

# NATURAL SCIENCE (806)

Information provided includes course descriptions by subject only. For complete 2024-2025 programs/academic plans, please refer to Academic Programs (<http://catalog.blackhawk.edu/academics/>).

## 806-110 Forensic Science (Criminalistics)

**Credits:** 1-3

Forensic Science is a course designed to provide students of law enforcement with an appreciation of the capabilities and limitations of scientific analysis of crime scene evidence. All functions of a basic crime lab are discussed with emphasis on relating methods of analysis to the proper collection and packaging of evidence. Laboratory exercises are designed to expand upon and reinforce lecture material.

**Aid Code:** 10 - undefined.

**Pre-requisites:** (COMPASS Reading Skills, 073 or ACT Reading, 16 or ASSET Reading Skills, 39 or AccuPlacer Reading Comp, 076 or Next Gen AccuPlacer Reading, 251 or Reading-Credit Level Met or SAT Reading, 330 or Test Waived-College Degree) or (838-104 or 838-104 or 801-195 or 801-136 or 801-196 or 801-198 or 804-133 or 806-112 or 806-118 or 806-134 or 806-139 or 806-154 or 806-177 or 806-186 or 806-194 or 806-199 or 809-103 or 809-166 or 809-172 or 809-188 or 809-195 or 809-143 or 809-196 or 809-198 or 809-199) and (COMPASS Reading Skills, 51 or ACT Reading, 12 or SAT Reading, 270 or AccuPlacer Reading Comp, 55 or Next Gen AccuPlacer Reading, 236)

**Co-requisites:** (838-104)

Complete Course Listing

## 806-112 Principles of Sustainability

**Credits:** 1-3

Prepares the student to develop sustainable literacy, analyze the interconnections among the physical and biological sciences and environmental systems, summarize the effects of sustainability on health and well-being, analyze connections among social, economic, and environmental systems, employ energy conservation strategies to reduce the use of fossil fuels, investigate alternative energy options, evaluate options to current waste disposal and recycling in the U.S., and analyze approaches used by your community to promote and implement sustainability.

**Aid Code:** 10 - undefined.

**Pre-requisites:** (COMPASS Reading Skills, 073 or ACT Reading, 16 or ASSET Reading Skills, 39 or AccuPlacer Reading Comp, 076 or Next Gen AccuPlacer Reading, 251 or Reading-Credit Level Met or Test Waived-College Degree) or (838-104 or 838-104 or 801-195 or 801-136 or 801-196 or 801-198 or 804-133 or 806-110 or 806-118 or 806-134 or 806-139 or 806-154 or 806-177 or 806-186 or 806-194 or 806-199 or 809-103 or 809-166 or 809-172 or 809-188 or 809-195 or 809-143 or 809-196 or 809-198 or 809-199) and (COMPASS Reading Skills, 51 or ACT Reading, 12 or SAT Reading, 270 or AccuPlacer Reading Comp, 55 or Next Gen AccuPlacer Reading, 236)

**Co-requisites:** (838-104)

Complete Course Listing

## 806-114 General Biology

**Credits:** 1-4

Introduces general biological concepts and principles. Emphasis is on cell structure and function, genetics, evolution, and taxonomical relationships. Consideration is also given to diversity among the various kingdoms.

**Aid Code:** 20 - undefined.

**Pre-requisites:** ( or (GPA High School, 2.6 or ACT Reading, 16 or Evidence-Based Read/Writ Score, 480 or Next Gen AccuPlacer Reading, 251 or Test Waived-College Degree or GED-Reading, 165 or College Transfer Course Cmpltd, 1) and (GPA High School, 2.0 or ACT Reading, 12 or Evidence-Based Read/Writ Score, 390 or Next Gen AccuPlacer Reading, 236)))

**Co-requisites:** (838-104)

Complete Course Listing

## 806-118 Metal Science

**Credits:** 1-3

This is a one-semester course in basic physics and metallurgy principles for the Technical College student. The course reviews accuracy and precision of measurements, introduces calculations with units and conversions within and between systems of measurements, formula rearranging, and applications in problem solving. Basic topics include properties of matter, metallurgy, material properties, material testing, force, motion (linear and circular), energy, power, and simple machines. The topics of heat, electricity, and magnetism are also introduced in the class. Emphasis is placed on the application of the laws and principles of physics to practical problems found in the machine shop and industry.

