Engineering and Computer Science

Principles of Engineering (Project Lead the Way - college credit): a year long survey course of engineering. The course exposes students to some of the major concepts that they will encounter in a postsecondary engineering course of study: Projectile Motion, Rocketry, Robotics, Machine Design, Bridge Design, Electronics, Programming, and Statistics. Students earn 3 college credits by passing the spring exam. 9th to 12th grade.

Introduction to Engineering Design (Project Lead The Way - college credit): an introductory engineering course to develop problem solving skills. Using 3D computer modeling software, students will learn the design process and solve design problems for which they develop, analyze, and create product models. Two semesters. 9th to 12th grade. Student should have a B or better in Algebra 1. Students earn 3 college credits by passing the spring exam. 9th to 12th grade.

Civil Engineering and Architecture (Project Lead the Way - college credit): a year long course that provides an overview of the fields of Civil Engineering and Architecture, while emphasizing the interrelationship and dependence of both fields on each other. Students use state of the art software to solve real world problems and communicate solutions to hands-on projects and activities. Two semesters. 9th to 12th grade. Student should have a B or better in Algebra 1. Students earn 3 college credits by passing the spring exam. 9th to 12th grade.

Computer Science Principles (Project Lead the Way - college credit): a year long course that provides an overview of computer science and programming. This course covers a variety of topics including: Python, Android App Inventor, PHP, javascript, SQL, and provides a first look at graphics, complex algorithms, and Object Oriented Programming. Students earn 3 college credits by passing the spring exam. 9th to 12th grade.

Cybersecurity (Project Lead the Way - college credit): a year long course that provides an overview of cybersecurity designed to expose high school students to the ever-growing and far-reaching field of cybersecurity. This will be accomplished through problem-based learning, where students roleplay as cybersecurity experts and train as cybersecurity experts do. Students earn 3 college credits by passing the spring exam. 9th to 12th grade.

Intro to Computer Programming and 3D Computer Modeling: an intro course that covers a variety of topics in computer technology, including: 3D software modeling (SketchUp, Autodesk Inventor), computer programming (Scratch, Javascript, Python), and computer graphics. One semester. 9th to 12th grade.

Computer Science IB Standard Level: This course is approximately equivalent to a first-year (bachelors) course. We will focus on programming, modelling and fundamentals of computer systems. Students will have an opportunity to address a real-world problem and go through the software development cycle to create a solution. Two semesters (11th and 12th grade). There is no prerequisite but a student should have completed Algebra 2/Trig with a solid B grade.

Computer Science IB Higher Level: The higher level (HL) course encompasses all the elements of the SL course but is extended to include: computer mathematics and logic; advanced data structures and algorithms; further system fundamentals; and file organization. Two semesters (12th grade). The standard level course is almost always a prerequisite.

Agriculture

Introduction to Agriculture: Food, plants, animals, oh my! Students will get the buffet of agriculture-learning a little bit of everything! Students In this class, we will explore the wide world of agriculture through topics in animal science, plant science, environmental science, food science, natural resources & wildlife, and biotechnology. Students will participate in Hands-on experiences and will be used to teach topics in agriculture while taking advantage of seasonal opportunities. This course will introduce students to the rest of the provided opportunities to explore the high school course offerings in the agriculture department.

Natural Resources: Make Minnesota's great outdoors your classroom as we take learning outside to explore Minnesota's forests, soil and water. You'll learn about the anatomy and physiology, growth, and development of trees; soil structure, nutrient analysis, and erosion; and water management and pollution. We'll talk about the environmental and economic impact of these intricate ecosystems on our state and world, plus analyze ways that our population can preserve, protect and manage natural resources for the future.

Plant Science: Give your green thumb a workout in the warmth of our school! This course is designed as an overview of the characteristics of plants, so you'll get your hands dirty and learn all about plant anatomy and growth. You'll walk away confident in your ability to identify common plants - and care for them - so you'll be able to impress the gardening experts in your life.

Floral Design: You can't have a successful event without a great floral arrangement! Whip out your shears and create floral arrangements, centerpieces, bows and corsages - putting the best design tools and principles into use. Learn how to identify and care for cut flowers and understand their specific uses in design work. Get a first-hand look at the floral industry as you plan and price out the flowers for an event such as a wedding.

Food Justice and Sustainability: How do we get food from farm to table while caring for our environment AND ensuring equity for everybody in the food system? In this course, students will explore solutions for agricultural sustainability and food justice by learning about sustainable management techniques and engaging in class discussions of current environmental and food justice issues such as climate change, environmental racism, food deserts, farm labor conditions, and more!

Food Science: Do you love food and want to learn more about the science of making delicious meals? In this class, we will investigate the scientific characteristics of food, as well as the technologies, techniques, and environmental considerations for food preparation, processing, packaging, and presentation through hands-on activities. Students will also explore careers in food science and discuss relevant current events.

Woodworking & Design

Beginning Woodworking: Beginning woodworking is an introduction to the safe and proper use of woodworking hand tools and power equipment. Students learn woodworking through the construction of projects. Students learn the basics of wood joinery and wood finishing.

Intermediate Woodworking: Intermediate woodworking provides increased opportunities for students to work independently on the design and construction of projects. Projects in this course involve more advanced wood joinery and finishing techniques. Prereq- Beginning Woodworking

Digital Design & Fabrication: This is a product design course focused on using the design cycle to develop and build projects. Projects in this course involve a wide range of design areas including graphic design, manufacturing, and video production. Students that enjoy problem solving and DIY projects will enjoy this course.

Film

Film IB: The Diploma Program film course aims to develop students' skills so that they become adept in both interpreting and creating film.. Through the study of film and exercises in film-making, the course explores film history, theory and the sociocultural context of film. Students have the opportunity to take the Film IB Diploma Assessment as part of this class.