engineers to complete their best work, without worrying about their impact upon the world, knowing there are checks in place to prevent the harsh side effects of their work. However, where the government does not do any regulating, I believe engineers should prioritize their actions so as to preserve the environment, and the physical and mental health of individuals around the entire world, not just in their immediate proximity. To protect the environment, I will always assess how the products I design and create will give off waste, alter the environment, displace species, or compromise ecosystems before releasing them to their intended users. To protect the physical health of individuals all over the world, I will determine the physical impact my designs have on the air we breathe, the food we eat. For example, when studying E-Waste in class, we were shown an E-waste scavenger-like area where people were inhaling fumes from electronic components in order to recycle the copper (Frontline World: Digital Dumping Ground 5:06). This clip demonstrates how the economic pressures of the world and companies who put profit over individuals' well-being created an extremely toxic environment for the people living there. This toxic environment also has a harsh environmental impact. Burning electronics releases toxins in the air, increases greenhouse gases, and contributes to unnatural climate change and global warming. In addition to protecting the environment, I will make sure there are minimal physical risks to using my products, and if there are physical risks, I will make sure there are abundant warning signs so that the individual fully understands what they are getting into. This strategy is already being implemented in some products. Some companies, such as Whole Foods, are setting goals to make sure all foods containing GMOs will be labelled by 2018 (Sorensen 3). This will warn the customers about what they are buying and eating and put the

freedom to make an informed choice back in the hands of the consumers. To protect the mental health of individuals around the world, I will test my products to make sure the products I create do not alter the chemical makeup individuals' brains. I will test for addictive tendencies my products bring out in individuals, and make sure that my products do not offend or depress individuals when they are using them, or when they are a bystander of someone else using them. My code of ethics easily adapts to almost any situation.

When my company's video game causes negative impacts on young individuals in my community due to adult themes such as violence, I can use my code of ethics to defend my company. Applying my code of ethics to this situation, I must first determine if there are any government regulations to monitor the release of violent video games and prevention of their use by minors. This will determine how I go about the situation. If there are government regulations, then I must direct the listeners at my press conference to the rules and guidelines that society has put on violent video games, and that the company was working within the bounds set for it by the government. Whether the government enforced their own legislation is something that is out of the control of the company and individual engineers. If there are no guidelines set, then I must go to the second part of my credo, where I must assess the environmental, social, physical, and mental impacts of the video game on young individuals. The environmental impact of the video game would be an increased electricity usage when the young individuals power their devices that run the video game. The societal and mental impact of the violent video game are tightly intertwined. The mental impact this game has on individuals is that the game desensitizes children to violence and makes violence more widely accepted as a possible solution to confrontations. In my experience, these violent video games can often be addictive, which would make individuals put aside healthy things in their lives in lieu of playing the video game. These things include socializing and other normal thought-provoking activities for kids like puzzles and reading books and thinking about the world. The impact on society is that young kids will possibly transfer this violence and aggression to the real world. The other impact of violent video games is the physical impact. Individuals become addicted and do not exercise and eat healthy, making their bodies suffer as a result. Due to the many downsides, I would recommend that young children do not play this game, and that the young children are not the target audience. To make this information widely known to parents, I would tell the press conference that the company was planning on printing new advisory labels on the game to ensure that buyers are well informed. One weakness of this argument is that critics of the game might say that the video game is bound to end up in the hands of small children regardless of whether they are the intended audience. To refute this, I think there must be some sort of practical, parental responsibility to watch over the children, similarly to how a parent should not allow their children to play with chemicals that say to 'keep out of reach of children'. This application of my pragmatic code of ethics takes many factors into account and covers most scenarios.

The backbone of my code of ethics is described by the role of a regulatory body, and how that body assumes the responsibility of making sure engineers and companies create reasonably moral products as well as informing consumers and individuals of the possible side effects and downsides of the use of these products. When this regulatory body is not present however, the responsibility of notifying the consumer and considering the effects of the product on individuals' mental and physical health, the environment, and society falls upon the

company and the engineers of that company to make practical, safe, and properly thought out solutions.