The Science Department is dedicated to providing students with a comprehensive science education while providing challenging, interest-based courses for all students. A hands-on laboratory science education at every level ensures students learn while doing and experience science to provide understanding and comprehension. From college level courses for future scientists to courses designed for the science novice, there are a myriad of courses available to students. While some students may choose a rigid, prescribed sequence others might enjoy the freedom to choose their course and level from year to year. Regardless of the path of courses chosen, Argo students will graduate literate in science with a deep respect for knowledge.

Most college admissions require a minimum of three years of laboratory science. Students planning a career in a medical field, science, engineering, or technical field should seek out a four-year science foundation based in Biology, Chemistry, and Physics. Argo has a two-year science requirement for graduation.

Suggested Science Sequence

College Prep 1:

9th Grade EARTH SCIENCE → 10th Grade BIOLOGY → 11th Grade CHEMISTRY → 12th Grade PHYSICS

College Prep 2:

9th Grade BIOLOGY → 10th Grade CHEMISTRY → 11th Grade PHYSICS → 12th Grade ANY SCIENCE COURSE

Honors 1:

9th Grade HONORS BIOLOGY → 10th Grade HONORS CHEMISTRY → 11th Grade HONORS PHYSICS → 12th Grade ANY AP SCIENCE COURSE

Honors 2:

9th Grade HONORS CHEMISTRY* → 10th Grade AP CHEMISTRY** → 11th Grade AP BIOLOGY → 12th Grade AP PHYSICS C***

Available Courses per Year				
Grade 9	**Grade 10**	**Grade 11**		**Grade 12**
Biology	Chemistry	Comparative Biology	Honors Physics	Forensics
Earth Science	Honors Chemistry	Medical Biology	AP Biology	Honors Forensics
Honors Earth Science	AP Chemistry	Geology and Meteorology	Any Grade 9 or 10 Course	AP Physics C
Honors Biology	AP Environmental Science	Physics		Any Grade 9, 10, 11 Course
Honors Chemistry	Any Grade 9 Course	Physics w/Robotics		

*In order to take Honors Chemistry in Grade 9, a student must be concurrently enrolled in Honors Geometry 10. No math requirement exists for Honors Chemistry for Grade 10, 11, and 12.

**In order to take AP Chemistry a student must have taken a prior Chemistry course or have Division Chair approval.

***The student must have previously passed or be concurrently enrolled in AP Calculus. Students without previous or concurrent enrollment in AP Calculus must successfully complete the AP Science Summer Bridge to learn the Math necessary for this course.

Course Descriptions:

AP BIOLOGY
SC980
Year: 11, 12
Credit: 1
AP Biology is a lab-based introductory college-level Biology course. Students cultivate their understanding of Biology through hands-on investigations and labs as they explore the following topics: evolution, cellular processes, energy and communication, genetics, information transfer, ecology, and interactions.
This AP Biology course is equivalent to a two-semester college introductory Biology course for Biology majors.

AP Biology may cover but is not limited to the following 8 units:

Unit 1	Chemistry of Life		Unit 5	Heredity
Unit 2	Cell Structures and Function		Unit 6	Gene Expression and Regulation
Unit 3	Cellular Energetics		Unit 7	Natural Selection
Unit 4	Cell Communication and Cell Cycle		Unit 8	Ecology

This course requires a teacher recommendation.

AP CHEMISTRY
SC990
Year: 10, 11, 12
Credit: 1
AP Chemistry is a lab-based course that provides students with a college-level foundation to support future advanced coursework in Chemistry. Students cultivate their understanding of Chemistry through hands-on investigations and labs as they explore content such as: atomic structure, intermolecular forces and bonding, chemical reactions, kinetics, thermodynamics, and equilibrium.

This AP Chemistry course is designed to be the equivalent of a two-semester college general Chemistry course.

AP Chemistry may cover but is not limited to the following 9 units:

Unit 1	Atomic Structure and Properties		Unit 6	Thermodynamics
Unit 2	Molecular and Ionic Compound Structure and Properties		Unit 7	Equilibrium
Unit 3	Intermolecular Forces and Properties		Unit 8	Acids and Bases
Unit 4	Chemical Reactions		Unit 9	Applications of Thermodynamics
Unit 5	Kinetics			

Successful completion of a previous Chemistry course or Assistant Division Chair approval is required to enroll in this course.
Recommended: Semester grades of A or B in both semesters of Honors Chemistry or teacher recommendation.
This course requires a teacher recommendation.

