2006

Chemical Information Class

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CHEMICAL INFORMATION CLASS

Taught in the Spring Semester 2005

Rensselaer Polytechnic Institute

Class Participants

- Upper level undergraduates in Chemistry
- Beginning graduate students in Chemistry

Class Makup

- Thirteen students signed up.
- The group consisted of American and Chinese students.
- All the Chinese students were graduate students.
- Interests ranged from inorganic chemistry to polymer science to biotechnology.

Our Classroom

- Classes given in our PC Lab.
- The PC Lab contains 15 Dell Microsoft Windows XP computers.
- Each computer was equipped with a SFS training login as well as a regular SFS login.
- The teacher used a Windows XP laptop connected to a projector.

Resources

- Copies of Lectures were put on the Class Web Site.
- The ACS Style Guide (1997) was put on course reserve.
- Chapter 6 of the ACS Style Guide was scanned and put on the electronic course reserve
- A summary for the ACS Guide Chapter 6 was put on the class website.

Goals for the Class

- Students were to gain experience using the library's chemistry online resources.
- All lectures and assignments were to be done online.
- Weekly, students were to retrieve two articles.
- Students were to read each article and create a one or two sentence summary for that article.

Goals for the Class (cont)

- Students were to cite their articles in ACS format. Each citation was to be followed by its annotation.
- At the end of the semester students were expected to have created a 30 citation Annotated Bibliography.
- The bibliography was to be preceded by a one page explanatory Scope Note.

Library Tools – Class 1

In the First Class we discussed:

- Bibliographic basics
- Writing the citations
- Organizing the citations

We also got acquainted and toured the library.

Library Tools: Class 2
RensSearch

RensSearch – RPI Library homepage

- Online Catalog
- Connect New York
- Ebsco A-Z
- Ingenta
- Illiad
- Proceedings First / Papers First

Library Tools Class 2 Comment

Some students had their greatest trouble with the basic resources.

- These basic resources included the online catalog and interlibrary loan
- They were allowed to take an optional makeup quiz.

Library Tools - Class 3
General Online Resources

- 1.
- Access Science
- Ullmann’s Encyclopedia
- Science Direct
- ACS Web Editions
- Annual Reviews

Library Tools - Class 4
Citation Resources

Web of Science

- ✓General Search
- ✓Cited Reference Search
- ✓Search History
- ✓Advanced Search
- ✓Saved Search

Library Tools Class 5
Chemical Biology Resources

- 1.
  - Nature Series
  - Science AAAS and Highwire
  - CSA BioMedical Series
  - CSA Bioengineering Abstracts
  - Compendex

Library Tools - Class 6
Medicinal Chemistry

NCBI

- ✓ PubMed
- ✓ PubMed Central (PMC)
- ✓ OMIM
- ✓ Books
- ✓ PubChem

Merck Online

Library Tools – Class 7
SciFinder Scholar

- 1.
- 1.Explore Command
- 2.Limit via Analyze and Refine
- 3.Full Records, Related Records
- 4.Locate Command
- 5.Browse Command

Library Tools - Class 8
SciFinder Scholar

- 1.
- 1.Chemical Structure Drawing Pad
- 2.Exact Structure Search
- 3.Reaction Search
- 4.SubStructure Searching

Library Tools Class 8 Comment

- SciFinder Scholar was probably the most fun for the students.
- Most students had used drawing software before.

Library Tools - Class 9 Property Resources

- Design Institute for Physical Properties (DIPPR)
- Knovel – Data Tables, Equation Plotter, and Graph Digitizer
- Wiley Database of Polymer Properties –
- How to recognize a Beilstein Citation

Library Tools – Class 10
Spectral Resources

- Aldrich Spectra
- Sadtler Standard Spectra
- NIST Chemistry WebBook
- SDBS -Spectral Database for Organic Compounds

Library Tools Class 10 Comment

- Aldrich and Sadtler Standard Spectra were in paper copy.
- Student told me they would like to have been able to search these online.

Balance of the Class

- Three weeks were left,
- To write the Bibliographies.

Pitfalls and Problems

- Student comprehension
- Getting the students to work on the bibliography on their own
- Technical problems
- Resource cancellations
- Getting students to use the ACS format

Solutions – 1
Comprehension

- For our foreign students - Don’t lecture too fast.
- Repeat important facts.
- Have office hours.

Solutions 2
Individual Work

- Take time with the students to:
  - Encourage students to explore their interests.
  - Encourage students to use the library resources

Solutions 3
Technical Problems

- Getting SciFinder Scholar structure searches on my laptop to display through our projector on to the screen.

- Our solution was to set up the computer completely and check it, before plugging in the projector.

Solutions 4 - Cancellations
Find Substitute Resources for:

- 1)Annual Reviews
- 2)DIPPR
- 3)Kirk-Othmer Encyclopedia
- 4)Merck Online
- 5)Papers First / Proceedings First
- 6)SciFinder Scholar Substructure Searching
- 7)Ullmans Encyclopedia
- 8)Wiley Database of Polymer Properties

Solutions - 5
Using ACS Format

- Chapter 6 of the ACS Style Guide 1997 – summarized and put on the WWW (by permission.)
- In a few cases where no format was indicated, we devised the best format.
- For citation organization a class in EndNote is being added.

Positive Outcomes

- Students began to use the library resources on their own
- I was very pleased with their research bibliographies
- Students and faculty seemed to be happy with the class