

**QUEENSBOROUGH COMMUNITY COLLEGE  
CHEMISTRY DEPARTMENT**

***INTRODUCTORY ORGANIC CHEMISTRY (CH-128)***

**Course Syllabus**

**Pre-Requisite** CH-120, CH-127 or CH-151

**Hours** 3 Lecture Hours                      4 Laboratory Hours                      4 ½ Credits

**Textbook** Fundamentals of General, Organic, and Biological Chemistry,  
5<sup>th</sup> Edition, ISBN # 0-13-187748-8  
by John McMurry, Mary E. Castellion and David S. Ballatine (Prentice Hall)

**Lab manual** Organic Chemistry Laboratory Manual (2<sup>nd</sup> Ed, ISBN-0-697-33923-8)  
by P. Svoronos, E. Sarlo and R. J. Kulawiec (WCB McGraw-Hill)

***Course Description***

This course is intended to provide a brief, but thorough introduction to organic chemistry and biochemistry. The major functional groups such as hydrocarbons, alcohols, ethers, amines, carbonyl compounds and their derivatives are studied with some emphasis on mechanisms and stereochemistry. Several aspects of organic chemistry related to biochemistry are also stressed including topics on amino acids, proteins, enzymes, carbohydrates and lipids. The laboratory introduces the students to the various synthetic methods for organic compounds, as well as to the purification techniques such as distillation, recrystallization and extraction.

***Curricula for Which the Course is Required/Recommended***

This course is recommended for students in Nursing and others planning to pursue careers in Allied Health curricula such as various Medical Laboratory Technology programs. The course may not be substituted for CH-251, but may be used as a preparation for CH-251. This course is not open to students who have already completed CH-251 or its equivalent.

***General Education Objectives***

Integrate knowledge and skills in the major fields and across disciplines; employ concepts and methods of the natural and physical sciences to make informed judgments, use information management skills effectively for academic research and lifelong learning.

**Course Objectives/Expected Student Learning Outcomes**

Understand the nomenclature, structures and reactions of simple organic compounds: alkanes, alkenes, alkynes, alcohols, amines, aldehydes, ketones, amides, esters, carboxylic acids and their derivatives. Attain knowledge of basic concepts of biomolecules such as amino acids, proteins, enzymes, carbohydrates and lipids. Correlate structures and reactivity of simple organic compounds and develop scientific research abilities such as planning and performing experiments, gathering and analyzing data, drawing conclusions from qualitative analysis, communicating results orally and in scientific writing and demonstrating some basic familiarity with chemical literature.

**Methods by Which Student Learning Will Be Evaluated**

The general guidelines for assessing grades are as follows:

- Examinations, Assignments and Classroom Performance      50%
- Laboratory Work      25%
- Final Examination      25%

The distribution may be changed at the discretion of the individual instructor. Aside from the above the student is mandated to take the American Chemical Society (ACS) assessment test which will be administered during the last (check-out) laboratory period (week 14) and 10% of that grade will be added on top of the student's final course grade.

**Accommodations for Students with Disabilities**

Any student who feels that he/she may need an accommodation based upon the impact of a disability should contact the office of Services for Students with Disabilities in Science Building, room 132 (718-631-6257) to discuss his/her specific needs and to coordinate reasonable accommodations for documented disabilities. Students should also contact their instructor privately to discuss their specific needs.

**Academic Integrity**

Academic honesty is taken extremely seriously and is expected of all students. All assignments must be the original work of the student (and partners or group, if applicable). All questions or concerns regarding ethical conduct should be brought to the course instructor. "It is the official policy of the College that all acts or attempted acts that are violations of academic integrity be reported to the Office of Student Affairs (OSA). At the faculty member's discretion and with the concurrence of the student or students involved, some cases, though reported to the OSA, may be resolved within the confines of the course and department. The instructor has the authority to adjust the offender's grades as deemed appropriate, including assigning an F to the assignment or exercise or, in more serious cases, an F to the student for the entire course." (Taken from the QCC Academic Integrity Policy, 2/14/2005.)

