SURVEY OF CHEMISTRY II
CHEM 1152
Spring 2018

Instructor
Dr. Ghazia Asif
Office 116,
email: gasif@westga.edu

Class time
Monday/Wednesday: 5.30-6.55 pm, Room 131

Office Hours
M/W 4-5:30PM.

Textbook
*General, Organic and Biological Chemistry*, 5th Edition, by Timberlake (loose leaf), plus MasteringChemistry plus iclickers (ISBN 0133880303), Required. Scantron forms (#229629) are required too (about 10), as well as a scientific calculator.

Purpose
This is the second course in a two-semester sequence covering the elementary principles of general, organic and biochemistry for allied health professions and non-science major students. This course discusses organic and biochemistry with an emphasis on applied chemistry to health topics.

General policy
The lecture meets for **85 minutes 2 days** per week, study session (workshop) meets an additional **90 minutes per week**. In addition, laboratory activities will include hands-on experiments and problem solving and will meet another **2 hours** a week. **Lecture power-point notes will NOT be printed for the students but will be available online so students can print them before coming to class.** Everything that has been taught since the beginning of the class is supposed to be known at any point of time and the students might be quizzed at any time on it during the semester. There will be **4 examinations** during the semester plus the **final exam**, which is an American Chemical Society standardized examination. Unannounced in class quizzes will be given, the lowest quiz will be dropped. Questions for a grade will be asked and answers will be recorded at each class period using iclickers. Also students will be required to watch videos online and answer questions (online or by iclickers) for a grade. If a student misses the deadline, it will not be reopened. No make-up quiz, clicker question or exam will be given. **If you miss an examination, the grade obtained on the final examination will replace the missing grade, if you miss two examinations, the grade obtained on the final examination will replace both of them and so forth.**
Learning outcomes

Students who complete this course are expected to develop:
- an understanding of the basic concepts covered in the text content,
- an awareness of the role of organic and biochemistry in everyday life,
- a basic comprehension of some applications of chemistry to human physiology.

Study Skills

The best way to make sure that you have thoroughly understood the material covered in class is to read the text, work through the appropriate problems, and participate in study session, on a REGULAR BASIS. Keep track of the end of chapter problems that give you the most difficulty, and try similar problems for additional practice and review. Keep up with the class, ask questions frequently in workshop study sessions and in lab.

In-Class Assignments

Attendance to the class meetings is required and will be recorded with iclickers (using another student’s clicker or answering the roll call for another student is considered academic misconduct and will be penalized with a zero for both students). You may earn a zero out of one hundred on the activity of the day you missed without a valid excuse (medical certificate or judicial note…) or if you are expelled for disruptive behavior. If you forgot your iclicker or if it is not working for any reason, you will not get credit for that day, even though you were present in class.

Schedule for the examinations

There will be total five exams. First four exams will be on the following dates, Jan 31st, Feb 21st, March 24th, April 16th

**Examination 1:** Chapters 12, 13; January 31st  
**Examination 2:** Chapters, 14, 15, 16; February 21st  
(Last day to withdraw with a W is February 28th).  
**Examination 3:** Chapters 17, 18, 19; March 24th.  
**Examination 4:** Chapters 20, 21, 22; April 16th.

**Final ACS Examination (Comprehensive): at 5-7 pm, Monday May 7th**

You will be given 120 minutes to complete each in class exam and no exam will be dropped. The exam dates will not be postponed, please make every attempt to be present at these times since no makeup exam will be given. Please arrive on time, as no extra time will be given if you arrive late.

The final exam will be from 5pm -7pm. If there is a conflict with the final examination time, you must provide me the written authorization from the Dean of Arts & Sciences to move your final examination time. This note should be delivered to me at
least two weeks prior to the scheduled final examination time. You are required to take the final examination to be eligible to pass the course. Each examination will be closed book and cumulative. After each examination, you should go over your paper and understand what you missed.

**Policy on cheating- Academic misconduct**

Cheating on a lab report or a quiz or any assignment for the first time will result in a score of zero for that particular paper. If the student is caught cheating a second time, his grade for the entire course will be an F. Furthermore, if a student is caught cheating on an examination, he will automatically receive a grade F for the entire course. Any infraction will be taken before the disciplinary committee and played out to the fullest extent. Cheating will never be tolerated. Unless a special medical condition (medical certificate required), no student will be allowed to leave the room during an exam. Leaving the room means to be finished with the exam, completed or not.

