

Organic Chemistry II

CHEM-3422

Spring 2021 Section 01 3 Credits 01/09/2021 to 05/11/2021 Modified 04/20/2021

Description

The second course will systematically explore reactions of carbon-containing compounds and the mechanistic pathways involved in these processes. Reactions that will be discussed include functional group transformations, oxidation, reductions, cyclo-additions and carbon-carbon bond formation. The course begins to teach the student how to systematically design a multi-step synthesis of complex organic compounds. CHEM 3422L may be taken concurrently.

Requisites

Prerequisites:

CHEM 2411 Minimum Grade: C and CHEM 3422L

Corequisites:

Contact Information

Instructor: Dr. Vickie Geisler

Email: vgeisler@westga.edu

Office: TLC 2120

Supplemental Instructor: Jonathan Daniel, jdanie31@my.westga.edu

Office Hours

M, W 10-12; T 1-2

TLC 2120

tutoring hours

Meeting Times

Lecture

TLC 1305

Monday, Wednesday, 12:30 to 1:45 PM

Materials

Organic Chemistry

Author: Ouellette and Rawn

Availability: Free online

https://galileo-usg-uwg-primo.hosted.exlibrisgroup.com/primo-explore/openurl?institution=UWG&vid=UWG_V1&url_ctx_fmt=null&rft.mms_id=9915452147102931&u.ignore_date_coverage=true&isServicesPage=true

Suggested Material: "Preparing for your ACS Exam in Organic Chemistry: The Official Guide"

Online resources: www.khanacademy.org/science/organic-chemistry

Required Equipment:

I>clicker; this is the UWG sanctioned clicker that is used in Biology and other UWG courses. **Bring your clicker to class every day!!**

The link to register your I-Clicker can be found in the content on CourseDen. I will drop the three lowest clicker quizzes and the three lowest participation grades so you will not be penalized if you forget your clicker, miss class, or your clicker does not work.

Outcomes

To learn the language of organic chemistry; to educate students to think independently about organic chemistry; to reason and think analytically in solving problems and making decisions in matters involving organic chemistry. To look for patterns and recognize qualitative similarities between seemingly unrelated facts. To develop a practical understanding for the causes of chemical change; to understand mechanisms; to predict reactivity from structure; and to learn to predict the outcome of a reaction never seen before and to communicate organic chemistry with clarity.

Evaluation

Criteria

Type	Weight	Topic	Notes
Clicker Quizzes	6%		At the start of each lecture there will be a clicker quiz (CQ) over the material covered in the previous class. Clicker quizzes will be taken individually. The three lowest quiz scores will be dropped You will not be excused from any quizzes; there are no make-up quizzes.
Clicker Participation (CP)	4%		After the clicker quiz and during each class there will be several participation clicker questions. You will receive full credit for a correct response, 75% credit for an incorrect response, 0% for no response. The three lowest CP scores will be dropped.
Textbook HW Quizzes	5%		Working problems is an essential part of studying organic chemistry. You should complete the assigned homework problems from the textbook. You will have a quiz over the homework. The quizzes will be due on Sunday @ 11:30 pm each week. You will have 1 hour to complete each quiz and during this time you will have two attempts at the quiz. The two lowest HW quiz scores will be dropped.
Problem Sets	7%		Problems sets will be posted on coursedden on a regular basis to help you prepare for exams. Selected problem sets will be collected and graded. PS must be handwritten and submitted as hard copies during class on the day on which they are due. Copying any part of a problem sets will result in a grade of zero for that assignment. Late problem sets will not be accepted.
Exams	64%		There will be four exams given on February 1, February 22, March 10, and April 14. No make-up exams will be given. An exam missed for any reason will result in your final exam counting in its place. Each exam will specifically test class material covered since the previous exam. However, since the nature of chemistry is cumulative, I will assume that you have mastered all previous material.
Final Exam	14%		The final exam will be a national ACS exam. It is a comprehensive exam over the entire course including material from CHEM 2411. The exam will be given on Thursday, May 5 th , 11:00 am-1:00 pm

Breakdown

Grade	Range	Notes
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Grade	Range	Notes
A	100-85	
B	84-75	
C	74-60	
D	59-50	
F	49-0	Last day to withdraw with a "W" is April 2 nd

