

**Ivy Tech State College
Lafayette/Regional Syllabus**

Course Information

Course and Section Number: CHT 212-50D

Course Title: Organic Chemistry II

Semester 053

Credits: 5.0

Contact Hours: 3 Hours Lecture
4 Hours Lab

Prerequisites/Corequisites: CHT 101 or ILT 101

Division: Technology

Program: Chemical Technology

Days: Monday

Time: 6:00 – 8:50 pm

Griffin Hall 223

Wednesday

6:00 – 9:50 pm

Griffin Hall 150/162

Faculty Information

Name: Michael Shevlin

Office Location: N/A

E-mail address: mshevlin@ivytech.edu

Contact Phone Number: (765) 429-8313

FAX number: (765) 269-5246

Office Hours: By appointment

Division Office: (765) 269-5267

Catalog Description:

The second in a series of two courses designed to cover an advanced understanding of industrial Organic Chemistry including reactivity of various aliphatic and aromatic compounds, various lab techniques and basic concepts in organic chemistry

General Course Objectives:

Upon successful completion of this course the student will be expected to:

1. Perform reactions common in industrial settings with attention specialized glassware, various scales and yield considerations.
2. Explain the effect of differing reactivity upon choices of chemical use in industrial settings including Aldehydes, ketones, carboxylic acids, aldol, amines, phenols, carbanions.
3. Perform lab techniques common in an industrial synthesis lab, including but not limited to reaction methods, distillation, chromatography, sublimation, polarimetry, refractometry.
4. Further understanding of organic chemicals used in industrial settings.
5. Understand basic concepts in organic chemistry as they relate to experimental considerations including spectroscopy, nucleophilic addition, nucleophilic substitution and condensation reactions.
6. Understand the role of solvent in a reaction.
7. Identify organic unknowns using spectroscopic and wet chemistry techniques

Course Content:

- aldehydes
- ketones
- carboxylic acids
- aldol
- amines
- phenols
- carbanions.
- reaction methods
- distillation
- chromatography
- sublimation
- polarimetry
- refractometry.
- spectroscopy
- nucleophilic addition
- nucleophilic substitution
- condensation reactions

Required Texts:

Organic Chemistry. by Solomons and Fryhle, Eighth Edition, ISBN: 0-471-41799-8

Introduction to Organic Laboratory Techniques: A Small Scale Approach, by Pavia, Lampman, Kriz and Engle, 2nd Edition, ISBN: 0-534-40833-8

References:

<http://www.chemfinder.com>

<http://www.aist.go.jp/RIODB/SDBS/menu-e.html>

Supplies:

Laboratory safety goggles

Laboratory research notebook with carbonless paper

Permanent marker, fine or extra fine point (such as sharpie)

Additional Resources:

Supplementary material will be posted at <http://apostasy.dyndns.org/~academics/>

Teaching Methods:

Teaching Methods will lectures, group discussions, individual assignments, problem solving sessions, and laboratory work.

Grading and Evaluation:

Methods of Evaluation: Homework will be assigned every week to reinforce the material covered in lecture and will be due the following week. Quizzes will be administered every week over the material covered in preceding lectures. Lab reports will be due at the beginning of lab following completion of the previous lab. There will be three examinations during the course of the semester and a cumulative final examination at the end of the semester. Exams will be administered during the lab period as listed in the course schedule. If the class average is low at the end of the semester, scores will be adjusted upward to maintain a 70% average.

Students failing to turn in more than two lab reports during the course of the semester will automatically fail the course. This includes late lab reports and unexcused absences, and absolutely no exceptions will be made.

Graded Elements:	Homework	10%
	Quizzes	10%
	Labs	35%
	Exams	25%
	Final Exam	20%

Grading Scale:	90 – 100	A
	80 – 89	B
	70 – 79	C
	60 – 69	D
	0 – 59	F

Research Assignments:

N/A

Additional Assignment/Grading Information:

Lab Reports

Laboratory work will be performed individually unless otherwise instructed. Lab reports will be completed individually and must be typed and include the following information:

Introduction	A sentence or two summarizing the experiment
Experimental Reactions	A paragraph describing the method used in the laboratory
Results	Balanced chemical equations for all reactions conducted in the lab
Calculations	Observations, data tables, graphs, etc.
Discussion	Sample calculations for values computed for the lab
Questions	A paragraph or two explaining the results
	Answers to questions provided in the laboratory

Lab Pages

Lab pages or the carbon pages from your notebook are due as indicated on the course outline or in the lab. They should include title of lab, reaction involved in the experiment, table of physical constants of all chemicals involved in the lab, procedures, data and observations, and sample calculations. These pages should be written in the accepted procedure for good laboratory practice outlined in the first week of class.