**SEMESTER GRADES**

Your grade will be calculated based on the following formula:

**Daily/online Quizzes: 11%**

**Workshop: 9%**

**Labs: 15%**

**Exams: 65%**

\[
\text{Course \%} = 0.65 \times (\text{Exam average} \text{ (not including mock exams)}) + 0.15 \times \text{Lab average (includes QEP assignment)} + 0.11 \times (\text{iClickers Questions + Quizzes in lecture + Assignments given in lecture + mock exams}) + 0.9 \times \text{Workshop}
\]

The exam average is calculated as follows:

**Exam average** = (exam 1 + exam 2 + exam 3 + exam 4 + final ACS exam) / 5

Note: All exam, quiz and lab activity grades will be based on your ability to DEMONSTRATE full understanding of the material (with full credit given only if you SHOW ALL YOUR WORK, not just for obtaining the correct answer).

<table>
<thead>
<tr>
<th>Course %</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90% - 100%</td>
<td>A</td>
</tr>
<tr>
<td>80% - 89%</td>
<td>B</td>
</tr>
<tr>
<td>70% - 79%</td>
<td>C</td>
</tr>
<tr>
<td>60% - 69%</td>
<td>D</td>
</tr>
<tr>
<td>0% - 59%</td>
<td>F</td>
</tr>
</tbody>
</table>
**Extra credit:** There is no extra credit for this class except instructor decides and announces in the class.

**Communication:**

The official communication method will be through campus e-mail (MyUWG or D2L), no other form of communication will be accepted as this system only verifies the identity of the interlocutor.

**Policy on withdrawals:**

Undergraduate students may withdraw from courses with a grade of “W” (Withdraw Passing) a maximum of six times during their entire undergraduate enrollment at the University of West Georgia. Students must withdraw from courses during the Withdrawal “W” Period, as noted on the Registrar’s Calendar in The Scoop. Retroactive withdrawals for prior terms are not permitted. The Withdrawal “W” Period typically begins after Drop/Add and closes at mid-term. Grades of “W” do not count toward the grade point average. For complete policy information, please visit the registrar’s website.

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

- Describe and explain intermolecular forces.
- Display an ability to name organic molecules.
- Recall some of the basic reactions of organic molecules.
- Make connections between the chemistry of organic molecules and the chemistry of physiologically relevant molecules.
- Describe the properties and behavior of macromolecules (polysaccharides, lipids, nucleic acids, proteins).
- Explain how the oxidation state of carbon plays a role in bioenergetics.
- Describe some basic biochemical processes, such as glycolysis, Kreb’s cycle, and oxidative phosphorylation.
- The ability to conduct basic experiments related to the course.

**Grading:**

Clicker Quizzes (start of each lecture) 5%
Practice quizzes/mock exam/Clicker Participation (CP) during each lecture 3%
Worksheets/online quizzes 3%
Lab 15%
Workshop 9%
Exams: Exam 1,2,3,4 and Final ACS Exam –65%
**Total 100%**
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 FROM WORKSHOP MODULES REQUIRED TO READ BEFORE CLASS or 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. Not all of the worksheets will be graded.

- Exams: There will be four exams given on: Jan 31st, Feb 21st, March 24th, April 16th. 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. 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 comprehensive national ACS exam which will cover the entire course. The exam will be given on Monday, May 7, from 5-7 pm.

- Workshops: Wednesday from 7-8:30 pm
  In addition to regularly scheduled lecture and laboratory sessions, you are required to attend a workshop on Wednesday from 7-8:30 pm to discuss chemistry problems and improve your understanding of the material. Expectations and evaluation procedures will be described during your first workshop session.

- Laboratory: Meets Monday from 7-8:50 pm.
  Attendance is required. If you are absent for a laboratory exercise, you may not submit a laboratory report. Your laboratory report must contain your data and your interpretation of that data, even though you may be working with others to carry out the laboratory exercise. There will be no opportunities to make up for a missing laboratory activity. Laboratory reports are due one week from the scheduled completion of the respective activity, which will typically be at the beginning of the next laboratory period. Laboratory reports that are submitted late will not be graded and a zero will be recorded for that week’s activity.

