Survey of Chemistry II (CHEM1152) Syllabus- Summer- 2020- GEORGIA STATE UNIVERISTY, Chemistry Department
By Dr. Angela Maria Navarro-Eisenstein **As on June 3rd 2020… If changes are needed, changes will be made.**

Course Description:

This course is designed for non-chemistry majors, mainly those entering health sciences and related fields, such as nursing 70%, medical technology 5%, nutrition 10% and other fields 15%. **Prerequisite:** Successful completion of Chemistry 1151K. Our primary goal is to convey the relationship between structure and function. This course comprises of two parts: In the **Organic Chemistry part,** students will be introduced to the characteristics, how to draw and name simple organic compounds. We will study the structures and typical reactions of the major types of organic functional groups and their possible changes of substances after reactions and their applications. In the second part, **biochemistry,** we will examine the structures of carbohydrates, lipids, amino acids, proteins and enzymes, and nucleic acids. Students will apply this background to the study of the organic chemistry of metabolism. This include the study of three key metabolic pathways: glycolysis, β-oxidation of fatty acids, the citric acid cycle and cellular respiration.

Course Goals and Student Learning Outcomes
After exploring features of biomolecules, students will expand their curiosity for the chemistry of diets, debunk myths and misconceptions redirecting their attention to living organisms and their own bodies. By the end of the course students will understand that the reactions of biomolecules and metabolic pathways are biochemical equivalents of organic functional group reactions taking place in a laboratory setting. Students will be trained to analyze contemporary multicultural questions with this science, and will effectively translate problem situations into solutions. In another hand, students will get equipped to succeed in their course load once admitted in health allied sciences programs.

Textbook: Karen C. Timberlake **General, Organic, and Biological Chemistry: Structures of Life (6th or 5th Edition)** (Prentice Hall, PEARSON). If you have taken CHEM1151 recently, you already have the book. If you have any other General Organic Biochemistry book, you can use it, just follow the order of topics listed instead of the chapter numbers.

Course Help: Office: 836 Langdale, **Phone**: (404)-413-5541 **Email:** anavarro@gsu.edu, (Not available this summer)

1. **Virtual Lecture Meetings: MWF 9:00-10:30 AM for *CHEM1152* and MWF 1:00-2:30 PM for *CHEM 3400.***
2. **Preferred Communication** method for on line courses is iCollege email anavarro@gastate.view.usg.edu
3. In case of emergencies I created a Google number 678-369-1509

Office hours by WebEx: Tuesdays and Thursdays 1:00-2:00 pm CHEM1152 and 2:30-3:30 for CHEM3400
How to get technical help Go to https://gsutech.service-now.com/sp or Email help@gsu.edu and include a detailed description and a call back number in the request.

Grade Breakdown: Lecture comprises 75% of the overall course grade and laboratory 25%.

Letter grade percentage is = total number of points accumulated x 100
800 points

Grades Tentative Cut Off for CHEM 1152:
A+: 96 % A: 90%; A-: 87%; B+: 84% B: 80% B-: 77%, C+: 74% C: 70% C-: 67%, D= 64-66%, F= below 64%

Tentative Assessments' Schedule
The course will require students to use Lockdown Browser with Respondus Web Monitor for all course Quizzes and Exams, and the Final Exam. Students will need a webcam-enabled device capable of installing Lockdown Browser. Students who require a device may request one from CETL here: https://cetl.gsu.edu/resources/resources-for-learning-remotely/internet-options/

180 pts 15@12	Quizzes	TBD Please Be alert and follow the schedule in Icollege's calendar
60 pts 4@15	Homework ORG)	Print it, work it, scan it and upload in Icollege Due on Fridays June 12, 19 and 26, and July 3 by 6:00pm
80 pts	Test 1	Alkanes, alkenes, alkynes, benzenes, alcohols, ethers, thiols June 24
100 pts	Midterm	Alkenes, Alcohols, amines, aldehydes, ketones, carb. acids, esters and amides July 6
80 pts	Test 2	Carbohydrates, lipids, amino acids, proteins, and enzymes July 20
100 pts	Final	Amino acids, Enzymes, DNA, glycolysis, lipolysis, ketone bodies, citric acid cycle, electron transport chain, ATP synthesis July 31
200 pts	Lab. Portion	Coordinator of lab will provide points earned

50 points will be granted to all students that attend and engage in this course during virtual lectures.

