ITEC/IHSS 1220
The Politics and Economics of Information Technology

Monday/Thursday 10:00 – 11:50am (Ricketts 211)
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Office Hours: Thurs. 12:15-1:15p*

Section/CRN	IHSS1220-01/82698	IHSS1220-02/82699	ITEC1220-01/82718
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Course Description

Introduction

What is "Code"? How does the work that IT professionals do influence the world around them? And how does the world, with its everyday "politics," influence the technological systems that we create? And if you are an IT Major, or even if you are studying science, engineering, or some other field, what skills, beyond those of programming and other "technical" expertise do you need to have to have a successful career? We explore these and other questions in this course through a unique experience in large-scale entrepreneurial simulation.

I expect some of you may have already heard rumors about this course. It used to be offered during spring semester, but it has now been moved to the Fall, both to provide an introduction to the broad arena of information technology for both majors and non-IT majors. Before the end of the first class, I will ask several of you to serve as the voluntary "CEO" of an IT startup, imagined or real, that you will use to complete many of the exercises associated with this class.

The course is built on a "Faustian bargain." While I give all of you this opportunity to participate in an IT startup, every project you undertake during this semester must be dedicated to the notion of "social advocacy." This is where you use information technologies to intervene in the "real world" with the goal of making some kind of positive difference. In the process, you will learn how to read the complex social, political, and economic circumstances that govern information technologies and their effective use by different users. You will also learn about different sectors that exist within our increasingly global economy. My hope is also that you will gain, through this simulated experience, a better understanding of the nature of IT work, and scientific and engineering work more generally.

Incidentally, this course requires no deep, personal engagement on your part to the notion of social advocacy. This is simply an instructional device. The world of philanthropy and volunteer work offers a particularly "difficult nut to crack," one often faced with social challenges and economic constraints that do not always prevail in the for-profit sector. By looking at issues such as the "digital divide", "economic globalization", "cultural diversity," and "privacy and information security" we'll be creating simulated experiences within which you will have to envision and design practicable solutions to some of the most complex problems in the world today; the case studies we consider will be among some of the toughest problems pertaining to the social aspects of technology. If you master this environment, you will do well in others. I can assure you that, many of the skills you acquire in this course will transfer readily into any kind of technical or management career (IT or otherwise). If you do not wish to accept this bargain, speak to me, and we'll work out a different arrangement.

Required Texts

- Lawrence Lessig, *Code: Version 2.0* (Basic Books, 2006)
- Other material accessible via the course website, http://www.rpi.edu/~akeraa/pe-IT

Lessig's book should be available at the Rensselaer Union Bookstore. We recommend purchasing a print copy (it's generally easier and faster to read), but the book may also be downloaded as an eBook at: http://codev2.cc/download+remix/.

Objectives

The objectives for this course are as follows:

- *Social Analysis (35%):* A demonstrated, basic ability for analyzing and interpreting complex social situations, as demonstrated through the weekly thought pieces, position papers (elective), and various team project assignments (see below). This includes an ability to understand how information technologies, and technology more generally, fits within a broader social fabric, and how everyday politics, economic considerations, and institutional priorities necessarily influence the design of successful technological solutions. In the context of the team projects, students should also demonstrate a basic but robust ability to break down the technological development process into stages of a) identifying the social and/or historical background surrounding a particular problem; b) formulate a specific problem definition suitable to social and technological intervention, and c) design a proposed solution that is reasonably realistic within the context of the simulation exercise.

- *Knowledge and understanding (35%):* Demonstrated acquisition of new knowledge and understanding pertaining to the social dimensions of information technology. This includes the different substantive issues addressed in this course (digital divide, new economy, economic globalization, and the relationship between IT and healthcare, environment, employment, civil society, etc...), as well as a basic, and where possible, critical understanding of the argument about "code" and technological legislation as advanced by Lawrence Lessig.

- *Technical proficiency* (30%)*:* Demonstrated progress in the basic technical proficiencies of higher education, including writing, oral and visual presentation, teamwork, seminar-style conversation, and community building within (and outside of) the classroom.

The Scenario

A new philanthropic foundation, *IT Futures Foundation,* was established eight years ago at the height of the dot-com boom of great repute. Although public furor surrounding information technology has died down since, this foundation continues to believe in the socially transformative effects of information technology. Convinced that the latest wave of IT (Internet, bioinformatics, forensic technologies, ubiquitous computing, etc...) will radically alter our social fabric, the Foundation is committed to examining the social implications of technology and intervening wherever it can make a positive difference.

This foundation is willing to put real money behind its philosophy. Based on a $20 billion endowment provided by the late and great Dr. Alexander of the Cyberscapes Corporation, it has decided to commit approximately $500 million this year to socially progressive, IT-based projects. The foundation will be issuing a series of 'requests for proposals' for dealing with some difficult social problem, especially one that has been generated by, or exacerbated by advances in information technology. The foundation also hopes to sponsor a series of public debates on contemporary issues related to information technology and society.

