LSC638 : E-Science & Technology Information
Spring 2016 – Summer 2016

Credit Hours 3
Prerequisites/ Department consent (if any) None

Classroom TBA

Days and hours of class meetings and labs or discussion sections TBA

NOTE: For summer classes, blended format and redistribution of assignments will be implemented.

Instructor contact information:
Kimberly M. Hoffman, CUA Coordinator of Scholarly Communications
202-319-6178 Mullen 124
hoffman@cua.edu
8AM-4PM - appointment by request

Course Description (from Cardinal Station http://cardinalstation.cua.edu)

This course surveys historic and current trends in scientific, technical, and medical publishing (STM.) This course emphasizes understanding the changes occurring in electronic dissemination of scholarly communication and how libraries and other information organizations will need to manage these changes. Scholarly communication issues will include open-access publishing and copyright and intellectual property trends and issues. Engineering, Physics, Health Sciences, Computer Science, Math and Technology information sources and users will be studied. Web-based scholarly collaboration and communication tools will be examined as they relate to researchers and authors. The course will include practical experience with e-science reference, bibliometrics, alt-metrics, GIS, and data information literacy.

Instructional Methods
The course will incorporate lecture/discussion; hands-on exercises and homework assignments. Class meetings will be supplemented by announcements, discussion, webinars, lynda.com online videos and other materials posted in the class Blackboard site. Homework assignments will include practice exercises, and analytical assignments.
Required Text

_The Busy Librarian’s Guide to Information Literacy in Science and Engineering_
Edited by Katherine O’Clair and Jeanne R. Davidson
978-0-8389-8619-6 (2012)
Publisher: ACRL Price: $32.00

_The Accidental Data Scientist: Big Data Applications and Opportunities for Librarians and Information Professionals_
By Amy Affelt
978-1573875110 (2015)
Publisher: Information Today, Inc. $35.00

Recommended Text
(Students NOT required to purchase these titles - Instructor may provide readings from these texts)


Davis-Kahl, S., and Hensley, M.K. (2013). Common ground at the nexus of information literacy and scholarly communication. 9780838986219 ($50.00)


Reading materials, web materials with full citations. (Note if on reserve) See under Course Schedule

Libraries
The CUA Libraries' wide range of resources and services, including databases, online journals, and FAQs are on the main web site. For assistance on papers and assignments, consult the research guides or schedule an appointment with a subject librarian.

Course Goals
The course is designed to:

- Introduce the students to scientific research, communication and publications and the implications of scientific research for society
- The students develop an understanding of how scientists (engineering, physics, health sciences, computer science, math) communicate and seek information
- The students will develop an understanding of how scientific information is used by those other than the researchers (i.e. press, politicians, advocates.)
- Prepare students for work in science and technology libraries or other organizations that utilize research in science and technology
- Explore issues associated with electronic communication, open access, serials licensing, e-science, data research services and changes in scientists’ information seeking behaviors
- Prepare students for changing roles of librarians in scholarly communications issues such as author's rights, copyright and information literacy that includes data information literacy, bibliometrics, data visualization, new digital tools for digital scholarship and publishing.

Goals for Student Learning
At the end of the course students will be able to evaluate and apply an understanding of:

- Literature, research and relationships between disciplines in the sciences
- Major reference tools, electronic and print format resources for science and technology literature and research
- Search strategies for scientific research enquiries, basic and applied (from research and experiments)
- Formal and informal channels of scientific communication and their effect on scientific research and information use
- Changes in the way e-science resources are managed by libraries and used by scientists
- Tools to advance librarians as advocates for scholarly publishing in the future

Professional Standards Addressed
ALA’s Core Competences of Librarianship
http://www.ala.org/ala/educationcareers/careers/corecomp/corecompetences/finalcorecompstat09.pdf

CUA SLIS Competencies
http://lis.cua.edu/res/docs/about/accreditation/documents/sliscompetenciesadopted20080326.pdf
Course coverage and teaching methods are designed to foster the development of competencies recommended by the Information Literacy Standards for Science and Engineering/Technology by The ALA/ACRL/STS Task Force on Information Literacy for Science and Technology
http://www.ala.org/acrl/standards/infolitscitech

