



CHEM&261 - Organic Chemistry with Lab I

Document Type: Master Course Outline Supplemental
Proposal Type: New Course
Requester(s): Stephanie A Endsley Employee Not Found (gting)
College: South
Origination Approved: 05/12/2014 - 9:41 AM

BASIC INFORMATION

Requester(s): Stephanie A Endsley
Employee Not Found (gting)

College: South Seattle Community College

Division/Dept: Academic Programs

Dean: Laura Kingston

Peer Reviewer(s): Jacob R Ashcraft
Jim Patterson

COLLEGE SUPPLEMENTAL

Proposed Quarter of Implementation: NA Request Provisional Exception

We submitted this course for approval by the Winter quarter 2014 deadline for a Fall Quarter 2014 start. This has been approved for a Fall 2014 start date.

Class Capacity: 24

Modes of Delivery: (Check all that apply)

- Fully On Campus
 Fully Online
 Hybrid
 Other Explanation:

Select the Special Designation(s) this course will satisfy, if applicable:

(No Special Designations Selected)

Class Schedule Description:

The first course in a three-quarter sequence includes molecular structure and bonding; acid-base chemistry; nomenclature, reactions and synthesis of hydrocarbons; stereochemistry, and an introduction to reaction mechanisms. This sequence satisfies the organic chemistry requirements for science and engineering majors and for various programs such as pre-medical, pre-dental, pre-pharmacy and other pre-technical disciplines. Format includes laboratory work. Prereq: CHEM&163 with a 2.0 or higher.

Student Learning Outcomes:

Communication

Read and listen actively to learn and communicate

Students will develop the ability to pronounce and spell the different types of organic molecules and use appropriate chemical terminology and nomenclature to describe organic compounds.

Speak and write effectively for academic and career purposes

Students will learn to communicate effectively using the language of chemistry and gain practice in technical writing through formal laboratory reports.

Human Relations

Use social interactive skills to work in groups effectively

Students will use social interactive skills to collaborate with classmates on in-class activities, problem solving sessions and laboratory experiments.

Critical Thinking and Problem-Solving

Think critically in evaluating information, solving problems, and making decisions

Attach meaning to abstract symbols and know when to use which symbol and formulate patterns based on specific examples. Apply vocabulary, concepts and techniques to understand and solve problems pertaining to chemical theories and introductory organic chemistry. Develop skills to determine if conclusions or solutions are reasonable.

Technology

Select and use appropriate technological tools for academic and career tasks

Students will use chemical instrumentation to evaluate organic compounds.

Personal Responsibility

Abide by appropriate safety rules in laboratories, shops and classroom

Manage personal health and safety while working with chemicals in the laboratory.

Information Literacy

Independently access, evaluate and select information from a variety of appropriate sources

Students will learn to access and evaluate information from the chemical literature and the internet.

Program Outcomes:

SLO #	Included in Course Objective Number	SSCC Student Learning Outcomes
SLO 1.1	2, 3, 4	Communication - Read and listen actively to learn and communicate.
SLO 1.2	3, 4, 9, 10	Communication - Speak and write effectively for academic and career purposes.
SLO 2.1		Computation - Use arithmetic and other basic mathematical operations as required by program of study.
SLO 2.2		Computation - Apply quantitative skills for academic and career purposes.
SLO 3.1	10	Human Relations - Use social skills to work in groups effectively.

SLO 3.2		Human Relations – Have knowledge of the diverse cultures represented in our multicultural society.
SLO 4.1	1, 2, 3, 4, 5	Critical Thinking—Think critically in evaluating information, solving problems, and making decisions.
SLO 5.1	6, 7	Technology - Select and use appropriate technological tools for academic and career tasks.
SLO 6.1		Personal Responsibility – Uphold the highest standards of academic honesty and integrity.
SLO 6.2		Personal Responsibility – Respect the rights of others in the classroom, online, and in all other school activities.
SLO 6.3		Personal Responsibility – Attend class regularly, complete assignments on time, and effectively participate in classroom and online discussions, group work, and other class-related projects and activities.
SLO 6.4	8	Personal Responsibility – Abide by appropriate safety rules in laboratories, shops, and classrooms.
SLO 7.1	9	Information Literacy—Independently access, evaluate, and select information from a variety of appropriate sources.
SLO 7.2		Information Literacy – Have knowledge about legal and ethical issues related to the use of information
SLO 7.3		Information Literacy - Use information effectively and ethically for a specific purpose.

