SURVEY OF CHEMISTRY II - CHEM 1152

Lecture: T,R 9:30-10:45 Nursing 115
Workshop: T 11-12:30 or 1:30-3
Lab F 9-10:50 TLC 3108

Instructor: Dr. Vickie Geisler
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Office: TLC 2120

Office Hours : T, R 11-12, M, W 1:30-3:30, R 2-4, other times by appointment
Required Material: *General, Organic and Biological Chemistry*, 5th Ed., by Karen Timberlake
Recommended Material: Study Guide
Required Equipment: **I>clicker**. **Bring your clicker to class every day!!** You are responsible for keeping your clicker working. I will drop **two** clicker quizzes and the two lowest participation grades so you will not be penalized if you forget your clicker, miss a class, or your clicker does not work.
Course Website: Enrolled students will have access to a CourseDen site where I will post grades, and PowerPoint presentations.

Course Description: This is the second part of a two-semester sequence covering the elementary principles of organic and biochemistry for allied health professions and non-science majors. The major objective of this course is to become aware of the various functional groups which are present in organic and biological molecules and to appreciate how the structures of these molecules influence their reactivity and function.

Learning Outcomes: Students who complete this course are expected to develop:

- An understanding of the basic concepts of organic and biochemistry (covered in the text).
- An awareness of the role of organic and biochemistry in everyday life.
- A basic comprehension of some applications of organic and biochemistry to human body.
- The ability to conduct basic experiments related to the course.

Grading:	Clicker Quizzes (start of each lecture)	4%
	Clicker Participation (CP) during each lecture	2%
	Worksheets	4%
	Lab	14%
	Workshop	6%
	Exams: 9/1, 9/27, 10/25, 11/17	56%
	Final Exam – Thursday, December 8th, 8-10 am	14%
		100%

All clicker quizzes and exams will be taken individually.
Grading Scale: A: 100-90; B: 89-80; C: 79-70; D 69-60; F: 59-0%

- **Clicker Quizzes (CQ):** At the start of each lecture there will be a 5 point CQ (clicker quiz) over the material covered in the previous class period. Clicker quizzes will be taken individually. Please remain quiet until time is called. **Two lowest quiz scores will be dropped**. You will not be excused from any quizzes; there are no make-up quizzes. A quiz missed for any reason will earn a zero.
- **Clicker Participation (CP):** After the clicker quiz and during each lecture there will be several clicker questions. Unlike the clicker quizzes, you are encouraged to work with your neighbor to answer these clicker questions. When you have arrived at an answer you must each individually key in your response. You will receive full credit for a correct response, 75% credit for an incorrect response, and 0% for no response. **Two lowest CP scores will be dropped**.
- **Worksheets:** Students will work on worksheets each class and turn them in by the end of class. **The two lowest worksheet grades will be dropped.**
- **Exams:** There will be four exams given on: Sept 1st, Sept 27th, Oct 25th, Nov 17th. You may not take a test early and there are no make-up tests for any reasons. If you miss a test the score obtained on the final exam will replace it. If you miss two tests, the score from the final exam will replace both of them. No extra time will be allowed if you arrive late for a test, so please arrive on time.
- **Final Exam:** The final exam will be a multiple choice exam. It is a comprehensive national exam over 1151 and 1152. The exam will be given on Thursday, December 8th from 8-10 am.
- **Homework**- problems from the book will be assigned on a regular basis but not graded.
- **Laboratory**: Dr. Hansen will be your lab instructor and he will describing how your 14% from lab will be determined.
- **Workshops** - In addition to regularly scheduled lecture and laboratory sessions, you are required to attend a workshop that meets weekly to discuss chemistry problems and improve your understanding of the material. Expectations and evaluation procedures will be described during your first workshop session.
- **Academic Honesty:**
    - All exams and quizzes will be closed book/closed notes, and will be taken individually. During exams you may not use your own paper or other materials except for a pencil. Academic dishonesty will not be tolerated. Academic dishonesty includes unauthorized use of any materials, notes, sources of information, electronic equipment, or study aids during a quiz or exam. It also includes the unauthorized assistance of any person other that the course instructor during a quiz or exam, the unauthorized viewing of another person's work during a quiz or exam, or the unauthorized securing of all or part of any quiz or exam before submission by the instructor. Coping any part of someone else lab report is also academic dishonesty
    - Violation of academic honesty will generate disciplinary action that may include a course grade of F. If you believe that there are situations in the course that are cases of academic dishonesty, please bring them to my attention. Insofar as it is possible, your anonymity will be protected.

Note: Late day to drop is 4 pm Friday, Aug 12th
Last day to withdraw with a "W" is Oct 28th (midnight).

Additional Policies:

- Students are expected to attend all classes. A large part of the learning process in this course is based on the in-class activities. If you are not here you will not have a chance to participate in those activities. There will be no makeup quizzes and worksheets – if you miss a day it will simply be one that is dropped from the calculation.
- Ringing cell phones are extremely disruptive in the classroom. Please be sure that your cell phone is turned off during class. The receiving cell phone calls and texting during class, lab or workshop is inappropriate. Cell phones may not be visible during exams; failure to comply may result in an F for the exam.
- This syllabus outlines the policies for the course. You are responsible for understanding them. Any changes in course policy will be announced in class.
- Qualified students with disabilities should contact me as soon as possible to ensure that appropriate accommodations can be made.

Tentative Course Outline:

Chapter 12 Properties or organic and inorganic compounds, structural formulas of alkanes, nomenclature of alkanes and cycloalkanes, combustion, and functional groups.

Chapter 13 Structure and naming of alkenes, alkynes and aromatic compounds, cis-trans isomers, addition reactions, hydrogenation, halogenation, hydration, Markovnikov's rule, polymers

Chapter 14 Structure, naming and properties of alcohols, phenols, thiols, ethers, primary, secondary and tertiary, dehydration and oxidation

Exam 1

Chapter 15 Structure, nomenclature and properties of aldehydes, ketones, oxidation and reduction, hemiacetals and acetals, chiral and Fischer projections

Chapter 16 Monosaccharaides, disaccharides and polysaccharides, aldose, ketose, D/L, amylose, amylopectin, glycogen and cellulose

Chapter 17 Structure, nomenclature and properties of carboxylic acids and esters, ionization, neutralization, preparation of esters, and hydrolysis and saponification of esters.

Exam 2

Chapter 18 Classes of lipids, fatty acids, saturated, unsaturated, triacylglycerol, waxes, glycerophospholipids, sphingomyelins, steroids, lipid bilayer, cell membrane

Chapter 19 Structure, nomenclature and properties amines and amides, ionization and neutralization, heterocyclic amines, hydrolysis of amides, neurotransmitters

Chapter 20 Amino acids, proteins, isoelectric point, peptide bond, primary secondary, tertiary and quaternary structure of proteins, denaturation

Exam 3

Chapter 21 Models of enzyme action, classification of enzymes, factors that affect enzyme action, reversible and irreversible inhibition of enzymes, regulation of enzyme activity, cofactors, and vitamins

Chapter 22 RNA, DNA, nucleotides, DNA replication, three types of RNA, transcription, codons, translation

Chapter 23 Catabolic and anabolic metabolism, ATP, NAD+, FAD, coenzyme A, digestion of carbohydrates, glycolysis, conversation of pyruvate to lactate, ethanol and acetyl CoA, glycogen

Exam 4

Chapter 24 citric acid cycle, electron transport chain, chemiosmotic theory, synthesis of ATP

Chapter 25 Digestion of fats, b-oxidation, ketogenesis, digestion of proteins, urea, essential amino acids