



## **LIS 2670: Digital Libraries**

[Current as of: 08/25/2013]

**Fall 2012**

**Class time:** Tuesdays 12:00pm – 2:50pm

**Location:** 404 IS Building

**Instructor:**

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Office hours: Thursdays 9:30-11:30am

or by appointment

**CourseWeb URL:** <http://courseweb.pitt.edu>

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### **I. Course Description:**

This course offers an examination of the conditions and factors influencing the development of digital library services, focusing largely on technological and socioeconomic issues. The course aims to develop a broad understanding of digital libraries, including: basic concepts, types of digital content, factors in the creation and organization of digital libraries, underlying technologies, the emerging importance of context, ensuring access, preserving digital content, and management of digital library resources. The course will include the development of theoretical knowledge and a practical understanding of digital libraries.

### **II. Course Goals**

Upon finishing this course, the students should be able to

- a. evaluate the major components of digital libraries by considering their supporting technologies and social-economic factors.

- b. review a practical problem associated with digital libraries, and develop a valid solution to solve it.
- c. examine the social, economical, cultural, and political issues related to digital libraries and their services

### III. CourseWeb Information:

CourseWeb is a Web-based system using BlackBoard software that facilitates course-related communication as well as distribution of course materials and grades. You can access CourseWeb at <http://courseweb.pitt.edu> . You must log in with your University Computer Account – this is the one that goes with your ‘pitt.edu’ e-mail address. If you do not have a Pitt account, please contact Computing Services (CSSD) at 412-624-HELP [4357] to find out how to get one. Course-related e-mail will be sent to your Pitt e-mail account. If you do not read e-mail on your Pitt account, you are responsible for forwarding any e-mail received on your Pitt account to the e-mail address that you use. See <http://accounts.pitt.edu/> for information on managing your Pitt account and forwarding e-mail. If you have trouble logging in to CourseWeb, you may need to log in to the accounts website above to activate your Pitt e-mail account. Call 412-624-HELP with any problems relating to your account.

### IV. Recommended books and Readings

There is no required textbook for this class. However, various parts of the following books will be used in the class:

1. Michael Lesk, “Understanding Digital Libraries”. Morgan Kaufmann Publisher. 2005. 1-55860-924-5. IS Library call number: [Z692.C65 L47 2004](#). Referred as “LESK” subsequently.<sup>1</sup>
2. William Arms. “Digital Libraries”. MIT Press 2000. ISBN: 0-262-01880-8. IS library call number: [Z692.C65 A76 2000](#). referred as “ARMS” subsequently. Available online <http://www.cs.cornell.edu/wya/DigLib/MS1999/index.html>
3. Christine L. Borgman, “From Gutenberg to the Global Information Infrastructure: Access to Information in the Networked World”. MIT Press, 2001. ISBN: 0-262-52345-0. IS library call number: [ZA3225. B67 2000](#). Referred as “BORGMAN” subsequently.
4. Ian H. Witten. “How to Build a Digital Library”. Morgan Kaufmann Publisher. 2002. ISBN: 1-558-60790-0. Referred as “WITTEN” subsequently.
5. Tefko's D-Lib Web site: [http://www.scils.rutgers.edu/~tefko/D\\_LibEdu\\_home.htm](http://www.scils.rutgers.edu/~tefko/D_LibEdu_home.htm)

There will be about 3-4 required readings each week. You will be asked to submit a reading note each week before the class to respond to the issues raised in 3 of the required readings. This can be informal in style – even bulleted lists can be used when appropriate, however, the response should clearly indicate the context, including the part of the text that triggered your questions. Do not summarize the readings. Instead, discuss your thoughts, ideas, and questions related to them. Please include at least one question each week that you have from the readings that you might like me to address in class. Put the responses for each week’s readings into the blog you created, and you should do so by midnight

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<sup>1</sup> LESK is the book recommended if you want buy a book for reference purpose.

the Saturday before the class. As described below, 10 responses are required as part of your final grade, each of which counts for .5 participation point.

Readings will generally be available via CourseWeb (if available in electronic format) and on reserve in the IS Library. I will communicate each week which readings are required both in class and on CourseWeb. Additional readings may be added as needed.

