Course Description
Survey of theories, concepts, methods and practices relating to the application of information technology (IT) to support the administration and use of information resources. Includes digital, printed and audiovisual materials.

Prerequisite
LIS 670 Introduction to Information Storage and Retrieval or LIS 605 Basic Cataloging & Classification or consent

Program Learning Objectives
This course addresses the following objectives of the LIS Program, as stated in their mission and goals. The course enable students to:

- (Obj.2) Demonstrate an understanding of the development, organization, and communication of knowledge;
- (Obj.3) Apply basic competencies and knowledge that are essential for providing, managing, and designing information services in a variety of information environments;
- (Obj.6) Demonstrate theoretical understanding of and basic competencies in storage, retrieval, dissemination, utilization and evaluation of information sources;
- (Obj.7) Demonstrate an understanding of the principles of administration applicable in libraries, archives, and information centers;
- (Obj.10) Demonstrate the professional attitudes and the interpersonal and interdisciplinary skills needed to communicate and collaborate with colleagues and information users;
- (Obj.11) Demonstrate basic competency in the latest specialized information technologies;
- (Obj.12) Demonstrate an understanding of the above goals within the perspective of prevailing and emerging technologies.
Course Learning Objectives

At the end of this course students should:

1. Understand the basic functions and configuration of computer systems; types of computers; and peripheral equipment used in library applications.
2. Be able to distinguish the types of software used in libraries and understand their functions.
3. Be able to participate in the process of library system specification, selection, and procurement.
4. Understand the role(s) of consultants in the automation process.
5. Understand the role and importance of standards and protocols in library applications.
6. Be able to plan and participate in a retrospective conversion process.
7. Understand the main objectives and approaches to the automation of the various functions in the library.
8. Understand all the issues mentioned above, in the context of electronic collections and digital libraries.
9. Be able to understand information technologies changes and how they apply to libraries and information centers.

Teaching philosophy

I believe in collaborative learning, where we all learn from each other. I also believe that students will benefit from exposure to real life situations, as it will foster their critical thinking. Working in a group helps students to improve their communication skills, which is something highly appreciated by most organizations. I also believe that it is everyone’s social responsibility to contribute in developing solutions to some of the problems in our community. As a result, this is project-driven course -- rather than lecture-driven --, where students work as a group in real life community-oriented projects.

Teaching Method

Class meetings will combine lectures, demos, presentations and discussions. In addition to lectures, students will be expected to complete practical exercises in the planning and use of information technology / library automation apparatus and systems. For each class session, students should have completed the assigned readings and exercises, bringing questions and comments to the class.

Early in the semester students will choose a special topic on IT in Libraries and Information centers; students will also work in a TERM project (see descriptions below); working in groups for the special topic and / or term project is encouraged.

Special topics

The special topic is intended to give an awareness of current issues and emerging technologies relevant to libraries and information centers, not directly covered in the regular schedule of classes. The results of the special topic analysis will be presented orally to the class during the semester, and a short paper (2-3 pages) should summarize the work done. Students will negotiate with the instructor the theme and schedule of presentations in order to find the time that will better complement the class matters.

Term Project

Main component of the course is a term project where students will have the opportunity to apply the theories learned to a real life project. Students are encouraged to form groups for the project; in special circumstances, and after agreement with the instructor, students can do individual work. The number of students per group will depend on the complexity of the project. Students will identify a "client" whose library is interested in a library information system. Students will meet with the client in order to gather information to define the problem, identify specifications, analyze data, and come up with a
solution.

Each team has to be ready to spend at least four hours per week working in the project. The client will have to be willing to meet with the students frequently to facilitate their data collection and to discuss their ongoing and updated proposals. Hopefully the client will be actively involved as part of the team.

The project work can be the basis for a presentation in professional conferences. This has been the case in several previous projects where students have presented their work in SLA, HLA and ASIST meetings; this a very valuable component of students portfolios.

**Type of projects:**

- The integrated automated system in a library is the backbone of many library services. Therefore, in previous semesters the usual project has been a preliminary plan for automating a library of your choice. This is still the main option this semester. In this case, the report should include sections describing the library and its environment, functions to be automated, preliminary (broad) specifications, possible approaches (including specific vendors), physical considerations, files needed and their creation, milestones (including a rough timetable), and a short list of useful publications. It should be assumed that the document will be presented to upper management and/or a funding body. While factual correctness and appropriateness are the major determinate of grades, appearance and presentation (e.g. diagrams, indexes, fonts used, etc.) will also be important. In average, between 15 and 25 pages (including appendix) will be needed, to document the work done.
- This semester there are other options for the term project to accommodate emerging technologies and media as well the diversity of students professionals goals and interests. Example of projects that students can undertake are:
  - Emerging technologies used in libraries, e.g. blogs, e-books, mobile devices
  - Study of the work carried out by system librarians, which might include an analysis of required competencies versus education and training offerings.
  - Digital collections: specifications for the creation and management of digital objects, collections, libraries and repositories
  - Evaluation of a current automated system
  - Evaluation of a library website
  - IT to support information community networking

  The content and structure of the report for these type of projects will be negotiated with the instructor in order to follow standards for writing proposal, research, etc.

