The Project Lead The Way – Biomedical Science Program Required Courses

Principles of Biomedical Science (8379) - Grade 9
In the introductory course of the PLTW Biomedical Science program, students explore concepts of biology and medicine to determine factors that led to the death of a fictional person. While investigating the case, students examine autopsy reports, investigate medical history, and explore medical treatments that might have prolonged the person's life. The activities and projects introduce students to human physiology, basic biology, medicine, and research processes while allowing them to design their own experiments to solve problems.

Human Body Systems (8380) – Grade 10
Students examine the interactions of human body systems as they explore identity, power, movement, protection, and homeostasis. Exploring science in action, students build organs and tissues on a skeletal Maniken®; use data acquisition software to monitor body functions such as muscle movement, reflex and voluntary action, and respiration; and take on the roles of biomedical professionals to solve real-world medical cases.

Medical Interventions (8381)- Grade 11
Students follow the life of a fictitious family as they investigate how to prevent, diagnose, and treat disease. Students explore how to detect and fight infection; screen and evaluate the code in human DNA; evaluate cancer treatment options; and prevail when the organs of the body begin to fail. Through real-world cases, students are exposed to a range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics.

Capstone Course: Biomedical Innovation (8382)- Grade 12
In the final course of the PLTW Biomedical Science sequence, students build on the knowledge and skills gained from previous courses to design innovative solutions for the most pressing health challenges of the 21st century. Students address topics ranging from public health and biomedical engineering to clinical medicine and physiology. They have the opportunity to work on an independent design project with a mentor or advisor from a university, medical facility, or research institution.

SAMPLE
PROJECT LEAD THE WAY BIOMEDICAL SCIENCE STUDENT PLAN OF STUDY

Subject	7th Grade	8th Grade	9th Grade	10th Grade	11th Grade	12th Grade
PLTW Courses			Principles of Biomedical Sciences	Human Body Systems	Medical Interventions	Capstone Course: Biomedical Innovation
Science	Life Science	Physical Science	Honors Biology	Honors Chemistry	AP Biology or AP Chemistry or Physics or Anatomy & Physiology	AP Physics or AP Environmental Science or AP Biology or AP Chemistry or Physics or Anatomy & Physiology
Math	Algebra I	Algebra I or Geometry	Geometry or Algebra II/Trig	Algebra II/Trig or Math. Analysis or DC Pre-Calculus or Probability and Statistics	Math Analysis or DE Pre-Calculus or AP Statistics or AP Calculus	AP Statistics or AP Calculus or DE Calculus or Computer Science elective
Social Studies	Civics	World Geography	World History I	World History II or AP European History	VA & US History or AP US History or DE US History	VA & US Government or AP Government & Politics or DE Government
English	English 7	English 8	Honors Eng 9 (with APA format)	Honors Eng 10 (with APA format)	Honors Eng 11 (with APA format) or AP Lang & Comp	Honors Eng 12 (with APA format) or AP Lit & Comp or DE English
World Language/ Electives		Year I World Language	Year II World Language	Year III World Language	Year IV World Language or AP Psychology	Economics and Personal Finance or Double Block AP Science or AP Psychology
Health/ P.E.			H/P.E. 9	H/P.E. 10	Economics and Personal Finance or Double Block AP Science	AP Psychology or Double Block AP Science

Advanced Studies Diploma Graduation Requirements for students entering high school in 2018-2019

Subject Area	Standard Credits	Verified Credits	Courses with SOL EOC Exams
English	4	2	English 11 (Reading, Writing)
Math	4	1	Algebra I, Geometry, Algebra II
Laboratory Science	4	1	Biology, Chemistry, Earth Science
History and Social Science	4	1	World History I, World History II, U.S. History
Health and P.E.	2		
World Language	3		
Fine Arts or CTE	1		
Economics and Personal Finance	1		
Electives	3		
Total Credits	26	5	

Additional Requirements:

- Students must (a) complete an Advanced Placement, honors, or IB course, or (b) earn a career and technical education credential approved by the board
- Students must complete on virtual course which may be non-credit bearing or a credit bearing required or elective course
- Students must be trained in emergency first aid, CPR, and AED
- Students shall acquire and demonstrate foundational skills in critical thinking, creative thinking, collaboration, communication, and citizenship.
- Students must complete 50 hours of community service hours by their senior year.