



# Center for Public Health and Advanced Medical Studies



The Center for Public Health and Advanced Medical Studies is located on the campus of White Knoll High School. The Center is open to all students in Lexington School District One beginning in grade 10. Students spend a total of two 90-minute blocks within the Center (half a day) each semester. All students take four Project Lead the Way (PLTW) courses focusing on the Biomedical Sciences. In addition to the courses taken through the center, students have the opportunity in their senior year to gain real world exposure through various work force visits.

**Center Prerequisites:** Students applying to the Center are required to have completed Biology 1 and Algebra 1 Honors prior to their sophomore year and have completed or be enrolled in Algebra 2 (Honors preferred). Students must pass all Center courses at a given grade level to continue to the next year of the program.

## Sophomore Year

In their Sophomore year, students begin taking courses in the Center. Students attend two blocks of classes each semester for a total of four classes. The classes being offered in Year One of the program include:

- Human Body Systems Honors
- Public Health Seminar Honors
- Chemistry 1 Honors
- Principles of the Biomedical Sciences Honors

## Junior Year

In their Junior year, students again take a total of four classes within the Center, two in the fall and two in the spring. The courses Juniors are required to take include:

- AP Chemistry 2
- Chemistry 2 Extension Honors
- Medical Interventions Honors
- Advanced Public Health Honors

*\*\*Students are encouraged to apply for externship opportunities during the summers between their Sophomore / Junior year and their Junior / Senior year.*

## Senior Year

In their final year in the program, students are able to focus on either Advanced Medical Studies or Public Health depending on where their interests lie. All students will take:

- Biomedical Innovations Honors
- Senior Seminar Honors
- AP Biology 2
- Biology 2 Extension Honors

Contact Information:  
Mr. Ryan Player  
Principal  
rplayer@lexington1.net

Mrs. Jennifer McNair  
Assistant Principal  
jmcnair@lexington1.net

Mrs. Melanie Piro  
Lead Teacher  
mpiro@lexington1.net

Dr. Crissy Roddy  
Director for Counseling and  
Advisement  
croddy@lexington1.net

**White Knoll High School**  
**(803) 821-5200**

# Course Requirements

## 10th Grade

**Principles of Biomedical Sciences HN 558000HW**  
Grade 10 1 unit

Students investigate the human body systems and various health conditions including heart disease, diabetes, and infectious diseases. They determine the factors that led to the death of a fictional person, and investigate lifestyle choices and medical treatments that might have prolonged the person's life. The activities and projects introduce students to human physiology, medicine, research processes, and bioinformatics. This course is designed to provide an overview of all the courses in the Biomedical Sciences program and lay the scientific foundation for subsequent courses.

**Human Body Systems Honors 558100HW**  
Grade 10 1 unit

Students examine the interactions of body systems as they explore identity, communication, power, movement, protection, and homeostasis. Students 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, students build organs and tissues on a skeletal manikin, work through interesting real world cases and often play the role of biomedical professionals to solve medical mysteries.

**Public Health Seminar Honors 559904HW**  
Grade 10 1 unit

This course is modeled after the University of South Carolina's Public Health 102 course. Students will be introduced to the history of public health and will then progress to analyzing public health initiatives on the local, state, national and global levels. Projects and activities in this course are designed to challenge student thinking while learning about the many facets of public health.

**Chemistry 1 Honors 323150HW**  
Grade 10 1 unit CHE lab credit

This course is an in-depth study of the nature and structure of matter, the periodic system, chemical reactions, balancing equations, mathematics of chemistry, gases, solutions and solubility, calorimetry, and acid-base relationships, with emphasis placed on chemical calculations. Appropriate laboratory activities that address the course inquiry standards are coordinated with the course content based on the South Carolina Chemistry Academic Standards.

## 11th Grade

**Medical Interventions Honors 558200HW**  
Grade 11 1 unit

Students investigate the variety of interventions involved in the prevention, diagnosis, and treatment of disease. The course is a "How-To" manual for maintaining overall health and homeostasis in the body as students explore: how to prevent and fight infection; how to screen and evaluate the code in human 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 are exposed to the wide range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics. Lifestyle choices and preventive measures are emphasized throughout the course as well as the important role scientific thinking plays in the development of interventions of the future.

**Advanced Public Health Honors 559905HW**  
Grade 11 1 unit

This course is designed to challenge students as they work through problem based units centered around the core areas of public health; epidemiology, biostatistics, environmental health sciences, health administrative services, and health promotion and behavior. Students will explore these five areas through hands-on, real world activities and labs.

**Advanced Placement Chemistry 2 327350AW**  
Grade 11 1 unit CHE lab credit

**Prerequisite:** Chemistry 1, Algebra 2  
**Requirement:** AP Chemistry Exam, Chemistry 2 Extension Honors linked course, summer reading/assignment

This course is a second year of intensive chemistry designed to prepare students to take the Advanced Placement Chemistry Examination. The course meets the objective of a general chemistry course at the college level. The College Board determines the course description; therefore, the content of this course must adhere to those requirements. This course is linked to a required one-unit honors course.

**Chemistry 2 Extension Honors 327351HW**  
Grade 11 1 unit

This course is a required link to Advanced Placement Chemistry 2 and is only open to those students enrolled in that course.

## 12th Grade

**Biomedical Innovations Honors 558300HW**  
Grade 12 1 unit

In this capstone course, students apply their knowledge and skills to answer questions or solve problems related to the biomedical sciences. Students design innovative solutions for the health challenges of the 21st century as they work through progressively challenging open-ended problems, addressing topics such as clinical medicine, physiology, biomedical engineering, and public health. They have the opportunity to work on an independent (capstone) project and may choose to work with a mentor or advisor from a university, hospital, physician's office, or industry. At the culmination of the project, students are expected to present their work to an adult audience that may include representatives from the local business and the healthcare community.

**Senior Seminar Honors 559906HW**  
Grade 12 1 unit

This course includes various opportunities for students to visit work sites within the public health and medical communities. As this course is linked to Biomedical Innovations Honors, students may choose to extend their capstone project over both courses if additional time and resources are needed.

**Advanced Placement Biology 2 327250AW**  
Grade 12 1 unit CHE lab credit

**Prerequisite:** Biology 1, Chemistry 1  
**Requirement:** AP Biology Exam, Biology 2 Extension Honors linked course, summer reading/assignment

This course is a second year of intensive biology designed to prepare students to take the Advanced Placement Biology Examination. The course meets the objective of a general biology course at the college level. The College Board determines the course description (including dissection); therefore, the content of this course must adhere to those requirements. This course is linked to a required one-unit honors course.

**Biology 2 Extension Honors 327251HW**  
Grade 12 1 unit

This course is a required link to Advanced Placement Biology 2 and is only open to those students enrolled in that course.

