

We live in a world increasingly dominated by science and technology. As the cornerstone of STEM, the ISD194 science department is training the next generation of scientists and developing responsible citizens through inquiry experiences and opportunities to embrace powerful subject matter. All students need the ability to understand the nature of the world around them to make informed choices and decisions through firsthand experience.

Students looking to pursue post-secondary education are strongly encouraged to consider a minimum of 8 semesters of science coursework throughout their 9th-12th grade academic career.

Science requirements for all students

Students need 3 years or 6 semesters for graduation. The following science classes are required:

1 year of Physical Science

1 year of Biology or Honors Biology or Honors Principles of Biomedical Science (or AP Biology)

1 year of Chemistry (or Honors Chemistry or AP Chemistry) or 1 year of Physics (or AP Physics 1)

OR students may choose the Rigorous Course Waiver Sequence below:

Students need 3 years or 6 semesters for graduation. The following science classes are required:

1 year of Honors Biology or Honors Principles of Biomedical Science (or AP Biology)

1 year Chemistry (or Honors Chemistry or AP Chemistry)

1 year of Physics (or AP Physics 1)



Physical Science

Grades: 9

Instructional Delivery: Face-to-face

Prerequisite: None

Year-long course

This course fulfills the Physical Science requirement for graduation.

Course Description: This course is the study of chemical concepts and the fundamental laws of physics that govern both our interactions with the physical world and outer space.

The units that pertain to Chemistry include the introduction to scientific methods, matter, thermodynamics, atomic structure, chemical bonds, the periodic table, chemical and nuclear reactions. The units that pertain to Physics include motion, forces, energy, waves, and electricity & magnetism. Earth science standards will be emphasized where appropriate with connections to geology, climatology and astronomy.

Students will be assessed by their performance on tests, quizzes, activities and homework.

Board Approved Primary Source:

Holt Science Spectrum Physical Science

Ken Dobson - John Holman - Michael Roberts – Holt-McDougall – 2006 – Print

ISBN: 9780030393937

Prentice Hall Earth Science

Edward J Tarbuck - Frederick K Lutgens - Pearson/Prentice Hall – 2006 – Print

ISBN: 978013258525

Additional Registration Information: None.



Biology

Biology Hybrid (LSHS)

Grades: 10-12

Instructional Delivery: Face-to-face or hybrid

Prerequisite: None

Year-long course

This course fulfills the Biology requirement for graduation.

Course Description: This course is the study of the living organisms in this world.

The primary units include: Science of Biology, Chemistry of Life, Molecular Biology of a Gene, Structure and Function of Cells, Cell Division, Genetics, Biotechnology, Evolution, Homeostasis of Living Systems, Ecology, Environmental Engineering.

The students will demonstrate learning through cooperative learning within experimental lab investigations; formative and summative assessments; and project based learning that utilizes problem solving and complex thinking skills.

Board Approved Primary Resource:

Prentice Hall Biology

Kenneth R. Miller - Joseph S. Levine - Pearson Prentice Hall – 2006 – Print

ISBN: 9780131662551

Additional Registration Information: The hybrid course is offered at LSHS only. LNHS students provide their own transportation.

Honors Biology

Grades: 9-12

Instructional Delivery: Face-to-face

Prerequisite: None

Year-long course

This course fulfills the Biology requirement for graduation.

Course Description: This course is the study of living organisms in the world.

The primary units of study include Science of Biology, Chemistry of Life, Structure and Function of Cells, Structure and Function of DNA, Cell Division, Genetics, Biotechnology, Evolution, Microbiology, Homeostasis of Living Systems, Ecology, Environmental Engineering.

The students will demonstrate learning through class participation, group projects, individual projects, labs, homework, quizzes, and tests.

Course Recommendation: This course is designed for the highly motivated Science student. The faster pace and increased rigor prepares students for more advanced science classes. Students best suited for this class should have excelled in previous science classes.

