Course Syllabus

CHEM 2423 – Organic Chemistry I

Course Director-**Mr. Harold Fick** (972) 438-6932 ext 7343 hfick@parkercc.edu

LECTURE & LAB INSTRUCTOR- **Mr. Harold Fick**

COURSE NUMBER: CHEM 2423

TRIMESTER CREDIT HOURS 4	***TOTAL CONTACT HOURS PER TRIMESTER 90***
LECTURE HOURS PER WEEK 8	***LECTURE CONTACT HOURS/TRIMESTER 60***
LABORATORY HOURS PER WEEK 4	***LABORATORY HOURS PER TRIMESTER 30***

Office Hours: 9AM-11:50PM Monday; 1-1:50PM Tuesday, Wednesday, Thursday; but when I am at the school, I will see students if possible

Our mission is to educate individuals in chiropractic wellness to be leaders in education, research, and service as primary care physicians and gatekeepers for direct access to health delivery systems. **The mission of this course is to support the Parker College mission** by instruction in organic chemistry. This course is important preparation for students' learning of biochemistry.

OVERVIEW OF COURSE CONTENT*:* The topics covered will be structure & bonding, alkanes & their reactions, cyclic alkanes, stereo isomers, properties & reactions of haloalkanes, & introduction to alcohols.

Course Mechanics:
Lecture - Monday through Thursday 7 – 8:50 AM
Lab – Tuesday & Thursday 9 – 12:50 AM

GOALS:

1. To build basic understanding of structure & bonding of the main atoms of organic chemistry; carbon, hydrogen, oxygen, nitrogen, & the halides.
2. To build basic understanding of polarity, nucleophiles, electrophiles, & reaction mechanisms for organic molecules.
3. To build basic understanding of alkanes & cycloalkanes; stereoisomers; haloalkanes; & alcohols; as to their names, properties, & some basic reactionsreactions.

LEARNING OBJECTIVES:

Learning outcomes:

Lecture Course Objectives:

Upon completion of Organic Chemistry I lecture the student should be able to:

1. Describe linear, trigonal planar, & tetrahedral molecular structure
2. Calculate ionic charges,
3. Draw Lewis structures for C,O,N,H,F,Cl,Br,& I ; & create bonded structures from them.
4. Write 1st & 2nd order kinetic rate reactions.
5. Write a thermodynamic equilibrium from a basic acid reaction.
6. Describe or otherwise show what is meant by a methyl, primary, secondary, or tertiary hydrocarbon radical.
7. Describe or otherwise show a radical halide substitution onto an alkane.
8. Demonstrate that they can name cycloalkanes up to Cyclodecane and make ΔG & K calculations with flipping substituted Cyclohexane molecules.
9. Determine absolute configurations of any stereocenter & describe some basic stereo chemistry reactions.
10. Describe what is a haloalkane S_N2 reaction, its kinetics, its stereochemistry, its solvent effects, its steric hindrance effects, its polarization, & the best nucleophiles & leaving groups for such reactions.
11. Describe what is a haloalkane S_N1 reaction, its kinetics, its stereochemistry, its solvent effects, its steric hindrance effects, its polarization, & the best leaving groups for such reactions.
12. Describe what is a haloalkane E1 reaction, its kinetics, its solvent effects, its steric hindrance effects, its polarization, & the best conditions for such reactions.
13. Describe what is a haloalkane E2 reaction, its kinetics, its solvent effects, its steric hindrance effects, its polarization, & the best conditions for such reactions.
14. Use the chart at the end of chapter 7 to effectively predict SN1, SN2, E1 & E2 reaction outcomes.
15. Systematically name alcohols, understand their syntheses & oxidation by identifying & predicting outcomes.

