



Pre-Engineering Pathway Offerings at LCB Academy Virtual Instruction Program 2022 – 2023 School Year

Gold
Diploma Seal
(1-8)

Silver
Diploma Seal
(1-4)

- Course Offerings to Get You There:
1. Intro to Engineer Design
 2. Intro to Computational Thinking
 3. Robotics
 4. Principles of Engineering (Next year)
 5. Data Manipulation
 6. Statistical Reasoning
 7. Dual Enrollment General Biology I
 8. Calculus I

****All above courses are 5-Point CPSB Courses**

1. Introduction to Engineer Design: A course designed to introduce the profession, ethics, and diversity of engineering to students. The course will expose students to various engineering disciplines: Biological, Civil, Chemical, Computer Science, Construction Management, Electrical, Environmental, Industrial, Mechanical, and Petroleum. It will emphasize the need for strong skills in technical problem solving, engineering design, ethical decision making, and communicating to diverse audiences.
2. Introduction to Computational Thinking: This course introduces students to the basic ideas of computational thinking and its applications to problem solving in STEM fields. Students will create code for simple drawings, animations and simulations.

3. Robotics: This beginning robotics course uses VEX EDR Robotics parts and VEX Code software to introduce the student to basic programming as well as problem solving strategies. Students work as a project manager, a builder, and a programmer throughout each project.

4. Principles of Engineering (2023-2024 Offering): This course is a sophomore-level survey of engineering course meant to be taken after Introduction to Engineering. The course continues to expose students to some of the major concepts that they will encounter in a postsecondary engineering course of study. Prerequisite: Completion of Intro to Engineering.

5. Data Manipulation (2023-2024 Offering): This course introduces students to the emerging field of Data Science. Instructional units cover the standard practices for effective data manipulation, analysis and interpretation as well as necessary concepts in the three disciplines involved (mathematics, statistics and computing.)

6. Statistical Reasoning: This STEM math course will introduce students to college-level statistics by strengthening students' understanding of statistical methods of inquiry and statistical simulations. Students will formulate and analyze statistical questions using data, collect and interpret data, and formulate graphical and numerical methods to analyze data. Prerequisite: Successful completion of Algebra I, Geometry, and Algebra II.

7. Dual Enrollment Biology I: This course is a dual enrollment course which is intended for non-science majors.

8. Calculus I: This course is an initial course in a calculus sequence where students will study basic calculus with applications to problems in physics, chemistry, and engineering. Prerequisite: Successful completion of Math 1110 (or an approved Precalculus w/Trigonometry course).