Board Approved Primary Resource:

Campbell Essential Biology with Physiology 3rd edition

Eric J. Simon – Jane B. Reece – Jean L. Dickey Pearson Prentice Hall – 2010 – Print

ISBN: 9780131375055

Additional Registration Information: None



Honors Principles of Biomedical Science (LNHS)

Grades: 9-11

Instructional Delivery: Face-to-face

Prerequisite: None

Location: LNHS

Year-long course

This course fulfills the Biology requirement for graduation.

Course Description: This course is the study of biomedical science. Students investigate concepts of biology and medicine as they explore health conditions including heart disease, diabetes, sickle-cell disease, hypercholesterolemia, and infectious diseases. Students determine the factors that led to the death of a fictional woman as they sequentially piece together evidence found in her medical history and her autopsy report. Students will investigate lifestyle choices and medical treatments that might have prolonged the woman's life and demonstrate how the development of disease is related to changes in human body systems.

The primary units of study include: The mystery case, diabetes, sickle cell, heart disease, infectious disease, and post-mortem. Additional units include ecology and evolution.

Students will demonstrate learning through use of research and design techniques on experiments, activities, hands-on projects, and problem solving. A variety of assessment tools such as performance rubrics, reflective questioning and End-of-Course (EoC) assessments will be utilized.

Course Recommendation: This course is recommended for highly motivated, self-directed learners who have a strong interest in a medical profession.

Additional Registration Information: Students enrolled in this Project Lead the Way course can earn concurrent credit (transcripted credits) through the Minnesota State system at St. Cloud State University. Students earning a B or better in the class and a score of 4 or higher on an end of course exam may submit a \$100 registration fee to earn college credit for the course. The course is offered at LNHS only. LSHS students provide their own transportation.



Honors Human Body Systems (LNHS)

Grades: 10-11

Instructional Delivery: Face-to-Face

Prerequisite: Honors Principles of Biomedical Science or Honors Biology

Location: LNHS

Year-long course

This course fulfills the elective requirement for graduation.

Course Description: This course is the study of human body systems. Students will examine the interactions of body systems as they explore identity, communication, power, movement, protection, and homeostasis.

The primary units of study include: Identity (human tissues, molecules and cells), communication (brain, electrical communication, chemical communication, communication with the outside world), power (food, oxygen, and water), movement (joints, muscles, blood flow, exercise physiology), protection (skin, bones, lymph and blood cells), and homeostasis (health and wellness). In each of these units, research and design techniques will be utilized on experiments and projects.

Students will demonstrate learning by completing activities projects and problems using a variety of assessment tools such as performance rubrics, reflective questioning and End-of-Course (EoC) assessments, to deepen and expand their knowledge. Students will design experiments, investigate the structures and functions of the human body, and use data acquisition software to monitor body functions such as muscle movement, reflex and voluntary action, and respiration. Exploring science in action, student will build organs and tissues on a skeleton manikin, work through interesting real world cases, and often play the role of biomedical professionals to solve medical mysteries. Students will practice problem solving with structured activities and progress to open-ended projects and problems that require them to develop planning, documentation, communication, and other professional skills.

Course Recommendation: This course is recommended for highly motivated, self-directed learners who have a strong interest in a medical profession.

Additional Registration Information: Students enrolled in this Project Lead the Way course can earn concurrent credit (transcripted credits) through the Minnesota State system at St. Cloud State University. Students earning a B or better in the class and a score of 4 or higher on an end of course exam may submit a \$100 registration fee to earn college credit for the course. The course is offered at LNHS only. LSHS students provide their own transportation.



Honors Medical Interventions (LNHS)

Grades: 11-12

Instructional Delivery: Face-to-Face

Prerequisite: Honors Human Body Systems

Location: LNHS

Year-long course

This course fulfills the elective requirement for graduation.

Course Description: This course is the study of a variety of medical interventions involved in the prevention, diagnosis, and treatment of disease as they follow the lives of a fictitious family. A “How-To” manual for maintaining overall health and homeostasis in the body, the course will explore how to prevent and fight infection, how to screen and evaluate the code in our DNA, how to prevent, diagnose, and treat cancer, and how to prevail when the organs of the body begin to fail. Through these scenarios students will be exposed to the wide range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics. Each family case scenario will introduce multiple types of interventions; reinforce concepts learned in the previous two Project Lead the Way courses, and present new content. Interventions may range from simple diagnostic tests to treatment of complex diseases and disorders. These interventions will be showcased across the generations of the family and will provide a look at the past, present, and future of biomedical science. Lifestyle choices and preventive measures are emphasized throughout the course as well as the important role that scientific thinking and engineering design play in the development of interventions of the future.