- Mastering Chemistry:
  To register go to www.pearson.com/mastering/chemistry Course ID, For more information a flyer is posted on course den in introductory material
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 than 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’s lab report is also academic dishonesty.
- In addition, you are on your honor to register iClicker responses only for yourself. This means you personally must be in class and register your own answers. Registering responses for someone else or having someone register responses for you is considered a form of cheating. Registering responses from outside of the classroom will also not be tolerated.

Note:

Last day to drop is Friday, Jan 12th
Last day to withdraw with a “W” is February 28th.

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.

- Refer to the student handbook for information on academic support, honor code, email policy, credit hour policy and HB 280 campus carry policy - https://www.westga.edu/UWGSyllabusPolicies/

- Qualified students with disabilities should contact me as soon as possible to ensure that appropriate accommodations are made.

University policy

Refer to the student handbook for information on academic support, honor code, email
Tentative Course Outline:
Chapter 12 Properties of organic and inorganic compounds, structural formulas of alkanes, nomenclature of alkanes and cycloalkanes, combustion, and functional groups. Structure and naming of alkenes, alkynes and aromatic compounds, cis-trans isomers, addition reactions, hydrogenation, halogenation, hydration, Markovnikov’s rule, polymers
Chapter 13 Structure, naming and properties of alcohols, phenols, thiols, ethers, primary, secondary and tertiary, dehydration and oxidation

Exam 1

Chapter 14 Structure, nomenclature and properties of aldehydes, ketones, oxidation and reduction, hemiacetals and acetics, chiral and Fischer projections
Chapter 15 Saccharides, aldose, ketose, D/L, amyllose, amylopectin, glycogen and cellulose
Chapter 16 Structure, nomenclature and properties of carboxylic acids and esters, ionization, neutralization, preparation of esters, and hydrolysis and saponification of esters.

Exam 2

Chapter 17 Classes of lipids, fatty acids, saturated, unsaturated, triacylglycerol, waxes, glycerophospholipids, sphingomyelins, steroids, lipid bilayer, cell membrane
Chapter 18 Structure, nomenclature and properties amines and amides, ionization and neutralization, heterocyclic amines, hydrolysis of amides, neurotransmitters
Chapter 19 Amino acids, proteins, isoelectric point, peptide bond, primary secondary, tertiary and quaternary structure of proteins, denaturation

Exam 3

Chapter 20 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 21 Describe the bases, sugars, and nucleotides in DNA and RNA
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, 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, urea, essential amino acids

**Final ACS Exam** will include all chapters (12-25)

**Tentative Lab Schedule**

<table>
<thead>
<tr>
<th>Date</th>
<th>LABORATORY EXPERIMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 8</td>
<td>Introduction to Lab and Safety</td>
</tr>
<tr>
<td>January 18</td>
<td>Martin Luther King Holiday</td>
</tr>
<tr>
<td>January 22</td>
<td>Experiment 1: Molecular Models</td>
</tr>
<tr>
<td>January 29</td>
<td>Experiment 2: Reactions of Alkanes and Alkenes</td>
</tr>
<tr>
<td>February 5</td>
<td>Experiment 3: Alcohols and Phenols</td>
</tr>
<tr>
<td>February 12</td>
<td>Experiment 4: Aldehydes, Ketones, Carboxylic Acids and their Salts</td>
</tr>
<tr>
<td>February 19</td>
<td>Experiment 5: Carbohydrates</td>
</tr>
<tr>
<td>February 26</td>
<td>Experiment 6: Esterification</td>
</tr>
<tr>
<td>March 4</td>
<td>Experiment 7: Saponification</td>
</tr>
<tr>
<td>March 11</td>
<td>Experiment 8: Amines and Amides</td>
</tr>
<tr>
<td>March 26</td>
<td>Experiment 9: Peptides and Proteins</td>
</tr>
<tr>
<td>April 2</td>
<td>Experiment 10: Enzymes</td>
</tr>
<tr>
<td>April 9</td>
<td>Experiment 11: DNA</td>
</tr>
</tbody>
</table>