Course syllabus

ATLANTA METROPOLITAN STATE COLLEGE

School of Arts and Sciences

Organic Chemistry and Lab I – CHEM 2241K CRN: 80159 Section 101

MW 11:00 AM – 12:20 PM, ASB (McMillan Building, #900) Room 262

W 2:10 PM – 6:10 PM, ASB (McMillan Building, #900) Room 244

Main Campus Course

This is a Core IMPACTS course that is part of the STEM area.

Core IMPACTS refers to the core curriculum, which provides students with essential knowledge in foundational academic areas. This course will help master course content, and support students' broad academic and career goals.

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	Instructor	Kenneth Starks, M.S., MEd
	Office location:	**ASB 207**
	Office telephone:	**404-756-3789** **Please text 470-755-7381**
	Email Address	**kstarks@atlm.edu**
	Class Meeting Times:	**Lecture: Monday and Wednesday 11:00 am – 12:20 pm Building #900 Rm. 262** **Lab: Wednesday 2:10 pm – 6:10 pm Building #900 Rm. 248**
	• In Person Office Hours:	**Monday 12:30 pm – 5:30 pm** **Thursday 12:30 pm – 5:30 pm**
	• Online Office Hours	**Monday 1:00 pm – 3:00 pm** with the use of Microsoft TEAMS
	• By Appointment	Office hour disclaimer: If you are not able to meet with the instructor during office hours, you may schedule an appointment based on instructor's availability.
	Course Information	
	Pre-requisites	CHEM 1211K and CHEM 1212K with a D or better
	Credit Hours	4
	Catalog Description	This course provides a study of the chemistry of organic compounds including their physical and chemical properties, synthesis and reaction mechanisms. Topics include bonding theories, organic acids and bases, reaction pathways, stereochemistry, nucleophilic substitution and elimination reactions, alkenes and an introduction to spectroscopy. This course is designed for science majors and includes a laboratory.
	Orienting Question	How do I ask scientific questions or use data, mathematics, or technology to understand the universe?
	Course Start and End Date	August 18 until December 6

		TOPICS AND LEARNING OBJECTIVES: CHAPTER 1 Structure and Bonding Upon completion of this chapter, for a given set of compounds, the student should be able to: 1. Draw Lewis and resonance structures and designate major and minor contributors 2. Calculate the formal charge of atoms in molecules 3. Write various formulas, including structural formulas, condensed, line structures, given the molecular formula 4. Predict the shapes of covalent molecules and bond angles with various bonding theories. 5. Determine the hybridization of atoms in molecules 6. Predict the relative bond lengths in specific compounds. 7. Write three-dimensional orbital pictures of compounds. 8. Define key terms CHAPTER 2 Polar Covalent Bond; Acids and Bases Upon completion of this chapter, the student should be able to: 1. Determine the relative polarity of the molecules by arranging in order of increasing polarity, beginning with the least polar compound. 2. Predict and calculate the dipole moment of a compound 3. Determine the type of nonbonding interaction between molecules, and their relative energies 4. Write the various definitions of acids and bases 5. Write and complete acid/ base reactions and identify conjugate acids and bases 6. Predict the relative acid and base strength and calculate acid base strength based on pKa and pKb values, respectively. 7. Relate structure to acid and base strength 8. Define key terms CHAPTER 3 Organic Compounds: Alkanes and Their Stereochemistry Upon completion of this chapter, the student should be able to: 1. Write the I.U.P.A.C. and common names for alkanes 2. Write structural formulas of hydrocarbons for isomers, given the molecular formulas and/or condensed and Lewis formulas 3. Write line formulas and structural formulas, given the IUPAC names of compounds, including stereoisomers 4. Write names and structures of products expected from reactions of hydrocarbons. 5. Write equations for the preparation and reactions of alkanes. 6. Write and name functional groups

