University of Kentucky
School of Library & Information Science (SLIS)

IS202-201 Technologies for Information Services
Spring 2014
January 15 – May 5, 2014

Instructor
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Preferred method of contact: Email

Office Hours
• M-F 9am – 3pm (EST). You will need to make an appointment.
• Contact via email to schedule an appointment
• I will frequently respond to emails as soon as possible, usually within 24 hours weekdays.

Class Information
• Online

COURSE INFORMATION

Course Description
This course is designed to teach the fundamental concepts of information technology in ways relevant to professional practice in informatics and the information professions. It explores computers and networks applied to information problems. Included are features of hardware, types of software, commercial systems and search engines.

Course Objectives
In achieving these learning outcomes, students will:

• communicate with peers about complex technical issues, using clear and effective English, in both written and oral form;
• design a personal strategy for maintaining and updating their information technology literacy, given their projected professional path;
• analyze the architecture of a computing device in terms of its requirements for processing power, storage, and communication bandwidth;
• articulate the role of modularity as a fundamental tool for managing software and network infrastructure complexity;
• discuss and further research appropriate methodologies for the analysis and design of an information technology project;
• list the competing standards and standard bodies operating within a given standardization area;
• articulate the pros and cons of open vs. proprietary standard strategies;
• analyze the economic conditions driving a specific information technology market;
• critically appraise the advantages and disadvantages of current government regulation in the areas of telecommunications, intellectual property, and development;
• appreciate the conceptual and engineering tools used by the programming community to design and implement software;

Course Outline
• Literacies & Information Technology Literacy
• Computer-Supported Cooperative Work and Play
• Architecture
• Modularity and Layering
• Design
• Standards
• Markets
• Regulation
• Programming
• Architecture: The Cloud & Technology Planning

Required Reading
Required Textbook:
No single textbook used. You are required to read certain texts that will be uploaded on the Blackboard course homepage each week. See course schedule for further information.
STUDENT EVALUATION

Grading Parameters
- Participation, 20%
- Midterm Quiz, 10%
- Reading Reports, 10%
- Quizzes, 30%
- Technology Plan, 30%

Grading Rubric (See Submission of Course Assignments for details.)
- Participation: Two points for each week of participation.
- Quizzes: 5 questions (as a max) based on the materials (1 point for each correct question. Total quizzes over the semester 6.
- Reading reports: Two rating scales will be used: check (all points) and check minus (half the points). The report should be 1-2 pages long and not less than 400 words.
- Technology plan: A definitive structure is not required for technology plan but it should have a clear description of objectives and requirements, a survey of current technology, what new technology will be implemented, how this going to be achieved, and maintenance as well as review of the new technology’s effectiveness. Budgeting information is not necessary to be there in detail but it should give a basic expectation of cost and within reason (e.g., do not order a supercomputer for a donut store unless you can justify such an expense). It is expected to be anywhere from 4-8 pages long and provide the details needed to establish such a plan.

Grading Scale
90% – 100% = A (Exceptional Achievement)
80% – 89% = B (High Achievement)
70% – 79% = C (Average Achievement)
60% – 69% = D (Below Average Achievement)
0% – 59% = E (Failing)

Participation
Participation involves activity in Blackboard course pages such as the discussion boards and emails. You are expected to communicate and collaborate with your classmates. Your comments in the discussion board need to go beyond simple agreement or disagreement. You have to make at least one original post. Please make at least one major contribution (could be a sentence long but has to be thoughtful).

Submission of Course Assignments
All assignments should be submitted before 12 o’clock midnight on the day of the due date. All due dates are posted on the course calendar. Late assignments will be accepted for a week after the due date but with a 20% reduction penalty of the maximum score.
Files can be submitted in doc, docx, odt formats. They should have a decent structure meaning headings, sub-headings where appropriate and paragraphs. Grammar and typo errors are allowed up to a degree. Beyond that it will cost you points. Reference and citations are encouraged where appropriate especially for claims that would otherwise be baseless. Filename should have a title followed by your link blue id or name (e.g., Week 1 – mts224.odt or Week 1 – Michael Tsikerdekis.doc).

