

SYLLABUS

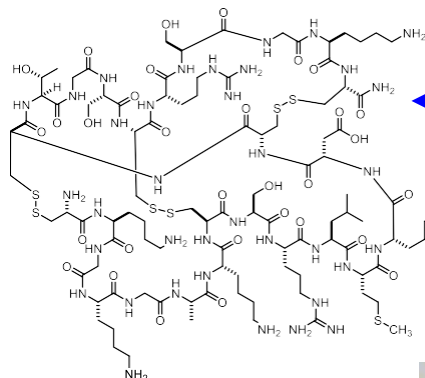
Department Name: Natural Sciences

Course Title: Organic Chemistry II

Course Number: Chem 3900

Units: 3 units

Semester Offered: Summer 2026
July 9 – July 31



Derived from Cone snail: *Conus magus*

Course Modality: In person (flipped classroom)

Course Meeting Time: Section 1 - 8:00am - 10:20 am
Section 2 - 10:30am - 12:50 am

Course Meeting Days: M-Sat (see schedule p. 5-6)

Course Meeting Place: Meadowlands 333

Prerequisites: Chem 3800/3805

Co-requisite: Chem 3905 (Organic Laboratory)



ziconotide (**Prialt®**)

FDA approved (**2004**)

disease target: severe pain

Developed by:

Elan pharmaceuticals

Instructor Information:

Name: Tyler Johnson, PhD

Phone: 415-482-1983

e-mail: tyler.johnson@dominican.edu

office hours: M W F 12-1pm – Zoom (annotated screen)

course webpage: contact instructor

Teaching Assistant (TA) / Tutor: Anjali Ingham (anjali.ingham@students.dominican.edu),

Cristian Chibacab (cristian.chibacab@students.dominican.edu)

If anything is unclear to you - please reach out – we're all here to HELP STUDENTS 🍌

DESCRIPTION OF SYLLABUS CONTENTS

1. Course Description: General Content of the Course

Course Description – Chem 3900 is the second quarter of organic chemistry and builds on the structural and reactivity conventions of organic compounds learned in Chem 3800. Students gain the ability to distinguish between nucleophiles and electrophiles to understand instead of memorize synthetic organic reactions, including those of aromatic compounds, alcohols, and carbonyl compounds as they relate to selected publications in [Bioorganic](#) and [Medicinal Chemistry](#). This lays the foundation for understanding the reactivity of more complex biomolecules such as carbohydrates, proteins and lipids (fats) involved in applied biochemistry.

2. General Education or Major Requirements Satisfied by the Course:

This course satisfies the requirements for a biology and chemistry degree.

3. Learning Outcomes.

This course satisfies the following Student Learning Outcomes (SLO) that include:

- SLO 1. Comprehension and integration of fundamental scientific concepts in the biological and physical sciences.
- SLO 2. Objectivity in scientific investigations by suspending preliminary judgments, drawing conclusions only from observable and testable data, and attempting to exclude cultural assumptions and biases.
- SLO 3. Understanding of a spectrum of chemical principles and knowledge in all major areas of bioorganic chemistry.
- SLO 4. Skills in chemical analysis and synthesis essential to establish and rigorously test hypotheses.
- SLO 5. Understanding of the importance of chemistry in society, involving health, medicine, biomedical research, the chemical industry and the environment.
- SLO 6. The skills necessary to pursue employment or further education in chemistry & biochemistry and or interdisciplinary areas involving biomedical research, environmental chemistry, health science and medicine.

This course satisfies the following Chemistry & Biochemistry Program Learning Outcomes (PLO) that include:

- PLO 1. Students will comprehend and integrate the fundamental scientific concepts and laboratory skills in the chemical and physical sciences.
- PLO 2. Students will develop the skills and knowledge to become ethical practitioners of science.
- PLO 5. Students will demonstrate readiness for further study or employment in discipline related areas.

This course will also allow students to acquire the following institutional learning outcomes (ILO) that include:

- ILO 1. Exploration and Acquisition of Knowledge
- ILO 2. Development of Intellectual, Professional, and Artistic Skills

4. Texts and Resources: Text: Organic Chemistry 9th edition McMurray. ISBN-13: 978-1305080485

Study guide with Solutions manual: Organic Chemistry 9th edition McMurray. ISBN-13: 978-1305082144

Molecular Model Set (Optional but Highly Recommended): If you have one, you use can use it on the exam(s).

