

## Code of Ethics

### *IPRO 321: Enhancing the Reliability and Performance of Paper Shredders*

#### **Overarching Standard**

The standard for this project is that we are in an informal contract with the sponsor. The team is expected to research, test, and provide accurate results and ideas to solve the sponsor's objectives. It is expected that the team will do the appropriate amount of work, testing, and designing to meet the desires of the sponsor by assisting in producing a better performing shredder and that all results are backed up with reliable testing. The team will research all trade names and copyrighted materials, through patents and intellectual property laws that regard to the project in anyway. It is expected that the team will uphold all ethical issues that are expected of any industry working in the production of paper shredders.

#### **Ethical Issues**

- 1) Ownership of ideas: do ideas developed in this IPRO belong to the IPRO sponsor or IIT
  - There is pressure from the sponsor that the ideas belong to their company because they are putting the money into the project and providing IIT with a project
  - There is also pressure that the sponsor needs to be kept happy so they will keep the IPRO at IIT.
  - The risk involved in this issue is that if IIT does claim the ideas as theirs, the sponsor may discontinue the IPRO
  
- 2) It is expected that all team members will keep professional relationship. Developing personal relationships while working on the project can cause ethical issues.
  - Since we are all peers there is pressure from everyone in the group to get along and be friends. It's easy to create personal relationship when a group works on a project for an extended period of time.
  - One risk with personal relationships is that if you feel strongly toward someone, you may not see that they are taking advantage of the relationship by doing less work knowing that you will step up and not get angry because you are "friends".
  - Another risk in personal relationships is that the team may be less critical of each other, ignoring mistakes or members not doing their work in fear of hurting their personal relationship.
  
- 3) The team is expected to present their results and not use reverse engineering and patent violation.
  - When attempting to solve an engineering dilemma, pressure may cause you to be tempted to reverse engineer or outright copy the solutions used by others in order present results.

- When a competitor comes to market with a superior product to your own, pressure may cause you to be tempted to copy the design to present results.
- The risk involved is that copying the designs and methods of other companies can sometimes result in the violation of various laws as well as patent rights.

4) The team is expected to do an in depth research of all options that can be used to solve the objectives they have been presented with. If they were to not fully research, this may cause information that is not up to date to be used which may cause inaccuracies.

- There is pressure to provide some form of results to the sponsor to keep him involved in the IPRO program.
- There is pressure to show the IPRO office by the time the desired deliverables are due that work is being done on the project in order to get the grades that all the students desire.
- The risk of this is that the team may be more concerned with their individual grades and meeting the requirements of the IPRO office and therefore either inaccurately report on data or lie about the amount of work or effort that they have put into the project.

5) The team is expected to uphold margins of safety in the design of the paper shredder. Other objectives should not exceed the importance of the safety of the machine.

- There may be pressure to reduce the intensive testing needed in order to produce results sooner
- There may be pressure to use lesser quality materials in order to reduce the price of the paper shredder.
- The risk of not upholding the margins of safety is that the public could be endangered by the product, or the project may not meet safety requirements, and that the device can not be sold.

6) It is understood that the software that the team is using to perform the data testing has been obtained in the proper manner and not downloaded from the internet or obtained in any other unethical manner.

- There may be pressure to get the software to perform tests; however, the money isn't there to purchase the software. This may cause the team to decide to download the software and not purchase it.
- Another pressure of not being able to afford the software to run the tests would be to steal another group or company's research material, as to skip running the tests and to move on using fraudulent data.
- One of the risks of using another company or group's data is that the research data may not fit the designs of the team, and then be inaccurate for use in calculations and designs. Also, taking this data could be seen as stealing and legal action could be taken.

7) Finally one of the characteristics of professional behavior shows that the team must be willing to request assistance and welcome scrutiny in order to provide the sponsor with results that contain correct information. This team will use all of the resources that are available to get accurate results and welcome criticism in aspects that may be incorrect.

- A pressure that may cause a team to not accept assistance is the fear that they aren't doing their own work. The team feels that they must get the results on their own and even if they are stuck, they refuse to request assistance to move along in the project.
- A pressure that may cause the team to not accept scrutiny is that nobody likes to be told that they are wrong. The team wants to show the sponsor and the IPRO office that they are able to do this work on their own so they get full credit for what they do.
- The risk of not bringing in others to assist is that nobody on the team is an expert in every field. There are going to be problems that come up that the team may not know the complete answer to. If they don't ask for assistance, they will either have wrong information or the project won't continue. Also, if they don't expect scrutiny, the final result of the project may not solve the objectives that the sponsor was looking for.