

CHEMISTRY (CHE)

CHE 100 Introductory Chemistry (3 Credits)

A one-semester course intended for students that have not completed a chemistry course before entering college or those who have not studied basic chemistry in several years. The course covers elementary concepts of general chemistry and develops problem-solving skills. The course will provide the background needed to enter into General Chemistry or Chemistry for the Health Sciences. The course may also be of interest to non-science majors who want a science-based elective. Offered as needed

This course may satisfy the general education core: Sustainability Dialogues.

Essential Learning Outcomes for Medaille College: Critical Thinking, Quantitative Reasoning, Scientific Reasoning and Technological Reasoning

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: None

Fees: None

CHE 145 Chemistry for the Health and Sciences (3 Credits)

This one-semester course gives students entering allied health, veterinary, or medical fields a fundamental knowledge of areas of chemistry that relate to physiological principles. The course covers the fundamental concepts and essentials of general chemistry, introductory organic chemistry and an introduction to biochemistry. This course includes three hours of lecture per week. Offered as needed.

Essential Learning Outcomes for Medaille College: Scientific Reasoning

Department: Science, Mathematics Technol

Pre-Requisites: (MAT 112 or 114) and CHE 100.

Co-Requisites: CHE 145L

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: 20

CHE 145L Chemistry for the Health Sciences Laboratory (1 Credit)

This course includes experiments and demonstrations designed to correlate with lecture topics presented in CHE 145. This one-semester course gives students entering allied health, veterinary or medical fields a fundamental knowledge of areas of chemistry that relate to physiological principles. The course covers the fundamental concepts and essentials of general chemistry, introductory organic chemistry and an introduction to biochemistry. This course includes two hours of laboratory per week. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: (MAT 112 or 114) and CHE 100.

Co-Requisites: CHE 145

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

CHE 200 General Chemistry I (3 Credits)

A lecture provides an introduction to the basic principles of chemistry. Topics include stoichiometry, atomic theory, chemical bonding, thermochemistry and properties of mixtures. This course includes three hours of lecture and one hour of recitation per week. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: (MAT 112 or 114) and (CHE 100 or 145 and CHE 145L).

Co-Requisites: CHE 200L

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: 20

CHE 200L General Chemistry I Laboratory (1 Credit)

Laboratory based exploration of the basic chemical concepts taught in General Chemistry I (CHE 200). Laboratory consists of exercises that provide an introduction to the basic principles of chemistry. Topics include state of matter, stoichiometry, atomic theory, chemical bonding, thermochemistry and properties of mixtures. This course includes three hours of laboratory per week. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: (MAT 112 or 114) and (CHE 100 or 145 and CHE 145L).

Co-Requisites: CHE 200

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

CHE 201 General Chemistry II (3 Credits)

The Application of principles learned in CHE 200 to complex chemical systems. Topics include kinetics, acids equilibria, thermodynamics and electrochemistry. This course includes three hours of lecture and one hour of recitation per week. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: CHE 200 and 200L.

Co-Requisites: CHE 201L

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: 20

CHE 201L General Chemistry II Laboratory (1 Credit)

Laboratory based exploration of the basic chemical concepts taught in General Chemistry II (CHE 201). Topics include kinetics, acids equilibria, thermodynamics and electrochemistry. This course includes three hours of laboratory per week. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: CHE 200 and 200L.

Co-Requisites: CHE 201

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

CHE 300 Organic Chemistry I (3 Credits)

An introductory course that examines the properties of carbon-containing compounds. Lecture topics will include nomenclature, organic functional groups, reaction mechanisms, stereochemistry, acid-base chemistry, oxidation-reduction reactions, and synthetic schemes. The laboratory will introduce the student to organic techniques and synthesis. This course includes three hours of lecture and one hour of recitation per week. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: CHE 201 and 201L.

Co-Requisites: CHE 300L

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: 20

CHE 300L Organic Chemistry I Laboratory (1 Credit)

This course includes experiments and demonstrations designed to correlate with lecture topics presented in CHE 300. Topics will include nomenclature, organic functional groups, reaction mechanisms, stereochemistry, acid-base chemistry, oxidation-reduction reactions and synthetic schemes. The laboratory will introduce the student to organic techniques and synthesis. This course includes three hours of laboratory per week. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: CHE 201 and 201E.

Co-Requisites: CHE 300

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

CHE 301 Organic Chemistry II (3 Credits)

A continuation of Chemistry 300. The course supplies an expanded view of organic synthesis, reaction mechanisms, and stereochemistry. This course will establish a more complete synthetic correlation chart. The chemistry of organic molecules will be related to the biochemical reactions of living systems. Emphasis will be placed on spectroscopy, molecular rearrangements and applications to molecular genetics. This course includes three hours of lecture and one hour of recitation per week. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: CHE 300 and 300L.

Co-Requisites: CHE 301L

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: 20

CHE 301L Organic Chemistry II Laboratory (1 Credit)

This course includes experiments and demonstrations designed to correlate with lecture topics presented in CHE 301. The course supplies an expanded view of organic synthesis, reaction mechanisms and stereochemistry. This course will establish a complete synthetic correlation chart. The chemistry of organic molecules will be related to the biochemical reactions of living systems. Emphasis will be placed on spectroscopy, molecular rearrangements and applications to molecular genetics. This course includes three hours of laboratory per week. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: CHE 300 and 300L.

Co-Requisites: CHE 301

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

CHE 400 General Biochemistry (3 Credits)

A course that explores the biological importance of chemical compounds with emphasis on the relationship between structure and function. Topics include enzyme regulation, enzyme kinetics, the role of carbohydrates, the biological mechanisms employed in energy production and the integration of metabolic pathways. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: BIO 171 and CHE 301.

Co-Requisites: CHE 400L

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: 20

CHE 400L General Biochemistry Laboratory (1 Credit)

Laboratory based exploration of the biochemical concepts taught in General Biochemistry (CHE 400). The laboratory will provide an introduction to the fundamental techniques of biochemistry. Techniques include: chromatography, gel electrophoresis, PCR and spectrophotometry. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: CHE 400

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

CHE 498 Independent Study in Chemistry (1-4 Credits)

Topic to be specified each semester course offered.

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: None

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None