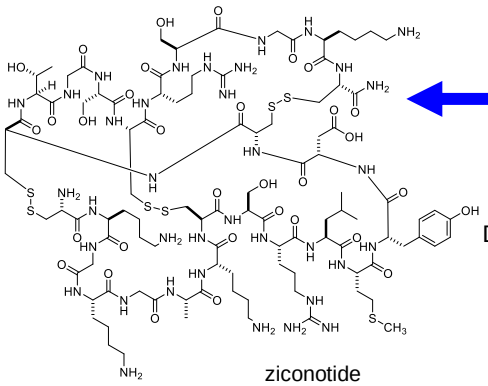
DOMINICAN UNIVERSITY of CALIFORNIA

SYLLABUS



Derived from Cone snail: ***Conus magus***

ziconotide

Department Name: Natural Sciences

Course Title: **Organic Chemistry II**
Course Number: Chem 3900
Units: 3 units

Semester Offered: **Summer**

Course Modality: Hybrid - self paced
YouTube instructional video tutorials

Course Meeting Time: 10am-11:15pm
In person on exam days only:
(7/22, 7/23, 7/29, 8/5)
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
web: http://moodle.dominican.edu/ Login → Chem3900

Office Hours: Mon, Wed, Fri – 12-1pm - 128 Science Center or (ZOOM online)
DUC TLC – **Tutor:** Joe Gerke
Joe Gerke <joe.gerke@dominican.edu> **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 satifsfies 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 inter-disciplinary 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.

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

6. Online Components of the Course. Moodle website: http://moodle.dominican.edu/

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

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) graphing calculator, b) smart phone, c) smart watch or d) Unauthorized supplementary device during an 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 exams will be provided,** unless there is: a legitimate scheduling conflict or real Emergency and or the **instructor is given one week notice by email** to make up the exam. Students missing an exam can take the weighted average score of their scores from two of the three exams given if they miss an examination. If more then one exam is missed by a student, they may be advised to *withdraw* from the course.

Students must complete the final exam to pass the course. Make up exams will be proctored by a faculty or staff member and if one is not available the student will take the make up exam under video surveillance. Individual circumstances will be evaluated at the instructor and the NSM department chair's discretion.
The above guidelines have been set in place to create democracy and 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 with 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.

Exam 1	200 pts
Exam 2	200 pts
Exam 3	200 pts
Exam 4	200 pts
Total	**800 pts**

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

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.

11. Expectations for Students

Please turn off cell phones during class and practice respect for your fellow students and the instructor. Texting during class can be distracting to your fellow students and instructor. Materials posted to the course web site are only for class use and may not be duplicated and 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 hour of class. Teamwork is essential and encouraged on class assignments ☺, **however** completing assignments is the responsibility of each student.

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 as soon as possible to discuss specific accommodations. Please submit the 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

https://sites.google.com/dominican.edu/scw/home?authuser=0

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

CHEM 3900

Chapter:	Problems
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: * Take home challenge (THC) Question
Solutions provided in office hours or with our course tutor or TA.