Methodologies and procedures to do the system analysis or research can take different approaches, e.g. interviewing, usability experiment, a literature review, a reaction paper, a comparative analysis, etc.

**Note: The final project report is due December 3.**

**Project progress reports**

To make the task more manageable, the final project report has been broken down into three project reports (PR), written by the team. Each report will help the group to build the final project report part by part. With every project report due, students must also provide a project documentation. A project documentation refers to information collected while working on the project, such as field notes, comments, etc. After submission of each progress report each team should schedule a meeting with the instructor to discuss progress and next steps. Meetings can be held face to face, online or the team can request a conference bridge, a free service provided by UH Tel-communications; up to ten people in different locations / phones can join the bridge conference.

**Project Journals**

With each project progress report, students will turn in an INDIVIDUAL project journal. The project journals are used to
evaluate the student's progress and how well each student is doing. A journal is due at the same time the project progress report is due. Since project journals are individual work, they should not be read by other team members. Therefore, each student MUST turn in his/her own journal.

**Project Poster**

The group should provide a Power Point file that will contain a single slide that summarizes your project. It can be created from the slides of your project presentation Power Point file. Creativity will be needed to make it appealing, yet still informative.

**Communication**

Communication between students, instructor and the clients will be done mostly via WebCT:

- **Email**: Please use the WebCT mail for all communications. If you need to reach me urgently, you may use lquiroga@hawaii.edu for faster replies. Please start the message subject with "LIS672".
- **Class Forums**: for each class session, a forum will be created for questions and discussions.
- **Group Project Forums**: each group will have a group project forum, which will be used to discuss ideas with your other group members and the client.
- **Special Topic Forum**: each group will have a topic forum to discuss ideas and progress.
- **Client's Guest Account**: The clients can have a guest account on WebCT so that they can communicate with the students and provide feedback on the group projects.

Conference bridge, a free service provided by UH Tel-communications can be requested for distant group meetings; people in up to ten different locations / phones can join the bridge conference. Send your request to the instructor at least one week in advance.

Face to face meetings: office hours or by appointment.

**Required Text**

**Textbook:**

Extra readings may be assigned during the semester.

**Useful books**

Chapter of some of these books will be required readings; copies will be made available to students. Other books chapters might help to prepare special topics and / or term projects. Books can be borrowed temporarily to make your own copies.


**Requirements**

Evaluation will be partly individual and partly team based, according to the following formula:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class attendance, constructive participation, WebCT, discussions, leadership</td>
<td>15 %</td>
</tr>
<tr>
<td>Quizzes, minor assignments, exercises</td>
<td>15 %</td>
</tr>
<tr>
<td>Assignments (4)</td>
<td>20 %</td>
</tr>
<tr>
<td>Special Topic - presentation and paper</td>
<td>10 %</td>
</tr>
<tr>
<td>Midterm</td>
<td>10 %</td>
</tr>
<tr>
<td>Course project:</td>
<td>30 %</td>
</tr>
<tr>
<td>In progress project reports and documentation (team) (3)</td>
<td>9 %</td>
</tr>
<tr>
<td>Individual journals (3)</td>
<td>3%</td>
</tr>
<tr>
<td>Final project Presentation (team)</td>
<td>5%</td>
</tr>
<tr>
<td>Final project report and poster (team)</td>
<td>8 %</td>
</tr>
<tr>
<td>Intra-team and client evaluations</td>
<td>5 %</td>
</tr>
</tbody>
</table>

**Assignments**

1. Examine the hardware configuration of an automated system used in a media center or small library. See details in
2. Explore a LAN's hardware and software requirements in a media center or small library. Evaluate performance and capacity of the LAN with respect to its existing and future applications. See details in Bilal, chapter 7: Activity, page 141. DUE session 6
3. Compare and contrast three OPACS. Hawaii' Voyager may be one of the three; instructions for accessing others will be distributed in class. Systems may be accessed via WWW or telnet. You are limited to three pages of 12 point type with one inch margins all around. DUE session 11
4. Compare and contrast three circulation modules. You can include Macintosh, Windows or Unix systems. You are limited to three pages of 12 point type with one inch margins all around. DUE session 12

Class participation, discussion, leadership
Full credit will be awarded only to students who have near-perfect attendance, participate meaningfully (and non-obstructively) in class discussions, and create an atmosphere of collegial participation when leading discussions (see section on policies)

Technology requirements
You will be expected to work with systems installed on both Macs and IBMs. Students are expected to check their email daily. This course requires the use of WebCT to access course materials and to conduct discussions with the instructor and classmates.