Establishing an IT Venture

At the course's outset, we will ask for eight to ten volunteers to serve as the CEO of an IT startup. We hope to cull this down to six teams by the end of the *IT Jobs Fair,* which will take place on Friday of the third week of class. You are welcome to invite your friends to be on your team. **However, keep in mind that**

you are dealing with the social dimensions of technology. You will need a diverse array of talent, including,

> a) A strong writer
> b) Someone with an interest in the humanities and social sciences
> c) Someone with debate experience
> d) A person with some non-profit / public service experience

A team made up of ten computer geeks is likely to crash and burn. You don't have to wait until the jobs fair to begin recruiting for your team.

Major Assignments

Team Projects

Team projects are built around the following exercises.

- Proposals submitted in response to various Request for Proposals (RFPs)
- Two public debates
- A final advocacy project

For details, see the *P&E of IT Course Manual*. (http://www.rpi.edu/~akeraa/pe-IT/course_manual.html)

Required Readings

All of the required readings for this course are listed in the Course Readings and Schedule, posted on the course website. As Thursdays are generally reserved for team project activities, **all readings must be completed by the first class meeting of each week.** Depending on how you distribute your effort, the required readings listed here will amount to anywhere form one-half to two-thirds of the total amount of reading that you do for this course. The rest must occur in conjunction with the additional research that you have to do for the "RFPs," debates, and final team project (or independent research for a position paper, see below). In acknowledging the typical reading proficiency and learning preferences of first-year undergraduate Rensselaer students (but in also considering the demands of the IT profession) we have set the volume of pre-specified required reading (exclusive of "webbing" assignments and research for the team projects) to be 40 pages. Failure to do all of the required readings will materially affect your grade.

Special Note for H&SS Majors: A typical first-year humanities course at a top-tier liberal arts college might require upwards of 150 pages per week of reading, or more. Especially, if you are considering graduate studies in a humanistic or social science discipline, we recommend that you read more extensively for this course. Many of the items listed as "recommended" or "additional readings" on the readings schedule are suitable for your training.

Weekly Short Essays

You will also be asked to submit a weekly essay in response to the required readings and any other reading you did during the past week. The essay should be based on a thoughtful reflection about the readings, and neither a simple summary of the author(s)'s argument, nor an uninformed and unsubstantiated opinion on the general subject. While you may, and are encouraged to bring personal experiences and other knowledge into the conversation, the essay must clearly demonstrate that you did the required readings for the week. All short essays are due on the first class meeting of each week.

While we provide a possible essay question each week along with the list of required readings, you may always pose a different question instead, especially if you read additional articles that the question does not adequately address. The instructors have been encouraged to evaluate your weekly essays according to the following criteria.

- *Superior (A+):* Strong, original essays based on a significant number of sources beyond the required readings that clearly engage deeply and meaningfully with the authors, and does so in a fair and intelligent manner.

- *Pass + (A/B):* A good, undergraduate essay that basically begins by summarizing the authors' arguments, and proceeds to offer original reflections on and/or interesting thoughts about what the author(s) said. May include some readings beyond the required minimum.
- *Pass (B/C):* A reasonable essay that tends to be built primarily around the authors' arguments. Must demonstrate that student did all required readings.
- *Qualified Pass (C):* Something close to a 'pass,' but with notable deficiencies.
- *Not-Yet-Pass (D):* An essay that does not adequately demonstrate that you did all of the required readings, or where there is clear failure to understand the author, or discuss what you didn't understand about the author in a thoughtful and meaningful way.
- *Fail (F):* Failure to turn in an assignment, or an essay that does not reflect acceptable effort.

Given that your goal is to progress towards the defined objectives, expect your early essays to fall into the Not-Yet-Pass or Qualified Pass category. So long as you are able to consistently secure a grade of Pass+ or Superior by the end of the semester, you will most likely have met the specific objectives associated with the short essays. Essays that receive a 'qualified pass' or 'not-yet-pass' may be resubmitted for up to two weeks after it was returned to you (exception: everything must be turned in by the last day of class). To be reevaluated, you must turn in both your original essay (with the instructor's comments) and the revised essay.

Position Papers (elective)

The position papers give you an opportunity to demonstrate more clearly the individual work you did for a team project. Basically, this is useful when the research that you do, say for an RFP or debate, isn't fully reflected in the final product (proposal, debate, or oral presentation). In this case, it may be in your interest to write up what you've done so you get full credit for it.

     The position papers may also be used to document any independent reading and research that you do outside of the team projects. To some extent you can do this via the weekly essays, but if you develop a strong interest in a particular topic, or "need" to work on an independent project in order to meet the course objectives, the position paper can be an effective way to reach your goal.