Assignments

Schedule

When	Topic	Notes
January 11	Diels Alder	Read sections 11.8, 25.5 and complete exercises 25.17-23
January 13	Aromatic Compounds	Read chapter 12 and complete exercises 12.1-3, 5-6, 10-12, 15, 18
January 18	MLK Day	No class
January 20	Electrophilic Aromatic Substitution	Read sections 13.1-3 and complete exercises 13.1, 3, 4, 6, 12, 18-22
January 25	Substituent Effects	Read sections 13.4-6 and complete exercises 13.23-24, 28-31
January 27	Synthesis Workshop	Read sections 13.7-8 and complete exercises 13.32-34; 37-42
February 1	Exam I	
February 3	Acidity of Phenols + Alcohols	Read sections 3.4-5, 9.3, 5, 11, 24.2 and complete exercises 9.9-13, 39
February 8	Nucleophilic Addition to C=O	Read sections 18.2, 15.9-10 and complete exercises 18.1-6, 15.50-53, 55, 66-69, 73, 76, 77
February 10	Reactions of Alcohols	Read sections 15.4, 9.17, 15.3 and complete exercises 15.28-30, 32, 9.73-75, 15.15-18, 23, 25
February 15	Reactions of Aldehydes and Ketones	Read sections 19.2-5, 8 and complete exercises 19.1, 18-19, 22, 27, 29, 31, 44, 46
February 17	Protecting groups and Synthesis	Read sections 19.6, 9 and complete exercises 19.1, 33, 34, 36, 37, 51, 53
February 22	Exam II	
February 24	Carboxylic Acids	Read sections 20-20.7, 21.5 and complete exercises 20.3-4, 15-16, 21-23, 34-37, 39-41, 21.41b,c, 42b,c
March 1	Nitriles and Carboxylic Acid Derivatives	Read sections 21.1-5, 8 and complete exercises 21.47f, 48f, 7-8, 19-20, 23
March 3	Reactions of Acid Chlorides and Anhydrides	Read sections 21.1-9 and complete exercises 21.1, 3, 30, 41d, 42a, 43a,d, 44a,d, 45a, 46a,d
March 8	Reactions of Esters and Amides	Read sections 21.1, 5-9 and complete exercises 21.38, 42c,d, 43b,c, 44bc, 45b-d, 46bc, 47, 55, 56
March 10	Exam III	
March 15-19	Spring Break	
March 22	Acidity of the alpha-Hydrogen	Read sections 22.1-5 and complete exercises 22.10, 13-14, 16, 34-35, 41-43, 45, 53

When	Topic	Notes
March 24	Aldol	Read sections 22.6-8 and complete exercises 22.55-57, 61-62, 64
March 29	Aldol	Read sections 22.6-8 and complete exercises 22.55-57, 61-62, 64
March 31	Decarboxylation and Synthesis	Read sections 22.12, 16 and complete exercises 22.79, 101-103
April 5	Conjugate addition and Michael Rxn	Read sections 22.9-11, 17 and complete exercises 22.65, 67-70, 107-109
April 7	Claisen	Read sections 22.12-14, 17 and complete exercises 22.79, 83, 86-96
April 12	Amines	Read Chapter 23 and complete problems 23.3, 7, 21, 28-29, 32, 35, 39.
April 14	Exam IV	
April 19	Reactions of ethers	Read Chapter 16 (not 7, 8, 11) and Do problems 16.3, 23, 27, 28, 52, 59
April 21	Review for final	
April 26	Review for final	
April 28	Biomolecules	
May 5	Final Exam	11:00 am - 1:00 pm

* Course Policies and Resources

Calculation of Overall Average

Method 1. CQ, CP, HW, PS, Exams, and Final will be averaged together according to the % above

Method 2. Same as above except the lowest exam score is dropped from the calculation and the final exam will count in its place..

Problem Solving Sessions: PS/SI

Earn 1 PS point for each PS/SI session you attend and participate. You will earn a dropped CA quiz for your 4th, 9th and 15th PS point earned.

Institutional Policies

Academic Support

Accessibility Services: Students with a documented disability may work with UWG Accessibility Services to receive essential services specific to their disability. All entitlements to accommodations are based on documentation and USG Board of Regents standards. If a student needs course adaptations or accommodations because of a disability or chronic illness, or if he/she needs to make special arrangements in case the building must be evacuated, the student should notify his/her instructor in writing and provide a copy of his/her Student Accommodations Report (SAR), which is available only from Accessibility Services. Faculty cannot offer accommodations without timely receipt of the SAR; further, no retroactive accommodations will be given. For more information, please contact [Accessibility Services \(https://www.westga.edu/student-services/counseling/accessibility-services.php\)](https://www.westga.edu/student-services/counseling/accessibility-services.php).

Center for Academic Success: The [Center for Academic Success \(http://www.westga.edu/cas/\)](http://www.westga.edu/cas/) provides services, programs, and opportunities to help all undergraduate students succeed academically. For more information, contact them: 678-839-6280 or cas@westga.edu.

University Writing Center: The [University Writing Center \(https://www.westga.edu/writing/\)](https://www.westga.edu/writing/) assists students with all areas of the writing process. For more information, contact them: 678-839-6513 or writing@westga.edu.

Online Courses

UWG takes students' privacy concerns seriously: technology-enhanced and partially and fully online courses use sites and entities beyond UWG and students have the right to know the privacy policies of these entities. For more information on privacy and accessibility for the most commonly used sites, as well as technology requirements visit the [UWG Online \(https://uwgonline.westga.edu/\)](https://uwgonline.westga.edu/) site.