## V. Course Schedule Summary

<b>Date</b>	<b>Unit</b>	<b>Assignment and Others</b>
Aug. 28	1: Introduction and Course Overview	Assignment 1 is out, Due: Sep.11
Sep. 4	2: Models and Architectures of Digital Libraries <i>Team Project Introduction</i>	None
Sep. 11	3: Open Source DL System Introductions (Guest lectures by TAs)	
Sept. 18	4: Representation of Digital Objects <i>Team Formation deadline</i>	Assignment 2 is out Due Oct. 2
Sept. 25	5: Metadata in Digital Libraries	None
Oct. 2	6: XML and Markup	Assignment 3 is out Due Oct. 16
Oct. 9	Fall break	
Oct. 16	7: Access in Digital Libraries - 1 <i>Team Project Proposal Talk</i>	
Oct. 23	8: Access in Digital Libraries – 2	None
Oct. 30	9: Digital Preservation	
Nov. 6	Exam Sitting in	Exam Given Out
Nov. 13	10: Interaction and Evaluation	Assignment 4 is out Due Nov. 27
Nov. 20	11: Social Issues	None
Nov. 27	12: Security and Economics	None
Dec. 4	13: Legal Issues and Future of Digital Libraries	None

Dec. 11	14: <i>Team Project Final Presentation</i>	Due Term Project Report

## VI. Assessment

### *Participation 14%*

Class attendance is required for success in this course, as material will be covered in class that is not included in the readings. Participation is based on active participation in on-class/online discussions (4 participation points), and off-class contribution to each week’s “my reading questions” before the class and “my muddiest points” after the class. The detail of assess contribution to “my reading questions” is stated in section IV. Your muddiest points can be submitted separately or with the reading questions for the next week. If the muddiest points and reading notes are submitted together, you need to make it clear where the muddiest points and reading notes each are. Again, 10 responses are required as part of your final grade, each of which counts .5 participation point.

If you must miss a class, please notify the instructor, and make arrangements to obtain course notes and handouts. Makeup exams will not be offered except under extreme circumstances.

### *Assignment 24%*

There are total four assignments, each of which will count 6% in the final course score. You are required to make a clear presentation about your ideas, and the essay should be about one or two pages.

The deadline of submitting each assignment is before 12pm of the due date. Each 24 hours delay will have 40% deduction of the maximal score. No submission later than 2 days will be accepted except in the case of emergencies and personal disasters.

### *Exam 32%*

The exam will be offer either as a sitting in for 120 minutes or work at home, and covers all the topics taught in the weeks before it. Common exam questions include multiple choices, short definitions, and discussion questions.

Previous year’s exam questions and answers can be located at the past exam section in the Courseweb.

### *Term Project 30%*

Please see section VIII for detail description of term project.

### *Course Grading Scale:*

The final grade depends on the percentage of points you have earned, and the definition of letter grades is:

- 90 <= A- < 93, 93 < A <= 97, 97 < A+ <= 100
- 80 <= B- < 83, 83 < B <= 87, 87 < B+ < 90
- 70 <= C- < 73, 73 < C <= 77, 77 < C+ < 80
- 60 <= D < 70,
- F < 60

## VII. Detailed Course Schedule

### *Unit 1 Introduction*

Objectives: After this class, you should be able to

- restate different views and definitions of digital libraries
- identify causes for different communities working on digital libraries
- develop or adopt your own definition of digital libraries, and verify some self-defined digital libraries based on your definition.

#### Required Readings

1. Leonardo Candela et. al. (2007) Setting the Foundations of Digital Libraries. *D-Lib Magazine* 13(3-4), March/April 2007. <http://www.dlib.org/dlib/march07/castelli/03castelli.html>
2. BORGMAN, chapter 2. (available in CourseWeb)
3. Andreas Paepcke, Hector Garcia-Molina, Rebecca Wesley, “Dewey Meets Turing: Librarians, Computer Scientists, and the Digital Libraries Initiative” *D-Lib Magazine*, Volume 11 Number 7/8, July/August 2005. <http://www.dlib.org/dlib/july05/paepcke/07paepcke.html>
4. Christian Lupovici. (2008) The growth of the role of librarians and information officers in digital libraries. *Digital Libraries*, Fabrice Papy (eds). ISTE and John Wiley & Sons, Inc. (available in CourseWeb)

#### Background Readings

5. William Y. Arms. “Automated Digital Libraries, How Effectively Can Computers Be Used for the Skilled Tasks of Professional Librarianship?” *D-Lib Magazine* July/August 2000. 6(7/8). <http://www.dlib.org/dlib/july00/arms/07arms.html>.
6. C. Schwartz. (2000). Digital libraries: an overview. *Journal of Academic Librarianship* 26(6): 385-393. [Available online at Pitt E-Journal <http://ug4fn7ck2h.search.serialssolutions.com/> ]
7. D.M. Levy. (2000). Digital libraries and the problem of purpose. *D-Lib Magazine* 6(1), January 2000. <http://www.dlib.org/dlib/january00/01levy.html>.