     To receive a good grade on a position paper, you will probably have to submit it in multiple drafts. Give your section instructor at least two weeks to review a draft and offer you useful comments. To keep from overloading the section instructors at the end of the semester, she or he will not be required to accept more than two position papers (either a revised draft or a new one) during each of the final six weeks of the semester. Moreover, they may choose to give priority to the revised drafts. For further details about position papers, and examples of topics you might write about, see "Position Paper" in the Course Manual.

Grading Criteria

As part of a new Institute initiative and policy, the grading structure in this course is built around specified objectives and outcomes. This grading structure will be quite unfamiliar to most of you. No single assignment contributes a specified portion to your grade. Instead, you will be assessed according to your overall abilities (and where specified, progress) as measured at the end of the semester according to each of the course objectives described above.

- Social analysis   35%
- Knowledge & understanding   35%
- Technical proficiency, progress in
  - Writing   5%
  - Oral/visual presentation   5%
  - Critical engagement & argumentation   5%
  - Teamwork / leadership   5%
  - Seminar conversation   5%
  - Community building   5%

You can expect to receive two interim progress reports (around week 7 and week 11). It is recommended that you set up individual meetings with your section instructor following these reports so that you find out where you should direct your energies to improve your earning outcomes (and your grade).

In rough terms, you can expect that appropriately 2/3 of your grade will be related to what you contribute by way of the team projects, and 1/3 with individual work done entirely outside of the team projects (i.e., the weekly thought pieces, and position papers (if any)). The RFPs, debates, and the final projects are weighted more or less evenly. But by all means, outstanding work in any one of these components may go a long way towards demonstrating your accomplishments with regards to any of the specified objectives.

There are a number of important modifiers.

- Please keep in mind that you are being evaluated based on your individual contributions to your team. While we may issue a "team grade" at the end of the semester for heuristic purposes, you can expect your own component of the team grade to vary, in effect, by as much as +1 to -4 letter grades. This is NOT meant to be a penalty, but rather a way to create the right incentives for everyone to contribute to their team.
- Attendance is required. There will be a 1/3 letter grade deduction from your final grade for every absence beyond two absences, **excused or unexcused,** that are not made up through appropriate arrangements with your section instructor.
- The weekly essays are also required. You are allowed to miss one weekly essay. Beyond this, each essay that you miss will result in a 1/3 letter grade deduction from your final grade. Makeup assignments, if allowed by your section instructor, must be completed within three weeks of the due date for the essay, and no later than the last day of class.

All grades, except where noted, are assigned by your section instructor. To encourage a proper relationship between you and your section instructor, my role as lead instructor is generally limited to that of considering an appeal if you feel your grade was not assigned according to the specified grading criteria of if you feel there is other just cause for filing an appeal. If the appeal is about an interpretation of the grading criteria, you may file an appeal only after you have spoken with your section instructor first, and this must be done within 10 business days of the grades being posted. All appeals must be made in writing (email is okay) within 10 business days after grades are posted, or if in conversation with your section instructor, upon being advised that you have to file an appeal. Other details pertaining to the appeals process may be found in the *Rensselaer Handbook* for students. We reserve the right to modify a grade based on the individual circumstances of each student.

Course Schedule (Summary)

Wk	Dates	Mondays	Thursdays	Event / Due Date Explanation
1	8/27 & 8/30		Create Teams	Establish Entrepreneurial Firms
2	9/6	(no class)	CEOs Pres.	CEO's presentations
3	9/10 & 9/13		Jobs Fair	IT Futures Foundation Jobs Fair
4	9/17 & 9/20		RFP #754 presentation	All RFPs are due on the Sunday before the date of the presentation
5	9/24 & 9/27		RFP #755 $FAP_{stakeholder}$	Final Advocacy Project, Stakeholder Analysis
6	10/1 & 10/4		RFP #756 $FAP_{proposal}$	Final Advocacy Project, Proposal
7	10/9 & 10/11	$FAP_{field\ res}$	RFP #757	FAP, Field Research or Interview Write Up Debate or RFP depending on number of teams
8	10/15&10/18	$FAP_{draft-1}$	Debate 1	FAP, First Full Draft
9	10/22&10/25		Debate 2 &RFP #759	
10	10/29&11/1		Debate 3	
11	11/5&11/8	$FA_{draft-2}$	Debate 4 &RFP #761	FAP, Second Full Draft
12	11/12&11/15		Debate 5	
13	11/19	RFP #763 FA_{poster}		FAP, Poster Session & Critique (probably in Lally 102)
14	11/26&11/29	$FAP_{confirm}$	RFP #764 & Debate 6	Field research, confirmations & revisions due
15	12/3 & 12/6	Self/Team Eval	FAP_{final} (CEO's eval)	FAP, Final Draft & Presentations Self & Team Evaluations / CEO's Evaluations

All assignments are **due in class,** unless indicated otherwise. RFP Proposals are generally due on the Sundays prior to the scheduled RFP presentation.