Tentative Topic and Reading Assignment Before Each Virtual Lecture WebEx lectures are intended to clarify misconceptions. Please watch pre-recorded videos before the day/time listed below. Make a habit of the following: download and do worksheets, watch videos, re-read the chapter, practice problems from your textbook –read and read. The way our brains learn new topics is by repetition. The more your practice, the simpler will be to retrieve information stored in your memory during assessments. There is a time limit in all quizzes and exams to keep assessments integrity and to prevent students playing around. Quick thinking will help you more than looking for the answers. We will monitor those with Web cam.

Date		THIS COURSE REQUIRES VIRTUAL LECTURES ATTENDANCE
Mon 6/8	Day 1	**Part I– ORGANIC CHEMISTRY** Chapter 11 Alkanes and cycloalkanes, memorize alkyl groups (methyl, ethyl, propyl, butyl) by heart to name branched compounds. Pay close attention to isopropyl, and isobutyl as their prefixes are used in the alphabetization of their names. (make flashcards for alkyl groups)
Wed 6/10	Day 2	Chapter 11 Alkanes and cycloalkanes-Continued, Chapter 12 Alkenes
Fri 6/12	Day 3	Chapter 12 Alkenes, Chapter 12 Cycloalkenes, alkynes Benzene and aromatic compounds (make flashcards for benzoic acid, phenol, aniline, nitrobenzene and toluene) **(Homework 1 due today by 6:00 pm)**
Mon 6/15	Day 4	Chapter 13 Alcohols, diols, glycerol
Wed 6/17	Day 5	Chapter 13 Phenols, ethers, thiols, sulfides, disulfides, Intro to Aldehydes, ketones, nomenclature
Fri 6/19	Day 6	Chapter 14, Aldehydes, ketones, nomenclature, reactions **(Homework 2 due today by 6:00 pm)**
Mon 6/22	Day 7	Aldehydes-hemiacetals, acetals and their hydrolysis, Chapter 18 Amines
Wed 6/24	Day 8	Test 1 opens at 7:00 AM and closes by 11:30 AM
Fri 6/26	Day 9	Chapter 18 Amines, Chapter 16, Carboxylic acids, introduction, nomenclature, physical properties, Carboxylic acids derivatives-(esters) Chapter 18 (amides) **(Homework 3 due today by 6:00 pm)**
Mon 6/29	Day 10	Carboxylic acids catch up and derivatives: chapter 17-lipids)triesters of acylglycerols-Saponification– and amides- amino acids introduction (Alanine, Cysteine, phenylalanine, aspartic acid and lysine)
Wed 7/1	Day 11	Chapter 16 esters- Chapter 18 amides-
Fri 7/3	Day 12	Hydrolysis of esters and amides, phosphoric acids and phosphoesters **(Homework 4 due today by 6:00 pm)**
Mon 7/6	Day 13	MIDTERM EXAM (ORGANIC) (100 POINTS) cumulative opens at 8:00 AM and closes by 3:00 PM
Wed 7/8	Day 14	**Part II – BIOCHEMISTRY**-Chapter 15-Carbohydrates
Fri 7/10	Day 15	/Chapter 17simple lipids (waxes,) phospholipids- steroids, prostaglandins
Mon 7/13	Day 16	Chapter 19 Proteins: 20 AAs-peptide bond and 4 levels of protein structure.
Wed 7/15	Day 17	Chapter 20 enzymes and vitamins-
Fri 7/17	Day 18	DNA-RNA
Mon 7/20	Day 19	Test #2 It opens at 7:00 AM and closes by 11:30 AM DNA-RNA continued-Metabolism, (NAD+, FAD, AcCoA) use of coenzymes
Wed 7/22	Day 20	Glycolysis gluconeogenesis, Glycogenolysis Chapter 24, beta-oxidation lipids metabolism
Fri 7/24	Day 21	Chapter 23 citric acid cycle (Krebs Cycle), Electron transport chain (ETC) cellular respiration
Mon 7/27	Day 22	ATP synthesis "oxidative phosphorylation"
Wed 7/ 31	Final	Last day of classes FINAL EXAM (BIOCHEMISTRY) (100 POINTS) It opens at 8:00 AM and closes by 5:00 pm