The primary units of study include: How to fight infection, how to screen what is in your genes, how to conquer cancer, and how to prevail when organs fail.

Students will demonstrate learning by completing activities, projects, and problems using a variety of assessment tools such as performance rubrics, reflective questioning and End-of-Course (EoC) assessments, to deepen and expand their knowledge. Students will practice problem solving with structured activities and progress to open-ended projects and problems that require them to develop planning, documentation, communication, and other professional skills.

Course Recommendation: This course is recommended for highly motivated, self-directed learners who have a strong interest in a medical profession.

Additional Registration Information: Students enrolled in this Project Lead the Way course can earn concurrent credit (transcripted credits) through the Minnesota State system at St. Cloud State University. Students earning a B or better

in the class and a score of 4 or higher on an end of course exam may submit a \$100 registration fee to earn college credit for the course. The course is offered at LNHS only. LSHS students provide their own transportation.



Advanced Placement Biology

Grades: 9-12

Instructional Delivery: Face-to-face

Prerequisite: None

Year-long course

This course fulfills the Biology requirement for graduation.

The Advanced Placement program (AP) provides high school students with the opportunity to take college-level course work and exams while still in high school, with each course culminating in a rigorous, optional exam to earn potential college credit. AP provides motivated and academically prepared students with the opportunity to develop the study skills, habits of mind, and critical thinking skills that they will need in college.

Course Description: This course guides students to a deeper understanding of biological concepts including the diversity and unity of life, energy and the processes of life, homeostasis, and genetics. Students learn about regulation, communication, and signaling in living organisms, as well as interactions of biological systems.

The primary units include: Cells, Genetics, Evolution, Diversity, Plant Form and Function, Animal Form and Function, and Ecology.

The students will demonstrate learning through class participation, group projects, individual projects, labs, homework, quizzes and tests.

Course Recommendation: This course is designed to be the equivalent of a college introductory biology course usually taken by Biology majors during their first year.

Board Approved Primary Resource:

Principles of Life 1st edition

By: Hillis, Sadava, Heller and Price

Copyright 2012 by Sinauer Associates

ISBN: 1-492-9117-6

Additional Registration Information: This course meets the rigorous course waiver for the Biology requirement. Summer homework may be required. In addition to the units of study, the AP Biology curriculum has “7 Significant Practices” that will be covered over the course of the year. There is a SIGNIFICANT emphasis on quantitative skills and application of mathematical methods during the course and on the AP exam in May.

Chemistry

Chemistry Hybrid (LSHS)

Grades: 9-12

Instructional Delivery: Face-to-face or hybrid

Prerequisite: Geometry

Year-long course

This course fulfills the Chemistry option for graduation.

Course Description: Chemistry is the study of the elements that make-up our world and how they can be combined, arranged and rearranged to modify a substance or create something new. Students will develop skills to answer many types of scientific questions.

The primary units of study include states of matter, bonding, the periodic table, atomic structure, chemical reactions and stoichiometry.

Students will demonstrate learning through laboratory work, worksheets, quizzes, and tests.

Course Recommendation: This course is recommended for students who need to fulfill the Chemistry requirement for graduation.

Board Approved Primary Resource:

Holt Chemistry

R. Thomas Myers - Keith B Oldham - Salvatore Tocci - Holt, Rinehart and Winston – 2006 – Print

ISBN: 9780030391071

Additional Registration Information: The hybrid course is offered at LSHS only. LNHS students provide their own transportation. This course, in conjunction with Physics, meets the rigorous course waiver for the Physical Science requirement.



Honors Chemistry

Honors Chemistry Hybrid (LSHS)

Grades: 9-12

Instructional Delivery: Face-to-face or hybrid

Prerequisite: Geometry

Year-long course

This course fulfills the Chemistry option for graduation.