**Group Work and Collaboration**
Although you will be individually evaluated, group collaboration is allowed and encouraged through the blackboard.
TECHNOLOGY INFORMATION & RESOURCES

This course will be conducted asynchronously via the Blackboard course management system. There is also the optional synchronous classroom which requires Adobe connect. Please visit the links below to learn about this system and the login requirements:

- [http://www.uky.edu/DistanceLearning/current/technology/blackboard.html](http://www.uky.edu/DistanceLearning/current/technology/blackboard.html)
- [http://www.uky.edu/Blackboard/](http://www.uky.edu/Blackboard/)

In order to have a successful educational experience in distance learning courses, there are minimum technology requirements that should be met. You can review the minimum recommendations and guidelines for your computer at [http://www.uky.edu/ukit/hardwareguide](http://www.uky.edu/ukit/hardwareguide).

You are also encouraged to acquire the following hardware, software, and Internet connection to ensure that all systems used by distance learning courses will function properly:

- Internet Connection
- Headset with a microphone
- Webcam (Recommended)
- Microsoft Office (Available free to students through [http://download.uky.edu](http://download.uky.edu))
- 1 MBPS Connection
- Adobe Connect Requirements such as Adobe Add-in (Testing and downloading can be found through [https://connect.uky.edu/common/help/en/support/meeting_test.htm](https://connect.uky.edu/common/help/en/support/meeting_test.htm))

To test your Internet connection to see if it is sufficient, run the speed test at [http://www.uky.edu/DistanceLearning/current/technology/techReqs.html](http://www.uky.edu/DistanceLearning/current/technology/techReqs.html).

Distance Learning Students are expected to have a minimum level of technological acumen and the availability of technological resources. Students must have regular access a computer with a reliable Internet connection and audio capabilities. Internet Explorer 7 (IE) or Firefox 2.x are the recommended browsers for those using a Windows-based PC. Those using Firefox 3.x may encounter problems with assignment uploads. Those using an Apple computer with MAC OS X (10.5.x) may use Firefox 3.x or Safari 3.x.

Please be certain that your computer and/or browser allows you to view Adobe Reader documents (.pdf). Microsoft Office and other software products are free for students: [https://iweb.uky.edu/MSDownload/](https://iweb.uky.edu/MSDownload/).

As your instructor, I am your first go-to person for technology problems. If you need more immediate assistance, please contact UKIT.
Information Technology Customer Service Center (UKIT)
http://www.uky.edu/UKIT/; 859-218-4357

Library Services
Distance Learning Services
http://www.uky.edu/Libraries/DLLS
- Carla Cantagallo, DL Librarian
- Local phone number: 859 257-0500, ext. 2171; long-distance phone number: (800) 828-0439 (option #6)
- Email: dllservice@email.uky.edu
- DL Interlibrary Loan Service:

Course Reserves

GENERAL COURSE POLICIES

Policies concerning academic integrity, excused absences and academic accommodations due to disability are available online at:
http://ci.uky.edu/lis/sites/default/files/policies.pdf
## COURSE CALENDAR

*(Schedule and readings is subject to change. Changes will be posted in the Announcements.)*

<table>
<thead>
<tr>
<th>Modules &amp; Dates</th>
<th>Topics &amp; Readings</th>
<th>Due</th>
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<tr>
<td><strong>Week 1 &amp; 2</strong>&lt;br&gt;Jan 15 – Jan 24</td>
<td>Literacies &amp; Information Technology Literacy</td>
<td><strong>Reading assignment 1</strong>&lt;br&gt;Jan 24</td>
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<tr>
<td><strong>Week 3</strong>&lt;br&gt;Jan 25 – Jan 31</td>
<td>Computer-Supported Cooperative Work and Play</td>
<td><strong>Quiz 1</strong>&lt;br&gt;Jan 31</td>
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<td><strong>Week 4 &amp; 5</strong>&lt;br&gt;Feb 1 – Feb 14</td>
<td>Architecture</td>
<td><strong>Quiz 2</strong>&lt;br&gt;Feb 14</td>
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</table>
### Core concepts
Processing power; memory; communication bandwidth; client-server, peer-to-peer, three-tier architecture; thin/thick clients.

### Read

### Approximately 90 pages

### Week 6
#### Feb 15 – Feb 21

#### Modularity and Layering

### Core concepts
Modularity: functionality, granularity, hierarchy, separation of concerns, interoperability, reusability; modules: interface, implementation, actions, parameters and returns, data types, protocols; layering: middleware, spanning layer.

