

Chemistry Course Descriptions

Please note: Course numbers and descriptions are given based on the UCF course offerings, if available.

Courses Offered		UCF	BCC	CFCC	DBCC	LSCC	SCC	VCC
CHM 1015	(Pre-College Chemistry)		X					
CHM 1020	Concepts in Chemistry	X		X			X	X
CHM 1025	Introduction to Chemistry		X	X	X	X		X
CHM 1032	General Chemistry	X	X	X			X	
CHM 1083	Environmental Science					X		
CHM 2040	Chemistry Fundamentals IA	X						
CHM 2041	Chemistry Fundamentals IB	X						
CHM 2045	Chemistry Fundamentals I	X	X	X	X	X	X	X
CHM 2046	Chemistry Fundamentals II	X	X	X	X	X	X	X
CHM 2093	Chemistry for Teachers						X	
CHM 1200	Intro to Organic Chemistry		X					
CHM 2205	Intro to Organic & Biochemistry	X			X	X	X	X
CHM 2210	Organic Chemistry I	X	X	X	X	X	X	X
CHM 2211	Organic Chemistry II	X	X	X	X	X	X	X
CHM 3120	Analytical Chemistry	X			X		X	
CHS 1440	Chemistry for Engineers	X						

CHM 1015 – Pre-College Chemistry

- **BCC:** CHM 1015 Introduction to Chemistry (3) - Introductory course for students with inadequate backgrounds to develop and build mathematical skills and learn concepts required for entry into more rigorous chemistry courses. Will not meet general education requirement.

CHM 1020 – Concepts in Chemistry

- **UCF:** CHM 1020 Concepts in Chemistry (3) - Concepts will be examined to provide insight into the significant role that chemistry plays in our culture. Intended as a general education course.
- **CFCC:** CHM 1020C Chemistry for Non-Majors (4) - A course to familiarize the non-science student with some of the attitudes and applications of science. The course deals with the basic concepts and theories of chemistry and the practical application of chemical principles in medicine; agriculture; the food, cosmetics and household industries; and environmental science. Laboratory is included in this course.
- **SCC:** CHM 1020 Contemporary Chemistry (3) - A one-semester course for the non-science major designed to meet the general education requirement for the A.A. degree. Presumes no chemistry background. The course examines some of the major scientific issues of the day: environmental pollution, nuclear chemistry and its applications, man-made materials, sources of energy, etc. Chemical principles are integrated with these topics on a need-to-know-basis. Laboratory experiences during lecture are designed to complement course material.
CHM 1020L Contemporary Chemistry Lab (1) - One credit is awarded to entering students with an appropriate score on the International Baccalaureate (IB) examination in Chemistry or the Cambridge AICE AS-Level chemistry examination.
- **VCC:** CHM 1020 Chemistry in Everyday Life (3) - Meets general education requirement for non-science major. Study of some basic concepts in inorganic chemistry, organic chemistry and biochemistry. Students apply principles as they analyze, discuss and make decisions on chemically related problems that affect everyday life.

CHM 1025 – Introduction to Chemistry

- **BCC:** CHM 1025 College Chemistry 1 (3) - A one-semester course covering, with slightly less rigor, the same topics found in CHM 1045 and 1046 (General Chemistry 1 and 2).
CHM 1025L College Chemistry Laboratory (1) - Laboratory practices designed to help the student acquire basic chemical laboratory skills and to illustrate concepts studied in CHM 1025.
- **CFCC:** CHM 1025C Introductory Chemistry with Lab (4) - Course includes study of measurements, historical approach to chemistry, periodic table, gas laws, thermodynamics, chemical stoichiometry, acids and bases, oxidation, and reduction.

