NISD SCIENCE COURSE SEQUENCE

Grade 9
IPC
Biology *
PreAP Biology *

Grade 10
IPC
Chemistry
PreAP Chemistry
Physics
AP Physics 1

Grade 11
Advanced Science

Grade 12
Advanced Science

Advanced Science Courses:
Chemistry or PreAP Chemistry
Physics or OnRamps Physics
Earth and Space Science
Environmental Systems
Advanced Animal Science
Anatomy and Physiology
Forensic Science
Scientific Research and Design
Engineering Design and Problem Solving (former STEM course)
AP Biology
AP Chemistry
AP Physics 1
AP Physics C: Mechanics
AP Physics C: Electricity & Magnetism
AP Environmental Science
DC Human Anatomy and Physiology I **
DC Human Anatomy and Physiology II **
DC College Physics I **
DC College Physics II **
DC General Chemistry I **
DC General Chemistry II **
DC Environmental Biology **

* Denotes that the course requires an End of Course Test.
** See Online or Off-Campus Dual Credit Opportunities
0214 | Integrated Physics and Chemistry
Integrated Physics and Chemistry (IPC) is the study of physical and chemical interactions of matter. Semester I covers introductory concept in Physics, while Semester II covers introductory concepts in Chemistry. This course provides an excellent foundation in science for students who are not pursuing a STEM endorsement and need to build capacity in science. **This course may not be taken after the completion of chemistry or physics.**

Credits: 1  
Grade Placement: 9-10  
Semesters: 2  
Weighted GPA: Level 2  
Prerequisite: None

0205 | Biology
Biology is the study of the structure, growth, and function of the life systems of organisms. Students learn the basics of structures and functions of living things and how those structures and functions change. Data collection and analysis is a key skill emphasized in Biology in preparation for the End of Course (EOC) Exam that is required for graduation.

Credits: 1  
Grade Placement: 9-10  
Semesters: 2  
Weighted GPA: Level 2  
Prerequisite: None

0205P | PreAP Biology
Biology is the study of the structure, growth, and function of the life systems of organisms. Students learn the basics of structures and functions of living things and how those structures and functions change. Data collection and analysis is a key skill emphasized in Biology in preparation for the End of Course (EOC) Exam that is required for graduation. This course will have an emphasis on lab experiences that provide opportunities for students to engage in gathering and processing complex data in order to produce high quality technical conclusions based on that data. Additional emphasis is placed on technical writing.

Credits: 1  
Grade Placement: 9-10  
Semesters: 2  
Weighted GPA: Level 3  
Prerequisite: None

0207 | Chemistry
Chemistry is the study of the composition of substances and the changes they undergo. Chemistry focuses on the skills of gathering and analyzing both qualitative (observational) and quantitative (numerical) data. A conceptual understanding of fundamental mathematical concepts is needed for this course as the same type of thinking is required.

Credits: 1  
Grade Placement: 10-12  
Semesters: 2  
Weighted GPA: Level 2  
Prerequisite: Biology or PreAP Biology, and Algebra I or PreAP Algebra I
0207P | PreAP Chemistry
SC.PB0207 | Blended PreAP Chemistry
PreAP Chemistry includes an in-depth study of basic concepts taught in Chemistry with emphasis on problem solving and laboratory. PreAP Chemistry provides students opportunities to engage in higher level lab experiences that emphasize collection and analysis of complex data in order to produce high quality technical conclusions based on the data. Additional emphasis is placed on technical writing. Blended option available at select high schools. See section on blended courses for further clarification about this opportunity.

Credits: 1
Grade Placement: 10-12 (Blended: 10-12)
Semesters: 2
Weighted GPA: Level 3
Prerequisite: Biology or PreAP Biology, and Algebra I or PreAP Algebra I. Completion or concurrent enrollment in Geometry or PreAP Geometry, and Algebra II or PreAP Algebra II is recommended.

0216 | Physics
Physics is the study of the relationships between matter and energy. Data analysis and problem solving skills are emphasized. Real world applications and data collection devices are used to teach process and skill.