		8. Compare and contrast physical properties of alkanes based on structure 7. Define key terms CHAPTER 4 Organic Compounds: Cycloalkanes and Their Stereochemistry Upon completion of this chapter, the student should be able to: 1. Write and identify various conformers of alkanes and cycloalkanes and corresponding perspective formulas and Newman projections representing these conformers and indicate their relative energies. 2. Perform conformational analysis with corresponding energy profile diagrams 3. Identify axial and equatorial bonds and calculate relative energies of conformers 4. Define and identify polycyclic ring systems and heterocyclic compounds 5. Define and predict the various types of strain energies 5. Perform conformational analysis of substituted cyclohexanes and polycyclic molecules 6. Define key terms CHAPTER 5 Stereochemistry at Tetrahedral Centers Upon completion of this chapter the student should be able to: 1. List and determine the kinds of organic reactions 2. Distinguish between radical reactions versus polar reactions 3. Use curved arrows in polar and radical reactions 4. Explain the difference between thermodynamics and kinetics of a reaction 5. Draw and explain the different parts a reaction energy diagram 6. Define key terms CHAPTER 6 An Overview of Organic Reactions Upon completion of this chapter, the student should be able to: 1. Write IUPAC names, including stereochemistry, and the E-Z Notational System of alkenes given a formula and vice versa 2. Calculate a molecule's degree of unsaturation and its consequences in terms of multiple bonds and rings present 3. Predict the physical properties and relative stabilities of alkenes. 4. Write reactant, reagents, and products in alkene preparation reactions 5. Predict regioselectivity and stereoselectivity in alkene preparation and reactions 6. Write the mechanism for the electrophilic addition reaction of alkenes. 7. Explain Hammond's Postulate 8. Define key terms

		CHAPTER 7 Alkenes: Structure and Reactivity Upon completion of this chapter the student should: 1. Write the names and structures of products expected and mechanism for selected reactions of alkenes, including: a) electrophilic addition of acids b) hydroboration-oxidation of alkenes c) addition of hydrogen to alkenes d) addition of halogens e) reaction of alkenes with oxygen electrophiles f) oxidation of alkenes g) free-radical addition of hydrogen bromide to alkenes h) epoxidation of alkenes 2. Understand the mechanistic basis for Markovnikov's Rule 3. Define key terms CHAPTER 8 Alkenes: Reactions and Synthesis Upon completion of this chapter, the student should be able to: 1. Write IUPAC names, including stereochemistry, of alkynes given a formula and vice versa 2. Write reactant, reagents, and products in alkyne preparation and reactions 3. Write three to five step mechanisms using retrosynthetic strategies 4. Write tautomers and predict their relative stabilities 5. Define key terms CHAPTER 9 Alkynes: An Introduction to Organic Synthesis Upon completion of this chapter, the student should be able to: 1. Determine stereogenic (asymmetric) carbons, optical activity, enantiomers, diastereomers, meso compounds, racemic mixtures, relative and absolute configurations. 2. Make assignments of configurations using the (R) and (S) system. 3. Draw Fischer projections, 3-D representations, Newman Projections and/or stick- and- ball structures for specific compounds. 4. Explain the process of resolving a racemic mixture and calculate specific rotation of the corresponding enantiomers give experimental data 5. Define key terms
	Career Ready Competencies	• Inquiry and

<table>
<tr><td></td><td></td><td>

Analysis
Problem-Solving
Teamwork

</td></tr>
<tr><td></td><td>Course Textbook</td><td>John E. McMurry
ISBN-10: 1-305-08211-7
ISBN-13: 978-1-305-08211-3
• Study Guide and Solution Manual for Organic Chemistry, 9TH Edition, by Susan McMurry. ISBN 978-0-8400-5445-6