The Fine Print

Attendance: (See above.) If you arrive late to class, you may not sign the attendance sheet without the permission of one of the instructors. Also, if you miss a scheduled meeting with your section instructor without notifying her or him twenty-four hours in advance (use email), this will also count as an absence of one section meeting. Fraudulent efforts to sign another student in on the attendance sheet will be regarded as an act of academic dishonesty.

Writing vs. Class Participation: In recognizing that some students have real difficulties speaking up in class, the section instructor, at his or her discretion, may grant individual students the right to submit additional written work, or place greater effort into the normal written assignments in lieu of class participation. Specific arrangements must be made with your section instructor early on in the semester.

Late Submissions: Section instructors will be setting their own policies regarding late assignments. However, if you are not told otherwise, assume that the deadlines in this course to be firm. No late papers or projects will be accepted except through specific arrangement with your instructor.

Gender Fair Language: Students in this course are expected to use gender fair language in their writing. Every time you use a masculine-oriented word to refer to people in general, the implicit effect, even if unintended, is to whisper: women don't count. Essays that do not use gender fair language will not receive a passing grade. If you are unfamiliar with the practice of gender fair writing, you should read "Gender Fair Language," written by Jenny Redfern of RPI's Writing Center. See, http://www.rpi.edu/web/writingcenter/genderfair.html.

The Center for Communicative Practice: Writing is an important component of IT work. Believe it. In addition to formal proposals and reports, you will be writing five to ten memos and emails each day in the professional world. Your performance will always be evaluated based on how well you convey your ideas. Periodically, you may be advised to seek out the services of the Center of Communicative Practice. It is located on the first floor of Folsom Library. You may obtain further information at 276-8983, or http://www.ccp.rpi.edu/. Your section instructor may also require you to have someone at the Center go over your written assignment before you can resubmit it for consideration. If this is the case, you **must obtain a stamp from the Center,** and then turn in the original, stamped (if different), and finally revised version of your assignment. Keep in mind that improving the mechanics of writing on any assignment will not be enough to receive a higher grade if the content remains inadequate.

ESL / LD Students: The requirements for this course will be adjusted to serve the needs and capabilities of ESL and LD students. Students who have difficulties reading or writing should feel free to notify their section instructor about their particular situation. In general, the guideline we use is to require at least four hours of reading per week. Likewise, ESL/LD student should expect to spend an average of two hours per week on their written assignments, exclusive of the team projects.

Use of Student Generated Materials: All written materials submitted in this course will be considered to be contributing to the general educational mission of Rensselaer. It may be posted on the web as part of a student work archive, or used for the purposes of educational research and assessment. However, we do respect student privacy and a students' rights to intellectual property. Students are therefore granted a prior right to obtain specific exclusions from the public disclosure of their work. Such exclusions should be requested in writing, either within the material submitted, or in a separate note sent to their section instructor and to Dr. Akera. Student generated material are not to be used for purposes beyond that of educational assessment and research without the express permission of the student(s) involved. In all cases, any scholarly work published from this material must do so without individual identifiers except where requested by the student herself or himself.

Academic Honesty: Student-teacher relationships are built on trust. Students must trust that teachers have made appropriate decisions about the structure and content of the course, and teachers must trust that the assignments students turn in are their own. Acts that violate this trust undermine the educational enterprise. They contradict our very reason for being at Rensselaer. The *Rensselaer Handbook* defines various forms of academic dishonesty and the procedures for responding to them.

Students should note, in particular, that academic penalties for plagiarism are harsh. In this course, they can vary from failure of assignment to failure of course plus a citation in the student's academic record. This will be based on an instructor's judgment of the student's intent and the severity of the case. Note that the student handbook states that this judgment should rest with an instructor's best judgment about what happened in a given situation; it is not based on the standards of judgment found in US criminal trials. Please be aware of this distinction. In any event, any use of another person's work, including the use of specific ideas and interpretations, must be acknowledged through proper attribution. All direct use of another person's words must be placed in "quotations." You must indicate when you paraphrase another person's work. See , "Academic Citation Guidelines" in the *P&E of IT Course Manual* for further details. If you are at all uncertain about the academic norms regarding plagiarism, make sure to speak with your section instructor.

Also, if we suspect that there are falsified signatures on the attendance sheet, and the student involved is unable to document their attendance to the satisfaction of the instructor, the student may receive a one letter grade penalty and/or all suspected falsified entries may be stricken from the record for the purpose of computing a final grade.