

**NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY**  
**CHM 245-246 - SPECIAL ORGANIC CHEMISTRY LABORATORY I-II (2 CR.) (2CR.)**

**Course Description**

Includes qualitative organic analysis. CHM 245 is Part I of II and CHM 246 is Part II of II/ Lecture 1 hour.  
Laboratory 3 hours. Total 4 hours per week.

**General Course Purpose**

Introduces students to various methods and procedures used in the present day organic laboratories. It covers the general techniques of organic synthesis and the use of common spectroscopic instrumentation. Students synthesize a variety of compounds and analyze the products through physical properties and spectroscopy.

**Course Prerequisites/Corequisites**

CHM 245 Prerequisite or Corequisite: CHM 241.

CHM 246 Prerequisites: CHM 242 and CHM 245

**Course Objectives**

Upon completion of the course students will be able to:

- Maintain a laboratory notebook
- Perform simple laboratory operations (melting and boiling points, simple and fractional distillations, recrystallization, extractions, use of various laboratory instruments: gas chromatograph, refractometer, IR, and UV/Vis Spectrophotometer.
- Perform simple organic syntheses
- Analyze and characterize the organic products formed in synthesis

**Major Topics to be Included**

- Laboratory Techniques: Melting point and boiling point determinations, various types of distillation, methods of extraction, methods of recrystallization, use of the various types of chromatography, use of the refractometer, use of the IR and the UV-VIS
- A Dehydration or Elimination reaction and analysis of the product
- Preparation of a compound using  $S_N1$ ,  $S_N2$  or addition reaction
- A redox reaction
- An electrophilic aromatic substitution reaction
- A condensation reaction
- A Grignard reaction
- A Nucleophilic Acyl substitution
- Data analysis using IR, mass spectrometer and NMR