

Engineering design

Profession



1. Engineering design generally involves five steps : developing a statement of the problem and/or a set of specifications, gathering information pertinent to the problem, designing several alternatives that meet the specifications, analyzing the alternatives and selecting the best one, and testing and implementing the best design. Discuss how is ethical problem solving shares similar attributes with engineering design. Ethical problem solving shares similar attributes with engineering design. Both type of problems require a large body of knowledge and analytical skills. They are complex, often ill defined; resolving them involves an iterative process of analysis and synthesis; and there can be more than one acceptable solution. The similarities between moral problems and engineering design problems are instructive for thinking about the resolution of moral problems and correcting some common fallacies about them. Ethical problems that call both for solving and for coping have their counterpart in design problems, although good ways of coping count as " solutions" in the case of design problems. For example, design of a system of drainage ditches to cope with (that is, to prevent damage from) periodic flooding of a nearby river counts as solving the problem of how to cope with periodic flooding, although the drainage ditches do not keep the river from flooding. Design problems are problems of making or repairing things and processes to satisfy wants and needs. The analogy with moral problems holds for a variety of design problems, from designing or repairing a book-shelf to devising a rotating work schedule, to designing or redesigning an experiment. Both ethics and engineering design problem appreciates the importance of practical as well as theoretical problems and of synthetic as well as analytic reasoning and possible answers to them. 2. Mr. Jason Jomo is a final year engineering student doing a project <https://assignbuster.com/engineering-design/>

management project. His work involves designing an earthen dam for a client in Sarawak. In discussions with his professor and the client, the client says that he has no intention of obtaining the proper permits for this dam. It is out in the jungle, he argues, and nobody would care. But the dam is upstream from a small community, and if it should burst, it could cause substantial damage and possibly loss of life. The professor shrugs off Mr. Jomo's concerns, saying that they are just helping the client with the dam and are not really in responsible charge. Mr. Jomo is not even a graduate engineer, much less a registered professional engineer. Does he have a duty to society to do something about what he perceives to be clearly illegal and unethical behavior? Every person is individually responsible for the ethical or unethical; decision & action that he or she takes. As for Mr. Jomo, taking an unethical decision cannot be an impersonal activity as it involves the person's individual and unique value system along with his moral standard. He cannot escape his personal liability for his crimes by saying that he was forced by other people. He should know that if his decisions is to do something about what he perceives to be clearly illegal and unethical behavior , it may affect the lives of thousands people. As a future engineer, ethical behavior contributes to Mr. Jomo's image of corrections as a profession. Unethical behavior by him impacts a facility very negatively. People perceive his purpose to build dam to be honest and beneficial to the society. If he does something illegal and unethical, it reduces public confidence in his ability as an engineer to protect society. People also trust him to carry out his duties in an ethical manner. When he act unethically, the faith and trust that society place in him may lessen.