

Code of Ethics

IPRO 344: Improving Energy-Efficiency and Offering Quality Audio in Mobile Devices Spring 2008

I. Overarching Standard

Improving energy-efficient audio circuits for mobile device applications and building a working model to demonstrate methods for improved efficiency.

II. Canons

A. Law

The IPRO team shall strive to uphold the law in all design practices and all business transactions with suppliers. Local and state laws, as well as IEEE standards and regulations in experimentation and proposed implementation, shall be held in the highest regard.

1. Pressure

Build an energy-efficient circuit at low cost.

2. Risks

a. In designing the circuit, disregarding IEEE regulations concerning electro-magnetic interference in exchange for energy-efficiency.

b. Using unlicensed software to design and simulate circuit.

3. Measures

Informing the team members about the right practices and encouraging them to use techniques that are in accordance with

the law. Seeking out instructor help with help with IEEE codes is required.

B. Contracts

The IPRO team shall uphold all contracts and will honor the terms of the agreement between McDonalds Corporation and the IPRO team.

4. Pressure

- a. Using disclosed information or equipment for unauthorized purposes.

5. Risks

- a. Leaking out of McDonald's technology and providing it to others who might be interested
- b. Using McDonald's equipment for personal use.

6. Measure

To constantly notify team members that particular information is not to be divulged. Also, keep a record of the equipment and a signup sheet for when people use the lab, so that no losses take place.

C. Professional Codes

IPRO team members shall adhere to the codes of ethics established by the Institute of Electrical and Electronics Engineers¹ (IEEE) and National Society of Professional Engineers² (NSPE). All duties will be completed with competence and honesty.

7. Pressure

- a. Quickly analyze, conduct research and implement optimization solutions for McDonald's drive through system.
- b. Design a highly efficient audio circuit that provides sufficient amplification for low power devices.

- c. Conduct large amounts of testing and perform modifications to enhance quality of circuit and make it more efficient.

8. Risk

- a. Not giving “full disclosure of pertinent limitations” by exaggerating the capabilities of the product, thus violating the IEEE Code of Ethics.
- b. Individuals using new techniques for improved energy efficiency developed by the IPRO team for personal profit, rather than abstaining to the IPRO office. Thus violating the NSPE’s code to “act for each employer or client as faithful agents or trustees.”
- c. Insufficient testing that might lead to a failure later.
- d. Assigning tasks that to a team member who is incapable of completing it competently due to a lack of the knowledge base required to do so.

9. Measures

The setting realistic short term and long term goals is important. A large amount of time must be left for testing. Also, creating sub-teams and assigning roles that matches with the individual’s competency. The team must also be informed about correct practices with regard to IEEE/NSPE code of ethics.

D. Industry Standards

- i. In designing energy-efficient audio circuits, the IPRO team will follow guidelines set by the IEEE on power consumption and improving efficiency in microelectronic audio circuits.
- ii. In design and construction of products, the IPRO team will make certain that safety standards are adhered to in order that no injuries befall and no damage be done to persons or property.

- iii. Strive for full documentation and disclosure of all nonproprietary techniques and technology. Be aware of and follow industry standards for amplification.

10. Pressures

- a. Lack of time due to the nature of the objectives and foreseeable delays with procurement and in obtaining a McDonald's system. Also a disregard for documentation and it being deemed unnecessary.

11. Risks

- a. Using methods to increase energy-efficiency at the expense of decreasing electrical safety.
- b. Increasing energy-efficiency using methods that decrease quality of output signal.
- c. Lack of documentation to depict any new technique that is used for example dynamic power supplies for low power devices.

12. Measures

No 'quick-and-easy' techniques for building the circuits will be used. Each modification will be documented for future use and also to backtrack if need be. We will adequately test for power consumption as well as things like signal to noise ratio to determine how an increase in efficiency affects the quality of sound and vice versa.

E. Community

The IPRO team will follow the model set by the academic community, particularly in proper reporting of all transactions and progress.

13. Pressure

- a. To meet all deadlines set by the IPRO office for reporting.

14. Risk

- a. In rushing to complete the midterm report and presentation on time, the team does not report specific enough information on progress and future plans. This prohibits the IPRO office from giving relevant feedback to the IPRO team.
- b. In order to meet the deadline for the final reports at the end of the semester, members of the IPRO team are required to cut corners by unnecessarily extracting, possibly as a form of plagiarism, from past IPRO reports or other sources.

15. Measures

Communication with the IPRO Office is encouraged. Moreover, the instructor will act as a link between our team and the office, and will informally notify them about our developments. Formally, we have to complete all requirements in a timely fashion and distribute tasks equally so that plagiarism is not warranted due to delays in the end.

F. Personal Relations

Each member shall be sincere, respectful, and fair in all interactions with other members and leadership of the team.

16. Pressures

- a. To complete a thorough and meaningful project that one can be proud of at the end of the semester.

17. Risks

- a. Criticizing other team members in an unconstructive way when their tasks aren't being completed.

- b. Team members working for their personal gains instead of working in accordance with the best approach for the team.
- c. Delegating an unfair portion of the design, construction, or testing of the circuit to one individual.
- d. Expecting a member of the team to complete a task that that member is not capable of doing.

18. Measures

Keep regular meeting minutes so that members are apprised of the developments in the class. Encourage the use of timesheets so that all members know how much they have contributed to the team. Strongly deal with any offensive remarks between any team members, but do encourage dialogue. Also, team members must make an effort to communicate issues in a timely fashion and assertively, but with respect.

G. Moral (and Spiritual) Values

All team members shall respect moral, spiritual, and religious values of their fellow team members.

19. Pressure

- a. Find a meeting time that all members can meet to research microelectronic circuits.

20. Risks

- a. People being distanced from the team because of their inability to meet outside of class due to religious or other constraints.
- b. Asking a team member to perform a function that goes against their moral beliefs.

21. Measures

All team members have to make their personal beliefs clear when they think any action individually assigned to them or the team, conflicts with them. An alternate course of action must be followed in such a situation.

III. Works Cited

A. ¹ IEEE Code of Ethics.

http://www.ieee.org/web/membership/ethics/code_ethics.html

B. ² NSPE Code of Ethics for Engineers.

<http://www.nspe.org/ethics/eh1-code.asp>