OBJECTIVES:

1. To become acquainted with the current literature in chemistry by studying Chemical Abstracts and online computer searching, by giving single article reviews, and by preparing a scholarly paper on a recent topic.

2. To gain experience in speaking before a group and in fielding questions by reviewing recent articles and by presenting a seminar based upon the scholarly paper.

3. To extend exposure to chemical topics beyond that covered in formal courses.

EVALUATION:
The grade in this course will be determined:

1. By the quality of the paper, the quality of the oral presentations, and the ability to relate the paper to the whole field of chemistry. (Evaluation of the talks will be made by faculty, visitors at the talk, and fellow students.)

2. By your preparation and participation in other areas of the course including homework, trips and class discussion. Each student enrolled in Chem 411-412 is expected to attend each class session. [Note: A check system has been designed to help insure compliance with this syllabus. See separate handout.]

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<tr>
<th># Checks Received</th>
<th>Maximum Course Grade Allowed</th>
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<tr>
<td>0-9</td>
<td>A</td>
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<td>10-19</td>
<td>B</td>
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SEMINAR:
You should realize from the outset that the Chemistry Department is very serious about the oral and written skills of each of its graduates. You should prepare thoroughly as if the members of the faculty are a review board sitting in judgment on your potential for graduation. My job is to serve as a help and guide but the entire departmental faculty will determine your grade. If you do not do well on the paper and presentation, you will not do well in the course.
The Paper:
The final paper must be approved by the faculty of the Chemistry Department before the student will be allowed to give the presentation. The paper will be evaluated for approval based on, but not limited to, the following criteria: quality of writing, scientific content, level of content, and understanding of content. Each time the final paper is submitted but not approved, 4 checks will be given against the paper. The topic for presentation must be based upon the current literature and must be chemically oriented in both its emphasis and content. The paper must be based on recent chemical research. References must include research oriented chemistry journals such as Journal of the American Chemical Society, Journal of Organic Chemistry, Biochemistry, Journal of Medicinal Chemistry, etc. The topic must be approved by the faculty no later than Nov 7. The same topic and paper cannot be used to satisfy both chemistry and biology seminar courses. The paper is expected to be at least 15 pages in length (typed, pages numbered, double spaced, 1 inch margins, excluding references which should be collected at the end on a separate page). The presentation must be at least 30 minutes in length. Two weeks before the paper is due a typed outline must be submitted. The outline should indicate on one page the date, time, room, topic, presenter, a topical outline of the paper, a three sentence abstract of the paper, and at least three major references used in preparing the paper. One week prior to the spring presentation of the seminar, a copy of the outline should be posted on the bulletin boards in DSC so that interested students might attend. This outline and paper must be done by using a word processor. One week prior to the spring presentation of the seminar (Mon. at 4 pm), four complete copies of the scholarly paper will be submitted, one to each faculty member. Multiple copies of the paper will be placed in the Student Majors Room each week and each student is expected to read the paper to be presented that day before coming to hear that seminar. References should follow the format given in Writing at Carson-Newman. Be sure to reference completely all diagrams, data tables, graphs, etc. in your paper. The tables and figures should be numbered sequentially. Plagiarism is considered an overt form of cheating and can result in an automatic grade of F in this class. As you prepare your paper, be sure to give proper credit to the ideas of others by using citations and be sure that the words, phrases, and style of writing in this paper are your own. If you directly copy the phrases and sentences of other writers, be sure to properly use quotation marks and citations. It is expected that whole pages of your paper will not appear in quotes. So that I will have a foundation for judgment, please submit to me along with your seminar paper a photocopy of the two most quoted articles used in your paper. If the source is a book, include a reasonable number of pages (<10) from the most used portion of the book.

Peer Review:
Seminar papers will be peer reviewed. This means that prior to submitting your paper another member of the class will read your paper and along with you, will be held responsible for grammar, spelling and logical flow of ideas. You are required
to get your final paper into my hands one week prior to submission to the faculty; I will give it to the appropriate student reviewer. This will allow for adequate time for corrections. If the paper is totally illogical or illegible, the reviewer should contact me immediately to preserve his grade. The reviewer bears no burden for writing the paper, just for reviewing it. One week before your seminar, you will submit 2 different copies of your paper to me: first, the copy reviewed, corrected in red ink, dated and signed on the cover sheet by the reviewer; second, your final, corrected copy signed by you on the cover sheet. Your reviewer will be determined from the class roll:

1 ↔ 2 ↔ 3 ↔ 4 ↔ 5 ↔ 6 ↔ 7
2 reviews for 1, 3 for 2, etc. 1 for 7

The Presentation:
Extra emphasis should be placed on the presentation as if it were being given before a professional gathering of chemists. Try to look good, put tables, reactions, structures and even an outline on overheads or PowerPoint, use a pointer, use note cards (DO NOT read the paper to us), practice the presentation aloud to a friend, etc. Your presentation should be 30 minutes in length. Any presentation that is less than 25 minutes in length (or in the opinion of the faculty had less than 25 minutes of content of acceptable quality) will have to be repeated before a passing grade will be assigned. A deduction of 10 points from the presentation evaluation will be taken each time the presentation is repeated. You may be videotaped, so don’t let the video camera bother you. NOTE: The major points and diagrams in your presentation must be included in your paper.

ARTICLE REVIEWS:
On Nov 14 students should be prepared to critically review a recent chemical journal article chosen by the faculty. The article will be distributed on Oct 24. You may study together as a group as you prepare. You will want to focus your entire background in chemistry and may even need to do some research on topics you have not encountered. I will be available to help you as you work through the article and with the presentation.

On Nov 22 students will present a 15 minute review of one article of their choice taken from the following journals published since 2006: Journal of the American Chemical Society, Journal of Organic Chemistry, Biochemistry, Analytical Chemistry, Journal of Physical Chemistry, Journal of Inorganic Chemistry. These journals can be found online at www.acs.org. Any review lacking a strong chemical focus will receive a poor grade. The article must be at least three pages long, a full article as opposed to letters to the editor, notes, communications, etc. and the article must be approved by the faculty. Four copies of this article must be submitted one week prior to the presentation. You should have the article approved before submitting four copies. After each review, questions from the audience will
be fielded by the student. The student should prepare for this presentation. The 
student should initially take the vantage point of defending the work of the author 
but of course can present his own opinion also. PowerPoint or overhead 
transparencies must be used; transparencies may be made in the division office with 
the help of Ms. France. **DO NOT** attempt to write on the board during your talk. 
**DO NOT** read the paper to us. All class members should read each article to be 
presented before coming to class. Photocopies can be found in the Chem Majors 
Room.

On **Nov 28 and Dec 5** students will submit a written summary (at least two pages in 
length, double spaced, word processor) of a journal article of their choice taken 
from the following journals published since 2006: *Journal of the American 
Chemical Society*, *Journal of Organic Chemistry, Biochemistry, Analytical 
journals can be found online at [www.acs.org](http://www.acs.org). Any review lacking a strong 
chemical focus will receive a poor grade. The article must be at least three pages 
long, a full article as opposed to letters to the editor, notes, communications, etc. 
and the article must be approved by the faculty.

**OTHER ACTIVITIES REQUIRED:**

1. **Off-Campus Lecture** Once during the Chem 411-412 experience every student is to 
attend a chemistry talk presented at an off-campus location by a speaker from 
another school or from industry and to evaluate it on the standard evaluation form. 
Student participation in class discussions involving both content and style is 
expected.

2. **On-Campus Invited Seminar Speaker** You will be required to attend the lectures 
presented on our campus by invited speakers. You may be asked to help pick these 
speakers.

3. **Department Evaluation** You are asked to evaluate the effectiveness of your major 
department here at CN. You must submit the evaluation in a sealed envelope with 
your name on the front by **Apr 23** to Dr. Karr. You will not receive a grade in this 
course until you do so. Dr. Karr will hold the evaluation until after your graduation 
so that it will have no effect upon your grade. You will also be asked to re-evaluate 
your BA/BS major in chemistry at certain intervals after graduation.

4. **Collegiate Division of the TN Academy of Sciences** Each spring this meeting is held 
in the East Tennessee area. You are encouraged to participate by attending and 
considering a presentation before the group based either on your lab research or 
perhaps your seminar paper. If you attend this session, you do not have to attend 
the off-campus lecture but please fill out an evaluation form on one of the talks.
The instructor reserves the right to make changes to this syllabus and will give notice if changes are made.

Any student with a special documented disability (learning, sight, hearing, mobility, etc.) which may affect class activities should contact
David Humphrey
Kathleen Manley Wellness Center
865-471-3268 Office
865-471- 3350 Receptionist
dhumphrey@cn.edu. Students will have to provide appropriate documentation.

This course is one of the approved courses for *Studies in Mathematics and Science* (Goal IVB) in the Liberal Arts Core. Our goal is for all Carson-Newman graduates to exhibit scientific literacy and quantitative reasoning skills critical for making informed decisions.