**Aid Code:** 10 - undefined.

**Pre-requisites:** (COMPASS Reading Skills, 073 or ACT Reading, 16 or ASSET Reading Skills, 39 or AccuPlacer Reading Comp, 076 or Next Gen AccuPlacer Reading, 251 or Reading-Credit Level Met or SAT Reading, 330 or Test Waived-College Degree) and (COMPASS Reading Skills, 51 or ACT Reading, 12 or SAT Reading, 270 or ASSET Reading Skills, 55 or Next Gen AccuPlacer Reading, 236)

**Co-requisites:** (838-104)

Complete Course Listing

### **806-134 General Chemistry**

**Credits:** 1-4

Covers the fundamentals of chemistry. Topics include scientific method, problem-solving using quantitative data, characteristics of matter, periodic relationships of elements, chemical bonding, chemical reactions, chemical equilibrium, analysis of chemical substances, characteristics of aqueous solutions, acids, bases, and gas laws.

**Aid Code:** 20 - undefined.

**Pre-requisites:** ((804-118 or 804-211) or ((GPA High School, 2.75 and HS Algebra II Completed, 1) or (ACT Math, 24 or SAT Mathematics, 590 or Next Gen AccuPlacer AAF, 250)) or (GPA High School, 2.6 or ACT Reading, 16 or Evidence-Based Read/Writ Score, 480 or Next Gen AccuPlacer Reading, 251 or Test Waived-College Degree or GED-Reading, 165 or College Transfer Course Cmpltd, 1) and (GPA High School, 2.0 or ACT Reading, 12 or Evidence-Based Read/Writ Score, 390 or Next Gen AccuPlacer Reading, 236)))

**Co-requisites:** (838-104

[Complete Course Listing](#)

### **806-139 Survey Of Physics**

**Credits:** 1-3

This course emphasizes understanding basic physics concepts through laboratory investigation and applications. Topics include kinematics, dynamics, work, energy, power, temperature, heat, waves, electricity, magnetism, electromagnetic waves, optics, and atomic and nuclear physics.

**Aid Code:** 10 - undefined.

**Pre-requisites:** ( or (GPA High School, 2.6 or ACT Reading, 16 or Evidence-Based Read/Writ Score, 480 or Next Gen AccuPlacer Reading, 251 or Test Waived-College Degree or GED-Reading, 165 or College Transfer Course Cmpltd, 1) and (GPA High School, 2.0 or ACT Reading, 12 or Evidence-Based Read/Writ Score, 390 or Next Gen AccuPlacer Reading, 236)))

**Co-requisites:** (838-104

[Complete Course Listing](#)

### **806-154 General Physics 1**

**Credits:** 1-4

Presents the applications and theory of basic physics principles. This course emphasizes problem-solving, laboratory investigation, and applications. Topics include unit conversion and analysis, vectors, translational and rotational kinematics, translational and rotational dynamics, heat and temperature, and harmonic motion and waves.

**Aid Code:** 20 - undefined.

**Pre-requisites:** ((804-197) or (GPA High School, 2.75 and HS Precalculus Completed, 1) or (ACT Math, 27 or SAT Mathematics, 630 or Next Gen AccuPlacer AAF, 276)) and ( or (GPA High School, 2.6 or ACT Reading, 16 or Evidence-Based Read/Writ Score, 480 or Next Gen AccuPlacer Reading, 251 or Test Waived-College Degree or GED-Reading, 165 or College Transfer Course Cmpltd, 1) and (GPA High School, 2.0 or ACT Reading, 12 or Evidence-Based Read/Writ Score, 390 or Next Gen AccuPlacer Reading, 236)))

**Co-requisites:** (838-104

[Complete Course Listing](#)

### **806-172 Basic Nutritional Science**

**Credits:** 1-3

This course provides an introduction into the science of nutrition. Basics concepts related to digestion and metabolism are presented. The significance of carbohydrates, lipids, proteins and vitamins to the human organism are discussed. The relationship of proper nutrition to selected pathological conditions throughout the human lifecycle is presented. The concept of sustainability and environmentally - conscious food production are introduced.

