

## Guidelines for the Senior Capstone Research Paper

Upon completing your project you are required to submit a paper describing your research to your faculty mentor and one other faculty member (chosen by the department). This paper, in addition to your presentation and attendance, will be used in assigning your CHM 432 course grade. Be aware that either CHM 490 or 491 is a prerequisite for CHM 432, so plan ahead to be sure you graduate on time. At a minimum, your written report should be of a quality comparable to that of a term paper. Your research advisor may wish to alter or supplement the guidelines below, but in the absence of other instructions use these guidelines in the preparation of your paper.

- 1) This paper should be a minimum of 10 text pages long. Pages should be numbered (beginning on page 2) including figures, tables, and graphs.
- 2) Use 12 point Times New Roman or 10 point Arial font. Pages should be 8½" x 11" on white paper. Margins should be 1", except for unusual circumstances (e.g. figures or tables occupying a single page may need larger or smaller margins to maintain a high quality appearance).
- 3) Use the *ACS Style Guide* (a copy is in the reference section of the Morrow library) for guidance in formatting your paper. Recent copies of ACS journals such as the *Journal of the American Chemical Society*, *Journal of Organic Chemistry*, *Journal of Physical Chemistry*, or *Inorganic Chemistry* may also provide some guidance. Be careful about using journals exclusively as this can lead to substantial formatting errors.
- 4) Read a paper or two written by your advisor. He or she will probably want your paper to be written in a similar fashion.
- 5) Make sure to define all abbreviations except the very most common (e.g. Ph = phenyl). This should appear on a separate page near the beginning or at the end.
- 6) The paper should have a(n):
  - i) *Title Page* – A blank title page may be downloaded from the address: <http://www.marshall.edu/chemistry/capstone.asp>. Fill in the fields as appropriate. Make sure you download the page appropriate for your major.
  - ii) *Abstract* – A less than one page synopsis of your major accomplishments. It may include some information (1 or 2 sentences) about significance and experimental descriptions.
  - iii) *Introduction* – This should provide a brief history of the area of research, its significance, and how your research objectives contribute to it. It should begin at the top of page 2.
  - iv) *Experimental Section* – This describes the experiments you did in much the same way a lab manual does. It should also include the equipment you used. You may be able to copy some parts from previous senior papers and/or your mentor's previous papers. Here verbatim copying of standard information (e.g. solvent purification, instrument descriptions) may not constitute plagiarism. Consult with your advisor to be sure whether or how to cite this information.
  - v) *Results and Discussion* – These sections may be split depending on your mentor. Ask to be sure. This will include a succinct description of the experiments you did and should

include both mathematical and chemical equations where relevant. Include tables of data, figures, and spectra as relevant. All three should have labels.

vi) *Future work* – Optional.

vii) *References* – This should include literature citations and may include footnotes.

7) Use spell check.

8) You must get both your advisor and the second reader to approve your paper before you receive credit for CHM 432. The approval will be recorded by having both of their signatures on the Title Page.

9) A copy of your paper with the signatures will be kept on file in the main office. Please forward an electronic version of the final draft to the secretary after it has been approved.