Course Description: Honors Chemistry is the study of the elements that make-up our world and how they can be combined, arranged and rearranged to modify a substance or create something new. Students will develop skills to answer many types of scientific questions.

The primary units of study include states of matter, bonding, the periodic table, atomic structure, chemical reactions and stoichiometry.

Students will demonstrate learning through laboratory work, worksheets, quizzes, and tests.

Board Approved Primary Resource:

Holt Chemistry

R. Thomas Myers - Keith B. Oldham - Salvatore Tocci - Holt, Rinehart and Winston – 2006 – Print

ISBN: 9780030391071

Course Recommendation: This course is recommended for the highly motivated Science student. The faster pace and increased rigor prepares students for more advanced science classes. Students best suited for this class should have excelled in previous science classes.

Additional Registration Information: This course, in conjunction with Physics, meets the rigorous course waiver for the Physical Science requirement. The hybrid course is offered at LSHS only. LNHS students provide their own transportation.



Advanced Placement Chemistry (LSHS)

Grades: 9-12

Instructional Delivery: Face-to-face

Prerequisite: Concurrent enrollment in Algebra 2 or higher during semester two of the course.

Location: LSHS

Three semester-long course

Course offering: Face-to-face

This course fulfills the Chemistry option for graduation.

The Advanced Placement program (AP) provides high school students with the opportunity to take college-level coursework and exams while still in high school, with each course culminating in a rigorous, optional exam to earn potential college credit. AP provides motivated and academically prepared students with the opportunity to develop the study skills, habits of mind, and critical thinking skills that they will need in college. Additionally, students can earn concurrent credit (transcripted credits) through the MnSCU system at Southwest Minnesota State University.

Course Description: Advanced Placement Chemistry is the study of the elements that make-up our world and how they can be combined, arranged and rearranged to modify a substance or create something new. Students will develop skills to answer many types of scientific questions.

The primary units of study include structure of matter, states of matter, chemical reactions, kinetics, equilibria, thermodynamics and electrochemistry.

The students will demonstrate learning through tests, quizzes, daily assignments and laboratory exercises.

Course Recommendation: This course is the equivalent of a college introductory chemistry course usually completed by students in a STEM field of study.

Board Approved Primary Resource:

Chemistry: the Central Science

Theodore Brown – Pearson Prentice Hall – 2006 – Print

ISBN: 9780131937192

Additional Registration Information: This course, in conjunction with physics/AP physics, meets the rigorous course waiver for the Physical Science requirement.

At LSHS, students have two scheduling options:

1. After successful completion of 2 semesters of general or honors chemistry, students may take AP Chemistry 2 and AP Chemistry 3.
2. Students can take the three semester AP Chemistry course (AP Chemistry 1-2-3).

A student earning a passing grade in AP Chemistry semester 2 and 3 of the course is eligible for 9 Southwest Minnesota State University Credits from the College Now concurrent enrollment program. AP Chemistry 2 earns 3 lecture credits and 1 lab credit and AP Chemistry 3 earns 3 lecture credits and 2 lab credits.

The course with concurrent credit is offered at LSHS only. LNHS students provide their own transportation.



Advanced Placement Chemistry (LNHS)

Grades: 9-12

Instructional Delivery: Face-to-face

Prerequisite: Concurrent enrollment in Algebra 2 or higher

Location: LNHS

Two semester-long course

Course offering: Face-to-face

This course fulfills the Chemistry option for graduation.

The Advanced Placement program (AP) provides high school students with the opportunity to take college-level coursework and exams while still in high school, with each course culminating in a rigorous, optional exam to earn potential college credit. AP provides motivated and academically prepared students with the opportunity to develop the study skills, habits of mind, and critical thinking skills that they will need in college.

Course Description: Advanced Placement Chemistry is the study of the elements that make-up our world and how they can be combined, arranged and rearranged to modify a substance or create something new. Students will develop skills to answer many types of scientific questions.

The primary units of study include structure of matter, states of matter, chemical reactions, kinetics, equilibria, thermodynamics and electrochemistry.

