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Chemistry 510 Advanced Physical Chemistry

Last update for Spring 2017

Instructor:

- **Andrew Cooksy**

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Office Hours: Mon, Wed 9:30am-10:30am; CSL-310.

Example sessions: Mon 5-6pm, room CSL-508, starting Jan 23.

Text: *Physical Chemistry: Quantum Mechanics and Molecular Interactions* by Cooksy, on sale at Aztec Bookstore. Any format for the book is fine (print, e-book, or loose-leaf). You will also need access to the online homework system, which comes bundled with the book at the bookstore.

Additional CHEM 510 Syllabus Information

CHEM 510 is offered for graduate students who choose to have some additional preparation in physical chemistry before pursuing advanced graduate courses, and to Open University students needing physical chemistry credit. This course is **not** normally open to undergraduate chemistry and biochemistry majors, because the CHEM 410A lab is prerequisite to CHEM 457 and CHEM 417.

CHEM 510 adheres to the [CHEM 410A course syllabus](#) with these two exceptions:

- There is no lab component to CHEM 510, which is why CHEM 510 is a 3-unit course and 410A is a 4-unit course.
- To make CHEM 510 a more advanced course than CHEM 410A, students in 510 are required to present an oral analysis of a current research paper relevant both to the student's area of research interest and to the 410A course material (e.g., spectroscopy, fundamental quantum mechanics, molecular symmetry, classical bond analysis, computational chemistry).

Paper presentation:

The paper must be approved in advance by the instructor; the instructor will try to find suitable papers if requested. Presentations will be given outside regular class time, at a time and date agreed to by the 510 instructor and students, no later than the week of final

exams. Each presentation should be 15 to 20 minutes long, with additional time for questions. Presentations may use the board, and/or presentation software such as Prezi or PowerPoint. They will be graded based on the student's knowledge of the work, critical assessment, and clarity of presentation. These presentations may be added to the Department's Journal Club seminar listing, when the Journal Club is active (so some of our other graduate students may wish to attend).

As well as giving their own presentation, every student will be expected to provide written comments on each of the other presentations. These will be combined with the instructor's comments and provided to the speaker when final grades are assigned.

Grading:

CHEM 410A lecture assignments (drills, quizzes, and exams) will be graded on the same scale as given in the 410A syllabus. The total 410A score will then be scaled by 80%. The paper presentation and participation in the seminar will count for the remaining 20% of the final grade in CHEM 510.

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