Learning outcomes:

Lab Objectives:

Upon completion of Organic Chemistry I lab the student should be able to:

1. Determine various characteristic of a cross section of organic compounds from a CRC handbook.
2. Describe correct lab and safety procedures by scoring at least 80 % on the appropriate quiz.
3. Demonstrate their knowledge of lab and safety procedures by using them during the experiments in the lab class.
4. Perform & interpret the bromination of phenol with HBr.
5. Perform & interpret the dehydration of sucrose with H_2SO_4.
6. Predict the amount of caffeine found in instant coffee, & describe and draw the caffeine molecule.
7. Perform & interpret the bromination of gasoline.
8. Perform & interpret the chlorination of gasoline.
9. Construct and systematically name straight chain & branched alkanes up to & including Decane.
10. Demonstrate that the student can draw and construct models of enantiomers, meso molecules, diasteriomers

GENERAL APPROACH TO TEACHING:
The instructor presents the main concepts of organic chemistry in lecture, reinforces them, and further reinforces them in labs. Learning concepts is emphasized strongly more than simply memorizing facts. Understanding reactions is emphasized strongly more than simply memorizing facts. The 1st 8 chapters of the textbook will be covered in lecture and with 10 labs. Labs will include group and individual work. 3 exams will be given to students for the course which are not comprehensive, but please realize that the information builds upon itself. Students are also encouraged to quickly, concisely summarize each lecture as this has proven to increase retention by about 7%. At times homework is given, but not graded. Lack of attempting to do homework penalizes students on their graded activities.

Prerequisites: General Chemistry I & II; enrollment in PCC

Required Texts: **Organic Chemistry Structure and Function**
by Vollhardt / Schore 4th or 5TH edition

Required Equipment: Safety goggles or glasses

Evaluation: Lecture counts 69% and Labs, quiz, & attendance 31%.
The grade for this class will be based on the following criteria): 3 tests at 23% each for a total of 69%. 10 labs @ 2% each, 1 announced lab quiz @ 6%, & attendance @ 5% for a total of 31%.

ESTIMATE OF STUDENT WORK LOAD:

To succeed, most students should plan to spend at least 1 hour of study outside of class for each hour of class. It is certainly better for students to do this continuously as opposed to "catching up" as the exam time nears.

STUDENTS WITH SPECIAL NEEDS:

Students with special needs such as bad eyesight, dyslexia, and with other such concerns will be accommodated for through the school. For such services contact Shaun Burrow at 7156.

90/90 RULE:

A student who has a 90 or better average in this course (for all exams, lab practicals and lab quizzes) and who has attended class 90% or more of the class meetings will have the option of being exempted from taking the final exam. For O Chem I and/or O Chem II, the average must be 89.5 or higher, & the student must have 3 or less absences from lectures.

EXAMINATIONS: Make-up Exams/Lab Practicals

You must be on time for the Exam or Lab Practical as no Exams are passed out once the first student leaves the exam room. Exams/Lab Practicals are scheduled well in advance so that students can plan appropriately. If a student must be absent from an exam/lab practical, it is the student's responsibility to notify the Course Director no later than the scheduled starting time of the exam/lab practical. Failure to notify the Course Director could result in the student receiving a grade of "0" for the missed exam/lab practical. (See missed exam policy below)

Exam dates can only be changed by the course director, under the direct guidance of the trimester faculty coordinator.

ALTERING GRADES ON EXAMS: Only the course director can change any grades.

MISSED EXAM POLICY:

The course director should be contacted prior to an exam if a student has any questions about the validity of an excuse to miss an exam or lab practical. If a student has to miss an exam, the course director must be notified PRIOR to the exam unless the student is physically incapable of notifying the course director and then written documentation must be provided to this effect. Notification must be email or a phone call to the course director. If a student fails to notify the course director prior to exam start time (or in the case of documented physical incapacitation within a 24-hour period of a missed exam) the exam grade will be calculated as a "0".

Students must be on time for all examinations. If a student is late, and no one has left the examination room, they will be allowed to take the examination, but no additional time will be allowed. If a student comes in late for any exam (including final exams) and another student taking the exam has already left the classroom, the late student will not be allowed to sit the exam, and the exam grade will be calculated as a "0".

With documentation of extenuating circumstances for late arrival or for missing a written exam, faculty may either give a written make-up (multiple choice, true/false, essay, etc.) or move the points to the final exam. The make-up exam (which will be a different exam and may or may not be of the same format or same level of difficulty as the exam given to the rest of the class) must be taken within 5 business days of the missed exam unless the student is physically incapable of doing so or unless other arrangements are made by the course director. The exam time will be scheduled at the discretion of the course director.

