

INFORMATION LITERACY SAMPLE ASSIGNMENT 1

Course: CHM 203 – Instrumental Analysis

Instrumentation Research Unit

Laboratory techniques and instrumentation are constantly evolving. An important component of working in the laboratory involves staying up to date with new information and methods. With this in mind, you need to be able to 1) find sources of information on laboratory instrumentation and techniques 2) evaluate how appropriate, relevant, and reliable those sources of information are, and 3) interpret and present information from these sources with appropriate citations. To help you gain these skills, you will be researching a modern analytical instrumentation technique and presenting your results to the class. In addition, you will write a 4-5 page research paper on your instrumentation for me. A list of instrumentation topics is on the reverse side.

Your paper and presentation should cover the following items:

1. Applications of the technique. Give examples of the major types of analyses that use this technique. What types of samples are analyzed? What are the objectives and analytes for these analyses? How does the instrumentation help them achieve these analytical objectives?
2. Basic theory and operating principles of the instrumentation, as well as a description of the major components of the instrument and their purpose.
3. What are the advantages and disadvantages of this technique over other similar methods? Consider resolution and/or sensitivity, analysis time, and cost.

You'll also be required to complete the following assignments in preparation for your presentation and paper. These preparatory activities are designed to help you think more critically about scientific information sources and how to present and cite scientific information.

1. Meet with a reference librarian to discuss the sources you are finding for your topic. As part of this assignment you must complete the attached 'Library Visit' form. This must be completed by: _____
2. Find 5 relevant sources of information (these could be textbooks, scientific articles, or websites). Choose 3 of these that you'd like to use for your presentation/paper and evaluate the information they present and the validity of the source critically. As part of this assignment, you must complete the attached 'Source Evaluation' form. This must be completed by: _____
3. Provide an annotated bibliography using the appropriate American Chemical Society reference style for all presentation references. For each source of information you use in your presentation, you should provide the reference information in the correct American Chemical Society reference style with a brief description of what information in your presentation came from this source (for example: "Graphic of instrument components" or "Background information on advantages and disadvantages of instrument technique"). This will be due on the day of your presentation. For more information on the American Chemical Society Reference style please see: The University of California Berkeley Library's ACS Style Guidelines Quick Guide at <http://www.lib.berkeley.edu/CHEM/acsstyle.html>.

Topics and Tentative Dates of Presentations:

Separations:

1. Ion Exchange Chromatography: 10/30/12
2. Size Exclusion Chromatography: 10/30/12
3. Affinity Chromatography: 10/30/12
4. Supercritical Fluid Chromatography: 10/30/12
5. Gel Electrophoresis: 10/30/12
6. Capillary Electrophoresis: 10/30/12

Gas Chromatography Detectors:

7. Flame Ionization Detector (FID): 11/8/12
8. Electron Capture Detector (ECD): 11/8/12
9. Thermal Conductivity Detector (TCD): 11/8/12

Mass Spectrometry:

10. Electron Impact Ionization (GC-MS): 11/20/12
11. Electrospray Ionization (LC-MS): 11/20/12
12. Inductively coupled plasma MS (ICP-MS): 11/20/12

Spectroscopy:

13. Fluorimetry: 12/11/12
14. Fourier Transform Infrared spectroscopy (FT-IR): 12/11/12
15. Flame Atomic Absorption (AA): 12/11/12
16. Graphite Furnace AA: 12/11/12
17. Inductively coupled plasma AA (ICP-AA): 12/11/12
18. X-ray diffraction: 12/11/12
19. X-ray fluorescence: 12/11/12
20. Nuclear magnetic resonance (NMR): 12/11/12

Library Visit

Name: _____

Topic: _____

Source Found:	Type of source (i.e. general website, scientific article, book, etc.)	Author of source:

Signature of Reference Librarian _____ Date: _____

Information Source Evaluation:

4. Provide the source reference. Use the appropriate American Chemical Society format to provide all appropriate information for your source. Review the ACS format at: The University of California Berkeley Library's ACS Style Guidelines Quick Guide at <http://www.lib.berkeley.edu/CHEM/acsstyle.html>. Note that you must provide more information than just the url for a website!

1.
 - a. Who is the author and/or publisher?
 - b. Are they qualified to present this information? Do they have any affiliations or biases that might influence the information presented?

2.
 - a. Briefly describe the information presented.
 - b. Is the information relevant to your research project? Does it describe the basic theory and operation of the instrument in general, applications, or advantages and disadvantages of the instrumental technique?
 - c. Do you understand the information presented?
 - d. For any relevant information you don't (or didn't) understand, how will you go about figuring out what it means? What terms do you need to define? What concepts do you need to clarify?