Students enrolled in online courses can find answers to many of their questions in the [Online/Off-Campus Student Guide \(http://uwgonline.westga.edu/online-student-guide.php\)](http://uwgonline.westga.edu/online-student-guide.php).

If a student is experiencing distress and needs help, please see the resources available at the [UWG Cares \(http://www.westga.edu/UWGCares/\)](http://www.westga.edu/UWGCares/) site. [Online counseling \(https://www.westga.edu/student-services/counseling/index.php\)](https://www.westga.edu/student-services/counseling/index.php) is also available for online students.

Honor Code

At the University of West Georgia, we believe that academic and personal integrity are based upon honesty, trust, fairness, respect, and responsibility. Students at West Georgia assume responsibility for upholding the honor code. West Georgia students pledge to refrain from engaging in acts that do not maintain academic and personal integrity. These include, but are not limited to, plagiarism, cheating, fabrication, aid of academic dishonesty, lying, bribery or threats, and stealing.

The University of West Georgia maintains and monitors a confidential Academic Dishonesty Tracking System. This database collects and reports patterns of repeated student violations across all the Colleges, the Ingram Library, and the School of Nursing. Each incidence of academic dishonesty is subject to review and consideration by the instructor, and is subject to a range of academic penalties including, but not limited to, failing the assignment and/or failing the course. Student conduct sanctions range from verbal warning to suspension or expulsion depending on the magnitude of the offense and/or number of offenses. The incident becomes part of the student's conduct record at UWG.

Additionally, the student is responsible for safeguarding his/her computer account. The student's account and network connection are for his/her individual use. A computer account is to be used only by the person to whom it has been issued. The student is responsible for all actions originating through his/her account or network connection. Students must not impersonate others or misrepresent or conceal their identities in electronic messages and actions. For more information on the University of West Georgia Honor Code, please see the [Student Handbook \(https://www.westga.edu/administration/vpsa/handbook-code-of-conduct.php\)](https://www.westga.edu/administration/vpsa/handbook-code-of-conduct.php).

UWG Email Policy

University of West Georgia students are provided a MyUWG e-mail account. The University considers this account to be an official means of communication between the University and the student. The purpose of the official use of the student e-mail account is to provide an effective means of communicating important university related information to UWG students in a timely manner. It is the student's responsibility to check his or her email.

Credit Hour Policy

The University of West Georgia grants one semester hour of credit for work equivalent to a minimum of one hour (50 minutes) of in-class or other direct faculty instruction AND two hours of student work outside of class per week for approximately fifteen weeks. For each course, the course syllabus will document the amount of in-class (or other direct faculty instruction) and out-of-class work required to earn the credit hour(s) assigned to the course. Out-of-class work will include all forms of credit-bearing activity, including but not limited to assignments, readings, observations, and musical practice. Where available, the university grants academic credit for students who verify via competency-based testing, that they have accomplished the learning outcomes associated with a course that would normally meet the requirements outlined above (e.g. AP credit, CLEP, and departmental exams).

HB 280 (Campus Carry)

UWG follows University System of Georgia (USG) guidance: http://www.usg.edu/hb280/additional_information# (http://www.usg.edu/hb280/additional_information)

You may also visit our website for help with USG Guidance: <https://www.westga.edu/police/campus-carry.php>
(<https://www.westga.edu/police/campus-carry.php>)

Mental Health Support

If you or another student find that you are experiencing a mental health issue, free confidential services are available on campus in the [Counseling Center](#). Students who have experienced sexual or domestic violence may receive confidential medical and advocacy services with the Patient Advocates in [Health Services](#). To report a concern anonymously, please go to [UWGcares](#).

ELL Resources

If you are a student having difficulty with English language skills, and / or U.S. culture is not your home culture, specialized resources are available to help you succeed. Please visit the [E.L.L. resource page](#) for more information.

COVID-19

Proctored Exams/Online Instruction: Students should be aware and plan ahead for the possibility of having to complete all courses and/or exams online or in a proctored environment. This means talking with your instructors about what minimum technical requirements (software and hardware) will be required should your class move online or a student's personal needs dictate. This also includes making plans for internet access at whatever location participation may occur.

Virtual or in-person proctored exams, if your instructor should require them, may result in an additional cost to the student. Please discuss these details with your instructor or see the information provided here.

Face Coverings: Effective July 15, 2020, University System of Georgia institutions, including the University of West Georgia, will require all faculty, staff, students, and visitors to wear an appropriate face covering while inside campus facilities/buildings where six feet social distancing may not always be possible. Face covering use will be in addition to and is not a substitute for social distancing.

Face coverings are not required in campus outdoor settings where social distancing requirements are met. Anyone not using a face covering when required will be asked to wear one or must leave the area.

Reasonable accommodations may be made for those who are unable to wear a face covering for documented health reasons.

Student FAQs: For more information about UWG COVID-19 guidance for students visit the [Student FAQ webpage](#) (<https://www.westga.edu/student-services/health/coronavirus-info/return-to-campus/students-faq-return-to-campus.php>).

Additional Items