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### *Unit 2 Models and Architectures of Digital Libraries*

Objectives: After this class, you should be able to

- explain major components of digital libraries
- examine ideas behind various DL architecture

- tell concepts of computer and networking technologies relevant to digital libraries

#### Required Readings:

1. Hussein Suleman and Edward A. Fox. "A Framework for Building Open Digital Libraries", D-Lib Magazine, December 2001. Volume 7 Number 12. <http://www.dlib.org/dlib/december01/suleman/12suleman.html>.
2. William Y. Arms, Christophe Blanchi, Edward A. Overly. "An Architecture for Information in Digital Libraries". D-Lib Magazine, February 1997. <http://www.dlib.org/dlib/february97/cnri/02arms1.html>.
3. Sandra Payette, Christophe Blanchi, Carl Lagoze, Edward A. Overly. "Interoperability for Digital Objects and Repositories, The Cornell/CNRI Experiments", D-Lib Magazine, May 1999, Volume 5 Issue 5. <http://www.dlib.org/dlib/may99/payette/05payette.html>. (pay attention to the discussion of interoperability and extensibility)
4. ARMS, Chapter 2, <http://www.cs.cornell.edu/wya/DigLib/MS1999/Chapter2.html>

#### Background Readings:

5. Robert E. Kahn and Vinton G. Cerf, "What is the Internet (And What Makes It Work)", prepared by the authors at the request of the Internet Policy Institute, December 1999. [http://www.cnri.reston.va.us/what\\_is\\_internet.html](http://www.cnri.reston.va.us/what_is_internet.html).
6. Richa Pandey. "Digital Library Architecture". DRTC Workshop on Digital Libraries: Theory and Practice, March 2003. [https://drtc.isibang.ac.in/retrieve/27/B\\_architecture\\_richa.pdf](https://drtc.isibang.ac.in/retrieve/27/B_architecture_richa.pdf)
7. The Work and Vision of Work Package 1: Digital Library Architecture. <http://www.delos.info/newsletter/issue2/feature1/>.

#### Hand On Points:

1. **Components of DL:** After you watched the lecture up to the slide for hand on point 1, you can pause and visit the Treasure Map of EU Digital Library at <http://www.theeuropeanlibrary.org/exhibition/treasures/>. Please explore the different pages of the site, and start to think about the models we discussed so far about the DL models, especially the 5S model. Can you identify streams, structures, spaces, scenarios, and societies?
2. **Handles and URL.** After you reach the slide for hand on point 2, open a browser, try on the following actions
  - a. type a query into [www.google.com](http://www.google.com)
  - b. browse news in <http://www.nytimes.com/>
  - c. find a hotel in [www.hotels.com](http://www.hotels.com) at washington D.C, check in nov 1, 2009, check on nov 4, 2009, 1 room, 1 person
  - d. At PittCat at <http://www.library.pitt.edu/books/> find a book about digital library

#### Discussion Points:

Based on the discussion we had in the class, try to think of the answers to the following questions.

1. What is the handle for current Web pages?
2. Any problems with it?
3. Can URL act as the identifiers of online digital objects?