- **DBCC:** CHM 1025 Introduction to Chemistry (3) - Survey of modern chemistry, designed particularly for those with little or no chemistry background or for those needing an overview of chemistry. May also be used as a preliminary to CHM 1045C/1045L. Three-hour lecture, one-hour recitation/ laboratory.
- CHM 1025L Introduction to Chemistry Lab (1)
- **LSCC:** CHM 1025C General Chemistry with Lab (4) - An introduction to the elementary aspects of modern chemistry including the concept of chemistry as an experimental science, atomic and molecular structure, chemical bonding in solids and liquids, and properties of gases. The lab component will provide laboratory support for the lecture material.
- **VCC:** CHM 1025C Introduction to General Chemistry (4) - Prepares students without high school chemistry or with inadequate background for CHM 1045C. Modern chemical theories used to develop understanding of fundamentals of inorganic chemistry and its applications. Emphasis on quantitative relationships, using dimensional analysis to solve problems. Laboratory experiences are integral part of course.

CHM 1032 – General Chemistry

- **UCF:** CHM 1032 General Chemistry (3) - An introductory study of the fundamental concepts of chemistry, primarily oriented toward Health Science majors.
- CHM 1032L General Chemistry Laboratory (1) - An introductory study of physical and chemical properties of elements and compounds.
- **BCC:** CHM 1031 Physiological Chemistry (3) - The course is the second part of a rigorous two-course sequence in chemistry intended for health science or biotechnology majors. The course is designed to provide an environment of collaborative and active learning. Areas of concentration include modern organic chemistry nomenclature and organic reaction pathways, nomenclature, structure, function and metabolism of major biomolecular groups including proteins, lipids, carbohydrates and nucleic acids.
- CHML 1031 Physiological Chemistry Laboratory (1) - This laboratory complements CHM 1031, the second part of a rigorous two-course sequence in chemistry intended for health science majors. It provides active, collaborative learning through direct chemical manipulation of organic and biochemical substances.
- **CFCC:** CHM 1032C Chemistry for the Health-Related Fields with Lab (4) - This is a basic, one-term course in chemistry for students aiming for careers in the professional health care fields. It introduces students to the basic concepts and principles of inorganic, organic, and biological chemistry and their application to health care situations.
- **SCC:** CHM 1032C Foundations of College Chemistry (4) - Topics covered include problem solving, atomic and molecular structure, formulas and nomenclature, bonding, stoichiometry, gas laws, solutions, and an introduction to organic chemistry and other selected topics. Lab fee required.

CHM 1083 – Environmental Science

- **LSCC:** CHM 1083 Environmental Science (3) - A non-mathematical study of chemistry and its practical applications. Topics include atomic structure, chemical bonding, acid-base behavior, energy sources, pollution, and consumer chemistry.

CHM 2045 – Chemistry Fundamentals I

- **UCF:** CHM 2045C Chemistry Fundamentals I (4) - Basic physical theory of chemical reactivity, atomic structure, chemical bonding, periodicity, stoichiometry, equilibria, thermodynamics, and kinetics.
CHM 2045H Honors Chemistry Fundamentals I (4) - Same as CHM 2045C with honors-level content.
- *CHM 2040C Chemistry Fundamentals IA (3) - Elementary principles of modern chemistry, including units and measures, stoichiometry, energy, chemical calculations, structure and properties of matter, chemical bonding. This course is to be followed by CHM 2041C.
- *CHM 2041C – Chemistry Fundamentals IB (3) - The second semester of CHM 2040C. The states of matter, reaction rates and equilibria, acids and bases.
- **BCC:** CHM 1045 General Chemistry 1 (3) - The first of a rigorous two course sequence in general chemistry designed for science majors. Relates modern theories of atomic and molecular structure to physical and chemical properties. The areas of concentration include stoichiometry, kinetic molecular theory, acid properties of solutions.
CHML 1045 General Chemistry 1 Laboratory (1) - Laboratory experience in which basic manipulatory skills are presented and practiced. Some applications of basic chemical principles are explored.

CHM 1045H Honors General Chemistry 1 (3) - The first of a rigorous two course sequence in general chemistry designed for science majors. The course is designed to provide a unique environment based on collaborative and active learning. Major areas of concentration include modern theories of atomic and molecular structure, quantitative chemistry, physical chemistry and the behavior of gases.

