LIS 506 - Introduction to Information Technology
Fall 2011 – Online section, Dr. Jianqiang Wang

General Course Information

Instructional Staff

- Dr. Jianqiang Wang (Instructor)
  Email: jw254@buffalo.edu
  GoogleTalk: wangjq0911
  Telephone: (716) 645-1478

- Ms. Minu Seetharaman (TA)
  Email: minumana@buffalo.edu
  GoogleTalk: minums
  Telephone: TBD

Online Office Hours

The following online office hours will be held each week through Google Talk:
- 2:00-4:00pm, Tue. (TA)
- 2:00pm – 4:00pm, Thu. (Instructor)

No appointment is needed if you want to talk to the instructional staff during the office hours. If you wish to talk to the instructor or the TA outside of the office hours, please set up an appointment via email. Of course, you can email your questions to the instructor or the TA at anytime. Normally your email will be responded within 24 hours.

Textbook & Readings

The following textbook is required for the course. Students can purchase it from UB bookstore at http://www.buffalo.bkstr.com:


Gary B. Shelley and Misty E. Vermaat

All other readings are available online. Check the “Reading List” on page 8-9 in this document for detail.

Official Catalog Description

This course will introduce students to the fundamental vocabulary, concepts, and practices for the use of information technology in libraries and information centers. Topics will include information storage and retrieval, networking, systems analysis, computing standards, and emerging technologies.
Course Goals

- Understand the role of information technology in libraries, archives, schools, information centers, and society.
- Become familiar with common information processing and management tools.
- Evaluate the suitability of information technologies to serve a range of needs.
- Apply information technology to solve a practical problem.
- Develop techniques for further study of information technology.

Prerequisites

Basic computer literacy, such as knowing how to turn on/off a computer, use a keyboard and a mouse, perform basic file manipulation (create, save, copy, delete files or folders), use a web browser such as Internet Explorer or FireFox, and use MS Word or a similar word processing tool, is required. Detailed computer competency requirements can be found on the Graduate School of Education’s (GSE) website at: [http://gse.buffalo.edu/lis/competencies](http://gse.buffalo.edu/lis/competencies). Those who feel uncomfortable with these prerequisites should catch up at your earliest convenience, preferably prior to the start of the semester.

Waiver of the Course

DLIS academic policy allows the waiver of a required course upon the student’s request. The rationale is that if a student has already been familiar with the topics covered by the course, his/her time and money should be spent on other courses wisely. A waiver request should be submitted to Dr. Ying Sun (sun3@buffalo.edu), the lead faculty of LIS506, in no later than the beginning of the second week of class. You may be evaluated with an exam before an approval can be granted.

Methods and Hardware/Software Requirements

The course will be delivered through recorded lectures, online office hours and online discussion that are managed using the university’s computing facility (blackboards, streaming servers, etc.). Each week, students should watch/listen to the recorded lecture, read the assigned readings, complete the homework assignments and software exercises, and actively participate in online discussion of the topics covered in that week. History indicates an average student should plan to spend 9-12 hours per week on the course.

Remote login to computers administrated by the GSE IT Office will be provided for students to practice using licensed software such as Photoshop and Dreamweaver. Bear in your mind that due to traffic volume and multiple logins at the same time, these machines may be slow at times. Instructions on how to logon into and use these machines will be provided in the first week of class.
Each student should have a personal computer with reliable access to the Internet, with which he/she can practice software installation/uninstallation, complete coursework, communicate with the instructional staff and classmates, and access UB’s resources of hardware, software, and information. A PC-compatible speaker and a microphone are required. UBIT website provides useful software for students to download. Check the “Tutorials & Exercises” section for further information.

In addition, Google Talk will be used as the main communication tool for the designated online office hours, appointed meetings, and final project presentation. Instructions on how to set up and use Google Talk can be found under “Week 1” inside the “Tutorials & Exercises” section in the course’s UB Learns space. Students are strongly encouraged to get familiar with Google Talk no later than the first week of class.