This course is a Day 1 Ready Inclusive Access course. This means that these books have already been paid with your tuition. In order to obtain the textbook for lecture each student must visit the AMSC Bookstore website (https://atlm.textbooktech.com/) to request the textbook to be sent to an address. Once on the website, login using your AMSC student credentials, scroll down to Textbook Lookup, click on Lookup by Student ID, then choose the mail option located by the textbook.</td></tr>
<tr><td></td><td>Required Resources</td><td>Textbook, Bound notebook for lab</td></tr>
<tr><td></td><td>Recommended Resources</td><td>Lab goggles, Safety lab coat</td></tr>
<tr><td></td><td>Core Impact Learning Outcomes</td><td>Students will use the scientific method and laboratory procedures or mathematical and computational methods to analyze data, solve problems, and explain natural phenomena.</td></tr>
<tr><td></td><td>General Education Learning Outcomes</td><td>NA</td></tr>
<tr><td></td><td>Program Learning objectives</td><td>NA</td></tr>
<tr><td></td><td>Course Learning Objectives</td><td></td></tr>
<tr><td></td><td>Important Dates</td><td>
<table>
<tr><th>Holidays</th><th>Attendance Verification (No Show Date)</th><th>Last Day to Reinstate</th><th>Midterm</th><th>Last Date to Withdraw Without Penalty</th><th>Last Day of Class</th><th>Final Exam</th></tr>
<tr><td>9/1

11-27/28</td><td>8/28</td><td>8-28/9-2</td><td>10-04/10-9</td><td>10/20</td><td>12/6</td><td>12-9/11</td></tr>
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</td></tr>
<tr><td></td><td>Course Delivery Method</td><td>Face-to-face</td></tr>
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	Email Preference	kstarks@atlm.edu
	Online Courses	Please use the internal course e-mail for general correspondence. I provide my external e-mail address for emergencies only. I cannot answer questions, accept assignments, or discuss grades via external e-mail so please use it for emergencies only.
	On Campus Courses	Please use ATLM or Ginger Email for communication. I also check Brightspace (D2L) email on a regular basis.
	Email Response Time	Unless you are notified otherwise, I will strive to respond to all student questions and emails within 24 hours during the week and within 48 hours during the weekend.
	Attendance:	Attendance is required at Atlanta Metropolitan State College. Students may view their attendance record by going to the Brightspace course page and clicking on "Attendance" from the "Assessments" menu at the top. It is the responsibility of each student to ensure that his or her recorded attendance is accurate. Any errors need to be brought to the attention of the instructor as soon as they are discovered.
	Online Attendance and Participation Policy	Being "Present" in class is determined by the student's active attendance and participation in an "academically related activity" which includes actual presence in a virtual class, submission of an assignment, group projects, completion of an exam or quiz and discussion forum posting.
	Conduct:	Refer to AMSC College Catalog, page 54
	Late Policy:	No late assignments will be accepted. Any and all exceptions must be worked out at the discretion of the instructor.
	Enrollment Status:	Students are ultimately responsible for ensuring that the course(s) in which they enroll are included in the approved degree plan and program map for their program of study. Students must periodically check their enrollment status in this course during the semester. The student is responsible for determining changes, if any, in enrollment status and taking necessary steps (e.g., pursuing re-instatement in this course) following those outlined in the AMSC catalog.
	Attendance Verification (No Show)/Reinstatement	Atlanta Metropolitan State College has a "No-Show" Reporting (Attendance Verification) policy. This policy is to comply with Federal Financial Aid regulations. Financial Aid recipients at Atlanta Metropolitan State College may become ineligible for funds by not attending class session (per enrolled course). Students who do not complete Mandatory Attendance Assignments and attend class sessions are NOT entitled to keep their financial aid award. The Registrar's Office will notify the students and faculty when the Attendance Verification Period has opened. The established "No-Show" Reporting (Attendance Verification) procedure will enable Atlanta Metropolitan State College to adjust financial aid awards before funds are issued to students (thereby eliminating liability for both the College and the student). A student reported as non-attending a course must seek the