### *Unit 3 Open source DL systems: introduction*

Objectives: After this class, you should be able to

- understand the basics of Greenstone and DSpace DL systems
- know the basic procedure for installing Greenstone and DSpace
- evaluate practical considerations for adopting one DL system

Required Readings:

1. Ian H. Witten, David Bainbridge, Stefan J. Boddie. "Greenstone Open-Source Digital Library Software". D-Lib Magazine, October 2001  
<http://www.dlib.org/dlib/october01/witten/10witten.html>
  2. MacKenzie Smith et al. "DSpace: An Open Source Dynamic Digital Repository" D-Lib Magazine, January 2003 <http://www.dlib.org/dlib/january03/smith/01smith.html>
  3. Goutam Biswas and Dibyendu Paul. An evaluative study on the open source digital library softwares for institutional repository: Special reference to Dspace and greenstone digital library. International Journal of Library and Information Science Vol. 2(1) pp. 001-010, February, 2010.  
<http://academicjournals.org/IJLIS/PDF/pdf2010/Feb/Biswas%20and%20Paul.pdf>
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### *Unit 4 Representation of Digital Objects*

Objectives: After this class, you should be able to

- outline common approaches for selecting materials for digitalization
- criticize various approaches for digitalizing, and representing digital objects
- evaluate practical considerations adopted for digitalization and representation in existing digital libraries

Required Readings:

4. LESK sections 2.1, 2.2, 2.7, chapter 3.
5. ARMS. Chapters 9. <http://www.cs.cornell.edu/wya/DigLib/MS1999/Chapter9.html>.
6. Clifford Lynch, "Identifiers and Their Role In Networked Information Applications".  
<http://www.arl.org/bm~doc/identifier.pdf>
7. Norman Paskin. "Digital Object Identifier (DOI) System". Encyclopedia of Library and Information Sciences. <http://www.doi.org/overview/080625DOI-ELIS-Paskin.pdf>

Background Readings:

8. Sam Sun, Larry Lannom, and Brian Boesch. "Handle System Overview",  
<http://www.handle.net/rfc/rfc3650.html>.
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### *Unit 5 Metadata in Digital Libraries*

Objectives: After this class, you should be able to

- outline the importance of metadata in representing and organizing digital objects into collections
- create basic elements of Dublin Core for digital objects

Required Readings:

1. R. Gartner. Metadata for digital libraries: state of the art and future directions 2008. [www.jisc.ac.uk/media/documents/techwatch/tsw\\_0801pdf.pdf](http://www.jisc.ac.uk/media/documents/techwatch/tsw_0801pdf.pdf)
  2. Anne J. Gilliland. Introduction to Metadata, pathways to Digital Information: 1: Setting the Stage 2008 [http://www.getty.edu/research/publications/electronic\\_publications/intrometadata/pdf.html](http://www.getty.edu/research/publications/electronic_publications/intrometadata/pdf.html)
  3. Stuart L. Weibel, "Border Crossings: Reflections on a Decade of Metadata Consensus Building", D-Lib Magazine, Volume 11 Number 7/8, July/August 2005 <http://www.dlib.org/dlib/july05/weibel/07weibel.html>
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### *Unit 6 XML and Markup Languages*

Objectives: After this class, you should be able to

- explain the functionalities of the major components of XML suite
- create simple XML document for describing objects

Required Readings:

1. Martin Bryan. Introducing the Extensible Markup Language (XML) <http://burks.bton.ac.uk/burks/internet/web/xmlintro.htm>
  2. Doug Tidwell, Introduction to XML [http://www.ibm.com/developerworks/xml/tutorials/xmlintro/?S\\_TACT=104AHW06](http://www.ibm.com/developerworks/xml/tutorials/xmlintro/?S_TACT=104AHW06)
  3. Uche Ogbuji. A survey of XML standards: Part 1. January 2004. <http://www-128.ibm.com/developerworks/xml/library/x-stand1.html>
  4. XML Schema Tutorial <http://www.w3schools.com/Schema/default.asp>
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### *Unit 7 Access in Digital Libraries-I*

Objectives: After this class, you should be able to

- evaluate various retrieval methods developed in digital libraries, especially those ones that do not exist in traditional libraries



Required Readings:

1. LESK chapter 4.
2. David Hawking , Web Search Engines: Part 1 and Part 2 IEEE Computer, June 2006.  
[http://www.computer.org/portal/site/computer/menuitem.5d61c1d591162e4b0ef1bd108bcd45f3/index.jsp?&pName=computer\\_level1\\_article&TheCat=1055&path=computer/homepage/0606&file=thingswork.xml&xsl=article.xsl&:jsessionid=G3nJ1tNBGT7hHN4hLhySlzJ4JnrH42kkmWrNhdrllpkGnMp2nC8N!-1182277384](http://www.computer.org/portal/site/computer/menuitem.5d61c1d591162e4b0ef1bd108bcd45f3/index.jsp?&pName=computer_level1_article&TheCat=1055&path=computer/homepage/0606&file=thingswork.xml&xsl=article.xsl&:jsessionid=G3nJ1tNBGT7hHN4hLhySlzJ4JnrH42kkmWrNhdrllpkGnMp2nC8N!-1182277384) and  
[http://www.computer.org/portal/site/computer/menuitem.5d61c1d591162e4b0ef1bd108bcd45f3/index.jsp?&pName=computer\\_level1\\_article&TheCat=1055&path=computer/homepage/0806&file=howthings.xml&xsl=article.xsl&](http://www.computer.org/portal/site/computer/menuitem.5d61c1d591162e4b0ef1bd108bcd45f3/index.jsp?&pName=computer_level1_article&TheCat=1055&path=computer/homepage/0806&file=howthings.xml&xsl=article.xsl&)
3. M. Henzinger et al. challenges in Web Search Engines. ACM SIGIR 2002.  
<http://portal.acm.org/citation.cfm?coll=GUIDE&dl=GUIDE&id=792553>

Background Readings:

4. Information Retrieval in Digital Libraries, by Bruce R. Schatz, Science Vol 275, 1997 <http://www.canis.uiuc.edu/archive/papers/science-irdl-journal.pdf> (too old)
5. Searching the Web: General and Scientific Information Access, by Steve Lawrence and C. Lee Giles, IEEE Communications 3791) 1999. <http://citeseer.ist.psu.edu/lawrence99searching.html>
6. Multimedia Search and Retrieval, by Shih-Fu Chang et al. In Advances in Multimedia: Systems, Standards, and Networks, A.Puri and T. Chen eds. 1999  
<http://www.ctr.columbia.edu/~sfchang/course/vis/REF/atul-book-chapter.pdf> (too long, too technical)

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*Unit 8 Access in Digital Libraries-II*

Objectives: After this class, you should be able to

- examine the various approaches for meta-search and federate search in DL

Required Readings:

1. OAI for Beginners - the Open Archives Forum online tutorial.  
<http://www.oaforum.org/tutorial/>
2. The Truth About Federated Searching. October 2003.  
<http://www.infotoday.com/it/oct03/hane1.shtml>
3. Lynch, Clifford A. (1997). The Z39.50 Information Retrieval Standard, Part 1: A Strategic View of its Past, Present, and Future. D-Lib Magazine, April 1997.  
<http://www.dlib.org/dlib/april97/04lynch.html>
4. Norbert Lossau, "Search Engine Technology and Digital Libraries: Libraries Need to Discover the Academic Internet" D-Lib Magazine, June 2004, Volume 10 Number 6.  
<http://www.dlib.org/dlib/june04/lossau/06lossau.html>

## *Unit 9 Preservation in Digital Libraries*

Objectives: After this class, you should be able to

- restate the new challenges in digital preservation
- explain the basic strategies for digital preservation.
- explain why OAIS reference model is needed, and how OAIS model can be used for preservation
- restate the purposes and functions of preservation metadata.

Required Readings:

1. Margaret Hedstrom “Research Challenges in Digital Archiving and Long-term Preservation” [http://www.sis.pitt.edu/~dlwksnop/paper\\_hedstrom.pdf](http://www.sis.pitt.edu/~dlwksnop/paper_hedstrom.pdf)
2. Brian F. Lavoie, The Open Archival Information System Reference Model: Introductory Guide. [http://www.dpconline.org/docs/lavoie\\_OAIS.pdf](http://www.dpconline.org/docs/lavoie_OAIS.pdf)
3. Jones, Maggie, and Neil Beagrie. Preservation Management of Digital Materials: A Handbook. 2001. <http://www.dpconline.org/pages/handbook/index.html> introduction and digital preservation sections.
4. Justin Littman. Actualized Preservation Threats: Practical Lessons from Chronicling America. D-Lib Magazine July/August 2007. <http://www.dlib.org/dlib/july07/littman/07littman.html>

Background Readings:

5. Trusted Digital Repositories: Attributes and Responsibilities, An RLG-OCLC Report. May 2002. <http://www.rlg.org/longterm/repositories.pdf>
6. Preserving Access to Digital Information (PADI), National Library of Australia. <http://www.nla.gov.au/padi/>
7. Digital Preservation Tutorial: <http://www.library.cornell.edu/iris/tutorial/dpm/foundation/oais/>
8. Jeff Rothenberg, “Ensuring the Longevity of Digital Information” <http://www.clir.org/pubs/archives/ensuring.pdf>
9. UNESCO, “Guidelines for the Preservation of Digital Heritage” [http://portal.unesco.org/ci/en/ev.php-URL\\_ID=8967&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201.html](http://portal.unesco.org/ci/en/ev.php-URL_ID=8967&URL_DO=DO_TOPIC&URL_SECTION=201.html)

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## *Unit 10 Interaction and Evaluation*

Objectives: After this class, you should be able to

- explain the designing process for the interaction between human and computers, especially digital libraries
- evaluate the usability design of existing digital libraries interfaces by considering the learned principles

Required Readings:

1. Arms chapter 8. <http://www.cs.cornell.edu/wya/DigLib/new/Chapter8.html>. This is useful if you want to learn really basic of interaction.

2. Rob Kling and Margaret Elliott "Digital Library Design for Usability"  
<http://www.cSDL.tamu.edu/DL94/paper/kling.html>
  3. Tefko Saracevic, "Evaluation of digital libraries: An overview"  
[http://www.scils.rutgers.edu/~tefko/DL\\_evaluation\\_Delos.pdf](http://www.scils.rutgers.edu/~tefko/DL_evaluation_Delos.pdf).
  4. Marti Hearst, The Design of Search User Interfaces, Chapter 1 of Search User Interfaces, Cambridge University Press 2009, [http://searchuserinterfaces.com/book/sui\\_ch1\\_design.html](http://searchuserinterfaces.com/book/sui_ch1_design.html)
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### *Unit 11 Social Issues*

Objectives: After this class, you should be able to

- Identify the social considerations to be included when designing and developing DL
- Apply related social considerations in designing and developing DL
- Explain social impacts of DL when considering certain topics in DL
- Explain social impacts of DL when considering different groups of people involved in DL
- Express certain view of the future of libraries

Required Readings:

1. Social Aspects of Digital Libraries. The final report of UCLA-NSF Social Aspects of Digital Libraries Workshop. [http://is.gseis.ucla.edu/research/dig\\_libraries/index.html](http://is.gseis.ucla.edu/research/dig_libraries/index.html)
  2. The Infinite Library, Wade Roush, Technology Review, 2005. (available in CourseWeb)
  3. William Y. Arms, "A Viewpoint Analysis of the Digital Library", D-Lib Magazine, Volume 11 Number 7/8, July/August 2005. <http://www.dlib.org/dlib/july05/arms/07arms.html>
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### *Unit 12 Security and Economics*

Objectives: After this class, you should be able to

- Explain the elements of access management, associated issues and related technologies
- employ appropriate technologies for ensuring the security of existing digital libraries
- explain the models that people have developed for making digital libraries sustainable
- restate the long term implications related to the issue of access vs ownership

Required Readings:

1. William Arms, "Implementing Policies for Access Management", D-Lib Magazine, 1998. <http://www.dlib.org/dlib/february98/arms/02arms.html>.
2. Ulrich Kohl, Jeffrey Lotspiech, and Marc A. Kaplan, "Safeguarding Digital Library Contents and Users, Protecting Documents Rather Than Channels", D-Lib Magazine, September 1997 <http://www.dlib.org/dlib/september97/ibm/09lotspiech.html>
3. LESK, chapter 10 "economics" (available in CourseWeb)
4. ARMS, chapter 6, economics part <http://www.cs.cornell.edu/wya/DigLib/new/Chapter6.html>

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### Unit 13 Legal Rights and Future of Digital Libraries

Objectives: After this class, you should be able to

- Explain the definition and purpose of copyright and copyright protection
- Identify whether or not an activity in digital libraries violate copyright laws
- Know the controversial nature of privacy
- Explain the complex nature of privacy, and the need for a balance between privacy protection and the desire of building better systems
- explain the major achievements in the past 10 years
- create you own view about the valid directions of the further development of digital libraries in next 10 years and longer.