**Aid Code:** 10 - undefined.

[Complete Course Listing](#)

### **806-175 General Pathophysiology**

**Credits:** 1-3

This introductory course in pathophysiology covers topics related to alterations of homeostasis and the associate pathophysiological processes. The major emphasis will be on the physiological factors that underlie disease states. Course studies include the processes involved that generate illness; signs and symptoms of commonly occurring illness states and effects of disease processes on the cell. Review of normal homeostatis mechanisms is included. Study of the fundamental processes in relation to the pathophysiological processes can enable the students to apply this knowledge to clinical situations.

**Aid Code:** 10 - undefined.

**Pre-requisites:** (806-179)

[Complete Course Listing](#)

### **806-177 General Anatomy and Physiology**

**Credits:** 1-4

Examines basic concepts of human anatomy and physiology as they relate to health sciences. Using a body systems approach, the course emphasizes the interrelationships between structure and function at the gross and microscopic levels of organization of the entire human body. It is intended to prepare health care professionals who need to apply basic concepts of whole body anatomy and physiology to informed decision-making and professional communication with colleagues and patients.

**Aid Code:** 10 - undefined.

**Pre-requisites:** ( or (GPA High School, 2.6 or ACT Reading, 16 or Evidence-Based Read/Writ Score, 480 or Next Gen AccuPlacer Reading, 251 or Test Waived-College Degree or GED-Reading, 165 or College Transfer Course Cmpltd, 1) and (GPA High School, 2.0 or ACT Reading, 12 or Evidence-Based Read/Writ Score, 390 or Next Gen AccuPlacer Reading, 236)))

**Co-requisites:** (838-104

[Complete Course Listing](#)

### **806-177E General Anat&Phys ChallExam**

**Credits:** 1-4

**Aid Code:** 10 - undefined.

[Complete Course Listing](#)

**806-179 Advanced Anatomy and Physiology****Credits:** 1-4

Advanced Anatomy and Physiology is the second semester in a two-semester sequence in which normal human anatomy and physiology are studied using a body systems approach with emphasis on the interrelationships between form and function at the gross and microscopic levels of organization. Instructional delivery within a classroom and laboratory setting. Experimentation within a science lab will include analysis of cellular metabolism, the individual components of body systems such as the nervous, neuro-muscular, cardiovascular, and urinary. Continued examination of homeostatic mechanisms and their relationship to fluid, electrolyte, acid-base balance and blood. Integration of genetics to human reproduction and development are also included in this course.

**Aid Code:** 10 - undefined.**Pre-requisites:** (806-177) and (Chemistry, 1 or Chemistry, 1 or 836-133 or 806-186 or 806-199 or 806-134)

Complete Course Listing

**806-186 Introduction to Biochemistry****Credits:** 1-4

Provides students with skills and knowledge of organic and biological chemistry necessary for application within Nursing and other Allied Health careers. Emphasis is placed on recognizing the structure, physical properties and chemical reactions of organic molecules, body fluids, and acids. Additional emphasis is placed on biological functions and their relationships to enzymes, proteins, lipids, carbohydrates and DNA.

**Aid Code:** 10 - undefined.**Pre-requisites:** ((806-134 or 806-199 or 836-133 or Chemistry, 1 or Chemistry, 1) or (GPA High School, 2.6 or ACT Reading, 16 or Evidence-Based Read/Writ Score, 480 or Next Gen AccuPlacer Reading, 251 or Test Waived-College Degree or GED-Reading, 165 or College Transfer Course Cmpltd, 1) and (GPA High School, 2.0 or ACT Reading, 12 or Evidence-Based Read/Writ Score, 390 or Next Gen AccuPlacer Reading, 236)))**Co-requisites:** (838-104)

Complete Course Listing

**806-189 Basic Anatomy****Credits:** 1-3

Examines concepts of anatomy and physiology as they relate to health careers. Learners correlate anatomical and physiological terminology to all body systems.

