LIS 674
Database Design & Creation
Summer 2009
Monday to Friday, 5:00 to 7:40pm
July 27 to August 14
Bilger Hall 319

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Office Hours: as arranged
Online Materials Available at: http://laulima.hawaii.edu

Course Description
Designing and creating textual and/or directory databases from the viewpoint of information specialists and content providers. Needs analysis, file design, record content and structuring, software choices. Students implement a prototype database.

Prerequisite
LIS 670 or consent.

Core Competencies Addressed
   Resource Building
   Knowledge Organization
   Technological Knowledge
   Knowledge Dissemination — Service

Program Learning Objectives Addressed
The Program’s first goal is for students to acquire the knowledge, skills, and attitudes that are fundamental to professional competence and career-long professional growth in the library and
information services field. The course also addresses the objectives of the LIS Program, as found in the UH LIS Program Mission and Goals, enabling you to:

- Demonstrate an understanding of the development, organization, and communication of knowledge (#2)
- Apply basic competencies and knowledge that are essential for providing, managing, and designing information services and programs in a variety of information environments (#3)
- Demonstrate theoretical understanding of and basic competencies in evaluating, selecting and organizing information sources (#5)
- Demonstrate theoretical understanding of and basic competencies in storage, retrieval, dissemination, utilization and evaluation of information (#6)
- Demonstrate an understanding of research techniques and methods of applying new knowledge as it becomes available (#9)
- Demonstrate the professional attitudes and the interpersonal and interdisciplinary skills needed to communicate and collaborate with colleagues and information users (#10)
- Demonstrate basic competencies in the latest specialized information technologies (#11)
- Demonstrate an understanding of the above goals within the perspective of prevailing and emerging technologies (#12)

Professional Expectations
All LIS students are expected to be familiar with and adhere to the Professional Expectations posted at [http://www.hawaii.edu/lis/students.php?page=profexp](http://www.hawaii.edu/lis/students.php?page=profexp)

Course Objectives
This course will enable students to:
- Create a database from scratch using a commercial database program.
- Organize information appropriately in the database to accomplish specific tasks.
- Exhibit a critical understanding of the elements of a good database design, including structural coherence and user-interface design.
- Explain and justify the decisions commonly made when developing a database, including the choice between flat and relational databases and the appropriate organization of fields.
Integrate macros and other automation into a database to perform routine functions. Integrate calculation fields (both numerical and textual) into a database to increase the database's functionality.

Provide specifications for a proposed database that would be suitable for explaining the database to a non-specialist.

Describe and explain the practical and ethical dimensions of database design and use, specifically in the context of a library.

Qualify for positions that require designing and implementing textual databases in libraries; information centers and other organizations providing information services.

It would be impossible to learn everything there is to know about database design in one semester. The overall goal of the course is to provide students with an understanding of the theoretical and social issues connected to database design, as well as practical skills connected with creating databases.

**ALA Core Competencies**

In 2007 the LIS Program decided to map our courses along with the ALA’s 2005 Draft “Statement of Core Competencies” as a way of basing our course offerings in parallel with requirements for today’s professional.* This course contributes to learning the following competencies:

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* The LIS Faculty added one competency (A): Social, Historical, and Cultural Context: concepts and knowledge regarding the socio-historical development of libraries, print culture, and information science; international librarianship, information policy, and social and cultural issues, including the interplay between library and information science and the cultures of Hawaii, the Pacific region, and Asia.
Teaching Methods
Class-time instruction will be a combination of lectures, guest lectures, student presentations and group discussions. Oral and written assignments, such as case studies, are designed to promote critical analysis and reflection on readings. Assignment due dates are indicated on the course schedule. Attendance and constructive participation are required. Some assignments will appear readily applicable to your first days of professional work, while the majority of assignments will lay the foundations for more advanced understanding.

