

## Merrillville High School

### **Course Information:**

**High School Course Title & DOE #: Principal of Computing 7183 HS Credits:** Credits: 2 Trimester course, 2 semesters required, 1 credit per semester, 2 credits maximum

**Length of Course:** 2 trimesters

**Dual Credit:** Ivy Tech INFM-109 Informatic Fundamentals

**NLPS Sequence:** A

**High School Prerequisites:** none

### **High School Faculty Information:**

**Name:** Aaron Longacre

**Office Location:** Merrillville High School

**Contact Information:** [ajlongacre@mvs.k12.in.us](mailto:ajlongacre@mvs.k12.in.us) 219-650-5307 ext. 7077

### **Catalog Description:**

*Principles of Computing provides students the opportunity to explore how computers can be used in a wide variety of settings. The course will begin by exploring trends of computing and the necessary skills to implement information systems. Topics include operating systems, database technology, cybersecurity, cloud implementations and other concepts associated with applying the principles of good information management to the organization. Students will also have the opportunity to utilize basic programming skills to develop scripts designed to solve problems. Students will learn about algorithms, logic development and flowcharting.*

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### **Course Objectives:**

Students will study and understand –

- PC Hardware
- Basic Networking & Communication
- Introduction to Code and Programming
- Introduction to Artificial Intelligence
- Introduction to the Windows Operating System and Administration

**Course Content:**

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**Required High School Textbook/Resources:****Grading and Evaluation:**

Grades are electronically entered into the online Skyward gradebook. Final exams constitute 20% of overall trimester grade.

**Methods of Evaluation:****Grading Scale:**

92-100 = A  
89.5-92.49 = A-  
86.5-89.49 = B+  
82.5-86.49 = B  
79.5 - 82.49 = B-  
76.5 - 79.49 = C+  
72.5 - 76.49 = C  
69.5 - 72.49 = C-  
66.5 - 69.49 = D+  
62.5 - 66.49 = D  
59.5 - 62.49 = D-  
59.49 and below = F

**Assignments and Tentative Course Schedule:**

<b><u>Class Meeting</u></b>	<b><u>Topic</u></b>	<b><u>Assigned Work</u></b>	<b><u>Work Due and Exams</u></b>
Week 1	Class introduction and Guidance drop add week.	Classroom Slide Show, the late work assignment agreement.	Class Bell Ringer, late work agreement, Classroom Slide Show.
Week 2	Discuss different aspects of the nature of information from a human and mechanical standpoint. Demonstrate awareness of the history of computing.	Ivy Tech Dual Credit account creation,. 5 Facts - Top 10 tech innovations.  Research famous pioneers and companies in the world of IT	Report/slide deck. Google Classroom online assignments and assessments.
Week 3	Demonstrate a working knowledge of computer <b>hardware basics</b> and the ability to use the available productivity software.	input/output devices, processin and storage.	Chapter 1 questions. Diagnose and troubleshoot storage devices.
Week 4	Demonstrate a working knowledge of computer <b>hardware basics</b> and the ability to use the available productivity software.	Printer technology, Open source vs closed source software. Identify Operating Sysytems and hardware.	PC and Laptop hardware identification. Parts Quiz, EdPuzzle and Kahoot.
Week 5	Discuss the importance of ethics, bias, and effective dissemination of technological knowledge. Discuss the importance of ethics, bias, and effective dissemination of technological knowledge.	Digital Netiquette	Worksheets, Quizzes, online research. Google yourself.
Week 6	Into to Programming	Amazon Your Voice is Power	Amazon Your Voice is Power coding assignments
Week 7	Intro to Pogramming	Develop a simple program and/or script using a compiled, object-oriented scripting language like Python.	Amazon Your Voice is Power coding assignments
Week 8	Networking	locate and deploy multiple devices	Into to Packet Tracer – Deploying Devices, configure end devices.

		construct a simple Packet Tracer network and complete basic configuration of end devices.	Packet Tracer EdPuzzle activities.
Week 9	Artificial Intelligence	code.org	online activities and Google Classroom online assignments and assessments.
Week 10	Artificial Intelligence	code.org	online activities and Google Classroom online assignments and assessments.
Week 11	Final Exam Review	Final Exam Review	Review material posted on Google Classroom
Week 12 (Last week of first trimester, Final Exam)	Final exam	Final exam review and test.	
Week 13		Classroom Slide Show, late work assignment agreement	Google Slides
Week 14	Internet of Things	Cisco Networking Academy	Packet tracer
Week 15	Internet of Things		packet Tracer
Week 16	Database technologies	MS Office Access	Access database setup
Week 17	Intro to Programming	Code HS	Code HS online activities
Week 18	intro to Programming	Code HS	Code HS online activities
Week 19	catchup week	catchup week	time to catchup or assignments to build on previous knowledge
Week 20	Website publishing and server technology	FTP Server and site publishing, DNS, A record, MX Record	Cisco Networking Academy curriculum
Week 21	website design	Create a Google site with multiple pages, contact form, embedded image carousel, YouTube link embedded, tables, text boxes, navigation and hyperlinks.	start personal website
Week 22	website design	Create a Google site with multiple pages, a contact	complete personal website

		form, an embedded image carousel, a YouTube link, tables, text boxes, navigation, and hyperlinks.	
Week 23	Final Exam Review	Final Exam Review	
Week 24 (Last week of second trimester, Final Exam)	Final exam	Final exam review and test.	