

Course ID:	Course Title:	
CHE 493	Evaluation of enecyclization of Isopulegol: A green chemistry reaction	Prerequisite: 9 credits of relevant senior courses in chemistry (BCH, CHE) with a current GPA of 3.0 or higher and an approval of an independent research project application
		Credits: 3

Course Description

This is a one-semester independent research project. The course provides the student with the opportunity to integrate the breadth of knowledge gained in prerequisite courses and apply it towards a hands-on chemistry experience while doing an independent research project

Program Outcomes

BSc (Biology) graduates will also be able to:

1. use critical thinking skills to approach research problems;
2. design experimental protocols to test hypotheses, with appropriate data collection and analysis;
3. perform basic experimental laboratory techniques, such as slide preparation, spectrophotometry, dissection, and extraction
4. form values and convictions based on sound reasoning and clear methodology.

Expected Learning Outcomes

At the end of the course, students should have acquired the following skills:

1. Students will integrate skills and knowledge from core chemistry courses and apply them to an independent research
2. Students will develop a basic understanding of scientific literacy in the specific area of their research
3. In the project, students will build hypotheses and plan experiments. They will then execute this plan to design and perform experiments
4. Students will learn to interpret the results and learn to rationalize them in the context of their hypothesis and communicate this in a scientific way in the form of a written paper or presentations.

Project-specific learning outcomes

- Bronsted and Lewis Acidity
- Ene Cyclization reactions
- Investigation of various materials toward ene cyclizations
- Application of green chemistry
- Spectroscopic characterizations

Course Schedule:

Students will choose a research topic of choice and perform a literature search and literature summary before writing a research proposal. The student will complete pilot experiments. Upon completion of the project, a research report needs to be submitted. Results will be presented at the Ambrose Research Conference.

Evaluation Methods:

Research Proposal: 5% (due by Jan 10)

Research Performance Evaluation: 20%

This is based on the level of active participation in research activities. This includes evaluating achieving 10 hrs/week in the laboratory over the 4 months' term in a regular semester and integrating the skills learned.

Research Progress Presentation: 20%

Each student will give a 10-Minute oral presentation outlining the research objectives and progress to date on a biweekly basis.

Research Report: 45%

Each student will submit a formal, written report by the due date.

The research report should contain the following elements:

- Abstract
- Introduction
- Experimental Section
- Results and Discussion
- Conclusion
- References

Grade for Ambrose Research Conference Oral Presentation: 10%

Each student will present a 15-minute formal oral presentation. Your supervisor will provide a grade based on the quality and your level of knowledge demonstrated during this presentation.

Grade Summary:

The available letters for course grades are as follows:

Grad	Percent	Grade Point Value	Description
A+	96-100	4.00	Outstanding
A	92-95	4.00	Excellent - superior performance, showing comprehensive understanding of subject matter.
A-	88-91	3.70	
B+	83-87	3.30	
B	78-82	3.00	Good-clearly above average performance with knowledge of subject matter generally complete.
B-	73-77	2.70	
C+	68-72	2.30	
C	64-67	2.00	Satisfactory – basic understanding of the subject matter. Grade point average below 2.00 is not sufficient for promotion.
C-	60-63	1.70	Minimum grade required if needed as a prerequisite course
D+	55-59	1.30	
D	51-54	1.00	Minimal pass – marginal performance; generally insufficient preparation for subsequent courses in the same subject.
F	<50	0	Fail – unsatisfactory performance or failure to meet course requirements.

Because of the nature of the Alpha 4.00 system, there can be no uniform University-wide conversion scale. The relationship between raw scores (e.g. percentages) and the resultant letter grade will depend on the nature of the course and the instructor's assessment of the level of each class, compared to similar classes taught previously.

Please note that final grades will be available on student registration system. Printed grade sheets are not mailed out.

Ambrose University Academic Policies:

Communication

All students have received an Ambrose e-mail account upon registration. It is the student's responsibility to check this account regularly as the Ambrose email system will be the professor's instrument for notifying students of important matters (cancelled class sessions, extensions, requested appointments, etc.) between class sessions. If students do not wish to use their Ambrose accounts, they will need to forward all messages from the Ambrose account to another personal account.