AP ENVIRONMENTAL SCIENCE
SC930
Year: 10, 11, 12
Credit: 1
AP Environmental Science is a lab-based course that is designed to engage students with the scientific principles, concepts, and methodologies required to understand the interrelationships with the natural world. The course requires that students identify and analyze natural and human-made environmental problems, evaluate the relative risks associated with those problems, and examine alternative solutions for resolving or preventing them. Environmental Science is interdisciplinary, embracing topics from Geology, Biology, Environmental Studies, Environmental Science, Chemistry and Geography.

This AP Environmental Science course is designed to be the equivalent of a one-semester, introductory college course in Environmental Science.

AP Environmental Science may cover but is not limited to the following 9 units:

Unit 1	The Living World: Ecosystems		Unit 6	Energy Resources and Consumption
Unit 2	The Living World: Biodiversity		Unit 7	Atmospheric Pollution
Unit 3	Populations		Unit 8	Aquatic and Terrestrial Pollution
Unit 4	Earth Systems and Resources		Unit 9	Global Change
Unit 5	Land and Water Use			

This course requires a teacher recommendation.

AP PHYSICS C - MECHANICS
SC975
Year: 12
Credit: 1
AP Physics C: Mechanics is a calculus-based, college-level Physics course. This lab based course covers kinematics, Newton's laws of motion, work, energy, and power, systems of particles and linear momentum, circular motion and rotation, oscillations, and gravitation.

This AP Physics C: Mechanics course is designed to be the equivalent of a one-semester, introductory college course in Calculus-based Physics.

AP Physics C: Mechanics may cover but is not limited to the following 7 units:

Unit 1	Kinematics		Unit 5	Rotation
Unit 2	Newton's Laws of Motion		Unit 6	Oscillations
Unit 3	Work, Energy, and Power		Unit 7	Gravitation
Unit 4	Systems of Particles and Linear Momentum		Unit 8	

Successful completion of a previous Physics course or Assistant Division Chair approval is required to enroll in this course.
Recommended: A grade of B or higher in a previous Physics class or teacher recommendation. Previous or concurrent enrollment in AP Calculus or successful completion of the AP Summer Bridge course. Students without previous or concurrent enrollment in AP Calculus must successfully complete the AP Science Summer Bridge to learn the Math necessary for this course.
This course requires a teacher recommendation.

AP SCIENCE SUMMER BRIDGE PROGRAM

This is a summer course or assignment that is designed for students who wish to take an AP Science class but who may not have met the requirements printed in the course catalog. Each Advanced Placement Science course (AP Biology, AP Chemistry, AP Environmental Science, AP Physics C: Mechanics) will have its own Science Summer Bridge course or assignment. The course or assignment will focus on reviewing and strengthening essential skills from the corresponding honors classes.

Students who have met the prerequisites for their chosen AP class are also encouraged to participate in this summer course or assignment as a means to enrich or refresh their knowledge. In order to successfully complete the AP Science Summer Bridge Program a student must complete all labs, activities, and summer homework assignments assigned as well as attend any classes offered.

BIOLOGY

SC310

Year: 9, 10, 11, 12

Credit: 1

This lab-based Biology course is an introductory course with scientific themes highlighting biological systems, diversity among living things, energy, evolution, and the human impact on our Earth systems. Biology students will be engaged in the applications of Science and Engineering practices and are expected to demonstrate scientific literacy by participating in scientific discourse. Laboratory work is an integral and required part of the course and is highly analytical in nature Dissection is NOT a part of this course.

Biology may cover but is not limited to the following 8 units:

Unit 1	The Nature of Science		Unit 5	Cell Division
Unit 2	Ecology		Unit 6	DNA and Protein Synthesis
Unit 3	Biochemistry		Unit 7	Genetics
Unit 4	Cells		Unit 8	Evolution

CHEMISTRY

SC320

Year: 10, 11, 12

Credit: 1

This lab-based course will investigate the structure, function, and behavior of atoms and molecules through hands-on learning. This course covers topics such as specific heat capacity, atomic and electronic structure, ionic and molecular compounds, stoichiometry, properties of solids, liquids and gases, acid-base chemistry, and reaction rates. At the end of this course, students will be able to execute chemical lab investigations and keep a lab notebook, use algebraic functions to describe trends in scientific data, interpret scientific data and support reasonable conclusions from observation.

