

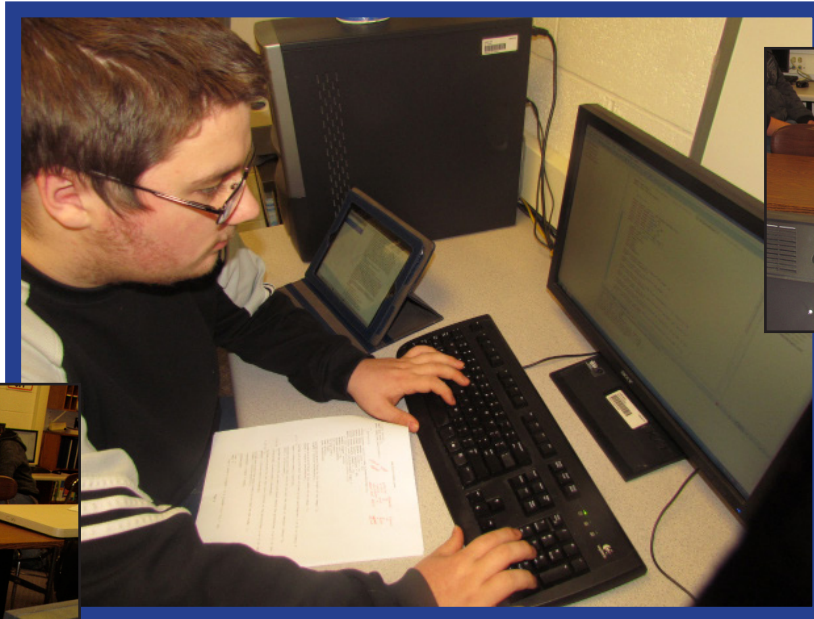


Bellmont • Huntington North, Adams Central • Southern Wells  
Norwell • Bluffton • Jay County • Blackford • South Adams

# Computer Programming

## INFORMATION TECHNOLOGY

Belmont



### POSSIBLE CAREERS:

- SOFTWARE DEVELOPERS
- COMPUTER/IT MANAGERS
- COMPUTER HARDWARE ENGINEERS
- COMPUTER SUPPORT SPECIALISTS
- COMPUTER SYSTEMS ANALYSTS

**Most computer programmers have a bachelor's degree; however, some employers hire workers with an associate's degree. Most programmers specialize in a few programming languages.**

**DUAL CREDITS**  
Ivy Tech College

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

### COURSES:

- COMPUTER PROGRAMMING I
- COMPUTER PROGRAMMING II

**Computer Programmers** write code to create software programs. They turn the program designs created by software developers and engineers into instructions that a computer can follow.

### JOB OUTLOOK

Employment of **Computer Programmers** is expected to increase 12 percent from 2010 to 2020, about as fast as the average for all occupations. Since computer programming can be done from anywhere in the world, companies often hire programmers in countries that have lower wages.

*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

**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: Information Technology					Pathway: Computer Programming				
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.									
SECONDARY	Grade	English/ Language Arts	Math	Science	Health/PE Social Studies	CTE/Career Preparation Courses for this Pathway		Other Elective Courses for this Pathway	
	9	English 9	Algebra I	Biology	Health & Wellness/ Physical Ed	Preparing for College & Careers;		Digital Citizenship, Personal Financial Responsibility	World Language
	10	English 10	Geometry	Chemistry	Geography/History of the World or World History/Civilization	**Information Communications and Technology			World Language
	11	English 11	Algebra II	3 <sup>rd</sup> Core 40 Science	US History	**Computer Programming I		Belmont	World Language
	12	English 12	Math or Quantitative Reasoning		Government Economics	**Computer Programming II		Belmont	Fine Arts
State specified Pathway Assessment: Dual Credit Finals									
Industry Recognized Certification: None									

Postsecondary Courses Aligned for Potential Dual Credit**	
Ivy Tech	Vincennes University
<ul style="list-style-type: none"> <li>CINS 101 Micro Operating Systems</li> <li>CINS 113 Logic Design Programming</li> <li>CINS 121 C++ Programming</li> <li>CINS 136 Java Programming</li> <li>CINS 137 Visual Basic Programming</li> </ul>	<ul style="list-style-type: none"> <li>Dual Credit Pending</li> </ul>

### Computer Programming I

Covers fundamental concepts of programming are provided through explanations and effects of commands, and hands-on utilization of lab equipment to product correct output. This course introduces the structured techniques necessary for efficient solution of business-related computer programming logic problems

and coding solutions into a high-level language. Includes program flowcharting, pseudo coding, and hierarchy charts as a means of solving these problems. The course covers creating file layouts, print charts, program narratives, user documentation, and system flowcharts for business problems. Reviews algorithm development, flowcharting, input/output techniques, looping, modules, selection structures, file handling, and

control breaks. Offers students an opportunity to apply skills in a laboratory environment. Demonstrations of business problems and solutions techniques will be reviewed.

### Computer Programming II

Explores and builds skills in C++ and Java. The study of C++ provides a basic understanding of the fundamentals of procedural program development using structured, modular concepts. Emphasizes logical program design involving user-defined functions and standard structure elements. Discussions will include the

role of data types, variables, structures, addressable memory locations, arrays and pointers. Data file access methods are also presented. The development of Java programming skills will provide a basic understanding of the fundamental concepts with an emphasis on logical program design using a modular approach which involves task oriented program functions. Java allows the design of an Internet user interface. The

application is built by selecting forms and controls, assigning properties and writing code.

## CINDY HELLER

### Bellmont High

**Surrounded by her students,** lifelong business and computer programming teacher Cindy Heller outlines the tasks for the day with members of her Computer Programming class. The class learns languages and coding of computers and eventually creates their own game as a final project. Heller teaches courses in both Interactive Media/Web Design, and in Computer Programming I and II at Belmont, which are capstone courses for those who wish to earn dual credit toward Ivy Tech college at no expense to the students and their families. Heller suggests a strong background in math for the programming courses and a strong desire to excel and work independently in a competitive market.



• DOE Code: 4534

• Recommended: 10-12

• Credits: 1-3 credits per semester, maximum of 2 semesters, maximum of 6 credits

• This course is aligned with postsecondary courses for Dual Credit: Ivy Tech

• CINS 113 Logic Design  
• CINS 137 Visual Basic

• Both classes count as a Directed Elective or Elective for the General, Core 40, Core 40 with Academic Honors and Core 40 with Technical Honors diplomas.

• DOE Code: 5236

• Recommended: 11-12

• Credits: 1-3 credits per semester, maximum of 2 semesters, maximum of 6 credits

• This course is aligned with postsecondary courses for Dual Credit: Ivy Tech

• CINS 121 C++  
• CINS 136 Java