The students will demonstrate learning through tests, quizzes, daily assignments and laboratory exercises.

Course Recommendation: This course is the equivalent of a college introductory chemistry course usually completed by students in a STEM field of study.

Board Approved Primary Resource:

Chemistry: the Central Science

Theodore Brown – Pearson Prentice Hall – 2006 – Print

ISBN: 9780131937192

Additional Registration Information: This course, in conjunction with physics/AP physics, meets the rigorous course waiver for the Physical Science requirement. Summer homework may be required. The course is offered at LNHS only. LSHS students provide their own transportation.



Physics

Grades: 11-12

Instructional Delivery: Face-to-face

Prerequisite: Algebra 2

Year-long course

This course fulfills the Physics option for graduation.

Course Description: This course is the study of matter, energy and the fundamental laws that govern our physical world.

The primary units of study include motion, forces, momentum, energy, electricity, magnetism, waves, sound, optics, relativity, and quantum theory.

The students will demonstrate learning through unit tests, quizzes, projects, labs, and homework problems.

Course Recommendation: This course is recommended for students who excel in Science and have strong problem-solving skills. This course, in conjunction with Chemistry, meets the rigorous course waiver for the Physical Science requirement.

Board Approved Primary Resource:

Physics: Principles and Problems

Paul W Zitzewitz - Todd George Elliott - David G Haase - Kathleen A Harper - Glencoe/McGraw-Hill – 2005 – Print

ISBN: 9780078458132

Additional Registration Information: Operating a scientific calculator is an integral part of this course. Because of students' desires to complete homework assignments in the evening, students benefit from having a scientific calculator. A limited number of scientific calculators will be available for students to check out for the entire year.



Advanced Placement Physics 1

Grades: 9-12

Instructional Delivery: Face-to-face

Prerequisite: Algebra 2

Year-long course

This course fulfills the Physics option for graduation.

The Advanced Placement program (AP) provides high school students with the opportunity to take college-level coursework and exams while still in high school, with each course culminating in a rigorous, optional exam to earn potential college credit. AP provides motivated and academically prepared students with the opportunity to develop the study skills, habits of mind, and critical thinking skills that they will need in college.

Course Description: This course provides a systematic introduction to the main principles of college physics and emphasizes the development of conceptual understanding and problem-solving ability using high-level math skills.

The primary units of study include Newtonian Mechanics (including rotational dynamics and angular momentum), Work, Energy, Power, Mechanical Waves and Sound, Circuits, and Magnetism.

The students demonstrate learning through tests, quizzes, homework, and hands-on labs.

Course Recommendation: It is recommended that students have a strong mathematics background and have taken Algebra 2. Students will need a quad-ruled laboratory notebook.

Board Approved Primary Resource:

College Physics Enhanced 7th Edition

Raymond Serway – Jerry Faughn – Chris Vuille – Charles Bennett – Brooks Cole – 2006 – Print

ISBN: 9780495113690

Additional Registration Information: This course meets the rigorous course waiver for the Physics requirement.



Advanced Placement Physics 2

Grades: 10-12

Instructional Delivery: Face-to-face

Prerequisites: Algebra 2 AND either AP Physics 1 or a full-year of General Physics

Year-long course

This course fulfills an elective requirement for graduation.

The Advanced Placement program (AP) provides high school students with the opportunity to take college-level coursework and exams while still in high school, with each course culminating in a rigorous, optional exam to earn potential college credit. AP provides motivated and academically prepared students with the opportunity to develop the study skills, habits of mind, and critical thinking skills that they will need in college.

Course Description: This course provides a systematic introduction to the main principles of college physics and emphasizes the development of conceptual understanding and problem-solving ability using high-level math skills.

The primary units of study are thermodynamics, fluid statics and dynamics, electrostatics, steady-state DC and RC circuits, magnetism and electromagnetic induction, geometric and physical optics, quantum physics, atomic physics, and nuclear physics.

The students demonstrate learning through tests, quizzes, homework, and hands-on labs.