Prentice Hall Molecular Model Set for General and Organic Chemistry. 1998. ISBN-13: 9780139554445.

These resources are available electronically - open-access (free) to students on our [course webpage](#).

5. Library Support: Library Liaison: Amy Gilber, amy.gilbert@dominican.edu, 415-257-1329

6. Online Components – course website: [contact instructor](#)

Lectures will be provided on our course webpage as  YouTube instructional video tutorials.

NOTE: During our lecture video tutorials - the instructor will often write on a white board. However, the student is NOT expected to draw what's on the whiteboard – rather what's on the slide, which is the source for where the instructor is drawing from to set the “tempo” of the lecture so that all students can follow along.

7. Academic Honesty Honor Code. Students are expected to adhere to the Academic Honesty Honor Code stated in the [Catalog](#). Students should practice academic integrity in all of its forms, including abstaining from plagiarism, cheating, and other forms of academic misconduct. The University reserves the right to determine in any given instance what action constitutes a violation of academic honesty and integrity.

Our course policy on cheating involves the following guidelines which include:

- 1) Any student caught using a: a) smart phone, b) smart watch, c) table or d) unauthorized supplementary device during a quiz or exam or viewed looking on another student's quiz or exam **will receive a 0.**
- 2) Students are encouraged to use the restroom prior to each 70 minute exam. Students may not be allowed to use the restroom during a 70 minute exam. Professional notes from a physician will be an exception.
- 3) **No make up quizzes or exams will be provided.** Students missing an exam can take the weighted average score of their other exam scores if they miss an examination. Student athletes with an exam scheduling conflict presented in advance at the start of the course are an exception.

If more than one exam is missed by a student, they may be advised to *withdraw* from the course. Students must take the final exam to pass the course. Students acknowledge they will be recorded on video during quizzes or exams. The content will be deleted after review for academic dishonesty. If sufficient notice (> 1 week) or an athletic team scheduling conflict exists, a make up exam can be proctored by a faculty or staff member. If one is not available the student will take the make up exam under video surveillance. Individual circumstances will be evaluated at the instructor & NSM department chair's discretion. The above guidelines are set in place to create democracy & equity for everyone in the classroom. Please do not take them personally, just take them seriously.

8. Diversity

Dominican University of California is committed to promoting diversity. In recognition of our diverse backgrounds, the inclusion of diverse thought is encouraged in our course in our classroom interactions. In addition, an effort will be made to provide a learning environment which is conducive for all students.

9. Assignments

Students are expected to read ahead in the textbook based on the tentative schedule. Assignments include homework and in-class worksheets. In-class exams will also be administered.

Problem sets: Textbook problems will be assigned (weekly in lecture) to help master the course material. The textbook homework will not be graded for points. It is the responsibility of the student to complete the assigned homework for the course on time in line with the proposed outlined schedule on page 4.

IMPORTANT NOTE:

Working problems is essential to learning organic chemistry. It'll be difficult for you to solve problems on quizzes or exams if you do not **PRACTICE** working similar problems while you are studying. It's to your advantage to use the solutions manual to check your answers. Keeping all of your worked-out problems in an organized folder provides the foundation for review material involving our exams and the final exam.

10. Grading:

Lecture (CHEM 3900) and Lab (CHEM 3905) will be graded separately. A separate grade will be reported for both courses to assess your strengths or weaknesses involving the lecture material and or a laboratory setting. Final grades will be given on a curve based on each students total points acquired versus those of their peers.

12 - extra credit quizzes* (3 pts/ea.)	36 pts
Exam 1	200 pts
Exam 2	200 pts
Exam 3	200 pts
Exam 4	200 pts
Total	800 pts

*In place to check if you: a) are staying on track with the course, b) have mastery of course material

NOTE: We structured this course to simulate preparative courses that prepare students for the: a) Optometry Admissions Test (OAT), b) Dental Admissions Test (DAT) or c) Medical College Admissions Test (MCAT). After taking these entrance exams (a-c), students are not provided their exams or a able to view which question(s) they missed. They are provided their percentile score overall out of 100%. Similarly, our exams will not be passed back to students. Exam scores will be emailed to each student. Students can view the question(s) they missed on our exams during office hours in person with their instructor. Exams questions will be drawn from approximately 85% 1) Worksheets and 2) HW questions with ~15% drawn from new but related material based on 1-2.