		approval of the instructor in order to be reinstated. Once approved, the student will complete the Reinstatement form and submit it. The Office of Registrar will notify students when course reinstatement process has been completed during Reinstatement Period. The student can demonstrate compelling reason (s) that have prevented attendance and the instructor believes that there is a strong probability that the student can catch up in the class OR The instructor made an error, and the student was in attendance prior to being dropped.
	Computer Hardware & Software Requirements:	One of the challenges many encounter with enrolling in and completing an online course is the accessibility to the required and recommended software and hardware. Different institutions, and even different courses within the same institution, have varying technology requirements. Check your hardware and software systems to determine its compatibility with the online course you have selected.
	Minimum Hardware Recommendations to take courses:	D2L System Requirement Internet Connection: · Ethernet Network Capability required · Wireless Network Capability required Operating System Requirements • PC: • Compatible Operating System: • Web Browser: Firefox, Chrome • Mac: • Compatible Operating System: • Web Browser: Firefox, Chrome, Safari Hardware requirements: Minimum Technical Specifications for Hardware: • A processor of 2GHz or faster • 4GB RAM or greater • 500 GB of Hard Drive space • Monitor and video card with a minimum resolution of 1024x768 • Keyboard and mouse Minimum Technical Specifications for Computer Peripherals: • Speakers • Headphones • Microphone • Webcam **Software requirements**:

		Browser Requirements/Supported Browsers Compatible Browsers: • Apple Safari - https://support.apple.com/downloads/safari (Mac) • Google Chrome - https://www.google.com/chrome/ (Mac or PC) • Mozilla Firefox - https://www.mozilla.org/en-US/firefox/new/ (Mac or PC) Application Software • Microsoft Office 2016 (Word, Excel, PowerPoint) (Mac or PC) • Adobe Reader - https://get.adobe.com/reader/ Plug-ins • Java - https://www.java.com/en/download/ • Adobe Flash Player - https://get.adobe.com/flashplayer/ • Windows Media Player - https://www.microsoft.com/en-us/download/details.aspx?id=20426 • Apple QuickTime - https://support.apple.com/downloads/%2523quicktime • Microsoft Silverlight - https://www.microsoft.com/getsilverlight/Get-Started/Install/Default **Accessibility:** Wi-Fi is also available for use in the campus parking lots.
	Tutoring Services	Students improve their self-confidence and increase their chances of excelling in their courses when they utilize their college/university academic support services. The following tutoring services are available to AMSC students: ❖ The AMSC Writing Center is open year-round to support students, staff, and faculty at AMSC. It offers virtual and in-person tutoring for various writing projects, assists at any stage of the writing process, and increases improvement in structure, use of sources, style, grammar, and more. The Writing Center is located in Building 100, Room 211. Students can walk in during hours of operation or schedule an appointment at https://calendly.com/amscwritingcenter/30min ❖ Tutor.com is a virtual space for students to access writing tutors outside of AMSC faculty. Access tutor.com in Brightspace by logging into your course. Next, click the 'Free Tutoring' tab and choose Tutor.com from the dropdown options. Students are granted five (5) hours per semester, and registration is not required. Contact the Center for Student Success and Advising at (404) 756-5690 for assistance. ❖ TutorOcean is a tutorial for students enrolled in STEM courses such as Biology, Chemistry, Mathematics, and Computer Science. Access TutorOcean and sign up at https://atlm.tutorocean.com .

	Americans with Disabilities Act (ADA) Statement	Atlanta Metropolitan College is committed to providing support for all students and making their college experience an enriching opportunity. In compliance with Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990, The Department/Office of Counseling and Accessibility Services**,** located in the Student Services & Success Center, building 650-Suite 252, oversees the coordination of services for students with documented disabilities. The Coordinator of Disability Services collaborates with faculty and staff to offer provisions for reasonable accommodation to students who meet the requirements. It is the policy and practice of AMSC to make all Web information accessible to students with disabilities. If you, as a student with a disability, have difficulty accessing any part of the course materials for this class, please notify the instructor immediately. Accommodation cannot be provided until a reasonable accommodation plan is in place. To the greatest extent possible, all college representatives shall observe confidentiality.
	Office of Counseling and Accessibility Services	The Office of Counseling and Accessibility Services operates under the Americans with Disabilities Act (ADA) laws in order to assist in leveling the playing field for students who have disabilities with those who do not. The amended ADA, otherwise known as ADAAAA defines "disability" as a physical or mental impairment that substantially limits one or more major life activities. If you feel that you have a disability or impairment that may limit your academic functioning, please contact Dr. Dorothy Williams, the Director of Counseling and Accessibility Services at 404-756-4016 or at https://www.atlm.edu/students/counseling-and-disability-services.aspx. The Coordinator of Counseling and Accessibility Services reviews all accommodation requests. In order to receive accommodation, the student's illness or disability must be verified in writing by a physician, psychiatrist, or some other health care provider or specialist. Students choosing to access disability support services should contact the Coordinator as soon as possible after acceptance to AMSC. Please be aware that late notifications may result in complications for establishing accommodation in a timely fashion.