Students with special needs
Students with special needs as defined by the Americans with Disabilities Act, should discuss their needs with the instructor at the beginning of the semester, in order to make the necessary arrangements early in advance.

Grading Scale

| 100-98 A+ | 97-94 A | 93-90 A- |
| 89 - 87 B+ | 86-83 B | 82-80 B- |
| 79 - 77 C+ | 76-73 C | 72-70 C- |
| 69 - 67 D+ | 66-63 D | 62-60 D- |

Policies

Missing class policy:
Missing a HITS session affects overall class participation; it will also affect the grade if there happens to be an exercise or quiz during the class. However, there are two different situations:

- With no valid excuse. Students will lose 4 points of the final grade for each class missed without permission. They will not receive grade for class any class quizzes, exercises missed during those classes.
- With a valid excuse: if the student has an excuse student will do some work to make up for class participation and any other class activity in such a way that the grade will not be affected.
  - Student will be asked to watch the tape and post in WebCT a brief summary (no more than 2 pages)
  - In addition, and depending on each case, some other extra work will be requested, for example, if the class was missed to attend a professional meeting (conference, workshop, etc.) the student will be asked to present...
a summary of that meeting to the class

Late assignments, exercises policy:

- With no valid excuse: the grade for the assignment will be reduced by 20% per each late day
- With a valid excuse: a fair deadline will be negotiated

**Course Schedule**

The following schedule may not necessarily be strictly followed, however students are expected to have all assignments completed before the class session unless otherwise instructed. Please keep in mind that 7 HITS sessions and 6 online sessions (using WebCT) will be held. Additional readings may be added during the semester.

<table>
<thead>
<tr>
<th>Date</th>
<th>Session</th>
<th>Topic</th>
<th>Required readings (see optional readings in the outline of sessions)</th>
<th>Notes / activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sep 3</td>
<td>1</td>
<td>Introductions; logistic; syllabus; WebCT. Overview of Library Automation (LA)</td>
<td></td>
<td>HITS session WebCT demo</td>
</tr>
<tr>
<td>Sep 10</td>
<td>2</td>
<td>Preparing for automation</td>
<td>Bilal chapters 1,2</td>
<td>WebCT session</td>
</tr>
<tr>
<td>Sep 17</td>
<td>3</td>
<td>Computer systems configurations: Hardware and software; enabling technologies</td>
<td>Bilal chapter 3</td>
<td>HITS session Projects and special topics selected First project status report # 1 DUE First journal DUE</td>
</tr>
<tr>
<td>Sep 24</td>
<td>4</td>
<td>Standards and protocols for data communication in computer networks</td>
<td>Bilal chapter 7</td>
<td>WebCT session Assignment # 1 DUE During this and next week: Meeting with instructor to discuss project status (office or phone)</td>
</tr>
<tr>
<td>Oct 1</td>
<td>5</td>
<td>Standards and protocols in the bibliographic context: Content and encoding standards</td>
<td>Bilal chapter 5 (p. 102-109); Taylor chapter 4,5</td>
<td>HITS session Special topics presentations start.</td>
</tr>
<tr>
<td>Oct 8</td>
<td>6</td>
<td>Standards and protocols in the bibliographic context: encoding and interfacing standards</td>
<td>Bilal chapter 8 (p. 154-155);</td>
<td>WebCT session Assignment # 2 DUE</td>
</tr>
<tr>
<td>Oct 15</td>
<td>7</td>
<td>Procurement</td>
<td>Bilal chapter 4 (p. 37-54)</td>
<td>HITS session Project status report # 2 DUE Journal #2 DUE During this and next week: Meeting with instructor to discuss project status (office or phone)</td>
</tr>
<tr>
<td>Oct 22</td>
<td>8</td>
<td>Implementation. Collection &amp; site preparation</td>
<td>Bilal chapter 5,6</td>
<td>WebCT session</td>
</tr>
</tbody>
</table>
Oct 29  9  Cataloging function; Authority Control Function. Midterm assessment  Bilal chapter 4 (p. 55-64)  WebCT session

Nov  5 10  Opac function  Bilal chapter 4 (p. 65-71); Bilal chapters 8,9  HITS session  Project status report # 3 DUE  Journal #3 DUE

Nov 12 11  Circulation function  Bilal chapter 4 (p. 72-80)  WebCT session  Assignment # 3 DUE (Opac comparison)  During this and next week: Meeting with instructor to discuss project status (office or phone)