CHML 1045H Honors General Chemistry 1 Laboratory (1) - The course is the laboratory portion of the first part of a two-course sequence in general chemistry intended for science majors. The course is designed to provide a unique environment based on collaborative learning and modern day applications of chemistry. Experiments will illustrate the chemical concepts taught in the lecture part of the course and will provide students with the experience required to work in a modern chemistry laboratory.

- *CFCC*: CHM 2045C General Chemistry I with Quantitative Analysis with Lab (4) - This course may include an expanded review of CHM 1025C. The course covers atomic structure, bonding, formulas, nomenclature, reactions, stoichiometry, gas, solid and liquid states. Additional topics may include the solubility product principle, electrochemistry, and coordination compounds.
- *DBCC*: CHM 1045C General College Chemistry I (3) - Fundamental laws and theories of chemistry and related laboratory experiments. Designed for students majoring in science. Three-hour lecture, three-hour laboratory.
CHM 1045L General College Chemistry I Lab (1)
- *LSCC*: CHM 2045C College Chemistry I with Lab (5) - A quantitative study of theoretical and descriptive aspects of the states of matter, atoms, molecules, bonding, homogenous reactions, acid-base properties, amphoterism, complex formation, chemical equilibria, and oxidation reduction process. The lab component will provide laboratory support for the concepts taught in lecture.
- *SCC*: CHM 2045C General Chemistry I (4) - This course is a study of the theoretical and descriptive aspects of chemistry. Includes a study of atomic and molecular structure, chemical reactions, the periodic classification of the elements, and stoichiometry. Also covered are kinetic molecular theory, gas laws, solutions, and thermochemistry.
- *VCC*: CHM 1045C General Chemistry with Qualitative Analysis I (4) - A study of the basic principles of chemistry including chemical reactivity, atomic structure, chemical bonding, molecular geometry, periodicity, stoichiometry, and kinetic-molecular treatment of gases. Laboratory illustrates principles discussed in classroom.
CHM 1045H General Chemistry with Qualitative Analysis I – Honors (4) - Same as CHM 1045C with honors content.

CHM 2046 – Chemistry Fundamentals II

- *UCF*: CHM 2046 Chemistry Fundamentals II (3) - Continuation of CHM 2045C or the CHM 2040C & CHM 2041C sequence.
CHM 2046L Chemistry Fundamentals Lab (1) - Illustration of chemical principles and introduction to the techniques of inorganic and physical chemistry.
CHM 2046H Honors Chemistry Fundamentals II (3) - Same as CHM 2046 with honors-level content.
CHM 2046L Honors Chemistry Fundamentals Lab (1) - Illustration of chemical principles and introduction to the techniques of inorganic and physical chemistry with honors-level content.
- *BCC*: CHM 1046 General Chemistry 2 (3) - The application of chemical principles to families of elements; introduction to organic and nuclear chemistry. Areas of concentration include kinetics, electrochemistry, and equilibrium.
CHML 1046 General Chemistry 2 Laboratory (1) - A continuation of CHML 1045 with greater emphasis on analytical techniques and analysis and interpretation of data.
- *CFCC*: CHM 2046C General Chemistry II with Qualitative Analysis with Lab (4) - This course may include a review of CHM 2045, and provides additional material. Topics that are covered in CHM 2045 will be expanded. Additional topics include equilibria and qualitative analysis.
- *DBCC*: CHM 1046C General College Chemistry II (3) - Continuation of CHM 1045C/1045L. Three-hour lecture, three-hour laboratory.
CHM 1046L General College Chemistry II Laboratory (1)
- *LSCC*: CHM 2046C College Chemistry II with Lab (5) - This course is a continuation of College Chemistry I. Laboratory emphasis is on qualitative analysis.
- *SCC*: CHM 2046C General Chemistry II with Qualitative Analysis (4) - Continuation of CHM 2045C with special emphasis on chemical kinetics, equilibrium electrochemistry, nuclear chemistry, and thermodynamics. Course stresses integration of chemical knowledge. Laboratory is primarily qualitative analysis.

