

**ILLINOIS STATE BOARD OF EDUCATION
NETWORKING/CYBERSECURITY PROGRAM OF STUDY MATRIX: MIDDLE -HIGH SCHOOL-POSTSECONDARY**

This Career Program of Study can serve as a guide, along with other career planning materials, as learners continue along a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner’s educational and career goals. The program of study should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements. Additional career exploration opportunities should also be offered at upper elementary grade levels to promote higher engagement and learner focus in subsequent years.

	Grade	English	Math	Science	Social Studies	Required Courses, Electives, and Learner Activities	Career and Technical Courses	Sample Occupations
Student Success Plans outlining career goals should be utilized through the advisement process.								Requiring on-the-job training or Industry-Recognized Credential <ul style="list-style-type: none"> • Computer Operator • Computer Repair Technician
Middle School	7	ELA 7	Math 7	Science 7	Social Studies 7		Career Exploration	
	8	ELA 8	Math 8	Science 8	Social Studies 8		Introduction to Computer Technology	
Courses with an asterisk () indicate the potential for exploring credit transfer opportunities with local community colleges*								Requiring an Associate's Degree: <ul style="list-style-type: none"> • Computer User Support Specialist • Web Developer • Computer Network Specialist
Secondary	9	ELA 9	Algebra I	NGSS Aligned Science 9	United States History	All programs of study should meet local and state high school graduation requirements and college entrance requirements. Participations in a CTSO are also important for developing appropriate skills and competencies.	Exploring Computer Science	
	10	ELA 10	Geometry	NGSS Aligned Science 10	World History or Economics		Computer Networking I*	
	11	ELA 11	Algebra II	Biology* or AP Biology	U.S. Government* or AP Government		Computer Science Principles* or AP Computer Science	
	12	Transitional English or English Composition*†	TM STEM, College Algebra*, Calculus*†, or Statistics*†	Anatomy & Physiology* or Chemistry*	Psychology*		Cybersecurity Networking Systems Workplace Experience	
Courses with a double asterisk () indicate courses that might have already been met with an appropriate dual credit agreement**								Requiring a Bachelor's Degree: <ul style="list-style-type: none"> • Computer Systems Analyst • Computer Programmer • Cryptanalyst • Cryptographer • Hardware Engineer • Information Security Analyst • Network Systems Administrator • Software Developer • Security Architect • Security Engineer • Security Administrator
Postsecondary	13	English Composition***†	College Algebra**	Science†	Social Science†	All programs of study should meet learners’ career goals with regards to required degrees, licenses, certifications, or journey worker status. Participations in appropriate student organizations are also important for developing appropriate skills and competencies.	Continue required courses in learners’ chosen area of specialization to complete the desired certification and/or credential.	
	14	Oral Communication†	Calculus**† Statistics**†					
	15 16	Continue courses in learners’ chosen area of specialization						