**Grading**

Your grade will be assigned based on your performance on online discussions, homework assignments, software exercises, exams and a team project. Items for evaluating students’ learning outcome and their grade percentages are as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework Assignments</td>
<td>30%</td>
<td>5% each</td>
</tr>
<tr>
<td>Midterm exam</td>
<td>10%</td>
<td>Open book, timed</td>
</tr>
<tr>
<td>Final exam</td>
<td>15%</td>
<td>Open book, timed</td>
</tr>
<tr>
<td>Team project</td>
<td>35%</td>
<td>25% development, 10% report &amp; presentation</td>
</tr>
<tr>
<td>Participation</td>
<td>10%</td>
<td>Online discussions and software exercises</td>
</tr>
</tbody>
</table>

Scores for each item will be assigned on a 100 point scale. The final grade will be computed by combining the score of each item in the above table. The conversion from a score grade (S) to a letter grade (L), which is what will be reported to the university, will follow the rules listed below:

<table>
<thead>
<tr>
<th>Score (S)</th>
<th>Letter (L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S &gt;= 95</td>
<td>A</td>
</tr>
<tr>
<td>95 &gt; S &gt;= 90</td>
<td>A-</td>
</tr>
<tr>
<td>90 &gt; S &gt;= 87</td>
<td>B+</td>
</tr>
<tr>
<td>87 &gt; S &gt;= 83</td>
<td>B</td>
</tr>
<tr>
<td>83 &gt; S &gt;= 80</td>
<td>B-</td>
</tr>
</tbody>
</table>

Scores for each item will be assigned on a 100 point scale. The final grade will be computed by combining the score of each item in the above table. The conversion from a score grade (S) to a letter grade (L), which is what will be reported to the university, will follow the rules listed below:

<table>
<thead>
<tr>
<th>Score (S)</th>
<th>Letter (L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 &gt; S &gt;= 77</td>
<td>C+</td>
</tr>
<tr>
<td>77 &gt; S &gt;= 70</td>
<td>C</td>
</tr>
<tr>
<td>70 &gt; S &gt;= 60</td>
<td>D</td>
</tr>
<tr>
<td>S &lt; 60</td>
<td>F</td>
</tr>
</tbody>
</table>

Since there are multiple evaluation items and some of them will be graded with letter grades, they have to be converted into scores on a 100-point scale before a final letter grade can be decided. The follow schema will be used for the conversion:

<table>
<thead>
<tr>
<th>A+: 100</th>
<th>A: 97.5</th>
<th>A-: 92.5</th>
<th>B+: 88.5</th>
<th>B: 85.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-: 82</td>
<td>C+: 78.5</td>
<td>C: 73</td>
<td>D: 65</td>
<td>F: 0</td>
</tr>
</tbody>
</table>
The grade of A signifies superior work beyond basic requirements of the course, B signifies adequate work in response to the requirements, and C and below signifies that work does not meet the basic requirements.

**Homework Assignments**

There will be six homework assignments for the first half of the semester. Each assignment will be made available on UBLearns on Monday of the week and due 11:00pm on Sunday. Each homework assignment will be graded within one week. The main purpose of the homework assignments is for students to further consolidate what they have learned from the readings, the lecture recordings, and the online discussion. Homework assignments may take different forms such as calculating computer speed and space, creating and publishing web pages, and designing databases. Students are encouraged to work together with each other on homework assignments. However, each student has to write his/her own answers. In other words, you cannot copy other’s answers. Detailed information about each homework assignment can be found in the “Homework Assignments” section in the course’s UBLearns space.

**Midterm Exam and Final Exam**

The midterm exam and the final exam will be held in Week 9 and Week 16, respectively. Each exam will cover topics that have been discussed in the course by the exam week (so the final exam will cover the whole semester). This may include things covered in the readings but not lectured on. Each exam will include but not limited to multiple choice questions, true/false questions, short answer questions, essay questions, calculation questions, and design questions.

Both exams will be given and completed using UBLearns. A student can complete an exam at a time of his/her convenience during the exam week. Both exams will be open-book but a time limit (usually 1.5-2 hours) will be applied. Students will be allowed to use any course-related materials (lecture slides, textbook, readings, Internet, etc.). To eliminate possible network disconnection due to long sessions, each exam may be split into multiple sections (e.g., 30 minutes per) so that they can be completed and submitted at different times. Students should not communicate with each other or anyone else during the exam session; discussion of an exam during its week is also prohibited (some other students may have not taken the exam yet). While this is an honor system, any violation of these rules, once detected or reported, will lead to the violator earning zero credit for the exam or failing the course in a severe case. Detailed instructions will be given at the beginning of an exam.