INFORMATION LITERACY SAMPLE ASSIGNMENT 2

Course: Introduction to Computer Science

Ethics Paper

Criteria:

1. The syllabus will require at least one substantial research based assignment. As described in the overview section, students will be required to choose a topic for a research paper, develop a thesis statement, select appropriate sources, and cite those sources.
2. Students will demonstrate an understanding of the research process through writing about their processes of discovering, evaluating, and rejecting sources.
3. As described in the overview section, students will be required to evaluate and select credible sources. A website credibility checklist will be provided to help students evaluate these sites for credibility.
4. Students will be encouraged to utilize the library (in person and on the web). As described in the overview, students will be required to identify what type of source they have selected for evaluation.
5. A librarian classroom visit will be arranged for face to face classes and LibGuides, produced by the library, will be provided for hybrid and online sections. This will provide students guidance for using library resources and consulting reference librarians.

Objectives:

Through a series of assignments, students will learn to identify their information needs, then locate, evaluate, and appropriately integrate information to write a research paper on ethics in computer science. Students will demonstrate the ability to use current technology as well as other research resources to successfully find, and then effectively communicate the information.

Learning Outcomes:

Students will have the opportunity to develop knowledge and/or skills concerning the ability to:

1. Choose a viable research topic and clearly define research goals.
2. Access needed information effectively and efficiently from a variety of print and electronic sources.
3. Evaluate information critically, choosing relevant, timely and authoritative sources.
4. Use information effectively to produce research projects which accomplish specific purposes required by course instructors.
5. Use information ethically and legally, citing sources in proper style.

Overview of Assignments:

These assignments are aimed at guiding students through the steps needed to write a short research paper on ethics in computer science. Students will choose a topic and write a thesis statement. Students will find at least five sources (web, print, scholarly journals, alternate media) to be evaluated and select at least three appropriate sources after evaluation. Students will describe their process for finding and evaluating the sources explain why any sources were rejected, and note whether the source is a web-based, a scholarly journal article, a popular/news source, etc. Students will summarize the sources with formal citations using MLA or APA format, similar to a literature review. Finally, students will use the sources, summaries, and works cited to write a short research paper. In order to provide students with additional guidance a librarian visit will be arranged for face to face sections and LibGuides, produced by the library, will provided for hybrid and online sections. By breaking the research processes into separate assignments, the students are engaged in a scaffold experience. This scaffolding will allow student see the research process step by step and help support students through a process which may be new to them. This collection of assignments will meet all information literacy criteria.

Individual Assignments:

Assignment 1 – Getting Started:

1. Choose an ethical issue in computer science. You can choose a topic from the textbook (back of each chapter), from the list below, or choose your own topic. If you choose your own topic, it must be approved by the professor.
2. Write a thesis statement for your paper. This should be the main point of your paper. This will help give you a direction and scope for your topic.

Possible Ethical Issues

Computers and Homeland security

HIPAA (Health data)

Email /Social Media and Privacy

Software Piracy

Open Source Software

Computer Hoaxes and Scams

Microsoft Anti-Trust Case

Spam

Hacking

Computer Viruses and Denial of Services

Robotics/Drones Cyberwar

Cyberterrorism/Hacktivism

Assignment 2 – Selecting Sources:

1. Find at least five sources (web, print, scholarly journals, alternate media) to be evaluated
2. Using the resources provided (Librarian visits, LibGuides, and checklists), evaluate the five sources and select at least three for use in your paper. Describe your process for finding and evaluating the sources, noting whether the source is a web-based, a scholarly journal article, a popular/news source, etc. Explain why each source passed evaluation or was rejected.
3. For each source you plan on using in your paper, summarize the content with formal citations using MLA or APA format.

***Wikipedia is NOT a source. It can be used to gain general information about a topic, but I will not accept it as a source for your paper.**

Assignment 3 – Writing your Paper:

1. Use the thesis statement, sources, summaries, and works cited you have created to write a short research paper.
2. In your paper you should contain the following:
 - a. Describe the ethical issue
 - b. Provide a fair and unbiased explanation of both sides of the issue
 - c. Explain your opinion on the issue
 - d. Describe how technological or cultural/societal changes could affect the issue
3. Your paper should be approximately 500 to 1000 words.
4. Your paper should be double spaced
5. Grammar, organization, spelling, and overall quality count (see rubric)

Additional Notes:

- Department faculty is working with the library to develop a LibGuide geared towards our students
- Example of a web source credibility checklist:
 - <http://www.library.illinois.edu/ugl/howdoi/webeval.html>