Research Methods
Research is an important part of the work and expertise of modern LIS professionals. This course utilizes the following research methods, as selected from “Qualitative and Quantitative Research Methods Taught and Utilized in LIS Program Courses”:

- **Action Research** - to study student interaction with the instructional environment;
- **Instructional Design** - to systematically analyze learner needs, implement instruction, and assess learning
- **Heuristic Evaluation** - to identify usability problems in the user interface design.

Course Assignments and Grading
Specific grading criteria are mentioned in the instructions for each assignment, but in general I like to reward papers that are well-written, well-researched, creative, and show me that you are integrating questions from this class and your real life experiences and readings from relevant professional literature. My interest is to see that you follow the instructions and are able to develop a logical, analytical, well-written paper, and provide evidence for your observations.

Part of demonstrating professionalism includes using LIS terminology when appropriate. I also am happy if you can tie theoretical issues to the larger world as long as this supplements your LIS readings (not in lieu of them). I highly value critical thinking. Do not take everything you read or hear as truth.
Your grade will be determined on the following basis.

Database Project = 60%
  Initial Proposal (10%)
  Class Demonstration (10%)
  Final Project (40%)
Classroom Explanations = 20%
  Calculation (10%)
  Script (10%)
Participation = 20%

Grading Scale

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<td>A+</td>
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<td>97-94</td>
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<td>93-90</td>
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<td>89-87</td>
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Papers are due at the start of class. 5% of the grade per day late will be subtracted from overdue assignments (starting with the time papers are handed in).

Textbooks


Alex Wright, *Glut: Mastering Information Through the Ages*. Cornell University Press.

Both books are required.

Additional readings will be handed out in class or made available electronically.

Technology Requirements

This course requires you to use a computer to produce all of the written assignments. Students should be familiar with Laulima and have access to a computer, preferably a laptop, that is capable of running the trial version Filemaker Pro (either PC or Mac).
Timeline

Day One - July 27 - Monday
Topic: Introductions
In Class: Creating a quick database

Day Two - July 28 - Tuesday
Topic: Excel and XML
Topic: Classification and Databases
Read and Discuss: Glut, to chapter end of chapter 3
In Class Activity: working with XML files

Day Three - July 29 - Wednesday
Topic: Flat Databases
Topic: Bibliographic control, Validation, International Standards Organization
Read and Discuss: Glut, chapters 4, 5 and 6

Day Four - July 30 - Thursday
Topic: Relational Database Basics, Keys, Indexes
Read and Discuss: Glut, chapters 7, 8 and 9

Day Five - July 31 - Friday
Topic: Planning a Database, user needs, functionality, translating
Read and Discuss: Glut, chapters 10, 11 and 12

Day Six - August 3rd - Monday
In Class Activity: Initial Proposal presentations

Day Seven - August 4th - Tuesday
Topic: From user needs to data models
Read and Discuss: "Panopticism" by Michel Foucault
Day Eight - August 5th - Wednesday
   Topic: Calculations
   Read and Discuss: *Everything is Miscellaneous*, to end of chapter 2

Day Nine - August 6th - Thursday
   Topic: Calculations
   Read and Discuss: *Everything is Miscellaneous*, chapters 3 and 4
   Read and Discuss: "The Analytical Language of John Wilkins" by Jorge Luis Borges

Day Ten - August 7th - Friday
   Topic: Scripting

Day Eleven - August 10th - Monday
   Topic: Scripting
   Read and Discuss: *Everything is Miscellaneous*, chapters 5 and 6

Day Twelve - August 11th - Tuesday
   Topic: Interface Design
   Read and Discuss: *Everything is Miscellaneous*, chapters 7 and 8

Day Thirteen - August 12th - Wednesday
   Topic: Usability Studies
   Read and Discuss: *Everything is Miscellaneous*, chapters 9 to end

Day Fourteen - August 13th - Thursday
   In Class Activity: Final Project Demonstrations

Day Fifteen - August 14th - Friday
   In Class Activity: Final Project Demonstrations