UNIVERSITY OF GUAM
Chemistry Department
DIVISION OF NATURAL SCIENCES
CH101: Introduction to Organic Chemistry
Course Outline- Fall 2019

Course	**CH101: Introduction to Organic Chemistry**
Instructor	Neelam Khandelwal
Office	**SC- 236 , Room – 9 ¾**
Contact	**email: khandelwaln@triton.uog.edu**
Office Hours	**Monday: 11:30AM – 12:30PM, 2:00- 3:00PM** **Wednesday: 11:30AM – 12:30PM, 2:00- 3:00PM**
Description	**An introductory course aimed at students preparing for technical training and nursing profession. It covers the basic properties of carbon compounds and associated chemical reactions. This course must be taken concurrently with CH101L**
Rationale	**This is a one-semester course tailored for nursing and agriculture majors. The course also qualifies as a general education course. It covers basic concepts of carbon chemistry and their asscociated properties. Topics are studied under various heading such as alkanes, alkenes, alkynes and functional groups under alcohols, carboxylic acids, amines, etc. The importance of these compounds in food, medicine, and other industries, will be discussed. It is a course that will enable students to appreciate the role chemistry play in our daily lives.**
Class times	**M, W- 12:30 to 13:50 PM (SC-200).**
Credit	**3 Credits**
Text book	**Chemistry: An introduction to general, organic, and biological chemistry, Timberlake, K.C., 12th edition.**

Molecular model	**Molecular Model Set for Organic Chemistry, The Allyn and Bacon Company. Other commercial model sets will be acceptable**
Grading	**Three Topic Exams @ 15% = 45%** **Final Exam: 35%** **SPOT Quiz: 10%** **Pre/Post Test: 10%**
Grading scale	**A >90%** **B 80 – 89** **C 70 – 79** **D 60 – 69** **F < 60**
Attendance	**Your attendance will be taken, 5% Bonus points will be given for full attandance**
Cell phones, beepers	**All phones MUST be turned off during lecture and lab class. Penalty will be applied by deduction of points from grand total.**
Student Learning Objectives **Topics:** **1. Alkanes** **2. Alkenes and Alkynes** **3. Oxygen and sulfur compounds** **4. Acids, Esters, Amines and Amides** **5. Carbohydrates** **6. Lipids** **7. Amino acids and Proteins** **8. Nucleic Acids and Protein synthesis** **9. Metabolic pathways**	**Describe organic compounds and how they differ from inorganic compounds.** **Draw the structural formula of compounds** **Be able to write the correct IUPAC names of the compounds based on the structural formula** **Distiguish the major functional groups and write basic chemical reactions for these groups; Name the compounds with particular functional groups and genral properties.** **Describe the different forms of isomers: geometric, optical and stereo isomers and identify isomers in a structure** **Explain the different types of caborhydrates; mono- and disaccharides write and their general structural formula; identify major types of polysaccharides.** **Explain the properties of lipids and its general structural formula** **Explain what lipids are and the general properties. Identify important lipids e.g. fatty acids, oils, phospholipids, steroids from their starural formula; state the importance in plants and animals.** **Describe amino acids and their function. Draw or identify structure of amino acids. Explain with equations the basic and acid properties of amino acids; Name amino acids; Decribe the formation of polypeptides from amino acids** **Explain the secondary and tertiary and quaternery structure of proteins.** **Decribe ezyme catalyse reactions and controlling factors.** **Describe nucleic acids and its structures. Explain the DNA double helix structure, DNA replication, RNA and genetic code, genetic mutation, genetic diseases, viruses.** **Describe metabolism and main types of reactions; Explain the stages of digestion; Explain the importance of coenzymes; Describe glycolysis and citric acid cycle.**
Reading	**Students are required to read the relevant sections in the text book and do the exercises at the end of chapters.**
Chapter Reviews	**A review will be done for each chapter and review questions will be prepared or taken from the text book.**
Cheating	**Students found cheating in class or laboratory will be disciplined and reported to the UOG Disciplinary Committee for further action.**
Plagerism	**Submitting work done by others under pretence to be your own is plagerism. Penalty will be applied and reported ot the UOG displinary committee.**
Withdraw	**If you plan to withdraw, fill in the withdrawal form. If you withdraw after**

	the middle of the semester/term then fill in the petition to withdraw form. This must be done before the final week of the term/semester
Americans with Disabilities Act Amendments Act (ADAAA) Accommodation Services	**If you are a student with a disability who will require an accommodation(s) to participate in this course, please contact the UOG Student Counseling and Advising Service Accommodations Office to discuss your specific accommodation needs confidentially. You will need to provide me with an accommodation letter from the Student Counseling and Advising Service Accommodations counselor. If you are not registered, you should do so immediately at the UOG Student Center, Rotunda Office #4 (735-2460) to coordinate your accommodation request.**
Campus Security	**671-888-2456.**
Missed class/exam/lab	**Any missed class must be accompanied with proof. Failure to provide evidence will be taken as absence. No marks will be given in case of lab or exam**
Final Exam	**Monday, Dec 16, 2019; 12:00 – 13:50 PM (SC- 200).**

Chemistry Program Learning Outcomes

PLO 1: Demonstrate the knowledge of fundamental concepts of chemistry and its relevance to the scientific method and other fields in science

PLO 2: Demonstrate the skills to make observations, experimentation, collect and collate data, analyze and interpret data in a safe chemical environment

PLO 3: Demonstrate the ability to clearly articulate, formulate, and communicate scientific information using computer, written and oral communication skills

PLO 4: Demonstrate critical thinking, problem solving skills and the ability to use chemical knowledge and mathematical skills to identify, evaluate, analyze, synthesize, and integrate data and abstract ideas in solving problems

PLO 5: Demonstrate the knowledge and skills in advanced instrumentation, applications, interpretation, and experimental design to address scientific queries in chemistry, industry, the environment, health, and related fields

PLO 6: Demonstrate a sense of exploration and research approach that enables students to pursue lifelong learning in chemistry

PLO 7: Demonstrate interaction skills and teamwork

Institutional Expected Student Learning Outcomes

Some of the expected fundamental knowledge, skills, and values that the University of Guam student will have demonstrated upon completion of any degree are:

ILO1: Mastery of critical thinking and problem solving

ILO2: Mastery of quantitative analysis

ILO3: Effective oral and written communication

ILO4: Understanding and appreciation of culturally diverse people, ideas and values in a democratic context

ILO5: Responsible use of knowledge, natural resources, and technology

ILO6: An appreciation of the arts and sciences

ILO7: An interest in personal development and lifelong learning