

BIOLOGY (BIO)

BIO 115 Environmental Biology fulfills both the life sciences requirement and the lab science requirement for the Associate in Arts, Associate in Science, and Associate in Fine Arts degrees.

BIO 108 Biology for Contemporary Society, BIO 110 Principles of Biology, and BIO 113 Molecular & Cellular Biology fulfill the life sciences requirement and the lab science requirement for the AA, AS, and the AFA degrees; however, only one of these courses can count as general education.

BIO 105 Survey of Environmental Biology fulfills the life sciences requirement for the AA, AS, and AFA degrees.

All BIO courses numbered 100 and above, except BIO 101 Nutrition for Contemporary Society, fulfill the science requirement for the Associate in Liberal Studies degree.

All BIO courses numbered 100 and above fulfill the math/science requirement for the Associate of Applied Science degree.

All BIO courses may also be applied to the major field and elective requirement for the AA and AS degrees.

BIO 101 Nutrition for Contemporary Society (3) 3,0

^ This course is designed to give students, who are not entering the health career path but are interested in the subject and want to learn more about its applications, an introduction to the core concepts of human nutrition and their relationship to wellness in contemporary society. Students will be introduced to valid nutrition research principles, tools to plan a healthy diet, and evidence based healthy eating patterns. The six nutrient groups, as well as alcohol, energy balance and body composition, nutrition and fitness, consumerism and sustainability, food safety and technology, and global nutrition and malnutrition will all be related to wellness. Each student will perform a personal computerized diet analysis and draw valid conclusions to modify their diet. (1.1) Proficiency Credit Not Available Pass/No Credit Available.

In-District Tuition/Fees: \$436 (effective 2022/23 academic year)

In-district tuition rates are subject to change based on Board approval.

Prerequisite: Reading: Grade of C or better in RDG 091 or LTC 099, or satisfaction of other placement criteria. Writing: Grade of C or better in ENG 098 or LTC 099 or satisfaction of other placement criteria. Math: Grade of C or better in MTH 090, an ACT Math score of 23 or above, or satisfaction of other placement criteria.+

Semester(s) Offered: Fall, Spring and Summer

BIO 104 Biotechnology and Society (4) 3,2

^ This course is designed to give students an introduction to biotechnology. Specifically, the course will address what biotechnology is and how it relates to everyday life. Students will explore current and relevant topics in biotechnology through an inquiry and investigative based approach that will foster critical thinking about how biotechnology impacts society. Students will be introduced to such topics as DNA profiling, crime scene analysis, and the ability to detect whether food contains products from a GMO. (1.1) Proficiency Credit Not Available Pass/No Credit Available.

In-District Tuition/Fees: \$588 (effective 2022/23 academic year)

In-district tuition rates are subject to change based on Board approval.

Prerequisite: Reading: Grade of C or better in RDG 091 or LTC 099, or satisfaction of other placement criteria. Writing: Grade of C or better in ENG 098 or LTC 099 or satisfaction of other placement criteria. Math: Grade of C or better in MTH 095 or MTH 096, or satisfaction of other placement criteria.+

Semester(s) Offered: Spring

BIO 105 Survey of Environmental Biology (3) 3,0

^ Examines ecological principles in relation to environmental problems. Emphasizes current environmental issues, human impact on earth's resources and possible solutions and courses of actions. Students may not receive credit for both BIO 105 and BIO 115. (1.1) Fulfills the ECC/IAI General Education/Life Sciences requirement: IAI Course Number: L1-905 Proficiency Credit Not Available Pass/No Credit Not Available.

In-District Tuition/Fees: \$406 (effective 2022/23 academic year)

In-district tuition rates are subject to change based on Board approval.

Prerequisite: Grade of C or better in RDG 091 or LTC 099, or satisfaction of other placement criteria. Writing: Grade of C or better in ENG 098 or LTC 099 or satisfaction of other placement criteria. Math: Grade of C or better in MTH 095 or MTH 096, or satisfaction of other placement criteria. +

Semester(s) Offered: Varies

BIO 106 Plants and Society (4) 3,2

^ This course is an exploration of plants and their important connection to society. Primarily for non-majors, this course investigates how plants enrich our lives on a daily basis. Students will study the origin, diversity, growth/ husbandry, conservation, and ecological services of plants. This course focuses on ethnobotany; thus, students will learn how plants provide: medicine, spices, dyes, clothing, and food for human consumption. Hands-on laboratory and greenhouse activities will cultivate an appreciation for plants and build a foundation for life-long learning. Field trips may be required for this course. (1.1) Proficiency Credit Not Available Pass/No Credit Not Available.