Registration

During the **Registration Revision Period** students may enter a course without permission, change the designation of any class from credit to audit and /or voluntary withdraw from a course without financial or academic penalty or record. Courses should be added or dropped on the student portal by the deadline date; please consult the List of Important Dates. After that date, the original status remains and the student is responsible for related fees.

Students intending to withdraw from a course after the Registration Revision Period must apply to the Office of the Registrar by submitting a "Request to Withdraw from a Course" form or by sending an email to the Registrar's Office by the **Withdrawal Deadline**; please consult the List of Important Dates on the my.ambrose.edu website. Students will not receive a tuition refund for courses from which they withdraw after the Registration Revision period. A grade of "W" will appear on their transcript.

Students wishing to withdraw from a course, but who fail to do so by the applicable date, will receive the grade earned in accordance with the course syllabus. A student obliged to withdraw from a course after the Withdrawal Deadline because of health or other reasons may apply to the Registrar for special consideration.

Exam Scheduling

Students, who find a conflict in their exam schedule must submit a Revised Examination Request form to the Registrar's Office by the deadline date; please consult the List of Important Dates. Requests will be considered for the following reasons only: 1) the scheduled final examination slot conflicts with another exam; 2) the student has three final exams within three consecutive exam time blocks; 3) the scheduled final exam slot conflicts with an exam at another institution; 4) extenuating circumstances. Travel is not considered a valid excuse for re-scheduling or missing a final exam.

Electronic Etiquette

Students are expected to treat their instructor, guest speakers, and fellow students with respect. It is disruptive to the learning goals of a course or seminar and disrespectful to fellow students and the instructor to use electronics for purposes unrelated to the course during a class session. Turn off all cell phones and other electronic devices during class. Laptops should be used for class-related purposes only. Do not use iPods, MP3 players, or headphones. Do not text, read, or send personal emails, go on Facebook or other social networks, search the internet, or play computer games during class. Some professors will not allow the use of any electronic devices in class. The professor has the right to disallow the student to use a

laptop in future lectures and/or to ask a student to withdraw from the session if s/he does not comply with this policy. Repeat offenders will be directed to the Dean. If you are expecting communication due to an emergency, please speak with the professor before the class begins.

Academic Policies

It is the responsibility of all students to become familiar with and adhere to academic policies as stated in the Academic Calendar. Personal information (information about an individual that may be used to identify that individual) may be required as part of taking this class. Any information collected will only be used and disclosed for the purpose for which the collection was intended. For further information contact the Privacy Compliance Officer at privacy@ambrose.edu.

Extensions

Although extensions to coursework in the semester are at the discretion of the instructor, students may not turn in coursework for evaluation after the last day of the scheduled final examination period unless they have received permission for a course Extension from the Registrar's Office. Requests for course extensions or alternative examination time must be submitted to the Registrar's Office by the deadline date; please consult the List of Important Dates. Course extensions are only granted for serious issues that arise "due to circumstances beyond the student's control."

Appeal of Grade

An appeal for change of grade on any course work must be made to the course instructor within one week of receiving notification of the grade. An appeal for change of final grade must be submitted to the Registrar's Office in writing and providing the basis for appeal within 30 days of receiving notification of the final grade, providing the basis for appeal. A review fee of \$50.00 must accompany the appeal. If the appeal is sustained, the fee will be refunded.

Academic Integrity

We are committed to fostering personal integrity and will not overlook breaches of integrity such as plagiarism and cheating. Academic dishonesty is taken seriously at Ambrose University as it undermines our academic standards and affects the integrity of each member of our learning community. Any attempt to obtain credit for academic work through fraudulent, deceptive, or dishonest means is academic dishonesty. Plagiarism involves presenting someone else's ideas, words, or work as one's own. Plagiarism is fraud and theft, but plagiarism can also occur by accident when a student fails or forgets to acknowledge to another person's ideas or words. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from the university. Students are expected to be familiar with the policies in the current Academic Calendar that deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean and become part of the student's permanent record.

Note: Students are strongly advised to retain this syllabus for their records.