

# ENVIRONMENTAL (506)

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/>).

## 506-102 Intermediate Laboratory Skills

**Credits:** 1-3

The learner will begin to apply laboratory procedures and the scientific method to the analysis of samples and the performance of simple experiments. The learner will develop and apply data analysis and management techniques. The learner will develop the necessary methodology to deal with chemical and bio-hazardous materials.

**Aid Code:** 10 - undefined.

**Pre-requisites:** (506-110 or 513-113 or 513-110)

Complete Course Listing

## 506-105 Quality Concepts in Laboratories

**Credits:** 1-3

The student will become familiar with quality concepts and their application within the laboratory environment. This will include understanding of the meaning and benefits of quality, quality systems and processes, and the cost/impact of quality. How to apply problem solving skills for continuous improvement will be explored.

**Aid Code:** 10 - undefined.

Complete Course Listing

## 506-108 Laboratory Safety and Hazardous Materials

**Credits:** 0.05-1

The learner will become familiar with the fundamental aspects of safety and hazardous materials in the laboratory environment, as well as safety/hazardous materials regulations and their applications. The learner will develop an awareness of their responsibility for safety within the workplace.

**Aid Code:** 10 - undefined.

Complete Course Listing

## 506-109 Data Management for Laboratory Assistants

**Credits:** 0.5-1

This class introduces the fundamental concepts and approaches for data management in a laboratory environment. Both manual and automated data collection and management will be covered with particular emphasis on "best practice" approaches for reliability, accuracy, and integrity within data management systems and their use.

**Aid Code:** 10 - undefined.

Complete Course Listing

## 506-111 Food Microbiology

**Credits:** 1-4

This course focuses on interactions of microorganisms and our food supply as it pertains to food processing and packaging in order to control food-borne disease, infections and toxins. Students will analyze what conditions affect the growth, death and survival of microorganisms in food. Students isolate and identify the primary food pathogens. Students will experience both positive interactions with microbes (such as fermentation) and negative interactions (such as spoilage and disease).

**Aid Code:** 10 - undefined.

**Pre-requisites:** (806-199) and (806-197)

Complete Course Listing

## 506-112 Food and Nutritional Science

**Credits:** 1-3

This course examines the biochemical processes of digestion and absorption as it pertains to the macromolecules, carbohydrates, lipids, and amino acids. Learners will analyze enzymes, vitamins, and co-factors. Learners will define the most common sources and functions of nutrients and nutritional needs by examining such items as caloric contents in food. Contemporary and emerging issues in nutrition will be examined.

**Aid Code:** 10 - undefined.

**Pre-requisites:** 806-199

Complete Course Listing

## 506-113 Excel and Statistics in the Laboratory

**Credits:** 1-3

In this course students learn data entry options for Excel, as well as analyze data using the software and its specific features. Students will learn how to control and share the data they have created. Students research different types of labs that utilize this software, and how data from these programs is and can be incorporated into a Laboratory Information Management System (LIMS). Excel plug-ins that support statistical calculations, and the mathematical reasoning for those calculations will be discussed, as well as practical applications of that data in the laboratory.

**Aid Code:** 10 - undefined.

**Pre-requisites:** (103-128 or 103-112)

Complete Course Listing

### **506-114 Introduction to the USDA and FDA**

**Credits:** 1-2

The United States Department of Agriculture (USDA) and Food and Drug Administration (FDA) are the major governing bodies involved in regulating our food supply. In this course, students will study the establishment of these government entities and analyze how they coexist. Students will define which areas of our food supply are governed by each entity. Learners will study the types of documents each facility must maintain in accordance with these governing bodies' regulations. Students will have the opportunity to participate in mock audits of a variety of production facilities during the course.

**Aid Code:** 10 - undefined.

Complete Course Listing

### **506-115 Food Production Regulations / HACCP, GFSI, FSMA**

**Credits:** 1-2

The regulations governing food production are a necessary part of ensuring safety of our food supply. The primary focus of this course will be for students to learn and apply the Hazard Analysis Critical Control Point (HACCP) system. Students will explore the relevant elements and the application of both the Global Food Safety Initiative (GFSI) and the Food Safety Modernization Act (FSMA). Students will evaluate how each regulation can influence the development of a strong quality assurance program within a food production facility. Upon completion of the course, students will be prepared to become HACCP- certified. (The certification is taken outside of the course).

**Aid Code:** 10 - undefined.

Complete Course Listing

### **506-117 Food Laboratory Occupational Experience**

**Credits:** 1-2

Students will be placed in a field experience where they will participate in the day to day operations of a food lab or food production facility. Students will be matched with an employee mentor at the facility and demonstrate skills in both the technical side of the industry as well as professional work behaviors.

**Aid Code:** 10 - undefined.

**Pre-requisites:** (806-199) and (806-197)

Complete Course Listing

### **506-120 ServSafe Certification Preparation**

**Credits:** 0.5-1

This course will introduce the learners to food preparation and storage conditions that promote safety to the consumer. Learners will prepare for and take a practice test of the ServSafe Certification. Upon successful completion of the course, students may elect to take the ServSafe Certification exam.

**Aid Code:** 10 - undefined.

Complete Course Listing