

## Teaching Tips Column: Resources for Teaching Ethics and Computing

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### Abstract

The National Science Foundation's Undergraduate Faculty Enhancement program sponsored two workshops devoted to developing resource materials that could be used in teaching ethics and computing. Participants in the workshops were faculty who teach in undergraduate Information Systems, Computer Science, or Computer Engineering programs. The teaching resources developed through the workshops are available to faculty through a web site <http://marathon.csee.usf.edu/~kwb/nsf-ufe/>. The web site contains over 50 model class exercises, reviews of videos that might be used in teaching, and additional resources.

**Keywords:** Ethics and computing, teaching resources, model exercises.

### 1. INTRODUCTION

Workshops on "Teaching Ethics and Computing" were held in the summers of 1998 and 1999, sponsored by the National Science Foundation. Approximately twenty faculty members from around the country attended each workshop. Each faculty member developed at least one model exercise for use in teaching ethics and computing. Some model exercises are meant primarily for use in a stand-alone ethics and computing course, but others could readily be used for an ethics-related module in courses such as software engineering, databases, networks or other courses. Many of the exercise write-ups were later modified based on use in the classroom. A web site resulting from the NSF grant contains the collection of model exercises plus additional resources. This column gives an overview of the resources currently on the site. Faculty members are encouraged to make use of these resources in their teaching, and to contribute additional resources to the site. In this regard, it is useful to quote from the Acknowledgement and Copyright Notice section of the opening web page – "Authors of the individual; exercises, reviews, and other materials retain the copyright to their works. These materials are available free of charge for educational use, with proper acknowledgement. If you use materials from this web site, please credit the original author and the support of NSF grant DUE 9752792."

### 2. MODEL EXERCISES

The web site currently contains write-ups for over 50 model exercises, divided into the following categories:

1. Fraud / Unfair Business Dealings (5 exercises),
2. Freedom of Speech (5 exercises),
3. Cracking / Security (5 exercises),
4. Intellectual Property (9 exercises),
5. Privacy / SPAM (7 exercises),
6. Safety-Critical Systems (4 exercises),
7. Whistle-Blowing (5 exercises),
8. Discrimination / Harassment / Workplace Issues (7),
9. Professional Responsibility / Liability (3 exercises),
10. Critical Thinking (1 exercise), and
11. Other Topics (2 exercises).

The distribution of topics reflects to a large degree the collective interests of the workshop participants, as they were given broad latitude in selecting a topic. To give an idea of what is available, here are short overviews of several of the model exercises.

An example of an exercise in the Intellectual Property area is the one titled "Software Piracy Perspectives," developed by Cindy

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Meyer Hanchey of Oklahoma Baptist University. This exercise involves a reading assignment, a questionnaire, research assignment, class discussion, video, and a worksheet. It is estimated to require one 75-minute class plus two to three hours of out-of-class time for the students. The video used is the "It Could Have Been So Easy" video distributed by the SIIA ([www.siiia.net](http://www.siiia.net)). The exercise should give students a good working knowledge of laws related to software intellectual property.

An example in the Privacy area is titled "Misuse of Government Databases," developed by Mary Jane Peters of Jacksonville State University. This exercise requires the students to do one to two hours of out-of-class work looking up articles, web sites, and laws, and to complete a worksheet. The in-class discussion might then take from 30 minutes to one full class. The students should develop an understanding of the types and amounts of data that might be accessed through government databases, and an understanding of some of the laws in this area.

An example in the area of Workplace Issues is "Sexual Harassment / E-Mail Fraud," developed by Nancy Greenwood of St Charles County Community College. This exercise requires one to two hours for students to complete reading, analysis, and a worksheet outside of class, and then could take up one class with discussion. A short summary paper could be required of students after the class discussion. One case considered in this assignment involves Oracle CEO Larry Ellison. Apparently, he had dated an Oracle employee, and when the relationship ended she falsified an email that was used in her court case alleging sexual harassment. Student will become familiar with what constitutes sexual harassment, wrongful termination, and other issues.

An example of an exercise in the area of Cracking and Security is the one titled "Distinguishing Between Cracking and Hacking," developed by Paul Tymann of the Rochester Institute of Technology. This exercise would require about two hours of work before class, to complete readings and worksheets, and then one class period for discussion. Students would become aware of the history of the term "hacking" and of the increasingly-observed distinction between the terms "cracking" and "hacking."

An example in the area of Freedom of Speech is titled "Author Butz's Holocaust Denial Web Site," developed by Gove Effinger of Skidmore College. This exercise would require 15 to 30 minutes of work prior to class, for reading, viewing the web site and complete a worksheet, and then one class for discussion. The discussion might incorporate the use of any of several videos mentioned in the exercise write-up and on the web site.

This is only an overview of less than 1/10-th of the model exercises, but it should illustrate the range of topics available and the style of class activity supported. Also, clearly, some topics require additional skill and care on the part of the instructor in order to be handled successfully. For example, there is potential for emotion-charged discussion in connection with the topics of sexual harassment and freedom of speech. However, we do our students a disservice if we send them into the world without a working knowledge of what constitutes sexual harassment or without an exposure to the "cost" side of our right to freedom of

speech. One benefit of these model exercises is that they should point out a possible way to covering such topics successfully.

### 3. VIDEO REVIEWS

The web site also contains reviews of sixteen videos that might be considered for use in teaching ethics and computing:

1. Reliability and Risk: Computers and Nuclear War
2. Star Wars: Can the Computing Requirements Be Met?
3. The Story Behind the Space Shuttle Challenger Disaster
4. Fighting Fraud: Citizen Action and the Qui Tam Remedy
5. A Shared Set of Values
6. Copyright and Freedom of Expression
7. Don't Copy That Floppy
8. It Could Have Been So Easy
9. The Constitution in Cyberspace
10. The Creeping Propertization of Information
11. The Internet: Cyber-Hate and Freedom of Speech
12. Hi-Tech Hate
13. Hate and the Internet
14. The KGB, the Computer, and Me
15. Unauthorized Access: Technological Crime
16. Fair Play: Achieving Gender Equity

Some of these are highly recommended, while others have aged to the point where they may be obsolete (for example, the one on the constitution in cyberspace). Several are available free, while others are rather expensive. The cost and possible use of the videos are covered in the reviews on the web page. The videos "Fighting Fraud" and "It Could Have Been So Easy" are ones that are available free or at minimal cost and are highly recommended. The three-video package on the Challenger disaster is rather expensive, but is very effective. We use it in each offering of the ethics and computing course here in the Computer Science and Engineering Department at the University of South Florida. The video "Hate and the Internet" is an ABC News Nightline episode dealing with hate speech on the internet. It is available for under \$100, and may be available cheaper from ABC News.

### 4. SUMMARY

The model exercises and the video reviews constitute the majority of the resources stemming from the Workshops on Teaching Ethics and Computing. However, there are a few other resources on the web page. One that may be worth mentioning is the power-point file that can be used to lead a discussion and analysis of the case of the Harvard dean who was found to have kept pornography on his PC.

The resources available on this web site should be broadly useful to faculty members teaching in an Information Systems curriculum, both in stand-alone ethics and computing courses and for ethics-related modules in other courses.

### 5. ACKNOWLEDGEMENTS

This work was supported by National Science Foundation grant DUE 97-5279



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ISSN 1055-3096