	Withdrawal	**Withdrawal from a course is solely the responsibility of the student.** Instructors will not initiate student withdrawals. A student who wishes to withdraw from a course **MUST** submit a completed Withdrawal Form (Schedule Reductions Form) to the Registrar's Office before mid-term in order to receive a grade of **"W"** for the course. A student who withdraws after the Midterm date receives a "WF" unless the Vice President for Academic Affairs determines that it is a hardship case, then a "W" will be recorded. The possibility that a student may fail the course will not be considered a hardship.
	Incomplete Grade Policy	An incomplete may be awarded at the instructor's discretion for non-academic reasons which prevent the student from completing the course requirements. The student must be passing the course at the time that the Incomplete is awarded and must sign an "Awarding of Incomplete" agreement. Unless otherwise stated, the incomplete should be removed by the end of the following semester; otherwise, the instructor will change the grade to an "F" grade.
	Time Commitment	To successfully complete this course it requires discipline, devoted time and commitment. A student must arrange his / her schedule to allow for the required time for this course. Expect to spend a minimum of 9 hours per week.
	Student Expectations	You are expected to refrain from profanity, crudeness, and slurs of any kind. You are also expected to treat your fellow students and instructor just as you would in the traditional classroom. Proper conduct applies to all forms of communication in the course. The penalty for not complying with these guidelines is removal from the course. Only the epitome of professionalism is expected of each student.
	Extra Credit	Provide proof of attendance of tutor ocean or tutor.com study sessions. Three extra credit points will be awarded on the lowest quiz for each proof of half hour workshop attended.
	Online Discussion Protocol	This class is taught face-to-face.
	Degree Relevance and Enrollment Status	Students are ultimately responsible for ensuring that the course(s) in which they enroll are included in the approved degree plan and program map for their program of study. Students **must** periodically check their enrollment status in this course during the semester. The student is responsible for determining changes, if any in enrollment status and taking necessary steps (e.g. pursuing re-instatement in this course) following those outlined in the AMSC catalog
	Abandoning a Course	Abandoning a course should be avoided at all cost. Abandoning a course instead of following official drop procedures will result in a grade of —F at the end of the course. It is the student's responsibility to initiate and complete the withdrawal process.
	Academic Honesty	Only the epitome of professionalism is expected of each student. Cheating or the abetment of cheating is not tolerated**.**

		Per page 91-93 of the 2019-2020 Atlanta Metropolitan State College Catalogue the Penalties for Academic Misconduct states: • In cases where a student is found guilty of cheating or exhibiting academic misconduct involving an instructor-generated assignment or examination, the instructor may impose a penalty. • Types of penalties may include, but are not limited to, the instructor assigning a grade of "F" for the assignment, the instructor not accepting the work, the student being assigned additional work, or the student receiving a grade reduction for the assignment. **The maximum penalty the instructor may impose is a grade of "F" for the course.** The instructor will impose the maximum penalty in this class in the case of academic dishonesty.
	Class Cancellation	Procedure regarding long-term emergency closure of the college (attendance policy): In the event of an emergency that forces the college to close for an extended period, students MUST contact the instructor of this class within 48 hours using the contact information (e.g., email address in BrightSpace/D2L) on the syllabus to obtain directions for continuing the course. The instructor will provide directions for the transmission and submission of course assignments and course assessments, including due dates. The student is responsible for submitting valid, accurate contact information, including an active AMSC email address to the instructor by the end of the first week of the course. Students can obtain an Atlanta Metropolitan State College Student email address in the Academic Support Center on the third floor of the Library Building. If the instructor for the course cannot be reached within the specified period (within 48 hours*)*, the Dean of the School responsible for the course can be reached at the email address posted on the college's website