Credits: 1
Grade Placement: 10-12 (Blended: 10-12)
Semesters: 2
Weighted GPA: Level 2
Prerequisite: Biology or PreAP Biology, and Algebra I or PreAP Algebra I

0205A | AP Biology
SC.AB0205 | Blended AP Biology
AP Biology is a college-level biology course designed to prepare students to take the AP Biology exam. This course broadens and deepens biology content with an emphasis on inquiry, collection and analysis of complex data, and technical writing. The district expectation is that the student will take the appropriate AP Exam for each AP course in which he/she is enrolled. NISD will continue to financially partner with families in this effort and bring the total per exam price as low as possible. Blended option available at select high schools. See section on blended courses for further clarification about this opportunity.

Credits: 1
Grade Placement: 10-12
Semesters: 2
Weighted GPA: Level 4
Prerequisite: Biology or PreAP Biology, and Chemistry, PreAP Chemistry, or concurrent enrollment in Chemistry or PreAP Chemistry

0217A | AP Physics 1
AP Physics 1 is a college level course designed to help students prepare for the AP Physics 1 exam. Emphasis is placed on inquiry based problem solving and technical writing. The district expectation is that the student will take the appropriate AP Exam for each AP course in which he/she is enrolled. NISD will continue to financially partner with families in this effort and bring the total per exam price as low as possible.

Credits: 1
Grade Placement: 10-12
Semesters: 2
Weighted GPA: Level 4
Prerequisite: Algebra II, PreAP Algebra II, or concurrent enrollment in Algebra II; it is strongly recommended that Algebra II be completed as concurrent enrollment can create inconsistencies in skills needed for success.
0215A | AP Physics C: Mechanics
AP Physics C: Mechanics is a college-level course designed to help students prepare for the AP Physics exam in Mechanics. Emphasis is placed on problem solving. The district expectation is that the student will take the appropriate AP Exam for each AP course in which he/she is enrolled. NISD will continue to financially partner with families in this effort and bring the total per exam price as low as possible.
Credits: 1
Grade Placement: 11-12
Semesters: 2
Weighted GPA: Level 4
Prerequisite: PreAP Precalculus or concurrent enrollment in PreAP Precalculus; it is strongly recommended to have credit or be concurrently enrolled in AP Calculus AB or BC.

0219A | AP Physics C: Electricity and Magnetism
AP Physics C: Electricity and Magnetism is a college-level course designed to help students prepare for the AP Physics C: Electricity and Magnetism exams. The district expectation is that the student will take the appropriate AP Exam for each AP course in which he/she is enrolled. NISD will continue to financially partner with families in this effort and bring the total per exam price as low as possible.
Credits: 1
Grade Placement: 12
Semesters: 2
Weighted GPA: Level 4
Prerequisite: AP Physics C: Mechanics credit or concurrent enrollment in AP Calculus AB or BC

0207A | AP Chemistry
AP Chemistry is a college-level chemistry course designed to prepare students to take the AP Chemistry exam. This course is a laboratory-oriented course with an emphasis on inquiry problem solving. Topics explored will include chemical reactions, bonding, thermodynamics, kinetics, acid-base chemistry, and equilibrium. The district expectation is that the student will take the appropriate AP Exam for each AP course in which he/she is enrolled. NISD will continue to financially partner with families in this effort and bring the total per exam price as low as possible.
Credits: 1
Grade Placement: 11-12
Semesters: 2
Weighted GPA: Level 4
Prerequisite: PreAP Chemistry, and Algebra II or PreAP Algebra II

0212A | AP Environmental Science
AP Environmental Science students will investigate the interrelationships between people and the natural world. This course will integrate the sciences, including biology, chemistry, and earth science, with the social sciences to analyze contemporary environmental issues. A strong laboratory and field investigation component is included so that students can explore the issues that affect their own lives. The district expectation is that the student will take the appropriate AP Exam for each AP course in which he/she is enrolled. NISD will continue to financially partner with families in this effort and bring the total per exam price as low as possible.
Credits: 1
Grade Placement: 10-12
Semesters: 2
Weighted GPA: Level 4
Prerequisite: Two years of science courses, preferably Biology or PreAP Biology, and Chemistry or PreAP Chemistry, or concurrent enrollment
08182 | Advanced Animal Science
Advanced Animal Science examines the interrelatedness of human, scientific, and technological dimensions of livestock production. Instruction is designed to allow for the application of scientific and technological aspects of animal science through field and laboratory experiences. To prepare for careers in the field of animal science, students must attain academic skills and knowledge, acquire knowledge and skills related to animal systems, and develop knowledge and skills regarding career opportunities, entry requirements, and industry standards. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills in a variety of settings. Students must meet the 40% laboratory and fieldwork requirement. This course satisfies a high school science graduation requirement and will be included in the calculation of the weighted GPA.