In-District Tuition/Fees: \$578 (effective 2022/23 academic year)

In-district tuition rates are subject to change based on Board approval.

Prerequisite: Reading: Grade of C or better in RDG 091 or LTC 099, or satisfaction of other placement criteria. Writing: Grade of C or better in ENG 098 or LTC 099 or satisfaction of other placement criteria. Math: Grade of C or better in MTH 095, MTH 096 or MTH 99, or satisfaction of other placement criteria.+

Semester(s) Offered: Spring and Summer

BIO 108 Biology for Contemporary Society (4) 3,2

This course is designed to give non-science majors, who are not entering the health career path, an introduction to core concepts in biology that are highly relevant in today's society. Students will be introduced to the following biological principles: process of science, cell structure, basic chemistry, molecules of life, genetics, evolution, energy flow within ecosystems, and ecology. (1.1) Proficiency Credit Not Available Pass/No Credit Not Available IAI General Education: L1 900L.

In-District Tuition/Fees: \$578 (effective 2022/23 academic year)

In-district tuition rates are subject to change based on Board approval.

Prerequisite: Reading: Grade of C or better in RDG 091 or LTC 099, or satisfaction of other placement criteria. Writing: Grade of C or better in ENG 098 or LTC 099 or satisfaction of other placement criteria. Math: Grade of C or better in MTH 095 or MTH 096, or satisfaction of other placement criteria.+

Semester(s) Offered: Fall, Spring and Summer

BIO 110 Principles of Biology (4) 3,2

^ This introductory course is suggested for students who are pursuing a career in the health-care industry. As such, Principles of Biology (BIO 110) serves as the prerequisite for both Anatomy and Physiology, as well as Microbiology. This biological science class introduces the concepts of: scientific method, characteristics of life, taxonomy, general chemistry, biochemistry, cell structure and function, cellular metabolism and photosynthesis, genetics, evolution, plant and animal tissues, human systems, and ecological principles. (1.1) Fulfills the ECC/IAI General Education/Life Sciences (lab) requirement. IAI Course Number: L1 900L Proficiency Credit Available (3 C) Pass/No Credit Not Available.

In-District Tuition/Fees: \$578 (effective 2022/23 academic year)

In-district tuition rates are subject to change based on Board approval.

Prerequisite: Reading: Grade of C or better in RDG 091 or LTC 099, or satisfaction of other placement criteria. Writing: Grade of C or better in ENG 098 or LTC 099 or satisfaction of other placement criteria. Math: Grade of C or better in MTH 098 or MTH 099, or satisfaction of other placement criteria.+

Semester(s) Offered: Fall, Spring and Summer

BIO 113 Molecular & Cellular Biology (4) 3,2

^ This is the first part of a two-semester biology sequence and includes an introduction to: general chemistry; biochemistry; cellular structure, function and processes; molecular genetics and biotechnology. (1.1) Fulfills the ECC/IAI General Education/Life Sciences (lab) requirement. IAI Course Number: L1 910L IAI Major: BIO 910 Proficiency Credit Not Available Pass/No Credit Not Available.

In-District Tuition/Fees: \$578 (effective 2022/23 academic year)

In-district tuition rates are subject to change based on Board approval.

Prerequisite: Reading: Grade of C or better in RDG 091 or LTC 099, or satisfaction of other placement criteria. Writing: Grade of C or better in ENG 098 or LTC 099 or satisfaction of other placement criteria. Math: Grade of C or better in MTH 112, or appropriate math placement.

Semester(s) Offered: Fall, Spring and Summer

BIO 114 Organismal Bio, Evolution, Ecology (4) 3,2

This is the second part of a two-semester biology sequence and includes an introduction to: structure and function of major groups of microorganisms, fungi, animals, and plants with an emphasis placed on mammalian tissues and systems, ecological principles, and evolutionary processes and relationships. (1.1) IAI Course Number: L1 910L IAI Major: BIO 910 Proficiency Credit Not Available Pass/No Credit Not Available.

In-District Tuition/Fees: \$578 (effective 2022/23 academic year)

In-district tuition rates are subject to change based on Board approval.

Prerequisite: Grade of C or better in BIO 113

Semester(s) Offered: Spring

BIO 115 Environmental Biology (4) 3,2

^ Examines ecological principles in relation to environmental problems. Emphasizes current environmental issues, human impact on earth's resources and possible solutions and courses of actions. Laboratory work includes indoor and outdoor activities and off-campus field trips. Students may not receive credit for both BIO 105 and BIO 115. (1.1) Fulfills the ECC/IAI General Education/Life Science (lab) requirement. IAI Course Number: L1 905L Proficiency Credit Not Available Pass/No Credit Not Available.

