



Course Syllabus
Principles of Engineering
Mr. Michael Dorsey
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Room L211

Course Description

Principles of Engineering (PoE) is typically the second course of Project Lead the Way’s engineering strand. Through problems that engage and challenge, students explore a broad range of engineering topics, including mechanisms, the strength of structures and materials, and automation. In PoE, students develop skills in problem solving, research, and design while learning strategies for design process documentation, collaboration, and presentation.

GE 121 (St. Louis Community College)

This course is an introduction to the opportunities and responsibilities of Engineering. Students will learn the field of Engineering, and explore Engineering Careers. They will complete projects in Design, Engineering Systems, Thermodynamics, Fluid Systems, Electrical and Control Systems, Strength and Properties of Materials, and Production Process and Quality Control.

Units of Study

- | | |
|-----------------------------|------------------------------|
| 1. Energy and Power | 3. Control Systems |
| 2. Materials and Structures | 4. Statistics and Kinematics |

Course Learning Outcomes

At the completion of this course, students are expected to:

LO 1	The student will demonstrate knowledge of the definition and types of Engineering, the workings of the engineering team and careers in Engineering.
LO 2	The student will plan and compose a written technical report about a career field in engineering.
LO 3	Students will design and deliver a presentation utilizing appropriate support materials about research they have conducted.
LO 4	Students conduct an energy analysis on a section of their home
LO 5	Students will design, diagram and implement a program using robotic systems, and defend their design solution in an oral presentation.
LO 6	Students will prepare and present a mathematical analysis of a truss design as part of a 5 minute oral presentation about their bridge design

LO 7	Students will give an oral presentation on the production processes used to create products from a category of materials and a demonstration about one of the processes.
LO 8	Students will prepare and defend a position on an ethical engineering dilemma.
LO 9	Students will design and build a device for the purpose of conducting experiments of acceleration, displacement, and velocity.

What You Can Expect of Your Instructor

The course instructor serves more as a facilitator of learning than as a traditional lecturer. The instructor is sensitive to the needs of new learners of sophisticated computer applications and has an understanding of the challenges associated with teaching and learning software applications.

What is Expected of Students

- Respect other students in the classroom
- Respect classroom and equipment
- Computers – Please do not change any settings, do not download anything from the Internet (Instant Messenger, games, etc.), and only use the Internet for approved activities from the instructor.
- Follow expectations and guidelines of UCHS students

Classroom Expectations

- Respect Yourself
- Respect Others
- Respect the Classroom Space

Materials Needed for Class Each Day

- Pencil (sharpened)
- Engineering notebook (provided)
- Charged Chrome Book
- Thinking cap

Learning Management System

Student will have access to the curriculum at any time at my.pltw.org. Students will obtain all documents and presentations via the site.

Electronic Devices

While it is important to recognize that electronics may be a valuable tool to the learning process, they can also be a great distraction. Therefore, usage will not be permitted at UCHS. Mr. Dorsey’s class is equipped with phone lockers for student use.

NAF Track Certification

Completion of PoE is one of the three major requirements for students to earn NAF Track Certification.

St. Louis Community College Policies

Withdrawal Policy

To formally withdraw, students must submit official forms to the Admissions/Registration office. The class will be shown on the transcript with a grade of W, and students are not eligible for a refund of fees. It is always the student's responsibility to initiate a withdrawal. The deadline to withdraw from this course is March 6, 2020. Students applying for financial aid at a college or university are required to submit all transcripts for college courses they have taken.

Diversity & Inclusion, Non-Discrimination Statement

St. Louis Community College is committed to nondiscrimination and equal opportunities in its admissions, educational programs, activities and employment regardless of race, color, creed, religion, sex, sexual orientation, national origin, ancestry, age, disability, genetic information, or status as a disabled or Vietnam-era veteran and shall take action necessary to ensure non-discrimination. The College maintains a complaint procedure for the purpose of investigating and providing prompt and equitable remedy. Student inquiries concerning discrimination or harassment, and the procedure for complaints of discrimination or harassment may be made to: Mary Zabriskie, Director, Student Conduct/Title IX Coordinator, 314-539-5345, mzabriskie@stlcc.edu.

Disability Resources and Access Office Information

STLCC is committed to providing all students equal access to learning opportunities. Access Office staff, available on each campus, work with students who have disabilities to provide and/or arrange academic accommodations. Students who have, or think they may have, a disability are encouraged to contact the campus Access Office:

- Forest Park & Harrison Center: 314-644-9039 or FP-Access@stlcc.edu

Students with academic accommodations are responsible for providing their professors with Instructor Memos and should do so early in the course. For more information, see Access services (<https://www.stlcc.edu/student-support/disability-services/>).

Title IX

Discrimination includes any form of unequal treatment on the basis of sex, sexual orientation or gender expression such as denial of opportunities, harassment, and violence. Sex based violence includes sexual assault, sexual harassment, dating violence, domestic violence and stalking. If you experience discrimination in any of these forms, you are encouraged to report the incident to the Title IX Coordinator, or campus-based Title IX Investigators. To learn more, including information on campus and community resources, go to STLCC's Sexual Misconduct Policy (<https://www.stlcc.edu/docs/policies-and-procedures/sexual-misconductguidelines.pdf>).