Makeups/Late submittals:

Late homework and laboratory assignments will not be accepted. Homework and exams may be made up following a documented, excused absence. Due to time constraints, there will be no make-up sessions available for laboratory work. Quizzes and labs missed due to excused absences will not be averaged into the final grade. *It is the responsibility of the student to obtain missed homework assignments.*

Attendance:

Attendance at scheduled class meeting or other activities assigned, as part of a course of instruction is essential. If a student is unable to attend any of the sessions, it is the responsibility of the student to inform the instructor before the scheduled class. As this is almost entirely a lab course, attendance becomes even more important. Lab work may only be made up in extreme circumstances. Vacations do NOT count as an extreme circumstance.

Last Date and Responsibility for Withdrawal:

The last date to withdrawal is April 10, 2006. If you wish to drop this class you MUST contact the instructor or the registrar's office to do so. You will not be dropped for failure to attend class.

Additional Class Information:

All students are required to take the final examination. Students that do not take the final examination will be given an incomplete grade.

Academic Honesty Statement:

The College is committed to academic integrity in all its practices. The faculty value intellectual integrity and a high standard of academic conduct. Activities that violate academic integrity undermine the quality and diminish the value of educational achievement.

Cheating on papers, tests or other academic works is a violation of College rules. No student shall engage in behavior that, in the judgment of the instructor of the class, may be construed as cheating. This may include, but is not limited to, plagiarism or other forms of academic dishonesty such as the acquisition without permission of tests or other academic materials and/or distribution of these materials and other academic work. This includes students who aid and abet as well as those who attempt such behavior.

ADA Statement:

Ivy Tech State College seeks to provide reasonable accommodations for qualified individuals with documented disabilities. If you need an accommodation because of a documented disability, please contact the Office of Disability Support Services at the beginning of each semester. The Disabilities Services Coordinator is Tony Criswell; he is located in the Learning Resource Center, Ivy Hall Room 1157F. If you will require assistance during an emergency evacuation, notify your instructor immediately. Look for evacuation procedures posted in your classrooms.

Conduct:

Cell Phones in Class: Cell phones and pagers should be turned off when you are in class. If your cell phone or pager rings during class, points may be deducted from your grade. If you have unusual circumstances, you should talk to the instructor.

Any use of cell phones and pagers during a quiz or test is strictly prohibited. Any student who violates this policy will earn a zero on the quiz or test.

Emergency calls may be addressed to the Registrar's Office at (765) 269-5119; the Registrar's staff will have you contacted in the classroom. After 5:00 p.m., calls may be directed to the main switchboard at (765) 269-5100. In the event of an emergency after 9:00 p.m., calls should be directed to the security officer on duty at (765) 269-5254, (765) 430-2882, or (765) 430-2883.

Lab Rules and Regulations:

1. Safety goggles must be worn in the laboratory at all times; there are NO exceptions. If you do not have your own goggles, you may purchase them through the bookstore.
2. Student must be appropriately dressed in the laboratory at all times. This means wearing clothing that protects the skin from the neck to below the knees. Sleeveless or tank top shirts, shorts or skirts that don't cover the knees, open-toed shoes and sandals (even with socks), are unacceptable in the laboratory. You may bring appropriate clothing to change into for the lab. Students will not be permitted to work in the lab wearing inappropriate clothing. Labs missed for this reason will be counted as unexcused.
3. If you require vision correction, you are advised to wear regular glasses rather than contact lenses in the laboratory. Chemicals and vapors can lodge behind contact lens and cause severe damage to the eyes. Also, contact lenses interfere with the use of an eyewash. If you insist on wearing contact lenses in the laboratory, you must inform your instructor of this at the beginning of the semester.
4. To avoid contact with flames and chemicals, hair longer than shoulder length must be appropriately contained.
5. Audio-visual equipment is prohibited in the lab unless the instructor is using such equipment for educational purposes. This means no radios of any kind,
6. Food and beverages are prohibited in the laboratory. Do not apply cosmetics in the laboratory.
7. No unauthorized experiments may be performed at any time

If you are pregnant or become pregnant, please notify the instructor immediately, so that proper precautions can be taken to protect you.

Extra Assistance:

The Student Support and Development Advisor, whose office is located in Ivy 1145, can provide academic counseling to assist with general academic and daily life management skills, such as time and stress management. She can also provide limited personal counseling and referral to outside assistance agencies. Tony Criswell, Disability Services Coordinator in Ivy 1157F, provides additional assistance for special needs students.