Chemistry 3900 – Organic Chemsitry II

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

Dates	Lecture	Topic	Sections	Chapter	HW complete
July 15	1	Introduction, UV visible spectroscopy & brief review	14.7, 14.9	**14**	No HW
July 15	2	Benzenes & Aromatics	15.1 - 15.6	**15**	
July 16	3	Chemistry of Benzenes & Aromatics	16.1 - 16.3	**16**	HW-15
July 16	4	Chemistry of Benzenes & Aromatics	16.4 - 16.5	**16**	
July 17	5	Alcohols & Phenols	17.1 - 17.4	**17**	HW-16
July 17	6	Reactions of Alcohols	17.5 - 17.7	**17**	
July 18	7	Ethers & Epoxides: Thiols & Sulfides	18.1, 18.3, 18.5, 18.6, 18.8	**18**	HW-17
July 18	8	Aldehydes & Ketones	19.1-19.5, 19.8,	**19**	HW-18
July 19	9	Aldehydes & Ketones	19.10, 19.11	**19**	
July 19	10	Carboxylic acids & Nitriles	20.1 - 20.7	**20**	HW-19
July 20		Review practice exam 1			
July 21		Review practice exam 2			
July 22		**Exam 1 (Chap 14-17)**			
July 23		**Exam 2 (Chap 18-20)**			
July 24	11	Carboxylic acids derivatives: Nucleophilic acyl substitution reactions	21.1 - 21.3	**21**	
July 24	12	Carboxylic acids derivatives: Nucleophilic acyl substitution reactions	21.3 - 21.4 21.6 - 21.8	**21**	
July 25	13	Carbonyl Alpha-substitution reactions	22.1 - 22.6	**22**	HW-21
July 25	14	Carbonyl Condensation reactions	23.1 - 23.3, 23.5 - 23.9	**23**	HW-22
July 26	15	Amines	24.1 - 24.4	**24**	HW-23
July 26	16	Amines	24.5 - 24.6 24.8	**24**	
July 27		Review practice exam			HW-24
July 29		**Exam 3 (Chap 21-24)**			
July 30	17	Carbohydrates	25.1 - 25.2	**25**	
July 30	18	Carbohydrates	25.3	**25**	
July 31	19	Carbohydrates	25.5 - 25.11	**25**	
July 31	20	Amino acids, Peptides & Proteins	26.1	**26**	HW-25
Aug 1	21	Amino acids, Peptides & Proteins	26.5-26.7 26.9	**26**	
Aug 1	22	Amino acids, Peptides & Proteins	26.5-26.7 26.9	**26**	
Aug 2	23	Amino acids & Lipids	27.6	**26/ 27**	
Aug 2	24	Lipids	27.6	**27**	HW-26
Aug 5		**Exam 4**			

Organic Chemistry II
(Chem 3900)_9am-12:00pm
Laboratory (Chem 3905)_1pm-5:30pm

JULY 2024

SUN	MON	TUE	WED	THU	FRI	SAT
30	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15 Lect 1 Lect 2 O.H. 12-1pm	16 Lect 3 Lect 4 Lab 1	17 Lect 5 Lect 6 O.H. 12-1pm	18 Lect 7 Lect 8 Lab 2	19 Lect 9 Lect 10 O.H. 12-1pm	20 Review practice Exam I
21 Review practice Exam II	22 Exam 1 (Lec 1-6)	23 Exam 2 (Lec 7-10) Lab 3	24 Lect 11 Lect 12 O.H. 12-1pm	25 Lect 13 Lect 14 Lab 4	26 Lect 15 Lect 16 O.H. 12-1pm	27 Review practice Exam III
28	29 Exam 3 (Lec 11-16)	30 Lect 17 Lect 18 Lab 5	31 Lect 19 Lect 20 O.H. 12-1pm	1	2	3

AUGUST 2024

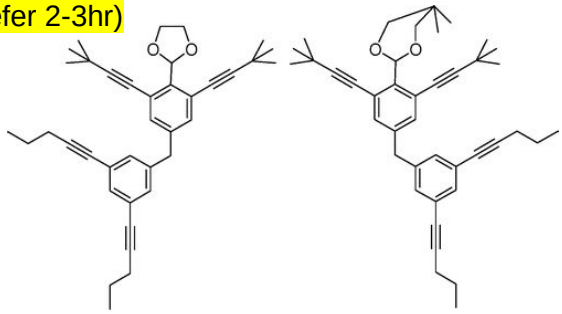
SUN	MON	TUE	WED	THU	FRI	SAT
28	29	30	31	1 Lect 21 Lect 22 Lab 6	2 Lect 23 Lect 24 O.H. 12-1pm	3 Review Worksheets & HW for Lectures 17-24 No practice exam
4	5 Exam 4 (Lec 17-24)	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

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 ≥ 8hrs / night if you can for this sort of course.

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