### Read

### Approximately 54 pages

### Additional Reading (non-mandatory)


### Midterm quiz
#### Feb 21

### Week 7 & 8
#### Feb 22 – Mar 7

#### Design

### Core concepts
Requirements analysis, “conduit” metaphor, participatory and iterative design, unintended consequences, qualitative research methods, interaction design.

### Read

### Quiz 3
#### Mar 7

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Week 9
Mar 8 – Mar 14

Standards

Core concepts
Interoperability; de facto/de jure standards; standard bodies, organizations and consortiums (ISO, IETF, W3C, ANSI, NISO, etc.), open/proprietary standards, lock-in.

Read


Approximately 100 pages

Quiz 4
Mar 14

Week 10 & 11
Mar 15 – Mar 28

Markets

Core concepts
Network effects; natural and serial monopolies; first-to-market; barriers to entry; economies of scale and scope; tipping point; fixed, sunk, and marginal costs; platform market; productivity paradox.

Read

Quiz 5
Mar 28
- Hal Varian, “Economics of Information Technology” (you can skip section 7, and any material that is overly mathematical or that refers to economic concepts you are unfamiliar with — e.g., Nash equilibrium, or Pareto efficiency).

**Approximately 48 pages**

### Additional Reading (non-mandatory)

#### Week 12
**Mar 29 – Apr 4**

**Regulation**

**Core concepts**
Convergence; networked industries; universal service; antitrust; copyleft; technology blending.

**Read**

**Quiz 6**
**Apr 4**

**Approximately 51 pages**

#### Week 13 & 14
**Apr 5 – Apr 18**

**Programming & Technology Planning**

**Core concepts**
Algorithmic complexity; rate of growth; pseudo-code; low/high level languages; imperative, functional, object-oriented programming, component-oriented programming.

**Read**

**Reading assignment 2**
**Apr 18**

**Approximately 48 pages**

#### Week 15 & 16
**Apr 19 – May 2**

**Architecture: The Cloud**

**Technology plan**
**May 2**
**Core concepts**

Grid, on-demand, cloud, ubiquitous, and pervasive computing.

**Read**

- David Talbot, “Security in the Ether: Information technology’s next grand challenge will be to secure the cloud—and prove we can trust it” Technology Review January/February 2010.

**Approximately 23 pages**

**Additional things to do (non-mandatory)**

- Help locate the aliens by sharing your idle processor cycles! Download and install the SETI client.

**Penalty after May 2 is 20%**

**Hard deadline for the technology plan is May 5**
COURSE ASSIGNMENTS

Reading reports
Reading reports don’t have to include all topics in the reading materials. They should be your own reflection on how the new information would be applied in your work. They should not have the form of a summary. Errors in grammar and typos won’t cost you points, however, your work should be spellchecked and be free of major grammatical errors. “Sloppy” work will not be accepted.

Midterm mini quiz
Once the date for the mini-midterm quiz is announced you will have to go to the blackboard homepage where under the assignments section you will be given a specific window of time in which to complete the quiz. Make sure you have a stable internet connection since you won’t be able to retake the exam.

Technology review and improvement
The technology plan can be based on your own example fictional or not. You are encouraged to do small research about how a business of your interest operates (e.g., what technology is implemented in a retail store) which can help you find potential points for improvement.

The technology plan is not expected to have a definitive structure but it should be logical and concise. It also must include:

- a mission and objectives of the business that the technology plan is aimed for;
- have a review of the current technologies implemented and how they satisfy requirements for the stakeholders;
- recommendations and changes that will improve the technology infrastructure and satisfy requirements better;
- how this will be achieved;
- include a justifiable budget for the changes (it does not need to be detailed);
- maintenance as well as review of the new technology's effectiveness;
- a brief summary as to why you chose to construct this particular technology plan.

In the plan you should be able to demonstrate some of the concepts you’ve learned throughout the semester especially in the section about improving the current IT infrastructure. Include at least two improvements based on the reading materials. You will have to include technical concepts involving technology infrastructure (type of communication between computers, through what technologies, where is the data stored etc.).

The writing and style of the report should be official. It must have an essay structure given the page limitation (official technology plans do not have an essay structure). The size is expected to be between 4-8 pages, single-spaced (appr. 1500 – 3000 words).