Texas State Technical College Waco
Course Syllabus

Course Rubric & Number: CHEM 2323

Lecture/Lab Hours: 3- 0

CIP Code: 400505138

Course Title: **Organic Chemistry I**
Course Description: A study of the general principle of the chemistry of carbon. Topics include alkanes, alkene, alkyne, ethers, alcohols, sterochemistry, reactions, synthesis and mechanisms.

Prerequisites:
Instructor: Richard Wheet

Office Phone Number: 254-867-4859

Email Address: richard.wheet@tstc.edu

Office Fax Number: 254-867-2973

Building & Office Room Number: TSC - Office

Department Chair: Kirk Hunter Kirk Hunter *Date:* 29 June 2010

Approved by CIP Committee: _____ *Date:* _____

End-of-Course Learning Outcomes:

CO1: Determine different organic families by structure features.

CO2: Nomenclature of organic chemical.

CO3: Preparation of organic chemicals.

CO4: Reactions of organic chemicals.

CO5: Synthesis of organic chemicals.

CO6: Mechanisms of selected reactions.

Resources:

Tools & Materials Students Purchase

Quantity	Item Description
1	Organic Chemistry – Morrison and Boyd – Prentice Hall – 6th edition

TSTC Grading Policy:

(Grades for all Major courses must be C or better)

Grade	Percent	Description	Grade Points
A	90-100	Excellent/Superior Performance Level	4
B	80-89	Above Required Performance Level	3
C	70-79	Minimum Required Performance Level	2
D	60-69	Below Required Performance Level	1
F	Below 60	Failure to meet Performance Requirements	0
IP	--	In Progress	
W	--	Withdrawal	0
CR	--	Credit	0
AUD	--	Audit of Course	0
See College Catalog for complete descriptions.			

Instructor's Participation Policy:

The student must be present for all tests, quizzes, and assignments. Failure to attend will result in a grade of zero for that particular test, quiz, laboratory or assignment.

Students with Disabilities:

If you have a documented disability that will impact your work in this class, please contact the Office of Deaf and Disabled Student Services (D/DSS) so that appropriate arrangements for your accommodations can be made. In accordance with the federal law, a student requesting accommodations must provide documentation of his/her disability to D/DSS. For information, visit D/DSS in the Fentress Center or call (254) 867-3600.

Once you and a D/DSS representative have signed a Letter of Special Accommodations, take the accommodations letter to each class for which an accommodation has been determined. Meet individually with each class instructor to discuss accommodations letter. Have the instructor sign and keep a copy of the letter. Take the original letter, signed by the instructor, back to D/DSS so they are aware that the instructor has been officially informed of the need for accommodations.

Course Assessments & Grading Scheme:

Assessments		*% of Final Grade*
Test 1: Alkanes	100 points	25 %
Test 2: Stereochemistry, Alkyl Halides, Alcohol and Ether	100 points	25 %
Test 3: Alkenes, Alkynes and Cyclic Hydrocarbons	100 points	25 %
Test 4: Aromatics	100 points	25 %
Final Course Grade		100%

A = 90-100% B=80-89% C=70-79% D=60-69%

Description of Graded Elements of the Course:

End-of-Course Learning Outcomes	***Assessment Measure(s)***	***Submittal of Assessment***	***Grading Criteria***	***% of Final Grade***
CO1: Determine different organic families by structure features; CO2: Nomenclature of organic chemical; CO3: Preparation of organic chemicals; CO4: Reactions of organic chemicals; CO5: Synthesis of	Test 1: Alkanes	Written using a writing instrument	Correct answers based on scientific fact	25%

End-of-Course Learning Outcomes	*Assessment Measure(s)*	*Submittal of Assessment*	*Grading Criteria*	*% of Final Grade*
organic chemicals; and CO6: Mechanisms of selected reactions.				
CO1: Determine different organic families by structure features; CO2: Nomenclature of organic chemical; CO3: Preparation of organic chemicals; CO4: Reactions of organic chemicals; CO5: Synthesis of organic chemicals; and CO6: Mechanisms of selected reactions.	Test 2: Stereochemistry, Alkyl Halides, Alcohol and Ether	Written using a writing instrument	Correct answers based on scientific fact	25%
CO1: Determine different organic families by structure features; CO2: Nomenclature of organic chemical; CO3: Preparation of organic chemicals; CO4: Reactions of organic chemicals; CO5: Synthesis of organic chemicals; and CO6: Mechanisms of selected reactions.	Test 3: Alkenes, Alkynes and Cyclic Hydrocarbons	Written using a writing instrument	Correct answers based on scientific fact	25%
CO1: Determine different organic families by structure features; CO2: Nomenclature of organic chemical; CO3: Preparation of organic chemicals; CO4: Reactions of organic chemicals; CO5: Synthesis of organic chemicals; and CO6: Mechanisms of selected reactions.	Test 4: Aromatics	Written using a writing instrument	Correct answers based on scientific fact	25%

Course Policies:

Late Work:

Late work receives a zero.