### ***Attendance/Absence Policy***

Attendance will be taken at every class. The Student Handbook states that you will be considered excessively absent from a course and will receive a WU grade if you have been absent for 15% or more of the total number of contact hours for your course. If there is a laboratory component to your course, you will be considered excessively absent if you miss 15% or more of **either component**. A WU is computed as an F in your GPA.

Students who have valid excuses for missed classes should speak with their instructor and present documentation explaining the reason for the absence.

- **If your class meets twice per week:** you will receive a grade of WU if you have a **total of 7 or more** excused and/or unexcused absences.
- **For any lecture that meets only once per week,** you will receive a grade of WU if you have a **total of 4 or more** excused and/or unexcused absences.

### ***Laboratory Policy***

You must earn a passing grade in the laboratory in order to pass the course. (60% or higher lab grade excluding the ACS assessment test) You will receive a grade of WU if you have a **total of 4 or more** excused and/or unexcused absences. Students who arrive to the lab after the pre-lab lecture will not be allowed to participate and will be considered absent.

A full lab report is required for each of the experiments performed and is due the next class period. The format of the report will be explained by the lab instructor during the first week of the course. Late reports are not accepted unless it is due to an absence. There are no make-up sessions for missed labs. Missed labs that are unexcused will be assigned a grade of zero. For excused absences, the lab average will be calculated using the experiments that were completed. Additional information will be distributed by the lab instructor.

### ***Required Attire***

Students **MUST** wear safety goggles in the lab at all times. Failure to do so may lead to their expulsion from the lab. Sandals or open-shoes, untied long hair, and any type of food or beverage in the lab are strictly forbidden. The instructor may request from a student to leave the laboratory if these rules are not followed.

**INTRODUCTORY ORGANIC CHEMISTRY (CH-128)****LECTURE SCHEDULE**

<b><u>CHAPTER</u></b>	<b><u>TOPIC</u></b>	<b><u>HOURS</u></b>
12	Introduction to Organic Chemistry: Alkanes	4
13	Alkenes, Alkynes, and Aromatic Compounds	4
14	Some Compounds with Oxygen, Sulfur, or a Halogen	3
15	Amines	3
16	Aldehydes and Ketones	4
17	Carboxylic Acids and Their Derivatives	5
18	Amino Acids and Proteins	5
19	Enzymes and Vitamins	4
22	Carbohydrates	3
24	Lipids	3
	Exams	4

**Note:**

The instructor is responsible for making assignments and scheduling examinations. The Final Exam date is scheduled by the Registrar.

**INTRODUCTORY ORGANIC CHEMISTRY (CH-128)****LABORATORY SCHEDULE**

<b><u>WEEK</u></b>	<b><u>TOPIC</u></b>	<b><u>EXPERIMENT</u></b>	<b><u>PAGES</u></b>
1	Check-in; Introductory Remarks Laboratory Safety & Equipment; The Basics	1	1 - 4
2	Distillation - Simple & Fractional (p 33, #1, 2)	4.1 & 4.2	29 - 32
3	Recrystallization of a Solid (p 71, #1,2,3)	6.3	66 - 70
4	Isolation of Caffeine from Tea (p 77, #3)	6.5	75 - 77
5	Synthesis of Cyclohexene (p 126, #1, 3)	10.1	123 - 126
6	Synthesis of t-Butyl Chloride (p 153, #1)	13.1	151 - 152
7	Qualitative Tests for Alcohols (p 182, #2, 3)	14.2	180 - 182
8	Oxidation of Cyclohexanol to Cyclohexanone (p 225, #1, 3)	17.1	223 - 225
9	Equivalent Weight of Organic Acid (p 205, # 1, 2, 3)	16.1	204 - 205
10	Synthesis of Aspirin (p 215, #1, 4)	16.3	214 - 215
11	Synthesis of Acetanilide (p 257, #1, 3)	19.2	255 - 256
12	Preparation of Phenacetin (p 186-7, #1, 3, 6)	14.3	185 - 186
13	Lipids - Preparation and Properties of a Soap & The Hanus Test (p. 307, #1, 2, 3)	23.1 23.2	305 - 307 311 - 312
14	Check-out, ACS Assessment Test		

**NOTE:** Questions to be answered in the lab report are in parentheses.