Both Semesters (Full-Year) (Students sign up for both semesters)

**Advanced Placement Physics C**
A two-semester course in calculus-based physics for prospective science and engineering majors. Our course emphasizes experimental work and problem solving and can give successful students a year of college credit.

*Instructor:* Mr. Michael Dowling

*Day/time:* Mon. and Thurs., 3:30 - 6:00 p.m.

*Prerequisite:* Calculus (concurrently), Physics (recommended)

*Credit:* 1 Carnegie Unit

**Advanced Placement Chemistry/Material Science**
AP Chemistry is a full year college level chemistry course designed for students who intend to major in a science related field. Material Science is an introduction to college level Material Science. Through problem-based learning and field trip experiences, students will learn about the chemistry of each class of materials. In this unique experience, AP Chemistry will be co-taught with Material Science. Students will learn AP Chemistry content while participating in Material Science laboratory experiences. Students will receive Carnegie credit for two science courses.

*Instructors:* Vashonda Davis (AP Chemistry), Katherine Sabree (Material Science)

*Days/Time:* Mon, Wed, and Thurs; 3:00 - 5:30 p.m.

*Prerequisites:* Chemistry (recommended) OR successful completion of Scientific Tools and Techniques

*Credit:* 2 Carnegie Units (1.0 per course)

**Robotics and Engineering**
This two semester project-based course will introduce students to basic CAD principles used in the robotics industry and present the interrelationship of various technology systems. Each semester is independent of the other. Fall semester is a prerequisite for Spring, but students may attend Fall only. Students will compete in the BEST Robotics challenge at Southern Polytechnic State University and possibly at South’s BEST at Auburn University in December. The students will utilize current technology to develop an understanding of skills required for designing and constructing a robot that has to perform specific functions.

*Instructor:* Dr. Debi Huffman

*Day/time:* Wednesday 4:00 - 6:30 p.m. Saturdays 1:00 - 4:00 p.m. Additional time TBD.

*Credit:* 1 Carnegie Unit

For additional information contact:
Fernbank Science Center
678-874-7102
or visit our website at http://fernbank.edu
Want to learn about animals, the environment, forests, food, robots, and much more? Advanced Studies at Fernbank Science Center may be for you.

This unique experience, available to all high school students, offers hands-on investigations into a variety of specialized areas of science. Students will have the opportunity to study with expert instructors, working in well-equipped laboratories or traveling to the field, seeing plants and animals in their natural habitats. These courses are provided tuition-free to all DeKalb County School District students. The courses are available to students outside of DeKalb County on a space-available basis. Contact the science center for more information.

To apply, students must submit an application obtained from their school counselor or you may download. To be considered student should have a high interest in the subject area, complete the application, submit a recommendation form from a science teacher or counselor and provide a brief statement explaining why they wish to enroll in the course. Please note that the Center’s policy requires students to have good attendance. Participants may be dropped from a course after three absences. Please see the detailed course descriptions below. Students must provide their own transportation to the science center.

Please read the detailed course descriptions carefully.

*Additional classes may be offered depending on instructor availability. Please check our website for updated offerings.

### Fall Semester

#### Science of Food

This is a multi-disciplinary course designed to introduce students to the field of food science. The course content covers many aspects of food production from farm to table. These include agricultural practices, processing, food safety, nutrition, new product development, packaging and sensory evaluation. Students will develop technical skills in microbiology, chemistry and physical science through many lab activities. Additionally, the class will visit regional food production and research facilities.

**Instructor:** Ms. Stacy Byrd

**Day/Time:** Tues. and Thurs., 3:00 – 5:30 p.m.

**Prerequisite:** Biology

**Credit:** 1 Carnegie Unit

#### Field Based Environmental Science

Examine how the earth is one interconnected system of abiotic and biotic components as you explore the environment in this hands-on/field based, tactile approach to learning experience. Each class session will involve field work to enhance the understanding of concepts discussed in the classroom. Students should be prepared to preform practical in class laboratory and outside investigations.

**Instructor:** Doug Hamby

**Day/Time:** Tues and Thurs, 3:00 – 5:30 p.m.

**Prerequisite:** Biology

**Credit:** 1 Carnegie Unit

#### Ecosystems Alive

Ecosystems will be examined in the field from the perspective of a naturalist. A variety of natural communities in Atlanta will be explored. This is a field course, so students will be exploring wetlands, lakes, streams and forests up close and personal!

**Instructor:** Mr. Chris Showalter

**Day/Time:** Mon. and/or Thursdays, 3:00 - 5:30 p.m.

One required Saturday field trip.

**Credit:** 1 Carnegie Unit

#### Forensic Science*

Examine the tools and scientific techniques used to solve crimes. This class will have a primary focus on the chemical aspect of forensics. Techniques include DNA, blood spatter, arson and explosive analysis. Field trips include visits to the GBI and Medical Examiners’ Office similar to those seen on CSI.

**Instructor:** Mr. Adrian Elliott

**Day/Time:** TBA Field trips may be scheduled during school hours.

**Prerequisite:** Chemistry

**Credit:** 1 Carnegie Unit

#### Oceanography*

Come explore the world’s oceans! In this course, students will use a multi-disciplinary approach to study the physical, geological, chemical, and biological components of the oceans, including the features of the ocean floor, ocean circulation, marine ecosystems, and the relationship between the atmosphere and the oceans. Several field trips are planned, including one weekend trip to the coast.

**Instructors:** Dr. Kate Wejnert and Ms. Nan Huebner

**Day/Time:** Tues and Thurs 3:00 – 5:30 pm

Two Saturday field trips

**Credit:** 1 Carnegie Unit

*Same course offered fall or spring - choose one