Spring 2017 Chemistry 686
Introduction to Organic Synthesis: Design
MWF 10:35-11:30 AM 100 LSB

Professor John D. Chisholm
4-006 CST jdchisho@syr.edu 443-6894
Office Hours: By appointment, between 9 AM and 5 PM

Course Description: CHE686 is a graduate-level organic chemistry course focused on the preparation of complex molecules. Principles of synthetic strategy and design will be discussed in the context of natural product synthesis, as will the application of various synthetic methodologies.

Text: There is no assigned text for the course. Instead a number of handouts and primary literature references will be assigned for reading.

Grading: Final grades will be based on the following items:

Exams (4, drop the lowest score)	150 points
Literature Presentation	50 points
Research Proposal Presentation	50 points
Written Research Proposal	50 points

Exams: There will be four regular exams this semester. Exam dates are indicated on the attached calendar. Emphasis for each regular exam will be placed on material covered since the preceding exam. However, as the study of organic chemistry builds upon itself, you should consider all exams to be comprehensive. Be prepared to apply previously learned concepts (including those from CHE 676) to material encountered later in the semester. The lowest of the four exam grades will be dropped. There will also be a cumulative final exam during the final exam period.

Literature Presentation: Each student in CHE 686 will present a synthesis from Nicolaou's "Classics in Total Synthesis" series. Assignments, instructions and a presentation schedule will be forthcoming.

Research Proposal: Each student in CHE 686 will be assigned a target molecule, for which they will be expected to design a viable synthetic route over the course of the semester. This work will culminate in a class presentation and the submission of a research proposal at the end of the semester. Further instructions and a schedule of due dates for preliminary and final assignments will be forthcoming.

Disability Policy: Students with any sort of disability who may need special accommodations should contact the instructor immediately. In order to obtain authorized accommodations, students should be registered with the Office of Disability Services (ODS) (804 University Avenue, Room 309, 315-443-4498) and have an accommodation letter. Accommodations and related support services such as exam administration are not provided retroactively and must be requested in advance. Should no request for special accommodations be received at least one week before the exam, I will consider existing exam accommodations to be satisfactory.

Observance of Religious Holiday Policy: Syracuse University's religious observances policy recognizes the diversity of faiths represented among the campus community and protects the rights of students to observe religious holy days according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to a religious observance provided they notify their instructors before the end of the second week of classes. For fall and spring semesters, an online notification process is available through MySlice/Student Services/Enrollment/My Religious Observances from the first day of class until the end of the second week of class. Please note that the religious

observances policy requires accommodation for the religious holiday itself, not for travel days if a student will be observing the holiday elsewhere.

Academic Honesty: Students enrolled in the course should exhibit honesty in all their academic endeavors. Cheating in any form will not be tolerated. University policies describing student rights and responsibilities can be found at http://www.syr.edu/policies/rr2001.pdf. Students caught violating the academic honesty policy will be reported to the academic integrity office and will receive a grade of F in the course. Students with pending academic integrity hearings are not allowed to drop the course.

Some Organic Chemistry References

Classics in Total Synthesis K. C. Nicolaou, E. J. Sorensen, VCH, 1996 (QD262 .N52 1996)

Classics in Total Synthesis II, K. C. Nicolaou, S. A. Snyder, VCH, 2003 (QD262 .N522 2003)

Classics in Total Synthesis III, K. C. Nicolaou, J. S. Chen, VCH, 2011 (QD262 .N522 2011)

The Logic of Chemical Synthesis E. J. Corey, X.-M. Cheng, Wiley, 1989. (QD262 .C577 1989)

Modern Methods of Organic Synthesis" (4th ed), W. Carruthers, Cambridge University Press, 2004.

Organic Synthesis: the Disconnection Approach, S. G. Warren, Wiley, 1982. (QD262.W284 1982)

Advanced Organic Chemistry" - Parts A and B (4th ed.), F.A. Carey and R. J. Sundberg, Wiley, 2000.