If a student encounters an extenuating circumstance where they feel they will not be able to perform to their abilities on any given exam, lab practical or final exam, they must notify the course director prior to the exam start time. Once a student takes an exam, even if the student is in a less than optimal physical or emotional condition, the exam grade will be final.

VACATION, LEISURE TRAVEL, SEMINAR ATTENDANCE, OVER SLEEPING, FORGETTING WHEN THE EXAM IS GIVEN, STUCK IN TRAFFIC, etc. DO NOT CONSTITUTE EXTRA ORDINARY OR EXTENUATING CIRCUMSTANCES FOR MISSING ANY EXAM.

Make-up Exams/Labs/Quizzes-NO NO NO NO NO

There are almost always no makeup exams/labs/quizzes. If your absence is excused, then you will get your lowest grade doubly weighted. NEVER EXPECT THIS TO HAPPEN MORE THAN ONCE. Otherwise, for the missed work the student will receive a zero. Sometimes work can be done early. If on a rare occasion you are allowed to make up something, it must be made up before the next class. **I MUST RECEIVE NOTICE FROM YOU VIA EMAIL OR TELEPHONE IF YOU MISS ANY GRADED EXERCISE WITHIN 24 HOURS OF THE EXERCISE.**

LABORATORY:
Each student can receive up to 50 Pts. per lab session. Points are awarded based on the group lab report. Then students individually can also receive up to 50 Pts for the lab quiz.

If you have to miss a lab or if you need to switch labs, you must obtain permission from the Lab Director

EXTRA CREDIT:
Actually, I love to give lots of extra credit during the course **but at the end of the course do not expect to be able to write a paper or something such as that to raise your grade!**

LECTURE EXAM REVIEW:
The review period for each exam will begin after the posting of the grades and last for five working days only, excluding weekends and holidays. Questions about the final exam and/or final course grades must be reviewed with the Course Director by 3:00 p.m. the third day of the new trimester. I do also like to go over all graded work briefly in class. I will spend about 45 minutes in class going over exams.

CLASSROOM BEHAVIOR:
Parker College of Chiropractic is a private first professional degree granting institution. As such, we expect our students and faculty to conduct themselves with honesty and integrity. Therefore, each student is expected to uphold high ethical standards both inside and outside of the classroom. The classroom should be an environment for learning; behavior that is considered disruptive by the course director, behavior that in the eyes of the receiver belittles another, or behavior which discourages others from achieving their academic goals has no place and will not be tolerated in the classroom. Individuals engaging in this type of behaviors will asked to leave the classroom. Repeat offenders will be referred to the Department Chairperson and may face penalties that could include suspension from the Institution. <u>DO NOT BE TALKING WHILE I AM LECTURING. FORMER STUDENTS SAY THIS IS ONE OF THE MOST DISRUPTIVE THINGS TO THEIR LEARNING AS DC STUDENTS!!</u>

PROFESSIONAL DECORUM:
Students are expected to behave in a professional manner at all times. Positive contributions to the learning environment and participation in classroom learning activities are expected. Students should demonstrate courtesy to the instructor, to special guest speakers, and to other classmates. Focusing your attention on anything other than pertinent classroom material could be considered discourteous. Any person who is discourteous or disrupts the class with unprofessional conduct may be asked to leave the classroom and will be counted absent for that class period. Cell phones and pagers should be turned off while in the classroom.

Solve problems in house. Chain of command is:

1. Students
2. Instructor
3. Dr Pearson, Basic Sciences Chairperson
4. Dr Giggleman, Dean of Academics.

By passing this chain can be very counterproductive even to students.

No food in the classroom. Drinks, gum, & pills are ok.

Cell phones and pagers should be turned off while in the classroom.

SEE COLLEGE CATALOG FOR COMMON POLICIES CONCERNING:

- ACADEMIC DISHONESTY
- ATTENDANCE POLICY
- STUDENT BEREAVEMENT POLICY
- COMPUTER USAGE
- AUDIO/VIDEO TAPING

IMPORTANT NOTE:
The provisions contained in this syllabus do not constitute a binding contract between the student and the Parker College of Chiropractic. These provisions may be changed at any time and for any reason at the discretion of the Course Director. When it is necessary to make changes to this document, appropriate notice (at least one week, if possible) will be given to the student(s).