Chemistry may cover but is not limited to the following 10 units:

Unit 1	Physical Properties of Atoms and Elements		Unit 6	Chemical Reactions and Quantities
Unit 2	Matter and Energy		Unit 7	Properties of Solids, Liquids, and Gases
Unit 3	Measurements		Unit 8	Solutions
Unit 4	Electronic Structure and Periodic Trends		Unit 9	Kinetics
Unit 5	Ionic and Molecular Compounds		Unit 10	Acids and Bases

CHEMISTRY JUMP COURSE (SUMMER SCHOOL)
SC333SUM
Year: 2
Credit: 1 Elective
This course is intended for self-motivated, high achieving students who are interested in taking AP Chemistry without having first taken Honors Chemistry. This summer course covers the basic information needed to be successful in AP Chemistry. Topics include nomenclature, atomic structure and periodic trends, chemical reactions, bonding, stoichiometry, structure and properties, gas laws, solutions, and acids and bases.

Successful completion of this course is required in order to enroll in AP Chemistry as a sophomore without Department Chair approval. Credit will be awarded on a pass/fail basis after a student has met the following criteria:

- ✓ All homework assignment, quizzes, labs, and tests have been completed
- ✓ Overall course grade of 70% or higher
- ✓ Meet the summer school attendance requirement

This course does not fulfill a science requirement but does earn elective credit. If the student withdraws or does not successfully complete the course, he/she will be automatically enrolled in Honors Chemistry at the start of the next academic year.
Fees: Summer school tuition

CHEMISTRY OF FOODS (SUMMER SCHOOL)
SC700
Year: 9, 10, 11, 12
Credit: 0.5 (Physical Science or CTE credit)
In this course, students investigate the chemical components and physical properties of foods. This course involves laboratory experiences in both Science and Family and Consumer Sciences and is led by teachers from both departments. Students will gain an understanding of food science as well as an awareness of health, nutrition, and culinary science principles. Science topics include: unit conversion, temperature conversions, elements/compounds/mixtures, chemical reactions, heat transfer, acid/bases, and percent yield relating to meal planning. Scientific processes are utilized as students explore the physical and chemical properties of food and science cooking applications. This course is appropriate for students who are interested in a hands-on application of scientific principles to the study of cooking and nutrition.

COMPARATIVE BIOLOGY
SC680
Year: 11,12
Credit: 1
Comparative Biology is a two-semester lab-based course that relies heavily on dissection of several species of animals as comparisons in structure and function are made between different species. Human anatomy will NOT be discussed. The topics for this course include dissection techniques, muscular structure and development, arterial structure and development, and evidence of evolution based on phylogeny.

Do not take this course if you do not want to or are opposed to the dissection of various species.

The topics for this course include dissection techniques, muscular structure and development, arterial structure and development, and evidence of evolution based on phylogeny.

Comparative Biology may cover but is not limited to the following 8 units:

Unit 1	Biological Design		Unit 5	Circulatory System
Unit 2	Skeletal System		Unit 6	Digestive System
Unit 3	Muscular System		Unit 7	Nervous System
Unit 4	Respiratory System		Unit 8	Sensory Organs

EARTH SCIENCE
SC340
Year: 9, 10, 11, 12
Credit: 1
This lab-based course is designed as a one-year course with eight units of study that are tied together through a set of enduring topics that are emphasized throughout the course. The topics are designed to address three-dimensional learning standards including disciplinary core ideas, cross cutting concepts, and science practice. Topics include space systems, the history of Earth, Earth systems, weather and climate, human sustainability and impact.

