SECTION 10: COURSE DESCRIPTIONS—CHEMISTRY (DC)

CHM 103 Chemistry in Society 3 credits
This course is designed for the non-science major with no previous college-level science background. It includes an introduction to chemistry as well as several current chemical topics of significant societal concern.

CHM 107 General Chemistry I 3 credits
Prerequisite: Departmental recommendation and Co-requisite: MTH 140 or 141 and CHM 110.
Stoichiometry, thermochemistry, states of matter, selected properties of the elements, solutions, atomic and molecular structure.

CHM 110 General Chemistry I Lab 1 credit
Prerequisite: CHM 107
Basic laboratory techniques are introduced including the qualitative analysis of the common inorganic cations and anions.

CHM 108 General Chemistry II 3 credits
Prerequisite: CHM 107
Chemical thermodynamics and equilibria, kinetics, electrochemistry and redox, nuclear reactions, solutions, and selected properties of the elements.

CHM 111 General Chemistry II Lab 2 credits
Prerequisite: CHM 110 and Co-requisite: CHM 108
Classical quantitative analysis via titrimetric, gravimetric and instrumental procedures.

CHM 227 Organic Chemistry I 3 credits
Prerequisite: CHM 108.
The first semester of a two-semester general course covering the theoretical aspects as well as the practical application of organic chemistry. The structure and properties of organic compounds are the basis for understanding stereochemistry, spectroscopy, and the chemistry of saturated aliphatic and alicyclic compounds.

CHM 228 Organic Chemistry I Lab 2 credits
Prerequisite: CHM 111
The more common laboratory techniques of organic and inorganic chemistry are illustrated with experiments involving the isolation, characterization and purification of compounds. Emphasis is placed on the concept of chemical reactions and the physical, chemical and spectroscopic tools available to the chemist.

CHM 229 Organic Chemistry II 3 credits
Prerequisite: CHM 227
A continuation of CHM 227 into aromatic, electrocyclic and carbonyl chemistry, followed by a survey of carbohydrate, amino acid and some other natural product chemistry.

CHM 230 Organic Chemistry II Lab 2 credits
Prerequisite: CHM 228
More comprehensive and sophisticated experiments in chemistry as a continuation of CHM 228.

CHM 333 Physical Chemistry Lab I 1 credit
Prerequisite: CHM 228
To be taken concurrently with or subsequently to CHM 341. Determinations of physicochemical properties and behavior of chemical compounds.

CHM 334 Physical Chemistry Lab II` 1 credit
Prerequisite: CHM 333
A continuation of CHM 333. Required of B.S. Biochemistry and B.A. Chemistry majors.

CHM 341 Chemical Thermodynamics Applications 3 credits
Prerequisite: One year of General Physics and Math 142.
The theory and application of thermodynamics and statistical mechanics to chemical systems.

CHM 342 Chemical Dynamics and Quantum Chemistry 3 credits
Prerequisite: CHM 341
The theory and application of chemical kinetics and quantum mechanics to chemical systems.

CHM 429 Industrial Chemistry and Societal Issues 3 credits
Prerequisite: CHM 229
A survey of the chemical and allied products, industries, size, economic importance, and practices. Sources, interdependence, uses and hazards of industrially important compounds. Discussion of environmental problems, risk-benefit analysis, long-term changes needed in energy use, raw materials and waste disposal.

CHM 470 Basic Biochemistry 3 credits
Prerequisite: CHM 229
An introduction to structure-function relationships of biomolecules, including amino acids, proteins, carbohydrates, lipids, and nucleic acids. Also an introduction to metabolism, including glycolysis, Krebs cycle and oxidative phosphorylation. Physiological applications of biochemistry will be stressed.

CHM 471 Biochemistry I 3 credits
Prerequisite: CHM 229.
The chemistry of carbohydrates, lipids, proteins, and nucleic acids are discussed in relation to cellular structure, with special emphasis on enzymes and enzyme kinetics.

CHM 472 Biochemistry II 3 credits
Prerequisite: CHM 471 or equivalent.
Intermediary metabolism of carbohydrates, lipids, proteins, porphyrin, and nucleic acids are discussed. Bioenergetics in terms of cellular utilization and conservation of energy are also studied. Metabolic controls are stressed in terms of genetic and enzymatic mechanisms.

CHM 474 Biochemical Social Issues 3 credits
Prerequisite: CHM 471 and CHM 472.
Discussion with student participation. An advanced treatment of current research in biochemistry. Topics such as receptors, hormones, neurobiochemistry, recombinant DNA, and biochemistry of disease, are selected from the current literature and will vary yearly. Emphasis is placed on proper interpretation of the literature and the significance of discoveries to the improvement of human life.