Miscellaneous Course Policies:

- All prerequisites must be fulfilled before enrolling in this Chemistry course

- Attendance: Students are expected to attend virtually all lectures via WebEx. As a courtesy to your fellow students, please arrive on time and mute your microphone and do not leave during the virtual lecture. Students are encouraged to type questions in the chat room. **If I do not discuss all questions during the session, I will make sure to do it in the announcements page.** To encourage active participation, I will grant the class 50 points to the 800 points.

- Religious Holidays Observance Please email me a schedule of your holiday the first week of class via Icollege, anavarro@gastate.view.usg.edu

- Accommodation Plan, Special Needs: Students are responsible for providing a copy of that accommodation plan to instructors of all classes in which an accommodation is sought. Your need for accommodations will only be discussed in private **and never in front of classmates.** **Students who wish to request accommodation for a disability** may do so by registering with the Office of Access and Accommodations Center (AACE) https://access.gsu.edu/. Students may only be accommodated upon issuance by the AACE Office are authorized via email to Dr. Navarro-Eisenstein.

- **Academic Honesty:** The honor code embraced by universities expresses an ideal of character, conduct, and citizenship. This applies especially to academic honesty and integrity. Passing off someone else's work as your own represents intellectual fraud and theft, and violates the core values of academic community. You will be asked to sign up the honor code in bold as written beneath, along with your printed name on the first page of homework "**As a member of the student body taking this course, I consider myself bound, guaranteed and compelled by honor to develop and uphold high standards of honesty and behavior."**

- **GSU-Provost email states: Sharing information/cheating** via group messaging apps such as **GroupMe or Slack is a violation** of the Academic Honesty Policy. All assessments are videotaped; therefore, a video may then be appropriate evidence if a student needs to be reported for cheating. Understand that cheating brings bad reputation to student's record. If after graduation alumni consent to a background check, GSU is required to report all academic integrity violations which could interfere with plans for a promising career in a given field.

- Electronic devices: The course will require students to use Lockdown Browser with Respondus Web Monitor for all course Quizzes and Exams, and the Final Exam. Students will need a webcam-enabled device capable of installing Lockdown Browser. Students who require a device may request one from CETL here: *https://cetl.gsu.edu/resources/resources-for-learning-remotely/internet-options/*

- Withdraw-The University requires that faculty members must, on a date after the mid-point of the course to be set by the Provost (or his designee): A) **Give a WF** to all those students who are on their rolls but no longer taking the class and B) **Report the last day** the student attended or turned in an assignment.

- Make-ups: There is no chance for make ups due to time constraint. Plan accordingly. Late submission could result in a 5% points deduction. In general, questions and problems on exams will be original and not copied from those found in a chapter of the textbook or old previous exams given. Don't waste time memorizing answers from old exams as the instructor modifies questions every semester. Exams are designed so that the majority of questions are of medium difficulty, some are relatively easy and very few are challenging.
  -Students missing an exam will be expected to submit a written note explaining why the exam was missed, to provide valid evidence for that excuse, and to discuss absence by phone or WebEx in private. Dr. Navarro-Eisenstein will call contacts provided and verify the excuse. Any student presenting falsified documentation will be referred to the Chemistry Department Chair or Dean of Students for disciplinary action.

- Preparation for the course: Read the chapter to be discussed before you come to lecture or watch the videos. Understand this is a new vocabulary that needs to be read, heard many times to stay with you. Work the problems within the chapter, as they bring step by step how to arrive to the answers. Work the problems at the end of the chapters. You know what you know when you answer the questions with the closed book. Previewing solutions to problems gives a false sense of confidence about the subject matter, and typically results in poorer test scores.