Nov 19 12  Acquisition function; Serials function  Bilal chapter 4 (p. 81-88)  HITS session  Assignment # 4 DUE (Circulation comparison)

Nov 26            Thanksgiving

Dec  3 13  Integrated LA systems; usability; trends  Kochtanek & Matthews, chapters 3, 11, 13, 14  HITS session  Final paper DUE  Journal #4 DUE  Final project presentations

Outline of sessions

**Session 1: Introductions; logistics; syllabus; WebCT. Overview of Library Automation (LA).**
Textbook and optional material for the class, and their different approaches.
LA: History, purpose, benefits, disadvantages.
Happenings in LA: journals; directories of LA software, systems and services; networking with colleagues, mailing lists, conferences; vendors exhibitions. Job market for librarians in the LA field.
WebCT demo

**Session 2: Preparing for automation**
Modules and functions of the library and of the system
System analysis & design: needs assessments; specifications; proposal; implementation; evaluation
Organizational/Management issues in LA: impact of a LA system within and outside the organization, project planning and management.
Funding.
Readings: Bilal chapter 1,2
Optional: Osborne, chapter 3,4,13; Matthew, chapters 1,2; Ingersoll & Culshaw chapter 1,2

**Session 3: Computer systems configurations: Hardware and software; enabling technologies**
Hardware system configuration.
Software: operating systems; applications
Data storage: disk drives, files, records of fixed and variable-length, file structures
Enabling technologies
Readings: Bilal chapter 3
Optional: Boss chapter 2, 4; Kochtanek & Matthews chapter 1,2
Session 4: Standards and protocols for data communication in computer networks
Computer networks architecture. LAN, WAN, the Internet. Standards, protocols and interfaces for computer-computer communication. The OSI (Open System Interconnection) Reference model; Client server system design. TCP/IP architecture, protocols (e.g. telnet, ftp, smtp, http)
Readings: Bilal chapter 7
Optional: Boss chapter 7 (p. 92-100); Boss chapter 3,9; Kochtanek & Matthews chapter 5

Session 5: Standards and protocols in the bibliographic context: Content and encoding standards
Content standards: ISBD; AACR, Dewey, MESH, LC,
Encoding standards: the American National Standard for Bibliographic Interchange - the MARC formats: ANSI Z39.2; MARC format for encoding holding statements: Z39.71; Dublin Core; SGML (Standard Generalized Markup Language); HTML (Hypertext Markup Language); XML (Extensible Markup Language); EAD (Encoded Archival description); APPM (Archives, Personal Papers, and Manuscripts)
Readings: Bilal chapter 5 (p. 102-109); Taylor chapter 4,5
Optional: Boss chapter 7 (p. 83-88);

Session 6: Standards and protocols in the bibliographic context: encoding and interfacing standards
Information Retrieval client-server protocol: Z39.50
Computerized ordering and claiming protocols: Z39.49, Z39.55, Z39.45, EDI (Electronic Data Interchange) standards
Patron Record Data Element: Z39.69
Interlibrary Loan: Z39.63
Circulation system data: Z39.70
Readings: Bilal chapter 8 (p. 154-155)
Optional: Boss chapter 7 (p. 100-105)

Session 7: Procurement
System selection; preparing the Request for Proposals (RFP); Sample RFP: general specifications; specification for utilities; hardware specifications)
Readings: Bilal chapter 4 (p. 37-54)

Session 8: Implementation. Collection & site preparation
Preparing the collection; RECON (Retrospective conversion); patron database; complying with bibliographic standards; barcoding
Site preparation; installation and testing; security; user training; database maintenance
Readings: Bilal chapter 5,6

Session 9: Cataloging function; Authority Control Function
Sample RFP: specifications for cataloging & authority control; cataloging in digital/virtual libraries
Readings: Bilal chapter 4 (p. 55-64)
Midterm

Session 10: Opac function
Sample RFP: specifications for OPAC; OPACS in the Internet; OPACS and digital/virtual libraries
Readings: Bilal chapter 4 (p. 65-71); Bilal chapters 8,9

Session 11: Circulation function
Sample RFP: specifications for circulation; circulation in digital/virtual libraries
Readings: Bilal chapter 4 (p. 72-80)

Session 12: Acquisition function; Serials function
Sample RFP: specifications for acquisition; specifications for serials; acquisitions & serials in digital/virtual libraries

Readings: Bilal chapter 4 (p. 81-88)

Session 13: Integrated LA systems; usability; digital libraries; trends

Readings: Kochtane & Matthews, chapters 3, 11, 13, 14; Ingersoll & Culshaw, Chapter 10