Course Recommendation: It is recommended that students have a strong mathematics background and have taken Algebra 2 and either AP Physics 1 or a full year of General Physics.

Board Approved Primary Resource:

College Physics Enhanced 7th Edition

Raymond Serway – Jerry Faughn – Chris Vuille – Charles Bennett – Brooks Cole – 2006 – Print

ISBN: 9780495113690

Additional Registration Information: None



Advanced Placement Environmental Science

Advanced Placement Environmental Science Hybrid (LSHS)

Grades: 10-12

Instructional Delivery: Face-to-face or hybrid

Prerequisite: None

Year-long course

This course fulfills an elective requirement for graduation.

The Advanced Placement Program (AP) provides high school students with the opportunity to take college-level coursework and exams while still in high school, with each course culminating in an rigorous, optional exam to earn potential college credit. AP provides motivated and academically prepared students with the opportunity to develop the study skills, habits of mind, and critical thinking skills that they will need in college.

Course Description: This course is the systematic study of earth's environment and human's place within it.

The primary units of study include earth systems and resources, the living world, population demographics, land and water use, energy resources and consumption, pollution, and issues of global environmental change.

The students will demonstrate learning through labs, inquiry-based projects, presentations, quizzes, and tests.

Course Recommendation: This course is designed to be the equivalent of a college introductory Environmental Science course.

Board Approved Primary Resource:

Living in the Environment: Principles, Connections, and Solutions

G. Tyler Miller - Scott Spoolman - Thomson Brooks/Cole – 2007 – Print

ISBN: 9780495015987

Additional Registration Information: This course will be offered every other year at LNHS. It will be offered during the 2019-2020 school year, but will not be offered in 2020-2021 school year. It will be offered each year at LSHS. This course includes some field investigations and field trips. See your Dean for more information.



Anatomy & Physiology 1

Grades: 10-12

Instructional Delivery: Face-to-face

Prerequisite: Biology or Honors Biology

Semester-long course

This course fulfills the elective requirement for graduation or can be used in the biomedical engineering pathway at LSHS.

Course Description: This course is the study of the structure and function of the human body.

The primary units of study include body organization and tissue, skeletal system, muscular system, respiratory system, cardiovascular system and digestive system.

The students will demonstrate learning through small and large group activities, quizzes, tests, and laboratory exams.

Course Recommendation: This college preparatory course is recommended for students interested in learning about the complexities of the human body and may be considering a career in a health-related or medical field.

Board Approved Primary Resource:

Principles of Anatomy and Physiology

Gerard J. Tortora - Bryan Derrickson - Wiley – 2006 – Print

ISBN: 9780471689348

Additional Registration Information: The lab section of this course is primarily focused on the dissection lab.

Anatomy & Physiology 2

Grades: 10-12

Instructional Delivery: Face-to-face

Prerequisite: Biology or Honors Biology

Semester-long course

This course fulfills the elective requirement for graduation.

Course Description: This course is the study of the structure and function of the human body.

The primary units of study include the urinary system, endocrine system, nervous system, special senses and reproductive systems.

The students will demonstrate learning through small and large group activities, quizzes, tests, and laboratory exams.

Course Recommendation: This college preparatory course is recommended for students interested in learning about the complexities of the human body and may be considering a career in a health-related or medical field.

Board Approved Primary Resource: Board Approved Primary Resource:

Principles of Anatomy and Physiology

Gerard J. Tortora - Bryan Derrickson - Wiley – 2006 – Print

ISBN: 9780471689348

Additional Registration Information: This course can be taken as a single semester class. Semester 1 Anatomy-Physiology is not a prerequisite. The lab section of this course is primarily focused on the dissection lab.



The Science of Natural Disasters

Grades: 10-12

Instructional Delivery: Face-to-face

Prerequisite: None

Semester-long course

This course fulfills the elective requirement for graduation.

Course Description: This course is the in depth-study of important earth science disasters that impact humans on local and global scales.

The primary units of study include tornadoes, hurricanes, droughts, floods, earthquakes, asteroid impacts, landslides, volcanic eruptions and tsunamis.

The students will demonstrate learning through tests, quizzes, labs and inquiry-based projects.