93-100%	A
90-92%	A-
87-89%	B+
83-86%	B
80-82%	B-
77-79%	C+
73-76	C
70-72	C-
60-69%	D
0-59%	F

11. Expectations for Students

Class attendance is not required on par with the University of California (UC) system - except for our exams. Materials posted to our course website are only for class use and may not be duplicated, distributed or sold. Students may download and print information for personal use as a student in the class. This is consistent with Fair Use under intellectual property protection. Expect to spend a minimum of three hours outside of class for every one lecture / class time. Teamwork is essential and encouraged on class assignments, however completing assignments is the responsibility of each student. **We do not field questions on our lectures, worksheets, homework or practice exams by email.** Organic Chemistry involves structures, graphics, and reactions/mechanisms with visual / spatial awareness - so email is not a proper venue to answer questions here. Students are encouraged to ask questions during our flipped classroom time or in office hours 😊.

PRIOR TO EACH LECTURE – PLEASE READ THE OUTLINED SECTIONS IN OUR TEXT (see page 5).

12. Students Who Require Accommodations:

Dominican University of California is committed to equal access for all students in accordance with the American's with Disabilities Act of 1990. Students who feels they may need accommodations based on the impact of a disability should contact the Office of Accessibility and Disability Services at 415-257-1388 asap to discuss specific accommodations. Please submit the subsequent paperwork to the instructor right away.

13. Course Evaluations

Dominican University of California is committed to an ongoing evaluation of its programs and courses through a culture of constructive dialogue and feedback. It is expected that students will complete the course evaluation either in class or outside of class. The instructor will determine time for the course evaluation to be completed. A link to the course evaluation will be sent to all the students enrolled in the class by the IT Department. The evaluation may be completed on a laptop, tablet, or mobile device. A laptop can be checked out from the library if needed.

14. Title IX

As instructors, one of our responsibilities is to help create a safe learning environment for our students and for the campus as a whole. As part of our commitment to students' well being, we have the responsibility to report any instances of sexual harassment, sexual violence, relationship violence, or stalking to our Title IX Coordinator, so they can inform students about their reporting options and the various support resources available. Student privacy is a priority for us and will be maintained to the extent permissible by law and policy. For more information about your rights and reporting options, including confidential and anonymous reporting, please visit dominican.edu/titleix.

15. Disclaimer

This syllabus is subject to modification. The instructor will inform students of any changes.

16. Dominican Scholarly & Creative Works Conference. DATE: Wednesday, April 15, 2026

17. **Homework** – Organic Chemistry (McMurray) 9th edition (**Updates - to be presented in lecture**)

Chapter:	Questions
Ch 15:	1, 3, 7, 9, 10, 11, 12, 18, 25, 42, 43
Ch 16:	1, 3, 7, 8, 9, 13, 14, 49 (skip c, d, g)
Ch 17:	2, 4, 6a,c, 7, 8b,c, 10a-c, 13 a,c,e, 14a,c,* 37 a-c, 41, 42 a,c,e, 59,
Ch 18:	3a,c,d, 5a-b, 7, 12b, 14a,c, 23,** 27a***,c****; 28a,c; 50 a-c
Ch 19:	2, 3 (skip d)*****, 4b,c, 5, 7, 10, 11,13a,b, 14, 16a,c,e, 17, 43, 54b,c,d,g, 56a-c, 64 g (only), 78
Ch 20:	2acf, 6, 9, 10a, 13, 14
Ch 21:	2ac, 3,4, 5bcd, 7ab, 9ac, 12-13, 17,19, 20 ac, 21, 48 ace, 73
Ch 22:	1a-e, 2, 4-6, 37-39*****, 41, 42 cd, 58 abe
Ch 23:	1, 3, 4, 16, 17
Ch 24:	2, 4, 6, 8, 11, 17
Ch 25:	2, 3, 4, 6, 7, 8, 9, 13-15
Ch 26:	1, 2, 3, 4, 8, 9, 12, 15a, 32, 34, 35, THC question

NOTES: Solutions manual typo(s), formatting errors or mistakes:

* use Dess Martin Periodinane/CH₂Cl₂ reagent vs CrO₃/H₃O⁺

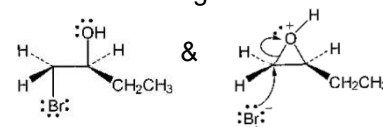
** “..Each mechanism involves protonation followed by a **SN₂** (not SN₁) displacement...”