Organic Synthesis" (3rd ed.), M. B. Smith. McGraw Hill, 2002. (eBook, QD262 .S65 2011)

Strategic Applications of Named Reactions in Organic Synthesis" Kürti, László, Elsevier Academic Press, 2005. (reference)

Comprehensive Organic Functional Group Transformations" Pergamon, 2005.

Comprehensive Organic Transformations, R. J. Larock, VCH, 1999.

Advanced Organic Chemistry, M. Smith and J. March, Wiley, 2001. (eBook)

Greene's Protective Groups in Organic Synthesis, P.G.M.Wuts, 5th ed., Wiley, 2014.

Protecting Groups, P. J. Kocienski, Thieme, 2000. (QD262 .K59 2000)

Encyclopedias & Dictionaries: Carnegie Library, reference room 103 (non circulating)

"Reagents for Organic Synthesis" (26 volumes), Fieser & Fieser, Wiley, 1967 – present.	QD262 .F5
"Organic Reactions" (78 volumes), Wiley, 1942 - present.	QD251 .O7
"Comprehensive Organic Chemistry" Oxford, Pergamon, 1979.	QD245 .C65
"Compendium of Organic Synthetic Methods" (11+ volumes), Wiley.	QD262 .C53

On-Line Resources:

Reaxys	http://researchguides.library.syr.edu/reaxys
Sci-Finder Scholar	http://researchguides.library.syr.edu/scifinder
Web of Knowledge	http://apps.webofknowledge.com
Encyclopedia of Reagents for Organic Synthesis (EROS)	http://onlinelibrary.wiley.com/mrw/advanced/search?doi=10.1002/047084289X
Electronic Journals	http://researchguides.library.syr.edu/content.php?pid=69954&sid=517800

CHE 686 Course Calendar

Spring 2017

Day	Date	Lecture/Exam
Wed	Jan 18	lecture 1
Fri	Jan 20	lecture 2
Mon	Jan 23	lecture 3
Wed	Jan 25	lecture 4
Fri	Jan 27	lecture 5
Mon	Jan 30	lecture 6
Wed	Feb 1	lecture 7
Fri	Feb 3	lecture 8
Mon	Feb 5	lecture 9
Wed	Feb 8	lecture 10
Fri	Feb 10	**Exam 1**
Mon	Feb 13	lecture 11
Wed	Feb 15	lecture 12
Fri	Feb 17	lecture 13
Mon	Feb 20	lecture 14
Wed	Feb 22	lecture 15
Fri	Feb 24	lecture 16
Mon	Feb 27	lecture 17
Wed	Mar 1	lecture 18
Fri	Mar 3	**Exam 2**
Mon	Mar 6	lecture 19
Wed	Mar 8	lecture 20
Fri	Mar 10	lecture 21
Mon	Mar 13	no classes (Spring Break)
Wed	Mar 15	no classes (Spring Break)
Fri	Mar 17	no classes (Spring Break)
Mon	Mar 20	**Literature Presentations**
Wed	Mar 22	**Literature Presentations**
Fri	Mar 24	**Literature Presentations**
Mon	Mar 27	lecture 22
Wed	Mar 29	lecture 23
Fri	Mar 31	lecture 24
Mon	Apr 3	**Exam 3**
Wed	Apr 5	*No class (ACS Meeting)*
Fri	Apr 7	lecture 25
Mon	Apr 10	lecture 26
Wed	Apr 12	lecture 27
Fri	Apr 14	lecture 28
Mon	Apr 17	lecture 29
Wed	Apr 19	lecture 30
Fri	Apr 21	lecture 31
Mon	Apr 24	**Research Proposals**
Wed	Apr 26	**Research Proposals**
Fri	Apr 28	**Research Proposals**
Mon	May 1	**Exam 4**
Tue	May 9	Written Research Proposal Due