**Aid Code:** 10 - undefined.

Complete Course Listing

**806-194 Survey of Anatomy and Physiology****Credits:** 1-3

This course is designed to provide a basic understanding of human anatomy, physiology, diseases, and terminology to assist with the transcription and coding of medical documents.

**Aid Code:** 10 - undefined.**Pre-requisites:** ( or (GPA High School, 2.6 or ACT Reading, 16 or Evidence-Based Read/Writ Score, 480 or Next Gen AccuPlacer Reading, 251 or Test Waived-College Degree or GED-Reading, 165 or College Transfer Course Cmpltd, 1) and (GPA High School, 2.0 or ACT Reading, 12 or Evidence-Based Read/Writ Score, 390 or Next Gen AccuPlacer Reading, 236)))**Co-requisites:** (838-104)

Complete Course Listing

**806-197 Microbiology****Credits:** 4

This course examines microbial structure, metabolism, genetics, growth and the relationship between humans and microorganisms. Disease production, epidemiology, host defense mechanisms and the medical impact of microbes in the environment, industry, and biotechnology are also addressed.

**Aid Code:** 10 - undefined.**Pre-requisites:** (806-114 or 806-177 or 806-195 or 806-199)

Complete Course Listing

**806-199 General, Organic and Biological Chemistry****Credits:** 1-4

A one semester course covering the fundamental aspects of inorganic and organic chemistry. Topics include lab safety, measurement, elementary problem solving, atomic structure, periodicity, chemical bonding, types of chemical reactions, properties of water, acid, bases, and salts, types of solutions and calculations of concentrations, gas laws, oxidation-reduction concepts, ionization, pH and buffers, hydrocarbons, types of organic compounds and functional groups, biochemical compounds including lipids, carbohydrates, proteins, and nucleic acids.

**Aid Code:** 10 - undefined.**Pre-requisites:** ( or (GPA High School, 2.6 or ACT Reading, 16 or Evidence-Based Read/Writ Score, 480 or Next Gen AccuPlacer Reading, 251 or Test Waived-College Degree or GED-Reading, 165 or College Transfer Course Cmpltd, 1) and (GPA High School, 2.0 or ACT Reading, 12 or Evidence-Based Read/Writ Score, 390 or Next Gen AccuPlacer Reading, 236)))**Co-requisites:** (838-104)

Complete Course Listing

**806-199E Gen, Organ&Bio Chem Challexam****Credits:** 1-4**Aid Code:** 10 - undefined.

Complete Course Listing

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### **806-286 Environmental Science**

**Credits:** 1-4

An introductory survey course appropriate for first-year students. This course includes a laboratory component and field trips designed to engage students in exploring environmental systems in the modern world. It emphasizes the interpretation of environmental data presented in graphs and figures and will sharpen student analytical skills through exercises based on both quantitative reasoning and reading comprehension.

**Aid Code:** 20 - undefined.

**Pre-requisites:** ( or (GPA High School, 2.6 or ACT Reading, 16 or Evidence-Based Read/Writ Score, 480 or Next Gen AccuPlacer Reading, 251 or Test Waived-College Degree or GED-Reading, 165 or College Transfer Course Cmpltd, 1) and (GPA High School, 2.0 or ACT Reading, 12 or Evidence-Based Read/Writ Score, 390 or Next Gen AccuPlacer Reading, 236)))

**Co-requisites:** (838-104

[Complete Course Listing](#)

### **806-315 Applied Science**

**Credits:** 1-2

This one semester course in basic physics principles reviews accuracy and precision of measurements and introduces calculations with units and conversions within and between systems of measurements. Formula rearranging and applications to problem solving are reviewed. Basic physics topics such as properties of matter, mechanical principles of force, motion (linear and circular), energy, power and machines, heat, electricity, and magnetism are also studied. Emphasis is placed on the applications of the laws and principles of physics to practical problems. The use of vectors is demonstrated in forces, velocities, and electrical transformers.

**Aid Code:** 31 - undefined.

**Co-requisites:** (804-306)

[Complete Course Listing](#)