**Team Project**

Students will work together in a group of 3 on a problem of substantial scope by integrating and extending what they have learned throughout the course. Since this is an online course, communication among the team will be done electronically, such as using emails, UBLearns’ group space, Google Apps, and/or any other software/communication tools of its choice. This will be the main assignment in the second half of the semester, although it is strongly recommended that students begin to think about their team
formation and topic selection as early as in the first week. The team project proposal and final report will be due in Week 8 and Week 15, respectively. A team’s final report should be submitted at least 24 hours prior to its project presentation. The project presentation will happen in Week 15, and the exact schedule for each team will be decided in Week 14. Detailed information of the project requirement can be found in the “Team Project” section on page 10-11 in this document.

Participation

Participation includes active online discussion and completion of software exercises. Every student is expected to post questions related to the subject matter of the course and/or respond to questions asked by others on the course’ UBLearns discussion board on a weekly basis. The instructor or the TA may also participate in the discussion. This item will be graded based on how often you ask and/or answer questions and the intellectual merit of the questions/answers you provided. For example, repeating a question that someone else already asked will carry far less weight than asking a new question.

The most effective method of learning information technology is to practice. For each of most weeks, at least one software tool is selected and corresponding exercises are produced for students to practice on. Tutorials and manuals have been created to help students to learn these software tools. Every student is required to read these tutorials and manuals, practice the software on a computer, and complete the exercises. Your exercise results should be saved in your public UB web space so that they can be accessed by the instructor and the TA. Starting from Week 4, everyone will create and maintain a “Software Exercises” web page that contains links to his/her software exercise results. Most of the exercises can be completed simply by following the detailed instructions given by the instructor or the TA, with the goal of helping students to get familiar with the software tools. While your completion of the exercises will only be checked by the instructor/TA at the end of the semester, you are expected to complete them in a timely manner. Detailed information of weekly software tutorials and exercises can be found in the “Tutorials & Exercises” section in the course’s UBLearns space.

Administrative rules

Homework assignment format and submission Unless otherwise specified, all your homework assignments, project proposals, and project reports must be submitted electronically through UBLearns. Pay close attention to specific requirements for each homework assignment. The format of your project proposal and report is described in “Project Description” section.

Late submission of coursework Due to extreme causes (such as illness or accident injury), late homework assignments can be accommodated if supporting documents (such as a doctor appointment/examination slip) are provided to the instructor; late submission due to less extreme causes (such as breakdown of your home computer, busy work schedule, etc.) will be accepted only if the submission is no later than one week. In this case, a 20% reduction of grade will be applied. Late submission of the project proposal will lead to
10% reduction of the project grade; late submission of the project report will lead to 10% reduction of the project grade. Coursework submitted after December 18 will not be graded and hence receive no credit.

Incomplete grades may be granted in cases of illness or other difficult circumstances. An Incomplete grade must be requested in writing by the student through filing a "Request for Grade of Incomplete" form (available at http://gse.buffalo.edu/gsefiles/documents/departments/Incomplete_Grade_Request.doc). The form must be received by the instructor by December 18.

Academic integrity. It is expected that every student will behave in an honorable and respectful way as you learn and share ideas. All work for this class must be original for this class. Work submitted to other courses or completed as part of your job responsibility generally cannot be submitted to fulfill the requirement of this course. For example, you cannot claim a website that you developed for your library before the semester starts as the product of your team project, unless substantial changes are made to the website by your team during the semester. Be forewarned: faculty members do talk to each other and as information specialists we can spot plagiarism and track it down. Please be familiar with the University and the School policies regarding plagiarism. Read the Academic Integrity Policy and Procedure at http://www.grad.buffalo.edu/policies/academic_integrity.pdf for more information.

Special accommodation. Any student with a disability that will require accommodation under the terms of federal regulations must present an accommodation request to the Office of Disability Services (http://www.ub-disability.buffalo.edu/). Unless a letter from that office is received by the instructor, no special assistant or treatment (e.g., extending homework deadlines) will be provided.
# Weekly Topics, Software Tools, and Deadlines