*Dual Credit Opportunities

**Skip to next course in sequence if accomplished through credit transfer opportunity

†Postsecondary Course Affiliated with IAI Code

CTE Course Codes, Titles, Definitions

State Codes	Course Title	Course Definitions
22151A001	Career Exploration	Career Exploration courses help students identify and evaluate personal goals, priorities, aptitudes, and interests with the goal of helping them make informed decisions about their careers. These courses expose students to various sources of information on career and training options and may also assist them in developing job search and employability skills.
10001A001	Introduction to Computer Technology	Introduction to Computer Technology courses introduce students to computers, including peripheral and mobile devices; the functions and uses of computer technology; the language used in the industry; possible applications of various computer-based technologies; and occupations related to computer technology hardware and software industries. These courses typically explore legal and ethical issues associated with computer technology use, as well as how changes influence modern society. Students may also be required to perform some computer technology operations.
10012A001	Exploring Computer Science	Exploring Computer Science courses present students with the conceptual underpinnings of computer science through an exploration of human computer interaction, web design, computer programming, data modeling, and robotics. While these courses include programming, the focus is on the computational practices associated with doing computer science, rather than just a narrow focus on coding, syntax, or tools. Exploring Computer Science courses teach students the computational practices of algorithm design, problem solving, and programming within a context that is relevant to their lives
10102A001	Computer Networking I	Computer Networking I is a skill-level course designed to provide students with the skills needed to setup, configure, test, troubleshoot, maintain, and administer a data network using various network operating systems such as Novell, Windows, and Linux. Instruction will include network planning decisions, such as choosing an appropriate network configuration, determining the performance level requirements considering the differences among operating systems, and recommending network interface cards and cabling. Students will also learn how to setup and manage file systems and resources, and network topologies, protocols, and system utilities to efficiently run software applications a network. Students will learn to use basic operating system commands, install, and configure networks, set up user accounts and rights, and establish user security and permissions
10102A002	Computer Science Principles	Computer Science Principles courses provide students the opportunity use programming, computational thinking, and data analytics to create digital artifacts and documents representing design and analysis in areas including the Internet, algorithms, and the impact that these have on science, business, and society. Computer Science Principles courses teach students to use computational tools and techniques including abstraction, modeling, and simulation to collaborate in solving problems that connect computation to their lives.
10011A001	Cybersecurity	Cybersecurity courses introduce students to the concepts of cybersecurity. These courses provide students with the knowledge and skills to assess cyber risks to computers, networks, and software programs. Students will learn how to create solutions to mitigate cybersecurity risks. These courses may also cover the legal environment and ethical computing behavior related to cybersecurity.
10148A001	Networking Systems Workplace Experience	Networking Systems Workplace Experience courses provide students with work experience in fields related to networking systems. Goals are typically set cooperatively by the student, teacher, and employer (although students are not necessarily paid). These courses may include classroom activities as well, involving further study of the field or discussion regarding experiences that students encounter in the workplace.

Additional Learning Opportunities Continuum

Early Career Opportunities Learning about work	Credit Transfer & WBL Opportunities	Industry Recognized Credentials	Student Organization
<input type="checkbox"/> Career Planning	<input type="checkbox"/> Dual Enrollment / Dual Credit	<input type="checkbox"/> Certification / License	<input type="checkbox"/> Business Professionals of America (BPA)
<input type="checkbox"/> Career Fairs	<input type="checkbox"/> Advanced Placement	<input type="checkbox"/> Certification / License	<input type="checkbox"/> Future Business Leaders of America (FBLA)
<input type="checkbox"/> Industry Speakers	<input type="checkbox"/> Articulated Credit	<input type="checkbox"/> Other	<input type="checkbox"/> Family, Career and Community Leaders of America (FCCLA)
<input type="checkbox"/> Informational Interviews	<input type="checkbox"/> Career-Related Service Learning		<input type="checkbox"/> Future Farmers of America - Illinois (FFA)
<input type="checkbox"/> Career Presentations	<input type="checkbox"/> School-Based Enterprise		<input type="checkbox"/> Future Health Professionals (HOSA)
<input type="checkbox"/> Worksite Tours	<input type="checkbox"/> Student-Led Enterprise		<input type="checkbox"/> Illinois DECA
<input type="checkbox"/> Cooperative Education	<input type="checkbox"/> Project-Based Learning		<input type="checkbox"/> Science Olympiad
<input type="checkbox"/> Job Shadow	<input type="checkbox"/> Internships		<input type="checkbox"/> Skills USA Illinois
<input type="checkbox"/> Simulated Skill Development	<input type="checkbox"/> Apprenticeships (i.e., youth, pre-registered, non-registered, research)		<input type="checkbox"/> Technology Student Association (TSA)
<input type="checkbox"/> Other	<input type="checkbox"/> Other		<input type="checkbox"/> Other
List Other:	List Other:		List Other:
			<input type="checkbox"/> Team-Based Challenge
			List Challenge:

Feeder Middle School(s):	
LEA Additional Graduation Requirements	