Technology

4916: Introduction to Engineering Design (IED) (C) - *Project Lead the Way 1*

Introduction to Engineering Design This is an engineering foundation course that teaches problem-solving skills using a design development process. Models of product solutions are created, analyzed and communicated using the sophisticated solid modeling computer software program Autodesk Inventor. This course is the first part of a Project Lead the Way sequence in the high school. Project Lead the Way is a nationwide multi-year program which, when combined with traditional secondary school mathematics and science courses, introduces students to the scope, rigor and discipline of engineering prior to entering college. This course may be taken for college credit through the Rochester Institute of Technology.

Prerequisite(s): None
Grade(s): 9, 10, 11
Credit: 1
Meets: 5 periods weekly

4926: Civil Engineering / Architecture (C) (CEA) - *Project Lead the Way 1 or 2*

This is the second course in the Jericho High School Project Lead the Way sequence. It emphasizes the interrelationship and dependence of both civil engineering and architecture on each other. This is accomplished through a comprehensive study of the roles of civil engineers and architects in: project and site planning, building design, documentation and presentation. Students will also be involved in the production of long and short term projects utilizing sophisticated computer software such as Autodesk Revit. This course may be taken for college credit through the Rochester Institute of Technology.

Prerequisite(s): Introduction to Engineering Design; Knowledge of basic Algebra, Geometry and Trigonometry is strongly recommended.
Grade(s): 10, 11
Credit: 1
Meets: 5 periods weekly

4936: Computer Integrated Manufacturing (C) (CIM) - *Project Lead the Way 2 or 3*

The major focus of this course is to enable the students to answer such questions as: How are things made? What processes go into creating products? How do assembly lines work? How has automation changed manufacturing? As they discover the answers to these questions, they will learn about the history of manufacturing and experience manufacturing processes, robotics, and automation. The course therefore utilizes computer modeling, Computer Numeric Control (CNC) equipment, Computer Aided Manufacturing (CAM) software, and flexible manufacturing systems. Students who successfully complete Computer Integrated Manufacturing may earn college credit through the Rochester Institute of Technology.

Prerequisite(s): Introduction to Engineering Design (IED) is required. Knowledge of algebra and geometry are also recommended.
Grade(s): 10, 11
Credit: 1
Meets: 5 periods weekly

4946: Principles of Engineering (C) (POE)- *Project Lead the Way 4*

This is a college-level survey course in which students explore the practical applications of engineering technology. It will enable them to study and experience a variety of technology systems and manufacturing processes while developing skills that use math-science-technology applications to solve engineering problems. Individuals who enroll in this course will utilize several highly sophisticated computer software programs including AutoDesk Inventor Professional. Principles of Engineering is the third course in the Jericho High School Project Lead the Way sequence. This course may be taken for college credit through the Rochester Institute of Technology.

Prerequisite(s): Introduction to Engineering Design; Knowledge of Algebra, Trigonometry and basic Statistics is strongly suggested.
Grade(s): 12
Credit: 1
Meets: 5 periods weekly

4951: Robotics

Robots are being used today in private industry, scientific research, and the military to perform tasks that, for various reasons, are not advantageous for humans to perform. The objective of this course is to use a hands-on approach to introduce the basic concepts in robotics, focusing on mobile robots and illustrations of current state of the art research and applications. Course information will be tied to lab experiments; students will work in teams to build and test increasingly more complex VEX-based mobile robots. In this course, basic concepts will be discussed, including coordinate transformations, sensors, path planning, kinematics, feedback and feed-forward control; stressing the importance of integrating sensors, effectors and control. The second half of the course will focus on applying the knowledge from the initial lectures to the key approaches of mobile robot control (reactive, behavior-based, and hybrid). The culmination of this course will be spent in applying the learned material to design and build a robot for a final competition. This is not a PLTW course offering.

Prerequisite(s): Introduction to Engineering Design (IED), and Computer Integrated Manufacturing (CIM) or Introduction to Computer Science
Grade(s): 10, 11, 12
Credit: 1
Meets: Full year, every day

4961: Introduction to Film and Video Production I

Lights, Camera, Action! This course will provide students with a foundational tool kit in the basics of video capture and editing. Students will develop skills in photography, cinematography, and will learn to edit video and audio with Final Cut Pro (an industry standard software). Additional topics covered include newscast, green screen, lighting, camera angles, and special effects. *Prerequisite(s): None*

Grade(s): 9, 10, 11, 12
Credit: 0.5
Meets: Everyday for 1 period for 1 semester

4971: Introduction to Film and Video Production II

Do you like movies, stories, and using your imagination? Then Let's Make A Video! Videos are one of the most exciting ways to share information in the 21st century. Learn how to produce and share videos

through a variety of genres including animation, documentary, experimental, narrative, interview, and newscast. You are bound only by your own imagination.

Prerequisite(s): Introduction to Film and Video Production I
Grade(s): 9, 10, 11, 12
Credit: 0.5
Meets: Everyday for 1 period for 1 semester

4981: Film and Video Production III

Are you a filmmaker? Then this class is for you. Film and Video Production III will provide emerging filmmakers an opportunity to foster their creative, technical and communications skills. Students will study film and its power to influence social change through the development of creative narrative and documentary style projects. Class work will focus on submission to a variety of student film competitions including the Speak Truth to Power competition associated with the Tribeca Film Festival.

Prerequisite(s): Introduction to Video I, II or Instructor Approval
Grade(s): 10, 11, 12
Credit: 1
Meets: Full Year, Every Day

4991: Film and Video Production IV

Film and Video Production IV will provide emerging filmmakers additional opportunities to foster their creative, technical and communication skills in writing, directing, audio control, lighting and video editing. In this course students will continue to build their body of work in the effort to curate an advanced video portfolio for college submission. This course may be taken for college credit through SUNY Oswego.

Prerequisite(s): Film and Video Production III
Grade(s): 11, 12
Credit: 1
Meets: Full Year, Every Day

4992: Senior Video Production V

Film and Video Production IV will provide emerging filmmakers additional opportunities to foster their creative, technical and communication skills in writing, directing, audio control, lighting and video editing. In this course students will continue to build their body of work in the effort to curate an advanced video portfolio for college submission. This course may be taken for college credit through SUNY Oswego.

Prerequisite(s): Film and Video Production IV
Grade(s): 12
Credit: 1
Meets: Full Year, Every Day