New SLA Competencies will be discussed: http://www.sla.org/about-sla/competencies/

Course Requirements

Students will be responsible for the following every week:

- Course readings as scheduled and supplemental course materials (i.e. presentations)
- Read/watch/listen/discuss - the sources in texts and on the web sites listed in the lectures for the disciplines that we are discussing.
- Online learning as needed for the course and projects – this may include lynda.com learning and webinars.
- Contributing and leading the science news discussion

During the course students will be responsible for:

- Four assignments that may include source annotations/analysis that will be due as specified on the course calendar
- Leading online discussion
- Short authors’ rights presentations
- GIS project
- Research data project
- Final “Issues” presentation with annotated bibliography

Expectations and policies

Academic Integrity Academic integrity is not merely avoiding plagiarism or cheating, but it certainly includes those things. More than anything, having academic integrity means taking responsibility for your work, your ideas, and your effort, and giving credit to others for their work, ideas and effort. If you submit work that is not your own – whether test answers, whole papers or something in-between – I have a responsibility to hold you accountable for that action. I also have a responsibility to treat you with respect and dignity while doing so.

The following sanctions are presented in the University procedures related to Student Academic Dishonesty:

“The presumed sanction for undergraduate students for academic dishonesty will be failure for the course. In the context of graduate studies, the expectations for academic honesty are greater, and therefore the presumed sanction for dishonesty is likely to be more severe, e.g., expulsion. ...In the more unusual case, mitigating circumstances may exist that would warrant a lesser sanction than the presumed sanction.”
At times, I may ask you to do group work for an in-class presentation or group project. For that specific assignment, you are allowed to share material, ideas and information; however, for any related work that is to be submitted on an individual basis, I expect your submission to be your own in its entirety.

For more information about what academic integrity means at CUA, including your responsibilities and rights, visit http://integrity.cua.edu.

**Accommodations for students with disabilities:** Any student who feels s/he may need an accommodation based on the impact of a disability should contact the instructor privately to discuss specific needs. Please contact Disability Support (dss.cua.edu) to coordinate reasonable accommodations for students with documented disabilities.

**Other Policies or Expectations:** Attendance and punctuality policy, Participation expectation, note re: cell phones, timeliness on papers, form of submission of papers electronic vs. hard copy, policy on making up (or not) quizzes, tests etc.

**Academic Support Services**
The university’s primary academic support resources are located on the 2nd floor of the Pryzbyla Center. These affiliated offices and services include:

- **The Undergraduate Advising Center** offers guidance to all undergraduates, especially first-year students, as they move toward their academic goals.
  - **Phone:** (202) 319-5545  **Email:** cua-advising@cua.edu  **Web:** advising.cua.edu

- **The Center for Academic Success** provides academic support services for all students through a broad base of programs and services, including Tutoring Services, Workshops, Academic Coaching, Individual Skills Meetings, Peer Mentoring, and more.
  - **Phone:** (202) 319-5655  **Email:** cua-academicsuccess@cua.edu  **Web:** success.cua.edu

- **The Writing Center** provides free, one-on-one consultations with trained graduate instructors for writing projects across all disciplines at any stage of the process, from brainstorming to revising. Appointments in the main location, 202 Pryz, can be scheduled in advance online (http://english.cua.edu/wc/). Drop-in appointments are also welcome based on availability in the Pryz and at the satellite location in the Mullen Library Lobby (see website for days and hours).
  - **Phone:** (202) 319-4286  **Email:** cua-writingcenter@cua.edu  **Web:** english.cua.edu/wc/

- **The Math Center** is staffed with Math Faculty and Tutors who are trained to assist students struggling in areas ranging from the basics to complex problems in calculus and statistics. Any student who feels he or she may need assistance in this or any other math class is welcome to visit the Math Center in Pryz 204 Monday through Thursday between the hours of 4:00 and 10:00pm. No appointment is necessary and services are absolutely free.
  - **Phone:** (202) 319-5655  **Email:** cua-academicsuccess@cua.edu
**Disability Support Services** provides programs and services designed to support and encourage the integration of students with disabilities into the mainstream of the university community.