Course Outcomes / Objectives:

At the end of the course the student will be able to:

1. Identify the various functional groups present in an organic molecule.
2. Give the correct IUPAC name of an organic compound when provided the structure of the compound, and give the correct structure of a compound when provided the IUPAC name.
3. Illustrate and explain the basic concepts of structure and bonding in organic compounds, including: constitutional isomerism, stereoisomerism, conformational analysis, and structural effects on the physical and chemical properties of organic compounds.
4. Explain the chemical behavior and reactivity of organic compounds related to thermodynamics, kinetics, and acid-base behavior.
5. Predict the product(s) of an organic reaction(s) consisting of one or several steps, taking into account the correct stereochemistry, regiochemistry, and chemoselectivity of the product(s).
6. Use standard organic laboratory techniques including crystallization, extraction, chromatography and distillation to isolate and purify a sample.
7. Use instrumentation including melting point apparatuses, infrared spectrometers, gas chromatographs, and other devices to characterize and identify organic compounds.
8. Safely handle laboratory glassware, equipment, and chemical reagents using basic knowledge about the common hazards associated with operations performed in an organic chemistry laboratory and the proper techniques for disposal of waste products.
9. Maintain laboratory records and write reports using standard techniques and formats.
10. Effectively collaborate as part of a group.

Explain the student demand for the course and potential enrollment:

Organic chemistry is a STEM class. It is required for students majoring in chemistry, biochemistry, chemical engineering, pre-medical, pre-dental, pre-pharmacy as well as other pre-technical professions.

Explain why this course is being created:

Organic chemistry is a STEM class. Due to the growing number of STEM and pre-professional students here at South, it is important to offer the organic chemistry series. These courses are required for students majoring in chemistry, biochemistry, chemical engineering, pre-medical, pre-dental, pre-pharmacy as well as other pre-technical professions. The chemistry 261-263 series that we are proposing is different from the organic chemistry series at NSCC and SCCC, which is CHEM&241-243 and CHEM&251-252. We think by offering this particular series, it will increase student enrollment by setting us apart from what North and Central are offering. It should also increase student interest in the class because it is similar to our general chemistry series (CHEM&161-163) in that it includes the lab and lecture in one class rather than separate classes for lab and lecture like the other series does. These courses also save students money on the entire series, since they are 18 credits over the year instead of 20 credits, as at North and Central, yet they all fully transfer. Both Bellevue College and Highline Community College are also offering CHEM&261-263 as their organic series, so this may also boost enrollment for us.

What challenges, if any, do you foresee in offering this course:

Organic chemistry is a 200 level series and is typically a lower enrolled class than the 100 level classes. This was more of a concern in the past, when the number of chemistry students was significantly smaller than in our current program.

This is to certify that the above criteria have all been met and all statements are accurate to the best of my knowledge.

Faculty involved in originating this program:

Stephanie A Endsley Print Name	<i>Stephanie A Endsley</i> Signature	1/1/0001 Date
Employee Not Found (gting) Print Name	<i>Employee Not Found (gting)</i> Signature	1/1/0001 Date

Dean:

Mark D Baumann (Admin) Print Name	<i>Mark D Baumann</i> Signature	4/8/2014 Date
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Results of SSCC Curriculum Coordinating Council Findings

Participating Faculty Response and Remarks

- Recommended for approval
 Not recommended for approval
 This course has not yet reached Committee Review

Chairman, Curriculum Coordinating Council:

Print Name	Signature	Date
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Vice President for Instruction:

Donna Miller-Parker Print Name	<i>Donna Miller-Parker</i> Signature	5/12/2014 Date
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