Earth Science may cover but is not limited to the following 8 units:

Unit 1	Earth’s Interior and Plate Tectonics		Unit 5	Climate Change and Weather
Unit 2	Rock Cycle		Unit 6	Earth, Sun, and Moon System
Unit 3	Geologic History		Unit 7	Our Solar System
Unit 4	Evolution of Life		Unit 8	Origin of Universe and Galaxies

FORENSIC SCIENCE
SC500
Year: 12
Credit: 1
The purpose of this lab-based course is to gain experience in the most common investigative techniques currently used by forensic scientists, crime scene investigators, and other law enforcement agencies; and to develop an understanding of the scientific concepts which serve as a basis for these techniques. At the end of this course students will be able to: secure and document a crime scene, collect and evaluate DNA, blood, hair, fibers, and other trace evidence, chemically analyze unknown substances that might be found at a crime scene, and use methods in forensic anthropology and psychology to evaluate evidence.

Unit 1	Observation Skills		Unit 6	Pathology
Unit 2	Fingerprinting		Unit 7	Anthropology
Unit 3	Hairs and Fibers		Unit 8	Casts and Impressions
Unit 4	Toxicology		Unit 9	Toolmarks
Unit 5	Blood and DNA		Unit 10	Handwriting and Forgery

Completion of 3 Science credits or Division Chair approval is required to enroll in this course.

GEOLOGY AND METEOROLOGY
SC700
Year: 11, 12
Credit: 1
This lab-based course explores an in-depth study of the forces that formed and continue to affect the Earth’s surface. Topics include earthquakes, volcanoes, erosion, atmospheric layering, changing pressures, winds, water vapor, air masses, fronts, temperature changes, and weather forecasting.

Geology and Meteorology may cover but is not limited to the following 11 units:

Unit 1	Earth Interior and Plate Tectonics		Unit 7	Earth, Sun, and Seasons
Unit 2	Minerals		Unit 8	Atmosphere
Unit 3	Igneous Rocks and Volcanoes		Unit 9	Weather Systems
Unit 4	Weathering and Erosion		Unit 10	Nature of Storms
Unit 5	Sedimentary and Igneous Rocks		Unit 11	Climate
Unit 6	Geologic History			

HONORS BIOLOGY
SC910
Year: 9, 10, 11, 12
Credit: 1
Honors Biology is an accelerated course that prepares students for future honors level courses, advanced Science classes and college level Biology, by providing a challenging learning environment in which the curriculum is organized at a more rigorous pace.
This lab-based Biology course is an introductory course, with scientific themes highlighting biological systems, diversity among living things, energy, evolution, and the human impact on our Earth systems. Biology students will be engaged in the application of Science and Engineering practices and are expected to demonstrate scientific literacy by participating in scientific discourse. Laboratory work is an integral and required part of the course and is highly analytical in nature. Dissection is NOT a part of this course.

Honors Biology may cover but is not limited to the following 8 units:

Unit 1	The Nature of Science		Unit 5	Cell Division
Unit 2	Ecology		Unit 6	DNA and Protein Synthesis
Unit 3	Biochemistry		Unit 7	Genetics
Unit 4	Cells		Unit 8	Evolution

HONORS CHEMISTRY
SC920
Year: 10, 11, 12
Credit: 1
This lab-based course is a rigorous, fast paced course with an emphasis on calculations and explanation. This course covers topics including specific heat capacity,,atomic and electronic structure, ionic and molecular bonding, stoichiometry, properties of solids, liquids, gases, and solutions, acid-base chemistry, kinetics, equilibrium, redox reactions, and nuclear chemistry. This course is designed to prepare students for both college chemistry and AP Chemistry (SC990). At the end of this course students will be able to explain phenomena on the macro and molecular level, execute chemical lab investigations and keep a lab notebook, understand the mathematical relationships in chemistry, and draw connections between various topics.

Honors Chemistry may cover but is not limited to the following 12 units:

Unit 1	Physical Properties of Atoms and Elements		Unit 7	Properties of Solids, Liquids, and Gases
Unit 2	Matter and Energy		Unit 8	Solutions
Unit 3	Measurements		Unit 9	Kinetics
Unit 4	Electronic Structure and Periodic Trends		Unit 10	Acids and Bases
Unit 5	Ionic and Molecular Compounds		Unit 11	Electrochemistry
Unit 6	Chemical Reactions and Quantities		Unit 12	Nuclear Chemistry

In order to take Honors Chemistry in Grade 9 a student must be concurrently enrolled Honors Geometry 10. No Math Requirement exists for Honors Chemistry beyond Grade 9.
Recommended: Completion of a grade 9 Science course with a grade of A or B, or teacher recommendation.