Course Recommendation: This course is recommended for students who are looking for an engaging, project and inquiry based science elective course.

Board Approved Primary Resource: Prentice Hall Earth Science Edward J Tarbuck - Frederick K Lutgens - Pearson/Prentice Hall – 2006 – Print ISBN: 978013258525

Additional Registration Information: The order of topics may change to reflect the timely study of any natural disaster that occurs. This course does not meet the requirements for NCAA approved core courses. See your Dean for more information.



Astronomy

Grades 10-12

Instructional Delivery: Face-to-face

Semester-long course

This course fulfills the elective requirement for graduation.

Course description: This course is the study of celestial objects, space, and the physical universe as a whole.

The primary units of study include an introduction to the night sky, history of astronomy, light and telescopes, solar systems, stars and their evolution, deep space astronomy and astrobiology.

The students will demonstrate learning through small and large group activities, quizzes, tests, projects and laboratory assessments.

Course Recommendation: This course is recommended for students who have an interest in the field study of astronomy.

Board Approved Primary Resource: TBD

Additional Registration Information: This course will offer practice in ACT test strategies for science and two STEM projects related to Astronomy.



Forensics and the Science of Crime

Grades: 11-12

Instructional Delivery: Face-to-face

Prerequisite: Any of the following: Biology, AP Biology, Chemistry, AP Chemistry, Physics or Instructor Approval

Semester-long course

This course fulfills the elective requirement for graduation.

Course Description: This course provides an overview of the most commonly used scientific methods in crime scene investigation.

The primary units of study include modern DNA analysis, fiber analysis, ballistics analysis, tool marks, print impressions, digital imaging, bone and dental comparison and many more forensic methods for gathering and interpreting physical evidence.

The students will demonstrate learning through small and large group activities, quizzes, tests, and laboratory exams.

Course Recommendation: This course is recommended for students who have an interest in the field study of forensics.

Board Approved Primary Resource:

Forensics Science for High School

Barbara Deslich - John Funkhouser - Kendall/Hunt – 2006 – Print

ISBN: 9780757518256

Additional Registration Information: None.



Medical & Health Professions (LNHS)

Grades: 10-12

Instructional Delivery: Face-to-face

Prerequisite: None

Semester-long course

This course fulfills the elective requirement for graduation.

Course Description: This course is recommended for students who want the opportunity to investigate and explore a wide variety of medical and health careers.

The primary units of study include career interest assessments; medical and health career terms, descriptions, and education needed; medical terminology; personal qualities of healthcare workers; legal and ethical responsibilities; first aid techniques; CPR recertification; job shadow.

The students will demonstrate learning through assignments, projects, demonstrations, participation, job shadow completion, and tests.

Course Recommendation: This course is recommended for students who are interested in learning about a variety of medical or health careers and where their interests lie.

Board Approved Primary Resource:

Introduction to Health Science Technology
Louise Simmers - Thomson/Delmar Learning – 2004 – Print
ISBN: 9781401811280

Additional Registration Information: This course requires an additional fee for CPR and First Aid certification. Successful completion of this course satisfies the Junior Opportunities Day College/Business Visit component of the Career Portfolio. This course does not meet the requirements for NCAA approved core courses. See your Dean for more information.



Wildlife Ecology

Grades: 11-12
Instructional Delivery: Face-to-face
Prerequisite: Any Biology course
Semester-long course
This course fulfills the elective requirement for graduation.

Course Description: This course is the study of Ecology locally and globally as well as the study of Minnesota Wildlife. Students develop the skills needed to study wildlife in a natural ecosystem. The primary units of study include Orienteering/Using a Compass, Ecology (aquatic and terrestrial), Wildlife Management, Invasive Species and Endangered Species, Survival Skills including winter survival, Wildlife Identification (Minnesota mammals and birds) and Animal Migration.

The students will demonstrate learning through daily activities and labs, tests, quizzes, projects, and presentations using a variety of computer presentation programs.

Course Recommendation: This course is recommended for students who have an interest in studying wildlife or working in wildlife professions.

Additional Registration Information: This course includes some field trips.