<table>
<thead>
<tr>
<th>Week</th>
<th>Days</th>
<th>Topics</th>
<th>Tutorials &amp; Exercises</th>
<th>Readings</th>
<th>Due 11:00pm Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8/29-9/4</td>
<td>Course Overview, Computing environment</td>
<td>UBLearns, GSE servers</td>
<td>Shelly c1, Shelly c15</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>9/5-9/11</td>
<td>Computer Architecture &amp; Hardware</td>
<td>Google Apps</td>
<td>Shelly c4, Shelly c7</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>9/12-9/18</td>
<td>Software, Operating Systems, &amp; Networking</td>
<td>UBFS, UBVPN, Network Drives</td>
<td>Shelly c3, Shelly c8, Shelly c9</td>
<td>HW1</td>
</tr>
<tr>
<td>4</td>
<td>9/19-9/25</td>
<td>Web Development Basics</td>
<td>HTML, CSS</td>
<td>Shelly c2, Raggett</td>
<td>HW2</td>
</tr>
<tr>
<td>5</td>
<td>9/26-10/2</td>
<td>Multimedia</td>
<td>Photoshop</td>
<td>Shelly c5, Shelly c6</td>
<td>HW3</td>
</tr>
<tr>
<td>6</td>
<td>10/3-10/9</td>
<td>Programming</td>
<td>JavaScript</td>
<td>Shelly c13, W3C School</td>
<td>HW4</td>
</tr>
<tr>
<td>7</td>
<td>10/10-10/16</td>
<td>Databases</td>
<td>MS Access</td>
<td>Shelly c10, Geekgirl's</td>
<td>HW5</td>
</tr>
<tr>
<td>8</td>
<td>10/17-10/23</td>
<td>Web 2.0</td>
<td>LibraryThing, Google Maps</td>
<td>Voelker, Farkas</td>
<td>HW6 Team Project Proposal</td>
</tr>
<tr>
<td>9</td>
<td>10/24-10/30</td>
<td>Interaction, Interface &amp; Usability</td>
<td>Dreamweaver</td>
<td>Hewett, Sholtz</td>
<td>Midterm exam</td>
</tr>
<tr>
<td>10</td>
<td>10/31-11/6</td>
<td>Search Technologies</td>
<td>Adobe Flash</td>
<td>McCown, Hawking</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>11/7-11/13</td>
<td>Digital Libraries</td>
<td>Metadata XML</td>
<td>Arms, W3C School</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>11/14-11/20</td>
<td>Ethics, Security, &amp; Integrity</td>
<td>MS Movie Maker</td>
<td>Shelly c11</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>11/21-11/27</td>
<td>No class (winter recess)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>11/28-12/4</td>
<td>Systems Analysis &amp; Design</td>
<td>Vyew</td>
<td>Shelly c12, Shelly c14</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>12/5-12/11</td>
<td>Team Project Presentation</td>
<td></td>
<td>Team Project Report</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>12/12-12/18</td>
<td></td>
<td></td>
<td>Final exam</td>
<td></td>
</tr>
</tbody>
</table>
Reading List

In general, you have 2-3 readings per week for the first half of the semester and 1-2 readings per week in the second half. The readings are to help you understand the topics of each week. It is advised that students read the assigned material before going through the lecture recordings because the required readings provide detailed background information for the lecture.

Information technology is a rapidly changing field, and occasionally new readings become available (or come to my attention) that I would like to take advantage of. In these cases I will endeavor to replace a reading that is on this list with another at least two weeks in advance.

Readings for Week 1: Overview and Software Environment
- Shelly et al., Chapter 1 (Introduction)
- Shelly et al., Chapter 15 (Careers)

Readings for Week 2: Computers
- Shelly et al., Chapter 4 (System Unit)
- Shelly et al., Chapter 7 (Storage)

Readings for Week 3: Software, Operating Systems, & Networking
- Shelly et al., Chapter 3 (Application Software)
- Shelly et al., Chapter 8 (Operating Systems)
- Shelly et al., Chapter 9 (Networks)

Readings for Week 4: Web Development Basics
- Shelly et al., Chapter 2 (Internet and WWW)
- Dave Raggett, [Introduction to HTML](read for detail for all three parts: “Basic HTML”, "Advanced HTML" and "Adding a Touch of Style")
- W3C School, [CSS Introduction](from CSS Basic to Box Model)

Readings for Week 5: Multimedia
- Shelly et al., Chapter 5 (Input Devices)
- Shelly et al., Chapter 6 (Output Devices)

Readings for Week 6: Programming
- Shelly et al., Chapter 13 (Programming)
Readings for Week 7: Databases
- Shelly et al., Chapter 10 (Database Management)
- Geekgirl's, *Databases from scratch* (all three parts)

Readings for Week 8: Web 2.0
- Kurt Voelker, "Web 2.0."
- Meredith Farkas, "Building Academic Library 2.0", (YouTube video). Skip the preface part to start at about the 13th minute.

Readings for Week 9: Interaction, Interface, & Usability
- Jean Scholtz, *Usability Evaluation*.