*** p. 552 bottom paragraph – Delete: “...Note: None of these reactions involve acidic conditions and a starting material with a tertiary carbon...” – this statement is incorrect for 18.27) a, c

**** Structures of product (top right) & intermediate (bottom) are incorrect. Replace them with:

***** Swap the answers of 19.3c for 19.3d.

***** HW 22.39c. Missing **O**-CH₃ on the 3 structures & the (-) designation on alkoxide ion



Chemistry 3900 – Organic Chemistry II

16. Tentative Lecture Class Schedule – We reserve the right to adjust accordingly.

Dates	Lecture	Quiz	Topic	Sections	Chapter	HW complete
July 9	1		Introduction, UV visible spectroscopy & brief review	14.7, 14.9	14	No HW
July 9	2	1	Benzenes & Aromatics	15.1 - 15.6	15	HW-15
July 10	3		Chemistry of Benzenes & Aromatics	16.1 - 16.3	16	
July 10	4	2	Chemistry of Benzenes & Aromatics	16.4 - 16.5	16	HW-16
July 11	5		Alcohols & Phenols	17.1 - 17.4	17	
July 11	6	3	Reactions of Alcohols	17.5 - 17.7	17	HW-17
July 13			Review practice Exam 1			
July 14			Exam 1 (Chap 14-17)			
July 15	7		Ethers & Epoxides: Thiols & Sulfides	18.1 - 18.3, 18.5, 18.6, 18.8	18	HW-18
July 15	8	4	Aldehydes & Ketones	19.1-19.5, 19.8,	19	
July 16	9		Aldehydes & Ketones	19.10, 19.11	19	HW-19
July 16	10	5	Carboxylic acids & Nitriles	20.1 - 20.7	20	HW-20
July 17			Review practice Exam 2			
July 18	11		Carboxylic acids derivatives: Nucleophilic acyl substitution reactions (not on Exam 2)	21.1 - 21.3	21	
July 18	12	6	Carboxylic acids derivatives: Nucleophilic acyl substitution reactions (not on Exam 2)	21.3 - 21.4 21.6 - 21.8	21	HW-21
July 20			Exam 2 (Chap 18-20)			
July 21	13		Carbonyl Alpha-substitution reactions	22.1 - 22.6	22	HW-22
July 21	14	7	Carbonyl Condensation reactions	23.1 - 23.3, 23.5 - 23.9	23	HW-23
July 22	15		Amines	24.1 - 24.4	24	
July 22	16	8	Amines	24.5 - 24.6 24.8	24	HW-24
July 23			Review practice Exam 3			
July 24			Exam 3 (Chap 21-24)			
July 25	17		Carbohydrates	25.1 - 25.2	25	
July 25	18	9	Carbohydrates	25.3	25	
July 27	19		Carbohydrates	25.5 - 25.11	25	HW-25
July 27	20	10	Amino acids, Peptides & Proteins	26.1, 26.2, 26.4	26	
July 28	21		Amino acids, Peptides & Proteins	26.5-26.7 26.9	26	
July 28	22	11	Amino acids, Peptides & Proteins	26.5-26.7 26.9	26	
July 29	23		Amino acids & Lipids	27.6	26/27	HW-26
July 29	24	12	Lipids	27.6	27	No HW
July 30		evals	Review Lectures 17-24 & HW			
July 31			Exam 4			

