

# Rockville HS – Biomedical Sciences Project Lead the Way (PLTW) Program of Study

The Project Lead the Way Biomedical Sciences program prepares students to take advantage of the tremendous career opportunities available in health and science. The hands-on, project and problem-based national curriculum engages students, allows them to explore the wide variety of healthcare and science career options, and equips them with the knowledge and skills necessary to succeed in any postsecondary biomedical sciences or pre-professional program. Students gain a broad foundation in science, mathematics, language arts, and social studies. The curriculum incorporates engineering principles such as design process, feedback loops, and fluid dynamics. Students will gain an awareness of the social, legal, and ethical issues surrounding technological advances related to the biomedical sciences.

The requirement for Program completion: All courses are required for pathway completion

<b>Title</b>	<b>GR</b>	<b>Descriptions</b>
Principles of Biomedical Science A/B  COURSE CODE: BHP2022 A/B	9-10	This course provides an introduction to the biomedical sciences through hands-on projects and problems. Student work involves the study of human medicine, research processes, and an introduction to bio-informatics. Key biological concepts embedded in the curriculum include homeostasis, metabolism, inheritance of traits, feedback systems, and defense against disease. Engineering principles such as the design process, fluid dynamics, and the relationship of structure to function are included.
Human Body Systems A/B (Advanced)  COURSE CODE: BHP2000 A/B  <b>Prerequisite:</b> Principles of Biomedical Science A/B	10-11	This course engages students in the study of basic human physiology, especially in relationship to human health. Students will use a variety of monitors to examine body systems (respiratory, circulatory, and nervous) at rest and under stress, and observe the interactions between various body systems. Students will use LabView software to design and build systems to monitor body functions. This course is for students who completed the first biomedical course, and is only offered at PLTW Inc.-approved schools.
Medical Interventions A/B (Advanced)  COURSE CODE: BHP2016 A/B  <b>Prerequisite:</b> Principles of Biomedical Science A/B and Human Body Systems A/B	11-12	This is the third course of the Biomedical Sciences Career program of study. The course explores the design and development of various medical interventions, including vascular stents, cochlear implants, and prosthetic limbs. In addition, students review the history of organ transplants and gene therapy, and stay updated on cutting-edge developments via scientific literature. Using 3D imaging, data acquisition software, and current scientific research students will design a product for medical intervention.

<p>Biomedical Innovation A/B (Advanced)</p> <p>COURSE CODE: BHP2008 A/B</p> <p><b>Prerequisite:</b> Principles of Biomedical Science A/B, Human Body Systems A/B, and Medical Interventions A/B</p>	12	<p>In this capstone course, students apply their knowledge and skills to answer questions and solve problems related to the biomedical sciences. Students will design innovative solutions for health challenges of the 21st century</p>
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***For any other options or questions, please see Mr. Jason Lomax, Resource Teacher (RT) for guidance and information.***