UMass Boston Chemistry Literature Seminar Requirements
(revised October 2015)

For both the M.S. and the Ph.D. degrees in Chemistry, a literature seminar presentation, based on review of the scientific literature related to a selected topic of current chemical interest must be completed within the first two years of matriculation.

The purposes of the literature seminar are that the student should demonstrate that he/she is capable of:
1) Learning independently about research in chemistry, and
2) Giving a coherent, interesting, and contained presentation about research in chemistry, which explains the background and context of the research, to a general audience of chemists.

The student must choose an article from the chemistry literature published within the past 5 years\(^1\) to focus on for the literature seminar. The student’s choice of article must be approved by (a) the student’s M.S. or Ph.D. advisor, and (b) the GPD or the instructor of the graduate seminar. The article should be from a journal in the field of chemistry (it need not be an ACS journal, but this is a good choice). Typically, the research article chosen is relevant to at least two research areas in chemistry (e.g., catalysis and organic synthesis, spectroscopy and atmospheric reaction mechanisms, electrochemical conduction in polymeric thin films and atomic microscopy, control of chemical reactions and mathematical reasoning of students in chemistry). The article chosen by the student cannot be authored by the student’s research advisor. The student will need to study background research in order to understand and provide context for the research article that is chosen.

The student should prepare (and practice beforehand) a presentation about the research article. The presentation will be given in the Graduate Seminar course, and should last between 30 and 40 minutes. The presentation should contain the following sections:

a) An introduction (usually ~5 minutes) that frames or motivates the problem studied in the article and presents the bigger picture about why the research is of value,
b) Explanation of the theory or experimental methods, with discussion of data presented in the research article, in the context of prior and competing research, along with some critical analysis of the results (this section will be the vast majority of the presentation), and
c) Conclusions (usually ~5 minutes) that provide the main take-home messages of the presentation, and may contain recommendations for further research or applications of the research.

Criteria for Pass/Fail in the Literature Seminar:

- The research article chosen should be in a field of chemistry.
- The reason why this research is important and/or what motivates it should be conveyed, but the majority of the talk should be about the chemistry research, not the bigger picture.
- The presentation teaches the audience, not only reports the results of one paper. Examples of findings or results from the selected research article should be presented and contrasted to prior work, competing work, and/or goals of the field, so that all audience members learn something. What they learn will depend on their own expertise, but everyone should learn.
- The presentation should be professionally given, with the student talking to the audience (not reading off the slides or notes), and a PowerPoint (or Keynote or Prezi) that looks professional (not too cluttered, words and diagrams legible, minimal errors).
- The student should be able to answer questions about the research that is presented or speculation on what could be done next. The answers to these questions should demonstrate an ability to think critically about the research and refer to background research relevant to the research article.

If the student does not pass the Literature Seminar, one re-do will be permitted, and must be given to a committee of Chemistry faculty, at least one of whom was present at the original Literature Seminar of the student. If the second Literature Seminar is not passed, the student will be placed on suspension from the M.S. or Ph.D. program.

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\(^1\) Exceptions are possible, with permission of (a) the student’s advisor, and (b) the GPD or grad. seminar instructor.