Electronic Devices:

All cell phones, pagers, computers and other electrical communication devices will be turned off completely during class (this includes no vibrate mode). Failure to comply with this requirement will result in the student being required to leave the class for the rest of the class period during which the violation occurs. Any work missed may not be made up.

Make-up work:

Make-up work receives a zero

Course Schedule:

Week # 1: Syllabus and Course Outline, Covalence, Orbitals, Covalent Bonds, Electron Configuration, Hybrid Orbitals, Unshared Pairs, Intra and Inter molecular forces, Bond Dissociation, Polarity, Melting Point,

Week # 2: Solubility, Boiling Point, Isomers, Hydrocarbons, Methane, Source, Reactions, Reactivity, Mechanisms, Inhibitors, Heat of Reaction, Energy of Activation, Alkanes

Week # 3: Alkanes, free rotation, alkane series, alkyls, common names, IUPAC naming, halogens, classes of hydrogens and carbons, physical properties, reactions, mechanism of halogenation, pyrolysis

Week # 4: Stereochemistry, Tetrahedral, Optical Activity and Enantiomerism, Review for test, Test over Introduction, Methane and Alkanes		
CO1: Determine different organic families by structure features; CO2: Nomenclature of organic chemical; CO3: Preparation of organic chemicals; CO4: Reactions of organic chemicals; CO5: Synthesis of organic chemicals; and CO6: Mechanisms of selected reactions.	Test 1	Alkanes

Week # 5: Chirality, Racemic, Configuration (R&S), Diasteromers, and Meso, Alkyl Halides, Relative Rates, Classification

Week # 6: Nomenclature, Preparation and Reactions, SN1 and SN2SN1 and SN2, carbocation, SN1 stereochemistry,

Week # 7: carbocation rearrangement, SN2 vs SN1 mechanism, analysis, alcohols, IUPAC nomenclature and industrial preparation

Week # 8: Preparation and Reactions of Alcohols, Oxidation of Alcohols, Naming and Industrial Preparations of Ethers, Hazards of Ethers, Williamson Synthesis and Reactions of Ethers

Week # 9: Alkenes - Structure and Nomenclature, Test review for Stereochemistry, Alcohols and Ethers and Test		
CO1: Determine different organic families by structure features; CO2:	Test 2	Stereochemistry, Alkyl Halides, Alcohol and

Nomenclature of organic chemical; CO3: Preparation of organic chemicals; CO4: Reactions of organic chemicals; CO5: Synthesis of organic chemicals; and CO6: Mechanisms of selected reactions.		Ether

Week # 10: Alkenes - Cis/Trans, E, Z system, Industral Sources and Saytzeff's Rule, Preparation and Elimination mechanisms, Markovnikov Rule and Addition Reactions

Week # 11: - Alkynes - Nomenclature, Industrial Preparation and Preparation, Reactions, and Cyclic Hydrocarbons

Week # 12: Benzene, Review for test over alkenes, alkynes and cyclic hydrocarbons and Test		
CO1: Determine different organic families by structure features; CO2: Nomenclature of organic chemical; CO3: Preparation of organic chemicals; CO4: Reactions of organic chemicals; CO5: Synthesis of organic chemicals; and CO6: Mechanisms of selected reactions.	Test 3	Alkenes, Alkynes and Cyclic Hydrocarbons

Week # 13: Benzene nomenclature - o,p,m and IUPAC, Reactions of benzene and orientation

Week # 14: Synthesis of aromatics and Arenes, Reactions and preparation of arenes

Week # 15: Review for test over aromatics and Test		
CO1: Determine different organic families by structure features; CO2: Nomenclature of organic chemical; CO3: Preparation of organic chemicals; CO4: Reactions of organic chemicals; CO5: Synthesis of organic chemicals; and CO6: Mechanisms of selected reactions.	Test 4	Aromatics

Modification of the syllabus:

This syllabus is intended as a tentative set of guidelines for this course and is not a contract. At any time during the semester, the instructor reserves the right to make modifications in content, schedules and requirements as deemed necessary to promote the best education possible within the prevailing conditions and circumstances affecting this course.