In-District Tuition/Fees: \$578 (effective 2022/23 academic year)

In-district tuition rates are subject to change based on Board approval.

Prerequisite: Reading: Grade of C or better in RDG 091 or LTC 099, or satisfaction of other placement criteria. Writing: Grade of C or better in ENG 098 or LTC 099 or satisfaction of other placement criteria. Math: Grade of C or better in MTH 095 or MTH 096, or satisfaction of other placement criteria.+

Semester(s) Offered: Fall and Summer

BIO 201 Principles of Nutrition (3) 3,0

This course is a study of the science of human nutrition for students entering the health professions. Nutrition research, professional and government nutrient standards, and tools to plan a healthy diet are introduced. The focus of study is on the essential macro and micronutrients, metabolism of the energy yielding nutrients, and energy and weight balance. The principles of nutrition and nutrient requirements are applied to health and wellness as well as prevention and intervention in chronic disease. Each student will perform a personal computerized diet analysis and draw valid conclusions to modify their diet in a scientific paper. (1.1) Proficiency Credit Not Available Pass/No Credit Not Available.

In-District Tuition/Fees: \$436 (effective 2022/23 academic year)

In-district tuition rates are subject to change based on Board approval.

Prerequisite: Grade of C or better BIO 110 or BIO 113

Semester(s) Offered: Fall, Spring and Summer

BIO 234 Special Topics in Biology (1) 1,0

Designed to satisfy specific needs or interests of students and the community. The student should identify or obtain a special study topic and request approval/direction from one or more of the biological sciences' faculty. Student proposals should include a comprehensive outline of what will be done along with a timeline for completion. Guidelines used in selecting topics include: relevancy to biological fields of study; adequate and available material on special topic; and, topic will increase student skills and knowledge of biological sciences or related careers. Course is repeatable two times up to three hours. (1.1) Proficiency Credit Available (3 C) Pass/No Credit Not Available.

In-District Tuition/Fees: \$132 (effective 2022/23 academic year)

In-district tuition rates are subject to change based on Board approval.

Prerequisite: BIO 105 or BIO 110 or BIO 113 or BIO 115 or consent of instructor

Semester(s) Offered: Varies

BIO 235 Special Topics in Biology (2) 2,0

Designed to satisfy specific needs or interests of students and the community. The student should identify or obtain a special study topic and request approval/direction from one or more of the biological sciences' faculty. Student proposals should include a comprehensive outline of what will be done, along with a timeline for completion. Guidelines used in selecting topics include: relevancy to biological fields of study; adequate and available material on special topic; and, topic will increase student skills and knowledge of biological sciences or related careers. Course is repeatable to six credits. (1.1) Proficiency Credit Not Available Pass/No Credit Not Available.

In-District Tuition/Fees: \$264 (effective 2022/23 academic year)

In-district tuition rates are subject to change based on Board approval.

Prerequisite: BIO 105 or BIO 110 or BIO 113 or BIO 115 or BIO 150 or consent of instructor

Semester(s) Offered: Varies

BIO 236 Special Topics in Biology (3) 3,0

Designed to satisfy specific needs or interests of students and the community. The student should identify or obtain a special study topic and request approval/direction from one or more of the biological sciences' faculty. Student proposals should include a comprehensive outline of what will be done along with a timeline for completion. Guidelines used in selecting topics include: relevancy to biological fields of study; adequate and available material on special topic; and, topic will increase student skills and knowledge of biological sciences or related careers. Course is repeatable to nine credits. (1.1) Proficiency Credit Not Available Pass/No Credit Not Available.

In-District Tuition/Fees: \$396 (effective 2022/23 academic year)

In-district tuition rates are subject to change based on Board approval.

Prerequisite: BIO 105 or BIO 110 or BIO 113 or BIO 115 or BIO 150 or consent of instructor

Semester(s) Offered: Varies

BIO 240 Human Anatomy and Physiology (5) 4,2

Study of ten major organ systems: integumentary, skeletal, muscular, nervous, endocrine, cardiovascular, respiratory, digestive, urinary, and reproductive. Laboratory includes microscopic study of tissues, exploration of muscle physiology, determination of blood pressure and respiratory volumes, an exercise in blood typing, and dissection of sheep brain, sheep heart and cow eye. Studies include work with anatomical models and cadavers. Attention students planning to transfer many schools and programs require a two-semester anatomy and physiology sequence of at least eight hours. Please check with your transfer institution before enrolling in BIO 240. You may need to register for BIO 245/246 instead. (1.1) Proficiency Credit Not Available Pass/No Credit Not Available.

