**BIOCHEMISTRY**

**BCH**

**College of Agriculture and Natural Resources**

**College of Human Medicine**

**College of Natural Science**

**College of Osteopathic Medicine**

**200. Introduction to Biochemistry**

Winter, Summer. 3(5-0) Credit may not be earned in both 200 and 401. General chemistry; one term organic chemistry; not acceptable for a B.S. degree in biochemistry. Survey of biochemistry emphasizing the major metabolic activities of living organisms.

**363. Clinical Biochemistry**

Spring. 3(3-2) 401; CEM 192. Primarily for Medical Technology majors; not acceptable for a B.S. degree in biochemistry. Quantitative clinical laboratory methods.

**400H. Honors Work**

Fall, Winter, Spring. Variable credit. Approval of department. Assigned reading and experimentation.

**401. Basic Biochemistry**

Fall, Summer. 3(5-0) Credit may not be earned in both 200 and 401. One year organic chemistry or CEM 242; not open to biochemistry majors.

A one-term presentation of biochemistry emphasizing structure and function of major biomolecules, metabolism, and regulation. Examples used for illustrative purposes will emphasize the mammalian organism.

**404. General Biochemistry Laboratory**

Fall, Winter, Spring. 3(1-0) Analytical chemistry. 401 or 451. Experimental aspects of biochemistry.

**451. Biochemistry**

Fall. 4(4-0) Credit may not be earned in both 401 and 451. One year organic chemistry or CEM 242. A comprehensive presentation of biochemistry designed for undergraduate biochemistry majors, students of medicine, and other students desiring an intensive treatment of the subject.

**452. Biochemistry**

Winter. 4(4-0) 451. Continuation of 451.

**499. Research**

Fall, Winter, Spring, Summer. Variable credit. Approval of department.

**501. Medical Biochemistry**

Fall, Winter. 3(3-0) One year organic chemistry, or CEM 242. Fall: Osteopathic Medicine students; Winter: Human Medicine students; Others approval of department. Basic biochemical principles and terminology of importance in medical biology.

**801. Biochemical Research Methods**

Fall. 3(0-3) One year of organic chemistry or CEM 242; BCR 451 or 811, or concurrently. Discussions and demonstrations of selected experimental techniques of wide application in biochemistry.

**804. Advanced Biochemistry Laboratory**

Fall. 3(1-6) Analytical chemistry; 801 and 811, or concurrently. Experiments to be selected from a representative group illustrating modern biochemical research.

**805. Advanced Biochemistry Laboratory**

Winter. 3(1-6) 804; 812 concurrently. Experiments to be selected from a representative group illustrating modern biochemical research.

**806. Advanced Biochemistry Laboratory**

Spring. 3(1-6) 805; 813 concurrently. Special experiments in advanced laboratory techniques.

**811. Advanced Biochemistry**

Fall. 4(4-0) One year of organic chemistry, one year of physical chemistry, one term of introductory biochemistry, 801 taken previously or concurrently, or approval of department. Limited to graduate students in biochemistry or other students needing a similar professional preparation.

The structure and function of biomolecules, energy transformations and chemical reactions in living cells, regulation of cell reactions, and the replication of living organisms.

**812. Advanced Biochemistry**

Winter. 4(4-0) 811. Continuation of 811.

**813. Advanced Biochemistry**

Spring. 4(4-0) 812. Continuation of 812.

**855. Special Problems**

Fall, Winter, Spring, Summer. Variable credit. May re-enroll for a maximum of 12 credits. Approval of department. Consideration of current problems.

**899. Research**

Fall, Winter, Spring, Summer. Variable credit. Approval of department.

**952. Plant Physiology and Biochemistry I**

Winter of odd-numbered years. 3(3-0) Approval of department. Interdepartmental with the Botany and Plant Pathology Department. Selected topics concerning photosynthesis and related processes.

**955. Plant Physiology and Biochemistry II**

Winter of even-numbered years. 3(3-0) Approval of department. Interdepartmental with the Botany and Plant Pathology Department. Metabolic pathways of unique significance to plants.

**980. Selected Topics in Biochemistry**

Fall, Winter, Spring, Summer. 1(1-0) or 2(2-0) May re-enroll for a maximum of 6 credits if a different topic is taken. Approval of department. Topics will be selected from the areas of biochemical genetics, biochemistry of development, biochemical evolution, complex proteins, lipid metabolism, immunohistochemistry, hormones, control mechanisms and structure of biological macromolecules.

**975. Seminar in Biochemistry**

Fall, Winter, Spring. 0 or 1(1-0) Presentation and discussion of reports by graduate students on biochemical topics of current interest.

**999. Research**

Fall, Winter, Spring, Summer. Variable credit. Approval of department.

**BIOPHICAL SCIENCE**

**B S**

**College of Natural Science**

**200. Studies in Contemporary Biological Science**

Spring. 4(3-3) 12 credits in a Department of Natural Science sequence. Biological topics impacting contemporary, domestic, and world society are studied in the context of major biological themes and individual laboratory investigation of a self-chosen topic.

**202. Biological Science for Elementary Teachers**

Fall, Winter, Spring. 4(3-3) Fundamental principles of biology which provide background appropriate for preparation for elementary education teaching.

**210. General Biology**

Fall, Spring. 4(4-3) Concepts relating to basic attributes and diversity of living things.

*For prerequisite purposes, the introductory biology sequence is Lyman Briggs College LBC. 140, 141, 242, may be used instead of this sequence.*

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