Introduction

The advances in information technology (IT) and computer networking in recent years are both amazing and somewhat daunting. We are seeing incredible advances in IT on almost a daily basis. It is an exciting time full of new opportunities for innovations in the way public and nonprofit organizations do business. But the advances also make it a confusing time. Have the advances in IT over the last 20 years or more helped to improve the efficiency and effectiveness of public and nonprofit organizations? IT developers would like to always have this question answered affirmatively. But in some instances the answer is a definite "no." IT sometimes doesn't advance our ability to make good decisions; rather it just adds another level of frustration and aggravation to our daily work routine.

I argue that a (or perhaps the) primary reason for IT dissatisfaction in organizations is that often the wrong people have made the decisions related to IT strategy and implementation. In some public sector settings, it may be that the public manager finds him- or herself at almost the mercy of IT contractors. In non-profit organizations often the IT-related decisions are left to the person who is the most technically savvy (e.g., the person responsible for the budget and who operates a spreadsheet) rather than the person or persons who really understand the mission and the business. Yet it is exactly these people -- public and nonprofit managers and policy analysts who understand and conduct the day-to-day business -- who should be deeply involved in the making the strategic choices and crafting new IT-based innovations to improve delivery of products and services while at the same time improving organizational accountability. But to do this you need to have some fundamental understanding of IT and issues related to IT management.

Here are some important questions you should ask yourself when considering this course: In your future job, if you were asked to help gather requirements on a new system by a contracted out IT developer, could you do it? If you are asked to help design a new database management system to improve program management or a web system for information distribution to the public could you do it? Would you be able to step into your new job with confidence that you can learn the in-house computer
systems or assess new technologies for possible use? If your answer is "no" or "not sure" for any or all of these questions then this course is for you. It is designed to help students (often with little or no IT background) gain foundational IT skills and to help you step in with a stronger background in how to take on these kinds of decisions or assignments.

This course is designed to be an integral part of the MPPA program at the Center for Public Policy and Administration. One CPPA student working as a legislative budget assistant for a New England state government recently sent me a letter stating: "I regularly draw on the problem-solving skills I developed in [your] information technology course." At the same time, what I teach in this course is directly relevant for students in the Natural Resource Conservation programs. For example, one previous student in the Wildlife and Fisheries program who was on leave from a natural resource conservation state agency, said generally that the material she learned in this class was exactly what she was grappling with in her job.

CPPA students: This course is designed to provide you with foundational technology and analysis skills that complement other more theoretical policy/administration courses offered in our program related to the organizational or managerial components of public and nonprofit management (for example, Public Management, Nonprofit management). You will notice too that topics you get in Research Methods are applicable here.

Finally, this is the 11th time I've taught this course and over time, in response to student evaluation requests, it has moved increasingly to hands-on use of technology material (e.g., web and database). I struggle with this, because managerial and policy issues related to information are just as important as technical skills. But at least for this year (2011), I've decided to keep it heavy on technical skills, in part because of the current job environment, and also because last year's students encouraged me to do so in their course evaluations. My hope is that skills gained here help to give you additional leverage in getting a job once you graduate.

Course objectives and approach

The goal of this course is to provide an introduction to IT for students headed for work in public or nonprofit organizations. The underlying main goal is to help students overcome any fears they have of technology, so later in their careers they can either employ technology themselves, or feel more comfortable dealing with technology experts and be able to assess their recommendations better. You can expect to gain knowledge in four areas after completing this course.

First and second: Through computer labs, practice exercises and assignments you should leave the class with confidence that you can develop basic web sites and design and develop a relational database management system. (If any student feels like he or she has substantial skills in these areas already, I'm happy to talk to you about developing tailored homeworks so that you can gain new abilities.) If you give the course a strong effort, you should be able to put the following down on your resume under "Technical Skills":

Website development: HTML and CSS  
Relational Database Design and Development

Third, together in class we will implement a technology planning exercise. Through this, you will gain a familiararity with some approaches used for analyzing organizational processes and information flows. In other words, you will gain some "systems analysis"
skills. Having the skill to look at business processes and strategically think about the role of computing in those processes is a skill many organizations need.

Fourth, in the last few classes, we will hold an "IT and Web 2.0 Miniconference" where students will present research they have done over the course of the semester on a subject of interest, hopefully involving new, emerging technologies and use in public and nonprofit settings.

Finally, I have thought carefully about the needs of international students. The material we discuss is as relevant just as much to international settings as it is in U.S. settings.

Prerequisites

I assume that all students have a fundamental understanding of Windows operating systems (since that is what we have in the Holdsworth 302 computer lab). All software that we use runs on a Mac and versions of everything we need is either free or open source software. I assume also that everyone has regular access to email and the World Wide Web.

A UMass userid and password is required for this course so you can use the computer labs and for your own personal world wide web server space. To take this course you MUST have and OIT account.

Since IT proficiency is so important for everyone in today's workplace, I allow anyone, regardless of skill level beyond this, to take this course. In other words, I am assuming students DO NOT have experience with web publishing or database technologies. If you do, you may want to talk to me about whether this course is right for you.