Virtual Library:

The Ivy Tech Virtual Library is available to students on- and off- campus, offering full-text journals and books and other resources essential for course assignments. Go to <http://www.ivytech.edu/library> and choose the Virtual Library link for your campus.

E-mail:

E-mail communication from the College is directed to the online student system. Students are responsible for checking their e-mail accounts, even if they also use other e-mail accounts. Please refer to the Ivy Vine Student Handbook for more information.

Assessment:

Ivy Tech State College is committed to graduating students who have the appropriate technical and general education skills. Each approved technical program in the College annually assesses its program graduates for technical competence. As all graduates are to be assessed for technical competence, students are expected to participate in assessment activities as required by their program. General Education skills are assessed through an authentic assessment project that uses work submitted by students as a part of their regular course requirements.

Course (SUMMA) Evaluations:

Course evaluations by students will be conducted during the fall and spring semesters using the College's "Student Evaluation of Instruction" form.

Emergency Procedures:

Please note emergency evacuation procedures posted in the classroom.

Certification and Licensing Statement:

Ivy Tech cannot guarantee that any student will pass a certification or licensing exam. Your success will be determined by several factors beyond the instruction you are given in the classroom including your test-taking skills, your willingness to study outside of class, and your satisfactory completion of appropriate practice exams. Certification and licensure exam questions are drawn from databases of hundreds of possible questions; therefore, a thorough understanding of the subject matter is required. The goal of Ivy Tech in providing a certification exam studies class is to assist you in understanding the material sufficiently to provide a firm foundation for your studies as you prepare for the exam.

Right of Revision

<p>NOTE: This syllabus and the information contained within it are subject to change without notice.</p>

CHT 212: Organic Chemistry II
 Assignments and Tentative Course Schedule:

Wk	Class Meeting	Topics	Assigned Work	Work due and Exams
1	1 / 9	Introduction		
	1 / 11	Chapter 12: Alcohols from Carbonyl Compounds	HW 1	
2	1 / 16	NO CLASS		
	1 / 18	Lab 1: Triphenylmethanol (<i>Experiment 36A, page 303</i>)		HW 1
3	1 / 23	Chapter 13: Conjugated Unsaturated Systems	HW 2	
	1 / 25	Lab 2: Diels-Alder Reaction (<i>Experiment 49, page 417</i>)		Lab 1
4	1 / 30	Chapter 14: Aromatic Compounds	HW 3	HW 2
	2 / 1	EXAM I		Lab 2
5	2 / 6	Chapter 15: Reactions of Aromatic Compounds	HW 4	HW 3
	2 / 8	Molecular Modeling Activity (<i>handout</i>)		
6	2 / 13	Chapter 15 continued	HW 5	HW 4
	2 / 15	Lab 3: Chiral Reduction of Ethyl Acetoacetate (<i>Experiment 31, page 258</i>)		MMA
7	2 / 20	Chapter 20: Amines	HW 6	HW 5
	2 / 22	Lab 4: 1,4-diphenyl-1,3-butadiene (<i>Experiment 41, page 341</i>)		Lab 3
8	2 / 27	Chapter 16: Nucleophilic Addition to the Carbonyl	HW 7	HW 6
	3 / 1	EXAM II		Lab 4
9	3 / 6	Chapter 16 continued	HW 8	HW 7
	3 / 8	Lab 5: Luminol (<i>Experiment 51, page 435</i>)		
10	3 / 13	NO CLASS		
	3 / 15	NO CLASS		
11	3 / 20	Chapter 18: Carboxylic Acids and Their Derivatives	HW 9	HW 8
	3 / 22	Lab 6: N,N-diethyl- <i>m</i> -toluamide (<i>Experiment 45, page 370</i>)		Lab 5
12	3 / 27	Chapter 18 continued	HW 10	HW 9
	3 / 29	EXAM III		Lab 6
13	4 / 3	Chapter 17: Aldol Reactions	HW 11	HW 10
	4 / 5	Lab 7: The Aldol Condensation (<i>Experiment 38, page 322</i>)		
14	4 / 10	Chapter 17 Continued	HW 12	HW 11
	4 / 12	Lab 8: Preparation of Benzoin (<i>Experiment 34A, page 288</i>)		Lab 7

15	4 / 17	Chapter 19: More Chemistry of Enolates	HW 13	HW 12
	4 / 19	Lab 9: Preparation of Benzil (<i>Experiment 34B, page 294</i>)		Lab 8
16	4 / 24	Chapter 19 continued	HW 14	HW 13
	4 / 26	Lab 10: Tetraphenylcyclopentadienone (<i>Experiment 35, page 300</i>)		Lab 9
17	5 / 1	FINAL EXAMINATION		HW 14 Lab 10
	5 / 3			