Required Readings:

1. LESK, chapter 11 (available in CourseWeb)
2. Joseph E. Stiglitz, “Intellectual-property rights and wrongs”, Daily Times, Aug19, 2005. [http://www.dailytimes.com.pk/default.asp?page=story\\_16-8-2005\\_pg5\\_12](http://www.dailytimes.com.pk/default.asp?page=story_16-8-2005_pg5_12)
3. Clifford Lynch, “Where Do We Go From Here? The Next Decade for Digital Libraries”, D-Lib Magazine, Volume 11 Number 7/8 July/August 2005, <http://www.dlib.org/dlib/july05/lynch/07lynch.html>
4. Knowledge lost in Information. Report of the NSF Workshop on Research directions for digital libraries <http://www.sis.pitt.edu/~dlwksshop/report.pdf>

Background Readings:

5. ARMS, chapter 6 <http://www.cs.cornell.edu/wya/DigLib/new/Chapter6.html>
  6. “Intellectual Property and Economic Issues for Digital Libraries” <http://www.iei.pi.cnr.it/DELOS/REPORTS/ipe.htm>
  7. Stephen M. Griffin, “Funding for Digital Libraries Research: Past and Present” D-Lib Magazine, Volume 11 Number 7/8, July/August 2005 <http://www.dlib.org/dlib/july05/griffin/07griffin.html>
  8. President's Information Technology Advisory Committee: Panel on Digital Libraries, *Digital Libraries: Universal Access to Human Knowledge*, PITAC February 2001 <http://www.itrd.gov/pubs/pitac/pitac-dl-9feb01.pdf>
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## VIII. Term Projects

Introduction:

The term project is designed for students 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 2 to 3 people. Experience suggests that successful teams require expertise in design, implementation, and project management.

Your task is to propose, plan and develop a prototype digital collection, using Open Source software (e.g., Greenstone, DSpace). Your digital library should address the need of a group of real users, and it should include at least three collections and at least one other media format in addition to text (minimally 25 documents total).

Requirements to the Report

The outcome of the term project includes two components:

1. a design report, which includes:
  - a. Problem statement
  - b. Digital library overview and scope
  - c. User requirements
  - d. Conceptual design
  - e. Schemas for representing and organizing digital objects.
  - f. Data collections
  - g. Sample information access scenarios
2. a running digital library system.

Grading Rubric

The term project will be evaluated based on the following criteria, and the score for the team will be the score for every term member unless the team falls into parts.

Design (40%)	40	<ul style="list-style-type: none"> <li>• Clearly identify the real user group;</li> <li>• Clearly identify users’ requirements through making contacts to the user group;</li> <li>• Multiple applications of the knowledge and technologies learned in the class into the design;</li> <li>• Materials included in the system are well processed, and the number exceeds the minimal requirements.</li> </ul>
	30	<ul style="list-style-type: none"> <li>• identify a user group;</li> <li>• Clearly identify users’ requirements;</li> <li>• some applications of the knowledge and technologies learned in the class into the design;</li> <li>• some materials included in the system are well processed, and the number exceeds the minimal requirements.</li> </ul>
	20	<ul style="list-style-type: none"> <li>• state some users’ requirements;</li> <li>• few application of the knowledge and technologies learned in the class into the design;</li> <li>• most materials included in the system are ill processed, but the number exceeds the minimal requirements.</li> </ul>
	10	<ul style="list-style-type: none"> <li>• No mention of user group;</li> <li>• No mention of user’s requirements;</li> <li>• No explicit application of the knowledge and technologies learned in the class into the design;</li> <li>• Materials included in the system are ill processed, and the number is below the minimal requirements.</li> </ul>
	0	<ul style="list-style-type: none"> <li>• Fail to design a DL system</li> </ul>

