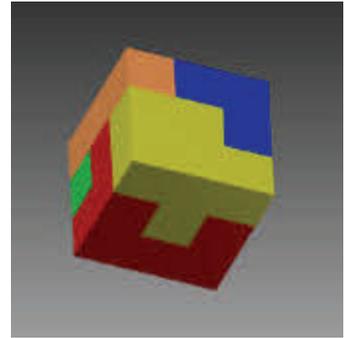


Project Lead the Way at Center Grove High School

Engineering & Technology

IED

IED (Introduction to Engineering Design) is an engineering course which develops student problem solving skills, with emphasis placed on the development of three-dimensional solid models. Students will work from sketching simple geometric shapes to applying a solid modeling computer software package. They will learn a problem solving design process and how it is used in industry to manufacture a product. The techniques learned, and equipment used, are state of the art and are currently being used by engineers throughout the United States.



Principles of Engineering is a course that helps students understand the field of engineering/engineering technology. Exploring various technology systems and manufacturing processes help students learn how engineers and technicians use math, science and technology in an engineering problem solving process to benefit people. The course also includes concerns about social and political consequences of technological change.

POE

DE

Students use computer simulations to learn about the logic of electronics as they design, test and actually construct circuits and devices. This course in applied logic that encompasses the application of electronic circuits and devices. Computer simulation software is used to design and test digital circuitry prior to the actual construction of circuits and devices. Computer simulation tests the circuit design and aids in the process of Correct LOGIC. The circuit is then built and tested with the use of Integrated Circuits chips.

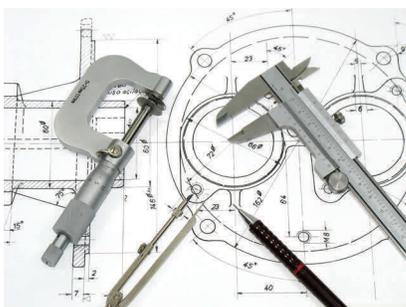


This course will introduce students to the fundamental design and development aspects of civil engineering and architectural planning activities. Application and design principles will be used in conjunction with mathematical and scientific knowledge. Computer software programs will allow students opportunities to design, simulate and evaluate the construction of buildings and communities. During the planning and design phases, instructional emphasis will be placed on related transportation, water resource, and environmental issues. Activities include: Project Planning, Site Planning, Building Planning and Project Implementation.

CEA

AE

Aerospace engineering introduces students to the world of aeronautics, flight, space-life sciences, and systems engineering through hands-on engineering projects developed with NASA. Students in this course will apply scientific and engineering concepts to design materials and processes that directly measure, repair, improve, and extend systems in different environments.



Engineering Design and Development is an engineering research course where students work in teams to research, design and construct a solution to an open ended engineering problem. The problem may be selected from a data base of engineering problems, be a recognized national challenge, or be an original engineering problem identified by the team and approved by the instructor. The students will maintain an engineering notebook as a part of a portfolio of their work. Each team will be responsible for progress reports and making a final presentation of their project to an outside review panel. Students may need to leave campus for research and/or meet with mentor engineers as part of the class.

EDD

Project Lead the Way Course Pathways

Career Pathway: Engineering

Career Pathway: Engineering Technology

Engineering and Engineering Technology are separate but closely related professional areas. Engineering programs often focus on theory and conceptual design, while engineering technology programs usually focus on application and implementation. Also, engineering programs typically require additional, higher-level mathematics, including multiple semesters of calculus and calculus-based theoretical science courses in college. Engineering technology programs typically focus on algebra, trigonometry, applied calculus, and other courses that are more practical than theoretical in nature

ENGINEERING	Grade	English/ Language Arts	Math	Science	Health/PE Social Studies	CTE/Career Preparation Courses for this Pathway		Other Elective Courses for Academic Honors Diploma
	9	English 9	Algebra I/ Hrs	Biology/Hrs	Geography/ History of the World or World History/ Civilization	Introduction to Engineering Design	Preparing for College & Careers; Health & Well- ness	World Language
	10	English 10	Geometry/ Hrs. AND Algebra II/ Hrs.,	Chemistry/ Hrs Or Earth and Space Science	Health & Wellness/ Physical Education	Principles of Engineering	Computer Applications/ Programming Class OR Other Elective	World Language
	11	English 11	Pre- Calculus/ Trigono- metry	Hrs. Physics	US History	Choose 1- 3 of the following courses: Civil Engineering & Architecture; Digital Electronics, Aerospace Engineering		World Language
	12	English 12	AP Calculus	AP Physics	Government Economics	Engineering Design and Development	PLTW Elective	Fine Arts

ENGINEERING Technology	Grade	English/ Language Arts	Math	Science	Health/PE Social Studies	CTE/Career Preparation Courses for this Pathway		Other Elective Courses for Academic Honors Diploma
	9	English 9	Algebra I/ Hrs	Biology/Hrs	Geography/ History of the World or World History/ Civilization	Introduction to Engineering Design	Preparing for College & Careers; Health & Well- ness	World Language
	10	English 10	Geometry/ Hrs.	Earth and Space Sci- ence OR ICP	Health & Wellness/ Physical Education	Principles of Engineering	Computer Applications/ Programming Class OR Other Elective	World Language
	11	English 11	Algebra II	Chemistry OR Physics	US History	Choose 1- 3 of the following courses: Civil Engineering & Architecture; Digital Electronics, Aerospace Engineering		World Language
	12	English 12	Precalculus/ Trigono- metry	Chemistry OR Physics	Government Economics	Engineering Design and Development	PLTW Elective	Fine Arts