JULY 2026

SUN	MON	TUE	WED	THU	FRI	SAT
28	29	30	1	2	3	4
5	6	7	8	9 Lec 1 Lec 2 ^{Quiz} Lab 1	10 Lec 3 Lec 4 ^{Quiz} OH 12-1pm	11 Lec 5 Lec 6 ^{Quiz} Lab 1
12	13 Review Practice Exam 1 OH 12-1pm Lab 2	14 Exam 1 (Lec 1-6) Lab 2	15 Lec 7 Lec 8 ^{Quiz} OH 12-1pm Lab 3	16 Lec 9 Lec 10 ^{Quiz} Lab 3	17 Lec 11 Lec 12 ^{Quiz} (Not on Exam 2) OH 12-1pm	18 Review Practice Exam 2
19	20 Exam 2 (Lec 7-10) Lab 4	21 Lec 13 Lec 14 ^{Quiz} Lab 4	22 Lec 15 Lec 16 ^{Quiz} OH 12-1pm Lab 5	23 Review Practice Exam 3 Lab 5	24 Exam 3 (Lec 11-16) OH 12-1pm	25 Lec 17 Lec 18 ^{Quiz}
26	27 Lec 19 Lec 20 ^{Quiz} OH 12-1pm Lab 6	28 Lec 21 Lec 22 ^{Quiz} Lab 6	29 Lec 23 Lec 24 ^{Quiz} OH 12-1pm Lab 7	30 Review Lec 17-24 & HW Lab 7	31 Exam 4 (Lec 17-24) OH 12-1pm	1

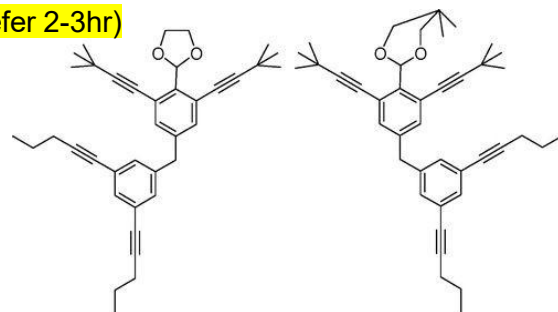
Study Tips and Requirements for O-Chem

What “they” say about organic chemistry is true - it is difficult and there is an incredible amount of material to learn in a short amount of time. If done right, however, this class can be fun! An easy way to make this a more pleasurable experience is to **establish good study habits early** and stick to them. The learning process is fluid and changes often need to be made based on other commitments. Many of these changes can be anticipated by staying organized so that you can compensate for lost time. Avoid comparing yourself to others and do your best.

In brief, follow these points and you can expect to excel in organic chemistry:

Make a schedule each week for WHEN you will study/day (min. 1hr, prefer 2-3hr)

- DO NOT FALL BEHIND - NOT EVEN ONE DAY.
- Maintain a positive attitude
- Do the reading assignment
- Take lecture notes and participate
- Review your notes and start HW assignments soon after lecture
- Actively prepare for and participate in CLASS
- Re-do HW problems without “cheating” to study for tests ON YOUR OWN
- Keep an organized, working record of concepts/problems that are difficult for YOU



Study Tips (just a few more...)

Stay organized. Be a nerd about this. Seriously.

Studying for exams:

Studying with groups is great, but it has to be in addition to studying alone. Your classmates cannot help you during the exam. Reading your notes and re-doing problems we do as a class is key.

Re-do as many homework problems as you can, as many times as you can. Don't just look at a problem and say, “I know how to do that.” Actually write it out again (a dry erase board can be useful for repetition without wasting paper).

Other Tips for Success and/or Maintaining Sanity

Patience.

Some things will not make full sense right away. Letting this bother you only slows your progress. Instead, accept it and enjoy the process. Your career is for the long haul, after all. Also keep in mind that no two students are the same. You can expect to learn at a different pace than your classmates. **College is actually about figuring out how *You* learn.**

Breathe and Get Out.

When feeling frustrated, take three deep breaths and start again fresh. Stress and frustration can also be alleviated with physical activity. Students tend to get caught up with classes, labs, studying, partying, eating, etc. and exercise falls by the wayside. If you are feeling particularly overwhelmed or otherwise stuck, get up and go for a walk, run, or a bike ride. Try a yoga class or pick a sport and go do it! Sometimes when you just want comfort food, you'd be better off getting some exercise or at least some fresh air.

Don't forget to **SLEEP!!!** I recommend ≥ 8 hrs / night if you can for this sort of course.

And last but not least ~ enjoy the journey ~ have some fun with it ☺