Implementation (30%)	30	<ul style="list-style-type: none"> <li>Fully implement the design of the system, or</li> <li>Provide reasonable explanations for the unimplemented parts</li> </ul>
	20	<ul style="list-style-type: none"> <li>Implement most features in the design</li> </ul>
	10	<ul style="list-style-type: none"> <li>Fail to implement majority of the design</li> </ul>
	0	<ul style="list-style-type: none"> <li>Fail to implement the system</li> </ul>
Team work (10%)	10	<ul style="list-style-type: none"> <li>Clear exhibition of collaboration among team members</li> </ul>
	5	<ul style="list-style-type: none"> <li>Lack collaboration among team members</li> </ul>
	0	<ul style="list-style-type: none"> <li>Team falls apart</li> </ul>
Report (10%)	10	<ul style="list-style-type: none"> <li>A clear presented and well documented report that cover all the required sections</li> </ul>
	5	<ul style="list-style-type: none"> <li>A report that covers most required sections</li> </ul>
	0	<ul style="list-style-type: none"> <li>A report missing most required sections, or</li> <li>not hand in the report on time</li> </ul>
Presentation (10%)	10	<ul style="list-style-type: none"> <li>clear, well organized, and engaging presentation that cover all the required information</li> </ul>
	5	<ul style="list-style-type: none"> <li>given a presentation that covers major issues in the project</li> </ul>
	0	<ul style="list-style-type: none"> <li>missing majority of required information, or</li> <li>fail to give a presentation</li> </ul>

#### Milestones for the project:

Introduction of term project:	September 4
Team formation deadline:	September 18
Project proposal presentation:	October 16
Final project report and presentation:	December 11
Project Demo:	last week of the semester

When writing either your assignment essays or project reports, please follow one of the established styles for reference and citation (visit “Research, Writing, and Style Guides” (<http://www.aresearchguide.com/styleguides.html>) for various existing styles). However, you are highly recommended to adopt the American Psychological Association APA style (the fifth edition of the *Publication Manual of the American Psychological Association* published by the American Psychological Association (2001)). “A Guide for Writing Research Papers” (<http://webster.commnet.edu/apa/>) is a wonderful online place to obtain the guidance for this style.

## **IX. Course Policies**

### *Ground rules for class discussion*

On-class interaction and discussion will be an important means of learning in this course, therefore, it is important that we work together to create a constructive environment by observing these rules:

- You should participate in the discussion of ideas.
- You should respect diverse points of view.
- You should aware the diverse backgrounds of peers.

- You may not belittle or personally criticize another individual for holding a point of view different than your own
- Your use of language should be respectful of other individuals or groups

### *Plagiarism*

It is expected that the work you submit in this course will be your own. While collaboration is allowed for the course project, it should be approved in advance and the nature of each contribution should be specified in the project proposal and the final submission.

The following statement is taken from *The Teaching Assistant Experience: A Handbook for Teaching Assistants and Teaching Fellows at the University of Pittsburgh* (A.P. Haley and J.M. Nicoll, eds.) ]

Plagiarism means submitting work as your own that is someone else's. For example, copying material from a book or other source without acknowledging that the works or ideas are someone else's and not your own is plagiarism. If you copy an author's words exactly, treat the passage as a direct quotation and supply the appropriate citation. If you use someone else's ideas, even if you paraphrase the wording, appropriate credit should be given. You have committed plagiarism if you purchase a term paper or submit a paper as your own that you did not write<sup>2</sup>.

Plagiarism is a violation of the University of Pittsburgh's standards on academic honesty, and violations of this policy are taken seriously. **From the *Guidelines on Academic Integrity: Student and Faculty Obligations and Hearing Procedures* (effective September, 1995):**

A student has an obligation to exhibit honesty, and to respect the ethical standards of the historical profession in carrying out his or her academic assignments. Without limiting the application of this principle, a student may be found to have violated this obligation if he or she:

- Presents as one's own, for academic evaluation, the ideas, representations, or words of another person or persons without customary and proper acknowledgment of sources.
- Submits the work of another person in a manner which represents the work to be one's own. [Quotation ellipsed.]<sup>3</sup>

### *Special Needs*

Students with disabilities who require special accommodations or other classroom modifications should notify the instructor and the University's Office of Disability Resources & Services (DRS) no later than the 2nd week of the term. Students may be asked to provide documentation of their disability to determine the appropriateness of the request. DRS is located in 216 William Pitt Union and can be contacted at 648-7890 (Voice), 624-3346(Fax), and 383-7355(TTY). Students who must

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<sup>2</sup> B. G. Davis, *Tools for Teaching* (San Francisco: Jossey-Bass, 1993), 300.

<sup>3</sup> University of Pittsburgh, *Guidelines on Academic Integrity: Student and Faculty Obligations and Hearing Procedures* (Pittsburgh: University of Pittsburgh, 1995), 7-8.

miss an exam or class due to religious observances must notify the instructor ahead of time and make alternative arrangements.