Allowing anyone with any level of IT proficiency take this class can make sessions challenging at times, especially when there is a broad span of technical capabilities. For ones with substantial IT experience, I ask for your patience and your willingness to help neighboring colleagues in the labs when they are stuck on a problem.

Class web site

The course web site address is: http://courses.umass.edu/pubp631/

On this homepage there are several links. The calendar link for the course which describes the class specifics. Get in the habit of checking the class web site frequently (at least twice a week). Important changes, like changes in readings, will be announced in class.

Computer labs for homeworks

We will be doing a lot of work with the following software packages: Seamonkey composer, WinSCP and Microsoft Access 2007 (or possibly Open Office “Base”).

This is the second year I have used free/open source software for the web portion of the class Seamonkey composer and Winscp for transferring files from the local computer to the web server host. There isn't much tutorial material available on this, so much of what we learn I will be demonstrating and you'll have to take notes. But I am excited about the fact that you are learning tools that you can take with you after the class is done. Seamonkey will be available in the 302 lab in Holdsworth, but it is probably not
available anywhere else. Hopefully many students will have their own computer and can install it on your own system.

Seamonkey can be downloaded at: http://www.seamonkey-project.org/

In the past, I have taught the relational database implementation portion of the class using Microsoft Access, which is available in Holdsworth 302, the CPPA computer labs (I believe) and in the OIT computer labs. There are several OIT computer labs on campus that have these applications installed, including the Learning Commons in the Du Bois library. The Learning Commons is open most of the time. See OIT's computer lab availability page for information on locations of these labs on campus and their current availability. But there is a database program called "Base" in the Open Office suite that is very much like MS Access. I want to have a class discussion to determine which software package we use.

Holdsworth 302 for database exercises and homeworks during its open hours, which is open weekday evenings until 9pm.

File backup

It is important that you backup your work, both for this class and for your other classes. How you do that is entirely up to you. But two useful options are your U:drive and possibly buying a memory (sometimes called a "flash" stick or a "jump" drive). This isn't required, but is an excellent backup tool. However, using just U:drive or a flash stick isn't enough! You need to back these up to a computer hard disk all the time if you use those for your main storage.

Class content and readings

I'm very cognizant that school is expensive and I am trying to save you money without reducing the learning experience. For this reason I use no textbooks. I've also decided this year to provide the material only through the course website and let you decide if you want to print it out or not. I'll be posting relevant material throughout the course as we go.

If you want a reference book on Access, go out to any bookstore and choose one that you like.

Assignments:

There will be four major assignments in the semester that will allow you to hone web development skills, technology planning skills and relational database design and implementation skills. We also will be holding a "Web 2.0 Miniconference" on the last three classes. Note that I am not assigning any readings in this course and there are no exams. The five assignments ARE your work for this course.

- Assignment 1.1-1.4 Web design and development "exercises"
- Assignment 2. Develop a website driven by your own interests
- Assignment 3. Relational database design and implementation
- Assignment 4. IT or Web 2.0 in Government/Nonprofit “Research Series” project and presentation

Assignments 1 and 2 are related in that assignments in 1 prepare you for assignment 2.
Assignment 3 is related to our in-class exercise on analyzing information flow in organizations, and then, with that foundation, we design and implement a database management system to support these processes.

Finally, the "Research Series report" (Assignment 4) is a short paper and presentation you will write related to some recent issue or IT-related phenomenon. I will hand out topic ideas, which can be assessing some Web 2.0 technologies and their implications for governments or nonprofits, reviewing emerging topics such as XML and open standards, for example, or choosing a topic of your own interest that we agree on. I hope that by having "research reports" presented in a miniconference setting, it will allow us as a group to explore and learn about current or emerging IT-related topics and will allow us to discuss their positive and negative implications for public and nonprofit organizations.

Class participation:

I expect people to be active participants in class discussions, and to help each other out in labs. As you will see, I need to find a reasonable pace of the computer labs depending on the existing knowledge base of the students. I hope students with more computing skills will be willing to help others who may be having more trouble. In addition, having classes in computer labs leaves a temptation to read emails or surf the web during class time. DO NOT do this. It is particularly distracting for me and other students when someone is typing on a keyboard -- and I will use this part of the grade to mark off if I see students doing this.

A reminder about homework assignments and the issue of plagiarism: I expect that for all assignments the work you hand in is your own.

(Grading criteria – next page)
Grading Criteria:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percentage of Final Grade</th>
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<tr>
<td>Assignment 1.1-1.4:</td>
<td>15%</td>
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<tr>
<td>Assignment 2: Personal website</td>
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<tr>
<td>Assignment 3.1 and 3.2: Relational database</td>
<td>35%</td>
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<td>design and DBMS development</td>
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<tr>
<td>Miniconference Report and Presentation</td>
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<tr>
<td>Class Participation</td>
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<td>Total</td>
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Final Grade Distributions:

- A > 92.5
- A- 90.0 – 92.4
- B+ 87.5 – 89.9
- B 82.5 – 87.4
- B- 80.0 – 82.4
- C+ 77.5 – 79.9
- C 72.5 – 77.4
- C- 70.0 – 72.4
- D 60.0 – 69.9
- F <60