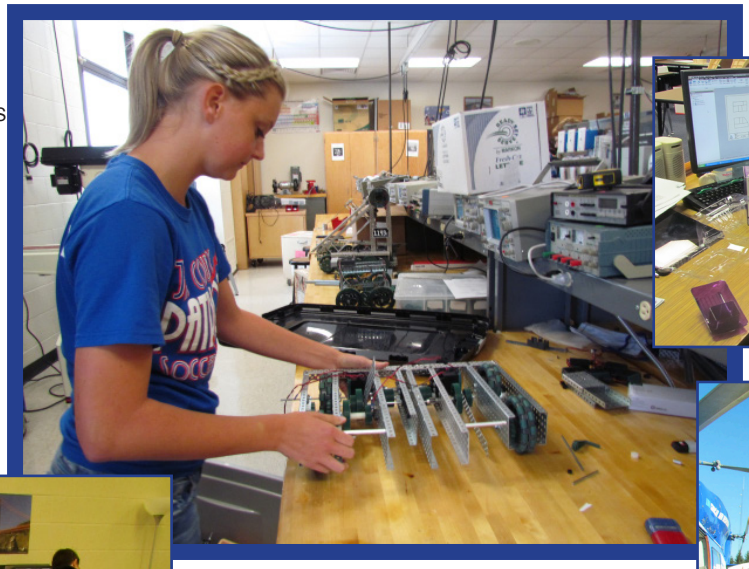
Jay County • Bluffton • Bellmont • Norwell • Adams Central
Southern Wells • Blackford • South Adams • Huntington

Project Lead the Way

MANUFACTURING: Engineering

POSSIBLE CAREERS:

- Architectural/Engineering Mgrs
- Drafters
- Materials Engineers
- Mathematicians
- Mechanical Engineering Techs
- Physicists
- Astronomers
- Petroleum Engineers



Jay County

Norwell

Bellmont

Adams Central

Mechanical engineering is one of the broadest engineering disciplines. Mechanical engineers research, design, develop, build, and test mechanical devices, including tools, engines, and machines.

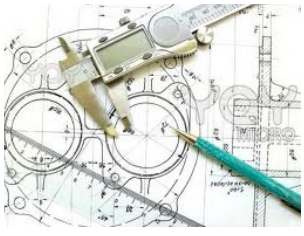
COURSES:

INTRO TO ENGINEERING DESIGN
DIGITAL ELECTRONICS
PRINCIPLES OF ENGINEERING
CIVIL ENGINEERING & ARCHITECTURE
ENGINEERING DESIGN & DEVELOPMENT

CTSO: NONE

DUAL COLLEGE CREDITS
Ivy Tech Community College
Purdue University

DIPLOMAS
Core 40
Core 40 with Technical Honors
Core 40 with Academic Honors



JOB OUTLOOK

Employment of **Mechanical Engineers** is expected to grow 9 percent from 2010 to 2020, slower than the average for all occupations. Job prospects may be best for those who stay abreast of the most recent advances in technology.

Source: Bureau of Labor Statistics

CTE Cooperative Serving Adams • Blackford • Huntington • Jay • Wells Counties

For more information:
Kevin Keller, Area 18 director
kkeller@bhmsd.k12.in.us

1/23/2013

See your school guidance counselor for assistance if your school currently does not offer the classes in which you are interested. There are shared programs among the nine high schools in the Area 18 Career and Technical Education network.

Indiana College and Career Pathway Plan – State Model

Cluster: Manufacturing | **Career Pathway: Engineering/Engineering Technology**

Core 40 with Honors High School Graduation Plan*

*This is a SAMPLE plan for schools to use in planning. Course sequences and grade level in which courses are offered may vary according to local policies, practices and resources.

Students should enroll in Indiana Career Explorer, complete interest inventories, and investigate careers in clusters & pathways prior to or during the time they create their individual Pathway Plans.

	Grade	English/ Language Arts	Math	Science	Health/PE Social Studies	CTE/Career Preparation Courses for this Pathway		Other Elective Courses for this Pathway	
SECONDARY	9	English 9	Algebra I	Biology	Health & Wellness/ Physical Ed	**Introduction to Engineering Design	Preparing for College & Careers;	Digital Citizenship; Personal Financial Responsibility	
	10	English 10	Geometry	Chemistry	Geography/History of the World or World History/Civilization	**Principles of Engineering	All Area 18 CTE Schools	Fine Arts	World Language
	11	English 11	Algebra II	3rd Core 40 Science	US History	**Choose1 to 3 of the following courses: Civil Engineering & Architecture; Computer Integrated Manufacturing; Digital Electronics; Biotechnical Engineering; Aerospace Engineering		Adams Central Jay County Norwell Bellmont	World Language
	12	English 12	Math or Quantitative Reasoning		Government Economics	Engineering Design and Development	Norwell Bellmont Bluffton Jay County		World Language

State specified Pathway Assessments: ECAs from National PLTW

Industry Recognized Certification: Autodesk Inventor Certified User, Autodesk Inventor Certified Associate, Autodesk Inventor Certified Professional

Postsecondary Courses Aligned for Potential Dual Credit**

**See individual Course Frameworks for alignment of high school course standards and postsecondary course objectives

Ivy Tech	Vincennes University
• ADMF 103 – Graphic Communications for Manufacturing OR • DESN 102 - Technical Graphics • ADMF 115 Materials & Processes for Manufacturing • ADMF 113 – Electrical & Processes for Manufacturing • ADMF 116 – Automation & Robotics in Manufacturing I • DESN 105 – Architectural Design I	▪ ELEC 130 - Digital Logic I ▪ CIMT 125/ 125L - Intro to Robotics/ Automation with Lab ▪ ARCH 221 - Advanced Architectural Software Applications

Civil Engineering and Architecture

Introduces 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 should allow students opportunities to design, simulate, and evaluate the construction of buildings and communities. During the planning and design phases, instructional emphasis should be placed on related transportation, water resource, and environmental issues. Activities should include the preparation of cost estimates as well as a review of regulatory procedures that would affect the project design.

Digital Electronics

Digital Electronics is a course of study in applied digital logic that encompasses the design and application of electronic circuits and devices found in video games, watches, calculators, digital cameras, and thousands of other devices. Instruction includes the application of engineering and scientific principles as well as the use of Boolean algebra to solve design problems. Using computer software that reflects current industry standards, activities should provide opportunities for students to design, construct, test, and analyze simple and complex digital circuitry software will be used to develop and evaluate the product design. This course engages students in critical thinking and problem-solving skills, time management and teamwork skills.

Engineering Design and Development

An engineering research course in which students work in teams to research, design, test and construct a solution to an open-ended engineering problem. The product development life cycle and a design process are used to guide the team to reach a solution to the problem. The team presents and defends their solution to a panel of outside reviewers at the conclusion of the course. The EDD course allows students to apply all the skills and knowledge learned in previous pre-engineering courses. The use of 3D design software helps students design solutions to the problem their team has chosen. This course also engages students in critical thinking and problem-solving skills, time management and teamwork skills, a valuable set for students' future careers.

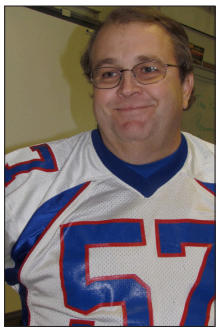
Bellmont | **Norwell** | **Adams Central** | **South Adams** | **Jay County**

Civil Engineering & Architecture
Eng. Design & Development

Civil Engineering & Architecture
Eng. Design & Development

Intro to Engineering Design
Principles of Engineering
Digital Electronics

Intro to Engineering Design
Principles of Engineering



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