Readings for Week 10: Search technologies
- Frank McCown, “Introduction to Web Search Engines."
- David Hawking, “How Things Work: Web Search Engines,” *Part I* and *Part II*

Readings for Week 11: Digital libraries
- WilliamArms, online Digital Libraries book, *Chapter 1*
- W3C School, *Introduction to XML* (go through XML tutorial, from XML Introduction through XML in Real Life)

Readings for Week 12: Ethics, Security, and Policy
- Shelly et al., Chapter 11 (Ethics)

Readings for Week 13: No reading (winter recess)

Readings for Week 14: Information System Development
- Shelly et al., Chapter 12 (Systems Analysis)
- Shelly et al., Chapter 14 (Enterprise Computing)
Project Description

The project in LIS 506 is designed to provide students an opportunity to integrate and extend knowledge acquired throughout the course and to apply that knowledge to solve a problem of substantial scope. Students are required to work in groups of 3, and teams should plan to devote approximately 100 hours to the project over the course of the semester (5 hours per person for 7 weeks). Experience suggests that successful teams require expertise in design, implementation, and project management.

Projects are required to make substantial use of at least two of the key technologies introduced in the course, integrated in a manner that is appropriate for their intended application:

- Web-based content delivery including multimedia
- Programming (JavaScript)
- Relational Databases
- Web 2.0

Projects are also required to include significant real content; mock-ups that contain only a limited quantity of content for demonstration purposes would not be acceptable.

Project teams are normally formed by students. A team project forum on UBLearns is set up for students to propose project ideas and solicit teammates. Those who have difficulties forming a team should report to the instructor at least one week before the proposal deadline. By Sunday, October 23 (Week 8), each team will submit a project proposal to the instructor. Members of each team should coordinate so that one and only one proposal is submitted. The proposal should include a title for the project, the names of the project team members, a brief description of the subject matter and scope of the project, what key information technologies the team plans to use, what content will be created, how the team plans to complete the project (such as task allocation, coordination, collaboration, and integration), etc. It is strongly recommended that teams that are not clear about the appropriateness of their project consult the instructor before the proposal is due. All proposals are subject to the instructor’s approval.

In Week 15, each team will give the instructor a 20-minute presentation and demonstration of its project. This will be done with a real-time conferencing tool such as Google Talk, Skype, or Vyew. The exact day/time when a team will give the presentation of its project will be decided in Week 14. The final project report should be submitted at least 24 hours prior to the team’s project presentation.

The sole role of the project report is to convey information that cannot be conveyed as effectively during the project demonstration. The key here is the content, not the style of the report. So there are essentially no style guidelines except that I would like to be able to understand it (so it is helpful if it is well written), and I would like it to be reasonably concise. The content of the report should address at least:
• Why you did this project (in addition to it being required)
• How you went about it. This has two aspects: (1) how did you learn what was really needed (did you just make it up, or do you have a real customer? If you have a real customer, how did you use their understanding of the true problem to guide your work?), and (2) how did you organize your efforts - Mythical man-month kinds of issues.
• What you learned about the nature of your problem
• What you learned about the capabilities and limitations of the technologies that you chose to work with
• What you know about how well your system meets the needs for which it was created? Did you test it? How? What insights did you gain?
• What plans are there for a continued life for what you have created? Will some customer adopt it?

Of course, different groups will devote more or less space to each of these, and some groups will add other things. There is no cookbook recipe for a good project report. The key is to learn a lot, and to describe what you have learned.

It is important that the chosen project be sufficiently substantial to represent a significant accomplishment, but that it not be so complex that completion within the available time would be unlikely. Teams may select any topic for their project, but they should be careful to select a project for which the required content can be obtained in the available time.

Cooperation and collaboration. Successful completion of the team project requires good communications and collaborations among team members. All team members should attend team meetings, report and respond to other members, and complete the assigned tasks in a timely manner. While usually only one grade is given to a project (hence all members receive that grade), in some extreme cases in which one member does not cooperate with others, that student will receive a different (lower) grade.

Submission. Your project proposal and report should be submitted electronically through UBLearns as either an MS Word document or a PDF file. Submitted work should be single-spaced and well proof-read. A project title and all team members’ full names should be included on the first page of each submission. In addition, you should include the location of your project: if it is a website, its URL should be provided in your final report; if it is a software package, you should submit it as a zipped file package.

Previous projects. The following page contains a list of team projects completed by previous students of LIS506: http://www.acsu.buffalo.edu/~jw254/previous-lis506-projects.html. Students are encouraged to take a look at these projects to gain some basic understanding of the kind of technology and content of the team project. Unless you can make substantial changes to the content and the technology used, you should not pick the same topic as any of these previously done projects.