<table>
<tr><td></td><td>Grade Scale</td><td colspan="3">Grading Scale:
100% - 90% = A
89% - 80% = B
79% - 70% = C
69% - 60% = D
Below 60%= F</td></tr>
<tr><td></td><td>Class Schedule</td><td colspan="3">Scales and Weights</td></tr>
<tr><td></td><td rowspan="6">These scheduled dates and assignments may be subject to change at the discretion of the instructor.</td><td>Category</td><td>Weight</td><td>Assignment/Due Date</td></tr>
<tr><td>Exams</td><td>30%</td><td>Exam 1 Chapters 1-2 9/24

Exam 2 Chapters 3-4 10/29

Exam 3 Chapters 5-8 12/3</td></tr>
<tr><td>Quizzes</td><td>20%</td><td>Syllabus 8/25

Quiz 1 9/8

Quiz 2 10/13

Quiz 3 11/26</td></tr>
<tr><td>Lab Exercises</td><td>25%</td><td>See Lab</td></tr>
<tr><td>Homework</td><td>10%</td><td>Weekly</td></tr>
<tr><td>Final</td><td>15%</td><td>12-5/10</td></tr>
<tr><td></td><td>Grade Appeals and Student Complaint Policy and Process</td><td colspan="3">Please follow the Grade Appeals Process outlined in the AMSC Student Catalog, Pages 61/62.

You can also refer to the Grade Appeal brochure at:
https://www.atlm.edu/downloads/advisement/CAAS%20Grade%20Appeal%20Brochure.pdf

For student complaint policy and process, refer to AMSC student catalog pages 51/52.</td></tr>
<tr><td></td><td>Frequently Asked Questions and Helpful Links</td><td colspan="3"></td></tr>
<tr><td></td><td>I need:</td><td colspan="3">LINK</td></tr>
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	What is Brightspace (D2L) and how can I access it?	Brightspace(D2L) is the virtual space where students access their online courses and some Face2Face class resources, quizzes, assignments, etc. You can access Brightspace (D2L) from https://atlm.view.usg.edu/ You can also access Brightspace (D2L) from the College's webpage and click on Brightspace (D2L) on top.
	Who is my Advisor? Where can I receive Advisement and Tutoring assistance?	Center for Academic Advising and Success (CAAS)
	What do I do if I face technical issues while taking a quiz or turning in an assignment in Brightspace	https://d2lhelp.view.usg.edu/ You can reach the GaView Helpdesk 24/7/365 days at 18557724423 If you are unable to submit a quiz or assignment or face a technical glitch, please contact the University System of Georgia's GaView Helpdesk at 1855 772 4423. The Helpdesk is open 24/7 all 365 days. If your issue cannot be resolved right away, the Helpdesk will issue a ticket to your Atlm Ginger email address. That ticket needs to be forwarded to your instructor to prove that you faced a technical issue that forced you to miss a deadline.
	I can't download Respondus Lockdown Browser. What do I do?	If you are unable to download Respondus to your computer, please email the Office of Testing at Testing@atlm.edu at least 24 hours in advance requesting a testing appointment at the Testing Lab. For Respondus issues, please contact https://web.respondus.com/contact/.
	Where do I go for ADA Accommodations	https://www.atlm.edu/students/counseling-and-disability-services.aspx
	I have a complaint. Where do I go?	Fill out and submit the Student Complaint form
	I have an issue with my grade. How may I appeal my grade.	Read the brochure and follow the instructions to appeal your grade.
	How do I Withdraw from a Course	Follow the Course Withdrawal Process **here**
	I have a Hardship. How do I do a Hardship Withdrawal?	Follow the Hardship Withdrawal Process **here**
	To Know the Campus Carry/HB 280 Policy	House Bill 280 Guidelines

	Disclaimer	*Information contained in this syllabus and schedule was, to the best knowledge of the instructor, considered correct and complete when distributed for use at the beginning of the semester. This syllabus should be considered only a guide for instructor and students, not a formal contract between Atlanta Metropolitan State College and any student. The instructor reserves the right, acting within the policies and procedures of AMSC, to make changes in course content or instructional techniques.*