HONORS EARTH SCIENCE
SC340 (H)
Year: 9, 10, 11, 12
Credit: 1
If students elect to take this course for honors credit, there will be requirements in addition to those of SC340.
This is a stacked class.

HONORS FORENSIC SCIENCE

SC500 (H)
Year: 12
Credit: 1

If students elect to take this course for honors credit, there will be requirements in addition to those of SC500. The honors work will consist of either a biological or chemical emphasis dependent upon section instructor.
This is a stacked class.

HONORS PHYSICS

SC930
Year: 11, 12
Credits: 1

This lab-based accelerated introductory Physics course involves the study of forces and laws of nature affecting matter. Topics including motion, momentum, kinematics, dynamics, the relationship between matter and energy, sound, light, and magnetic and electric phenomena. This course uses mathematical models to investigate real-world phenomena.

Honors Physics may cover but is not limited to the following 10 units:

Unit 1	ID Kinematics		Unit 6	Static Electricity
Unit 2	Projectile Motion		Unit 7	Circuits and Power
Unit 3	Dynamics		Unit 8	Waves and Sound
Unit 4	Energy		Unit 9	Light, Color, and Optics
Unit 5	Momentum		Unit 10	Astronomy and Modern Physics

MEDICAL BIOLOGY

SC650
Year: 11, 12
Credit: 1

This lab-based course is designed for students who want to enter a medical profession. Students will gain knowledge in fundamental topics in human biology and how they pertain to the medical field. There will be a heavy emphasis on cellular biology, genetics, disease, immunology, evolutionary biology, and bioethics.

Medical Biology may cover but is not limited to the following 8 units:

Unit 1	Scientific Method and Clinical Trials		Unit 5	Human Genetics
Unit 2	Bioethics		Unit 6	Cells, Cell Division, and Cancer
Unit 3	Biochemistry		Unit 7	Evolution and Antibiotic Resistance
Unit 4	DNA and Protein Synthesis		Unit 8	Infectious Disease

PHYSICS

SC410
Year: 11, 12
Credits: 1

This lab-based introductory course involves the study of forces and laws of nature affecting matter. Topics include motion, momentum, kinematics, dynamics, the relationship between matter and energy, sound, light, and magnetic and electric phenomena. This course uses mathematical models to investigate real-world phenomena.

Physics may cover but is not limited to the following 10 units:

Unit 1	ID Kinematics		Unit 6	Static Electricity
Unit 2	Projectile Motion		Unit 7	Circuits and Power
Unit 3	Dynamics		Unit 8	Waves and Sound
Unit 4	Energy		Unit 9	Light, Color, and Optics
Unit 5	Momentum		Unit 10	Astronomy and Modern Physics

PHYSICS WITH ROBOTICS

SC615

Year: 11, 12

Credit: 1

This lab based introductory Physics course is intended for students who may be interested in a technology-related career such as engineering, computer programming, automotive technology, software, or game development. Students will learn important concepts in physics such as kinematics, Newtonian mechanics, energy transformations, momentum, gravitation, electricity, waves, light, color, and sound. At the same time, students will also learn how to program a simple robotic device to model and explore physics concepts.

Physics with Robotics may cover but is not limited to the following 6 units:

Unit 1	Introduction to Programming		Unit 4	Energy
Unit 2	Constant Speed Kinematics		Unit 5	Electrostatics
Unit 3	Motion Graphs and Acceleration		Unit 6	Waves, Sound, and Light

ROBOTICS WITH SCIENCE

SC200

Year: 9, 10, 11, 12

Credits: 2 (1 credit for SC200 and 1 credit for IT460)

This lab-based course will focus on the study of mechanics, electronics, computer control/design and the underlying science. During this class, students will learn to build and program robots and micro-controllers. The students will explore basic mechanical systems such as servos, motors, gears and levers, electronic systems with analog and digital, 2D and 3D design and computer control systems. The associated science concepts will be emphasized in the context of robotics and engineering. The course is project based, and students will develop engineering problem solving skills through a series of hands-on activities and projects. Students will often work together in design teams to overcome problems of design, development, production, and testing of the project. The major engineering and science fields will be researched, and students will learn about the theory, application, and hands-on skills for each discipline.