

Comprehensive Literature Review Paper Assignment

Project Description

The assignment serves as practice of the process of scientific research for online chemistry graduate students in CHM597 class with special emphasis on the retrieval and use of information from literature databases and review paper writing.

Learning Outcomes

Students will demonstrate an in-depth understanding of the fundamental chemistry required to evaluate and review a topic in the chemical literature. Students will demonstrate the ability to develop a thorough literature review of a chemical topic. Students will demonstrate the ability to effectively communicate scientific information in writing. The assessment measure of these outcomes is a success on the written assignments.

Frames involved: All 6 frames from the Framework for Information Literacy for Higher Education are relevant.

Frames in bold are especially important.

- Authority Is Constructed and Contextual
- **Information Creation as a Process**
- **Information Has Value**
- Research as Inquiry
- Scholarship as Conversation
- **Searching as Strategic Exploration**

Assignments

The review paper will be written step by step and students will add more components to their paper by each assignment and revise the previous components. Each assignment is graded, and students will receive feedback before the next assignment is due. References should be added and revised as the writing progresses.

Assignment #1

Write a title, abstract and list initial bibliography of 10 or more references.

Students can choose to work on their own topic or one from the list given during the class. The topic must be in the field of chemistry and the students should be able to include advanced chemistry concepts in the review paper. The title should clearly describe what will be reviewed in the paper. The topic

should focus on a specific aspect of a field of chemistry, so the recent development can be comprehensively reviewed.

Assignment #2

Write outline of the review paper and list refined bibliography of 30 or more references.

The newly assigned part will be added to the revised first assignment. Outline will describe what will be written in each section of the paper in a paragraph. Students will acquire a good knowledge of the current research of the chosen topic through the literature selection and reference reading process.

Assignment #3

Scheme/Figure sample (4 or more) with a caption in the Review Body

All chemical structures and reaction schemes are to be drawn using Chemdraw program downloaded following the instructions given in the syllabus. Students will create figures or modify and redraw existing figures from literatures. Figures of molecular structures and reaction schemes are essential for chemistry paper and help readers understand the concepts greatly.

Assignment #4

Submission of the first draft of the review paper.

A full, first draft of the review paper will be written with all the components. The review paper structure is explained below.

Assignment #5

Submission of the final, revised review paper

A final and revised draft of the review paper will be written with all the components.

Review Paper Structure

The complete review paper will be comprised of the following sections: Title, Abstract, Introduction, Review Body, Conclusion, and Bibliography.

- ***Title*** (a clear, concise description of the review topic, 15 words or less)
- ***Abstract*** (a brief overview of the main points identified in the review, 200 words or less)
- ***Introduction*** (Describe the central topic of the review in a general fashion. This can be from a historical standpoint and/or the review of some basic chemical principles and background)

information so your reader can understand the review better. Schemes and Figures are often necessary.)

- **Review Body** (Specific literature examples in a summarized form. Use Schemes, and Figures (and Tables, if necessary) to present the detailed data that supports the authors' claims. All Schemes and Figures should be prepared using ChemDraw.
- **Conclusion** (A 1-2 paragraph summary of the review with a future perspective, aka what direction with the topic head in the future)
- **Bibliography** (Your final review must have a minimum of 30 journal references, but there is no maximum. Each reference should be numbered and correctly formatted. All reference numbering in the Introduction and Body should appear as a superscript.