- VCC: CHM 1046C General Chemistry with Qualitative Analysis II (4) - Continuation of CHM 1045C dealing mainly with equilibrium theory, thermodynamics, chemical kinetics and electrochemistry. Laboratory illustrates principles of ionic equilibria within framework of qualitative analysis.
- CHM 1046H General Chemistry with Qualitative Analysis II - Honors (4) - Same as CHM 1046C with honors content.

CHM 2093 Chemistry for Teachers

- SCC: CHM 2093 Chemistry for Teachers (3) - This course covers the basic principles of chemistry with applications of these principles to everyday phenomena. Lectures will include hands-on activities and demonstrations. Topics will vary to fit the specific needs of the teachers enrolled.

CHM 1200 – Introduction to Organic Chemistry

- BCC: CHM 1200 Introduction to Organic Chemistry (3) - A course designed to introduce students to the terminology and major concepts of organic chemistry, to prepare the student for the CHM 2210-2211 series. This course cannot be taken to meet General Education requirement for an AA degree.

CHM 2205 – Introduction to Organic and Biochemistry

- UCF: CHM 2205 Introduction to Organic and Biochemistry (5) - An introduction to organic chemistry, stressing the chemistry of functional groups and a survey of the biochemistry of proteins, carbohydrates, lipids, and nucleic acids.
- DBCC: CHM 2205C Introduction to Organic and Biochemistry (3) - An introduction to organic and biochemistry for Allied Health students. Course stresses the chemistry of functional groups and a survey of biochemistry. Compounds will be analyzed and synthesized in the laboratory.
CHM 2205L Introduction to Organic and Biochemistry Lab
- LSCC: CHM 1205C General Organic and Biochemistry with Lab (5) - This course is primarily designed to provide students planning a career in the health-related fields or in the life sciences with an introduction to organic and biochemistry. Major emphasis will be on the nomenclature, preparation, and reactions of the functional groups. In addition, this course should serve as a valuable introduction for those who will later require a year-long sequence of organic chemistry.
- SCC: CHM 2205C Introduction to Organic and Biochemistry (4) - A lecture-laboratory course covering an introduction to the concepts of organic chemistry and biochemistry. The chemistry of organic functional groups is covered with the chemistry of biological processes.
- VCC: CHM 1205C Introductory Organic and Biochemistry (4) - Introduces students planning careers in health-related fields or in life sciences to organic and biochemistry. Study of structures and typical reactions of functional groups, structures and functions of classes of biomolecules and energy flows of biological systems. Laboratory portion of course provides students with exercises illustrating principles of organic and biochemistry.

CHM 2210 – Organic Chemistry I

- UCF: CHM 2210 Organic Chemistry I (3) - Theory and applications of organic chemistry: structure, bonding, kinetics, thermodynamics, reaction mechanisms, synthesis, and stereochemistry. Structure elucidation via spectrometric techniques.
- BCC: CHM 2210 Organic Chemistry 1 (3) - The first of a rigorous two-course sequence in the study of the organization of carbon compounds and the unifying principles of their chemistry.
CHM 2210 Organic Chemistry 1 Laboratory (1) - A first course in fundamental techniques used in carrying out organic synthesis. Emphasis placed on basic procedural steps and lab reports.
- CFCC: CHM 2210C Organic Chemistry I with Lab (4) - The first term of a two-term sequence in college organic chemistry covering basic principles of structure, classification, nomenclature, synthesis, chemical behavior, and reaction mechanisms of the compounds of carbon. A thorough study of topics that cuts across disciplines such as medicine, veterinary science, chemical engineering, biology, and pharmacy.
- DBCC: CHM 2210C Organic Chemistry I (3) - The first semester of the CHM 2210C/2210L - 2211C/2211L sequence. A study of the structure, synthesis and reactions of organic compounds. Three-hour lecture, three-hour laboratory.
CHM 2210L Organic Chemistry I Lab (1)