- Planning ahead this is a key to success. Your performance in science is a lot better when you study daily. Do not wait until the night before the exam to begin studying. As you read the material, you should take written notes and **underline**. Use **highlighters** or color pens. That will help you throughout the semester and to study for finals. The basic ideas and principles on exams come from the book and lecture material and are designed to test a student's 1) understanding of the concepts and 2) ability to solve problems, as well as 3) knowledge of the facts. Research shows that the more **different ways** you present information to the brain the easier it is to learn. In other words, **hear it, see it, say it, write it, practice it, highlight it, quiz it,** etc.

- MORE ON "Class Preparation": The price of success is high. Anything of value requires great effort. You have to work hard, be persistent, and pay attention to details. These traits are ultimately why a college degree is valuable, plus the capacity to learn. **Believe you can succeed.** Be willing to pay the price. **Accept responsibility for learning!** Your performance depends on the time and effort you invest in this course. Chemistry is a highly structured subject in which each new topic is based on others previously discussed. Therefore, if one topic is not mastered, it becomes *increasingly* difficult to master those that follow. **Missing even one class can lead to problems that the average student cannot overcome.** Also, chemistry does not lend itself to "cramming". What you learned from the first chapter is needed for the second; what you learned from the third chapter will be needed the last day. Complex concepts build up from beginning chapters. **Attend all virtual lectures!** The quizzes and exams are based mostly on material that is covered in class.
  Three habits will help in mastering each topic as it arises, and will reinforce the topics previously covered:
  - ✓ **Read** the assigned material *before* it is covered in lecture and watch my own Ipad videos. You can explore more in your own time but you might encounter the same topics with more details for higher level chemistry.
  - ✓ **Work** through the **example** and **practice problems** from the textbook within each assigned chapter or those I place in ICollege.
  - ✓ **Work** a large number and wide variety of problems "as many **end-of-chapter problems as possible".** All in-chapter examples and practice exercises should be done. To reward your hard work I might use some of the problems from your book for exams and quizzes.

- Resources: Students are strongly encouraged to download lecture notes from **ICollege** before coming to class**.** The lecture **visual aids** for the instructor and **are not intended** to be *"the only source of study"* for the students. **You need to study from the textbook for all exams.**
- Engage: Each student has the responsibility of checking their email and ICollege on a daily basis.

- Cheating: All tests taken must represent your individual, unaided efforts. To receive or offer information during an examination is cheating. The use of unauthorized supplementary materials during tests is also cheating. A student who cheats on an exam will receive **a zero for that exam which cannot be dropped as the lowest grade**. Any suspected offenses may also be referred to the Department Chairman and/or the Dean of Students for appropriated disciplinary action. The Department of Chemistry follows the university policy on academic honesty published in the "Faculty Affairs Handbook" and the "On Campus: The Undergraduate Co-Curricular Affairs Handbook."

Georgia State University Student Conduct and Integrity Policy: *The Georgia State University Policy on Academic Honesty* is applicable to this course, including but not necessarily limited to infractions in the areas of ***plagiarism,*** *cheating on examinations, unauthorized collaboration, falsification,* and *multiple submissions*. This policy is published in *On Campus: the Student Handbook*, available to all members of the university community. **Also all results submitted by you in the laboratory section of this course must reflect your individual effort**. Only original data obtained by your experimentation in the assigned laboratory may be used, except when specifically authorized by your laboratory instructor. Supplementary source material (handbooks, reference literature, etc.) must be *clearly referenced* (title, author, volume, page(s), etc.). Falsification or destruction of data constitutes cheating. **Conduct or actions that disrupt class,** examination, or laboratory periods or falsification of information related to chemistry courses by any student will be taken as a violation of the policies of the Board of Regents of the University System of Georgia and the Georgia State University Student Code of Conduct, Section 6.0. Any suspected offenses may be referred to the Department Chair.