



Guidance on Computer Science and Information Technology NLPS

This resource provides additional information regarding the Computer Science NLPS, Software Development NLPS, and other related programs of study that schools and career centers may consider offering.

Please note that the Computer Science NLPS and each Information Technology NLPS begin with Principles of Computing (7183). The tables below provide a side-by-side comparison of the Computer Science and Software Development Programs of Study. This comparison is provided to help schools decide which program of study will best meet their needs.

Overview		
Category	Computer Science	Software Development
Implementation Timeline	The Computer Science program of study will be newly available in the 2022-2023 school year. Standards are being finalized and will be released in March, the same timeline as all new programs of study.	The Software Development program of study was developed during phase I and the course information and competencies are available in the NLPS Review Document .
Design / Purpose	Computer Science is designed as a cross between an exploratory and a transfer program and is intended to expose students to a variety of topics and prepare them for a variety of opportunities, including advanced academic study. It may be beneficial to pair this program of study with the Indiana College Core.	Software Development shares similarities with the Computer Science program of study in terms of computer programming but is more applied in nature and is aligned to short-term stackable credentials but may also lead to advanced academic study.

Course Sequence		
Category	Computer Science and Software Development NLPS	
Principles Course	Principles of Computing (7183) allows students to explore how computers work and can be used in a variety of settings. Multiple topics are covered including computing and programming basics. This course is aligned to VU COMP 177 and ITCC SDEV 120 and INFM 109 for dual credit. Schools may choose to utilize College Board endorsed curriculum for AP Computer Science Principles to cover course content. Curriculum decisions are made at the local level, and it is the teacher's responsibility to ensure that all course standards are covered, regardless of curriculum selection. Additionally, this course can satisfy the requirement for all public and public charter schools to offer at least one computer science course each year (IC 20-30-5-23).	
	Computer Science	Software Development
Concentrator A Course	Topics in Computer Science (7351) is designed for students to investigate emerging disciplines within the field of computer science such as data science, artificial intelligence, app/game development, and security. Students will utilize knowledge related to these areas and programming skills to develop solutions to authentic problems. This course is not currently aligned with any VU or ITCC courses for dual credit.	Website and Database Development (7185) will provide students a basic understanding of the Web and Database skills and business practices that directly relate to Internet technologies used in Web site and Database design and development. Students will learn to utilize HTML and CSS. This course is aligned to dual credit through ITCC and VU.

Concentrator B Course	Computer Science (7352) introduces the fundamental concepts of procedural programming. Topics include data types, control structures, functions, arrays, files, and the mechanics of running, testing, and debugging. Dual credit is aligned to CSCI 101 through ITCC. Schools may choose to utilize College Board endorsed curriculum for AP Computer Science A to cover course content. Curriculum decisions are made at the local level, and it is the teacher’s responsibility to ensure that all course standards are covered, regardless of curriculum selection.	Software Development (7184) introduces students to concepts and practices of programming languages and software development. Students are introduced to algorithms and development tools used to document/implement computer logic. The course is aligned to ITCC SDEV 140 and VU COMP 203. The course covers similar programming topics to Computer Science but would require a bridge course to fill in the gaps.
Capstone Course*	Computer Science Capstone (7353) provides a working understanding of the fundamentals of procedural and object-oriented program development using structured, modular concepts and modern object-oriented programming languages. The Computer Science Capstone will provide an option for college credit through dual enrollment.	Software Development Capstone (7253) provides a working understanding of the fundamental concepts involved when using an object-oriented programming language. The emphasis is on logical program design using a modular approach involving task-oriented program functions. Students may also build upon their web design experiences in previous courses by taking an in-depth look into client- and server-side scripting aspects including Java Script and PHP: hypertext preprocessor along with other scripting tools.

*Schools may choose to offer the WBL Capstone or the Entrepreneurship and New Ventures Capstone courses in place of the NLPS Capstone Course.

Additional Programs of Study in the Information Technology career cluster:

As a reminder, Principles of Computing (7183) serves as the principles course for the Computer Science NLPS, the Software Development NLPS, and the additional Information Technology NLPS that are listed below.

Cybersecurity

This program of study is aligned explicitly to the Certificate of Graduation in Cybersecurity and Networking Operations through Vincennes University. The program goes far beyond the scope of the PLTW Cybersecurity curriculum and offers multiple certifications and dual credit opportunities.

IT Operations (Helpdesk, Cloud, or Cybersecurity capstone options)

This program of study is designed to prepare an individual for a career as an IT Technician. Schools have the option of customizing the program of study through various Capstone options, including Cybersecurity, Help Desk, and Cloud Operations. The program is only available for dual credit through Ivy Tech and embeds multiple certifications, certificates, and Technical Certificates.

Computer Networking

This program of study will prepare students specifically to be a networking technician. The program is aligned to the CISCO Certified Network Associate certification. It is available for Dual Credit through ITCC or VU.