Credits: 1
Grade Placement: 11-12
Semesters: 2
Weighted GPA: Level 2
Prerequisite: Biology or PreAP Biology and Chemistry or PreAP Chemistry, or IPC; Algebra I or PreAP Algebra I, and Geometry or PreAP Geometry; and either Small Animal Management, Equine Science, or Livestock Production. Veterinary Medical Applications recommended.

0211 | Anatomy and Physiology
The Anatomy and Physiology course is designed for students to conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Students in Anatomy and Physiology will study a variety of topics, including the structure and function of the human body and the interaction of body systems for maintaining homeostasis. Students must meet the 40% laboratory and fieldwork requirement. This course satisfies a high school science graduation requirement and will be included in the calculation of the weighted GPA.

Credits: 1
Grade Placement: 10-12
Semesters: 2
Weighted GPA: Level 2
Prerequisite: Biology or PreAP Biology, and a second science credit; a course from the Health Science Career Cluster is recommended.

0204 | Earth and Space Science
This course is a capstone course designed to build on students’ prior scientific and academic knowledge and skills to develop a better understanding of Earth’s system in space and time.

Credits: 1
Grade Placement: 11-12
Semesters: 2
Weighted GPA: Level 2
Prerequisite: Three years of science courses, one of which may be taken concurrently, and three years of math courses, one of which may be taken concurrently.
0213 | Environmental Systems
Environmental Systems is a laboratory course covering basic principles of ecology, energy, and the environment. Topics include local environmental systems, source and energy flow, populations and environmental changes. Decision making relating to the balance of nature and the impact of man will also be addressed.

Credits: 1
Grade Placement: 11-12
Semesters: 2
Weighted GPA: Level 2
Prerequisite: Biology and IPC, Chemistry, or Physics

08591 | Forensic Science
CT.B08591 | Blended Forensic Science
Forensic Science is a course that introduces students to the application of science to connect a violation of law to a specific criminal, criminal act, or behavior and victim. Students will learn terminology and procedures related to the search and examination of physical evidence in criminal cases as they are performed in a typical crime laboratory. Using scientific methods, students will collect and analyze evidence such as fingerprints, bodily fluids, hairs, fibers, paint, glass, and cartridge cases. Students will also learn the history and the legal aspects as they relate to each discipline of forensic science. Students must meet the 40% laboratory and fieldwork requirement. This course satisfies a high school science graduation requirement and will be included in the calculation of the weighted GPA. Blended option available at select high schools. See section on blended courses for further clarification about this opportunity.

Credits: 1
Grade Placement: 11-12
Semesters: 2
Weighted GPA: Level 2
Prerequisite: Biology or PreAP Biology and Chemistry or PreAP Chemistry

SC.D216OR OnRamps | Physics Dual Enrollment Physics (Level 3)
SC.D921OR OnRamps | Physics Dual Enrollment Physics (Level 4)
(PHY 302K/PHYS 1301) Physics
OnRamps Physics is a dual enrollment course that focuses on mechanics, heat, and sound aspects of Physics during the first semester and completes the requirements of a general physics technical I course. OnRamps Physics is dual enrollment partnership with the University of Texas at Austin. Students must demonstrate their ability to do college level work during the fall semester in order for the opportunity to earn college credit during the spring semester. See the NISD College and Career Readiness OnRamps website for more details: nisdtx.org/onramps. UT Austin tuition for this course is paid to Northwest ISD. See page 25 for details.

Credits: 1
Grade Placement: 10-12
Semesters: 2
Weighted GPA: Level 3 (Level 4 for students entering Grade 9 Fall 2018 and beyond)
Prerequisite: Parent, counselor, principal, and college approval; Algebra I, Geometry, Recommended: Algebra II or Pre-Calculus