- **LSCC:** CHM 2210C Organic Chemistry I with Lab (5) - This course provides a basic introduction to all organic functional groups, followed by detailed treatment of the relationship between structure and reactivity. Other topics include stereochemistry, synthesis, and spectroscopy.
- **SCC:** CHM 2210C Organic Chemistry I (4) - This course provides a basic introduction to all organic functional groups, followed by detailed treatment of the relationship between structure and reactivity. Other topics include stereochemistry, synthesis, and spectroscopy.
- **VCC:** CHM 2210C Organic Chemistry I (4) - Deals with aliphatic and aromatic compounds, their properties, reactions and synthesis, emphasizing dependence of properties and reaction mechanisms upon structure. Laboratory illustrates techniques of separation, identification and purification.

CHM 2211 – Organic Chemistry II

- **UCF:** CHM 2211 Organic Chemistry II (3) - Continuation of CHM 2210.
CHM 2211L Organic Laboratory Techniques I (2) - An introduction to the laboratory techniques of organic chemistry, including the preparation, reaction, and analysis of organic compounds.
- **BCC:** CHM 2211 Organic Chemistry 2 (3) - The second of a rigorous two-course sequence in the study of the organization of carbon compounds and the unifying principles of their chemistry.
CHML 2211 Organic Chemistry 2 Laboratory (1) - A continuation of CHML 2210, with emphasis on application of techniques and multi-step synthesis.
- **CFCC:** CHM 2211C Organic Chemistry II with Lab (4) - This course is a continuation of CHM 2210C. It completes the long form organic sequence and continues a thorough study of compounds, structures, functions, reactions and syntheses, which are important components of chemical life systems and chemical engineering. Includes the study of nomenclature, structure, physical and chemical properties, and chemical behavior.
- **DBCC:** CHM 2211C Organic Chemistry II (3) - Continuation of CHM 2210C/2210L.
CHM 2211L Organic Chemistry II Lab (1)
- **LSCC:** CHM 2211C Organic Chemistry II with Lab (5) - This course provides a basic introduction to all organic functional groups, followed by detailed treatment of the relationship between structure and reactivity. Other topics include stereochemistry, synthesis, and spectroscopy.
- **SCC:** CHM 2211C Organic Chemistry II (4) - A continuation of CHM 2210C covering the chemistry of aromatic, carbonyl and nitrogen compounds, followed by an introduction to biomolecules. Emphasis will be on reactivity, mechanism, and synthesis.
- **VCC:** CHM 2211C Organic Chemistry II (4) - Continuation of CHM 2210C with laboratory devoted to multistep synthesis.

CHM 3120 – Analytical Chemistry

- **UCF:** CHM 3120 Analytical Chemistry (3) - Classical and instrumental analysis. Choice of preferred analytical methods and techniques is emphasized through applications involving both inorganic and organic systems.
CHM 3120L Analytical Chemistry Laboratory (1) - Experimental exercise of quantitative methods of analysis using titrimetric, gravimetric, potentiometric and photometric methods of analysis including statistical treatment of experimental data.
- **DBCC:** CHM 2120C Introduction to Analytical Chemistry (3) - The principles and laboratory techniques of quantitative analytical methods, with emphasis on problem solving and choice of analytical methods.
CHM 2120L Introduction to Analytical Chemistry Lab (1)
- **SCC:** CHM 2120C Analytical Chemistry (5) - A one-semester lecture-laboratory course in Analytical Chemistry covering the principles and techniques of gravimetric, volumetric, and instrumental methods.

CHS 1440 – Fundamentals of Chemistry for Engineers

- **UCF:** CHS 1440 Fundamentals of Chemistry for Engineers (4) - Basic concepts of chemistry, with emphasis on problem solving and engineering applications. Atomic and molecular structure, states of matter, stoichiometry, equilibria, electrochemistry and thermodynamics.