**Phone:** (202) 319-5211  **Email:** cua-disabilityservices@cua.edu  **Web:** dss.cua.edu

**The Counseling Center** provides free individual and group counseling services, psychiatric consultation, alternative testing, and emergency services to CUA students. In addition, we provide consultation services and outreach programs to the CUA community. Appointments can be scheduled in person in 127 O’Boyle Hall, or by phone.

**Phone:** (202) 319-5765.  **Web:** counseling.cua.edu

**Assessment**

(10 points) In Class participation/BB discussion/Science News contributor, reflections
(10 points) Author/Researcher Rights Presentations
(20 points) Exercises: 4 reference question sets and/or analysis
(15 points) GIS project and/or (15 points) Research Data project
(30 points) Paper/Presentation: Issues in E-Science and Research

**University grades:**
The University grading system is available at [http://policies.cua.edu/academicundergrad//gradesfull.cfm#II](http://policies.cua.edu/academicundergrad//gradesfull.cfm#II) for undergraduates and [http://policies.cua.edu/academicgrad//gradesfull.cfm#iii](http://policies.cua.edu/academicgrad//gradesfull.cfm#iii) for graduate students. Reports of grades in courses are available at the end of each term on [http://cardinalstation.cua.edu](http://cardinalstation.cua.edu).

**Course Schedule**
Blended class
8 face to face sessions in a computer lab
SEE grid for projects

**Bibliography** *See under Course Schedule*

* For courses in which both graduate and undergraduate students are permitted to enroll, two separate syllabi are required that should reflect the additional requirements for students taking a course for graduate credit.
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<thead>
<tr>
<th>COURSE LEARNING OBJECTIVE</th>
<th>CUA LIS PROGRAM OUTCOMES</th>
<th>ASSIGNMENTS</th>
<th>HOW MASTERY WILL BE ASSESSED</th>
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<tr>
<td>Evaluate and apply understanding of Literature, research and relationships between disciplines in the sciences</td>
<td>Professional identity</td>
<td>Readings, online discussions</td>
<td>Graded on depth and breadth of comments and engagement in discussions and online postings.</td>
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<tr>
<td>Evaluate and apply mastery of major reference tools, electronic and print format resources for science and technology literature and research</td>
<td>Resources</td>
<td>Final project &amp; presentation</td>
<td>Peer evaluation, quality of sources discovered and used, consideration of intellectual property rights, knowledge of importance of subject to body of knowledge.</td>
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<tr>
<td>Apply understanding and demonstrate search strategies for scientific research enquiries, basic and applied (from research and experiments)</td>
<td>Resources</td>
<td>4 research question assignments</td>
<td>Graded on depth of answers and knowledge of sources used to answer. Be able to answer what does this user need?</td>
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<tr>
<td>The students will develop an understanding of how scientific information is used by those other than the researchers (i.e. press, politicians, advocates.)</td>
<td>Information organization</td>
<td>Research data project</td>
<td>Demonstrate mastery of in class tools and use of them in the teaching example or project demo.</td>
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<td>Prepare students for changing roles of librarians in scholarly communications issues such as author's rights, copyright and information literacy that includes data</td>
<td>Services</td>
<td>GIS assignment</td>
<td>Demonstrate mastery of in class tools and explain implementations in libraries from staff and users points of view.</td>
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information literacy, bibliometrics, data visualization, new digital tools for digital scholarship and publishing.

**Course Schedule: Blended class format**

Class/Lab   TOPICS: Science Librarianship, Job Competencies, Scholarly Communications Job Descriptions, eScience

*Readings:*


Class/Lab TOPICS: Scientific Publishing, Publishers, OA, JIF, h-factor, Alt-metrics, Copyright -- Authors Rights assignment

Readings:


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**Class/Lab TOPIC : GIS for Science and Libraries -- GIS Assignment**

**Readings:**


Class/Lab TOPICS: Information Literacy for Sciences, Data Information Literacy, Big Data

Readings:


Class/Lab TOPICS: Health Sciences/Medicine/Biology and Librarian as Informationist

Readings:


Class/Lab TOPICS: Cross-Disciplinary research, ENGR, Sustainable Design, Standards, Patents and Computer Science --Data Assignment


Class/Lab TOPICS: Bibliometrics, Informatics, Visualization, Data Research Management

Readings:


Class/Lab Student Presentations: Issues in Science Librarianship DUE