In-District Tuition/Fees: \$710 (effective 2022/23 academic year)

In-district tuition rates are subject to change based on Board approval.

Prerequisite: Grade of C or better in BIO 110 or BIO 113 Recommended: One year high school Chemistry or CHM 101 or CHM 112

Semester(s) Offered: Fall and Spring

BIO 245 Human Anatomy and Physiology I (4) 3,2

First course in a two-semester sequence on Human Anatomy & Physiology. Designed for pre-health profession majors, especially those planning to transfer to four-year programs. Study of cell membrane, passive and active transport mechanisms, histology, general anatomical terminology and the following systems; integumentary, skeletal, muscular, and nervous. Laboratory topics include microscopy, passive and active transport, histology, bones, muscular anatomy, muscle physiology, reflexes, general senses, and neural anatomy. Laboratory exercises include working with tissue slides, skeletons (articulated and individual bones), sheep brain dissection, and use of various models. Cadaver demonstration and study is used for muscular anatomy, and both in-class and out-of-class cadaver time is required. (1.1) Fulfills the ECC/IAI General Education/Life Science (lab) requirement. IAI Course Number: L1 904L Proficiency Credit Not Available Pass/No Credit Not Available.

In-District Tuition/Fees: \$578 (effective 2022/23 academic year)

In-district tuition rates are subject to change based on Board approval.

Prerequisite: Grade of C or better in BIO 110 or BIO 113 Recommended: One year of high school chemistry or CHM 101 or CHM 112

Semester(s) Offered: Fall, Spring and Summer

BIO 246 Human Anatomy and Physiology II (4) 3,2

Second course in a two-semester sequence on Human Anatomy & Physiology. Designed for pre-health profession majors, especially those planning to transfer to four-year programs. The study of metabolism, electrolytes, acid/base balance, and the following systems: endocrine, cardiovascular, lymphatic, digestive, respiratory, urinary, and reproductive. Also included is the study of the special senses. Laboratory exercises include eye and heart dissections. Experiments include taking respiratory and cardiovascular data. Appropriate video demonstrations of cardiovascular disorders, immune system function and reproductive topics are also included. Cadaver demonstration and study is used for cardiovascular system and major organ systems. Both in-class and out-of-class cadaver time is required. (1.1) Proficiency Credit Not Available Pass/No Credit Not Available.

In-District Tuition/Fees: \$578 (effective 2022/23 academic year)

In-district tuition rates are subject to change based on Board approval.

Prerequisite: Grade of C or better in BIO 240 or BIO 245 Recommended: One year high school chemistry or CHM 101 or CHM 112

Semester(s) Offered: Fall, Spring and Summer

BIO 252 Human Anatomy and Cadaver Dissection (4) 2,6

This course provides the participant the ability to expand their anatomical knowledge base, professional growth, and dissection skills. The participant will have the unique opportunity to dissect, within a small group, a cadaver and present visible structures to the instructor and their peers. (1.1) Proficiency Credit Not Available Pass/No Credit Not Available
NOTE: Course will be offered based on cadaver availability and faculty availability.

In-District Tuition/Fees: \$528 (effective 2022/23 academic year)

In-district tuition rates are subject to change based on Board approval.

Prerequisite: Grade of B or better in BIO 245 and BIO 246 and consent of the instructor.

Semester(s) Offered: Varies

BIO 265 Microbiology (4) 3,3

This course provides students with a good understanding of microorganisms and an in depth focus on bacteria and viruses. It is designed for students intending to transfer as science majors, entering health programs, or those exploring careers in microbiology. It includes a full laboratory experience to develop skills in laboratory techniques, cultivation and evaluation of living organisms. An important focus of this course is the broad impact and relevance of microorganisms in our world, including the environment, industry, food microbiology, sanitation and health. Students learn properties and growth processes of microorganisms such as photosynthesis, fermentation, microbial genetics, significance of genetic change, virulence, diseases transmission and immunology. Community health issues focus on specific pathogens, prevention and treatment of disease, antimicrobials, immunization, useful applications and procedures of recombinant biotechnology, ELISA and use of antibody treatments. (1.1) Proficiency Credit Not Available Pass/No Credit Not Available.

In-District Tuition/Fees: \$588 (effective 2022/23 academic year)

In-district tuition rates are subject to change based on Board approval.

Prerequisite: Grade of C or better in BIO 110 or BIO 113 Recommended: One year high school Chemistry or CHM 101 or CHM 112

Semester(s) Offered: Fall, Spring and Summer