

Syracuse City School District
Career and Technical Education Program
Course Syllabus
CIS100: Computer Information Systems 100
Introduction to Computer Information Systems



Program Overview

The PTECH Computer Information Systems program provides students with the opportunity to learn the fundamentals of information processing, networks, hardware, software applications, and web publishing toward the goal of earning college credits and an Associate's degree in Computer Information Systems from Onondaga Community College. Students will learn about common software packages for word processing, spreadsheets, databases, digital imagery and design, and desktop publishing and will use their skills to create authentic products for themselves and the community. Students will carry out computer and technical equipment maintenance and environmentally responsible hardware recycling. Students will explore and apply the concepts of digital citizenship. Within this curriculum students will have the opportunity to earn Precision Computer Systems I Certification along with CTE Endorsement and college credits. Students who successfully complete the Computer Information Systems pathway will be prepared for entry level careers or further education and training in programming, systems analysis, tech support, web development, software development and other opportunities in the computer information field.

Course Description

This course will introduce students to the fundamentals of computers and computer systems. Through hands-on experience, students will learn the basics of computers, hardware, peripherals, and networking. This course will give students the foundational knowledge and skills for the Computer Science sequence.

Work-Based Learning

Students will be connected with working computer science professionals in the community through Career Coaching, field trips and job shadowing which could lead to further opportunities for direct job training and real-world experience. Students will create and maintain a portfolio of their work-based learning experiences throughout the program to document the development of their skills.

Pre-Requisites

N/A

Course Objectives

1. Students will understand the historical and societal context of computer science.
2. Students will understand the career ready practices that will lead to success in the computer science pathway.
3. Students will understand computer operations and how it relates to computer science.
4. Students will be able to assemble and troubleshoot computers.
5. Students will understand the relation between the physical and virtual worlds.

Integrated Academics

N/A

Equipment and Supplies

- **School will provide:** All necessary technology and classroom equipment
- **Student will provide:** N/A

Textbook

TestOut IT Fundamentals. Pleasant Grove, Utah: TestOut Corporation, 2020. Online Lab Simulator.
TestOut PC Pro. Pleasant Grove, Utah: TestOut Corporation, 2020. Online Lab Simulator.

Grading

10%	Class Attendance and Participation
10%	Oral Presentation
25%	Assignments
25%	Mid-Term Exam
30%	Final Exam

Additional Course Policies

- Students are required to follow all safety procedures.
- All work is due at the time and day specified when the assignment is given. Submission details for work to be graded will be given at the time the work is assigned.
- Quizzes will be given throughout the semester. The lowest quiz score (one score only) will be dropped when calculating the final course grade.

Course Calendar

Quarter	Units of Study
1	<ul style="list-style-type: none">• Introduction to the Program, the School, and the Future• Setting Up for Success• The Importance of Communication• The 7 Habits of Highly Effective Teens• Career Ready Practices and Workplace Readiness Skills• Proper Keyboarding Technique• Work-Based Learning: Career Coaching
2	<ul style="list-style-type: none">• Digital Citizenship and Ethical Computing• How to Clean and Maintain Technology• Digital Portfolios, Resumes, and Work-Based Learning,• Safety in the Computer Lab• Protecting Ourselves and Our Technology• Introduction to the Computer Lab, Tools, and Resources• File Management, Storage and Backups• Work-Based Learning: Career Coaching
3	<ul style="list-style-type: none">• Introduction to Word Processing and Microsoft Word• Introduction to Presentation Software and Microsoft PowerPoint• Introduction to Spreadsheets and Microsoft Excel• Introduction to Databases and Microsoft Access• Work-Based Learning: Career Coaching
4	<ul style="list-style-type: none">• Introduction to Hardware• Introduction to Software• Introduction to Networking and Wireless Computing• Introduction to the Internet• Safe Use of the Internet, Social Media, and other Digital Tools• The Evolution of Technology Careers, Technology Trends and What's to Come• Finding and Applying for a Job• Work-Based Learning: Career Coaching• Review and Final Exam

Syracuse City School District
Career and Technical Education Program
Scope and Sequence
CIS100: Computer Information Systems 100
Introduction to Computer Information Systems



Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Weeks 1-2 Introduction to the Program, the School, and the Future	<ul style="list-style-type: none"> What is the ultimate goal of this CTE program? What are the expectations for the CTE Computer Pathways classroom and lab? How do students keep themselves and others safe? How can students be successful in school and in the CTE program? How can students use technology appropriately and effectively? What is the district's Code of Conduct? What supports are available to students in the classroom, lab, school, and district? 	<ul style="list-style-type: none"> Explain the goals and expectations of the 4-year high school CTE program. Summarize classroom procedures and expectations. Describe the Code of Conduct and where to reference it. Identify classroom, lab, school, and district supports and resources. 	Written <ul style="list-style-type: none"> Workbook Research Project Tests and Quizzes Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Procedure Checklist Teacher Observation Checklist 	Career Ready Practices CRP 1,2,4,7,10,11,12	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,4	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1 IT-NET 1	CSDF 9-12.IC.7
Weeks 3-4 Setting Up for Success	<ul style="list-style-type: none"> What academic and social-emotional resources are available to support students? How can students manage their time? How can students study effectively to prepare for a test? What notetaking methods are effective for students? How do students build a quality portfolio over the next four years? What are the graduation requirements for the program? What is the Graduation Requirements Checklist? What is the role of guidance counselors? What are SMART Goals? What is a rubric? 	<ul style="list-style-type: none"> Describe the academic and social-emotional resources available to support students. Use curriculum delivery methods and other online resources to complete assignments and meet class requirements. Describe effective time management, note taking, and test taking strategies and methods that can be used in class. Explain what a portfolio is and how it will be developed over the course of four years. Explain what the graduation requirements are for the program. Use the Graduation Requirements Checklist to track credits earned and credits needed each year. Describe the role of guidance counselors. Describe and set SMART Goals. Describe a rubric and explain its function. 	Written <ul style="list-style-type: none"> Workbook Research Project Tests and Quizzes Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Procedure Checklist Teacher Observation Checklist 	Career Ready Practices CRP 1,2,4,6,7,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1 IT-NET 1	CSDF 9-12.DL.2
Week 5 The Importance of Communication	<ul style="list-style-type: none"> Why is communication important? 	<ul style="list-style-type: none"> Explain how vital the role of Communication is. 	Written <ul style="list-style-type: none"> Workbook Research Project 	Career Ready Practices CRP 1,2,4,7,8	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
	<ul style="list-style-type: none"> What methods of communication are there? When is it appropriate to use each of the different methods? What is the difference between professional and casual communication? 	<ul style="list-style-type: none"> Identify and describe the different methods of Communication. Evaluate a scenario and the best method of communication to use in addressing and/or clarifying the situation. 	<ul style="list-style-type: none"> Tests and Quizzes Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Procedure Checklist Teacher Observation Checklist 		9-10L 1,2,3,4,5,6
				Cluster Standards IT 1	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1 IT-NET 1	CSDF 9-12.DL.2
Weeks 6-7 The 7 Habits of Highly Effective Teens	<ul style="list-style-type: none"> What are the 7 Habits of Highly Effective Teens? What is the meaning of each? What are the risks of not using them? What would change if these habits were implemented? 	<ul style="list-style-type: none"> Describe the 7 habits of Highly Effective Teens are. Identify which habits they already possess and which they don't. Describe specific strategies for implementing those they're not using yet. 	Written <ul style="list-style-type: none"> Workbook Research Project Tests and Quizzes Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Procedure Checklist Teacher Observation Checklist 	Career Ready Practices CRP 1,2,4,7,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1 IT-NET 1	CSDF 9-12.DL.2
Weeks 7-8 Career Ready Practices and Workplace Readiness Skills	<ul style="list-style-type: none"> What are the Career Ready Practices and what do they mean? What are examples of each? What are Workplace Readiness Skills? What are the Workplace Readiness Skills and what do they mean? What are examples of each. What are the differences and similarities of Career Ready Practices and Workplace Readiness Skills? 	<ul style="list-style-type: none"> List and explain the twelve Career Ready practices and how they tie to success. List and explain the Workplace Readiness practices and how they tie to success. Explain how both the Career Ready Practices and the Workplace Readiness Skills can be implemented throughout various classroom assignments and activities. 	Written <ul style="list-style-type: none"> Workbook Research Project Tests and Quizzes Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Procedure Checklist Teacher Observation Checklist 	Career Ready Practices CRP 1,2,4,7,8,10,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1 IT-NET 1	CSDF 9-12.IC.7
Weeks 9-11 Proper Keyboarding Technique Work-Based Learning: Career Coaching	<ul style="list-style-type: none"> What is keyboarding/home-row typing? What are the characteristics of proper keyboarding technique? Why is practice so important? Why is it important to use home-row typing? What is ergonomics and why is it important? What is the function of each of the keys on the keyboard? What are the differences between keyboards? What can be learned from computer information systems professionals? 	<ul style="list-style-type: none"> Demonstrate proper keyboarding technique and explain its benefits. Explain how to improve keyboarding skills. Explain the relationship between keyboarding speed and efficiency and practice. Explain the ergonomic concepts that can help avoid pain and injury. Describe various types of input devices, their differences, and their functionality. Participate in Career Coaching process. 	Written <ul style="list-style-type: none"> Workbook Research Project Tests and Quizzes Career Coaching Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Procedure Checklist Teacher Observation Checklist 	Career Ready Practices CRP 1,2,4,7,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1 IT-NET 1	CSDF 9-12.DL.1

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Weeks 12-13 Digital Citizenship and Ethical Computing	<ul style="list-style-type: none"> What does it mean to be a good digital citizen? What is the proper use of social media? How can technology be used ethically to avoid hurting others and oneself? How can information be verified as accurate and true? Should outdated technology equipment be recycled? 	<ul style="list-style-type: none"> Conduct themselves with professionalism while exchanging their ideas and interests over the internet or through social media. Describe what kinds of information are appropriate and inappropriate to share. Explain how use of the internet and social media can have a positive or negative impact. Explain how outdated technology impacts our environment. 	Written <ul style="list-style-type: none"> Workbook Research Project Tests and Quizzes Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Procedure Checklist Teacher Observation Checklist 	Career Ready Practices CRP 1,2,4,7,8,9,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,4	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1 IT-NET 1	CSDF 9-12.IC.3,4,5 9-12.CY.1,2,3
Week 14 How to Clean and Maintain Technology	<ul style="list-style-type: none"> What tools and procedures are used to clean and maintain equipment? What procedures can keep equipment, classmates, and oneself safe? What new products, technology or procedures evolved because of COVID? 	<ul style="list-style-type: none"> Explain the policies and procedures that encourage safe, long-term use of equipment. Properly disinfect key equipment in order to keep the classroom and building community safe. Identify where appropriate cleaning supplies are located within the classroom and explain how to use them safely. 	Written <ul style="list-style-type: none"> Workbook Tests and Quizzes Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Procedure Checklist Teacher Observation Checklist 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3	CSDF 9-12.NSD.2,3 9-12.DL.2,5
Weeks 15-16 Digital Portfolios, Resumes, and Work-Based Learning	<ul style="list-style-type: none"> What is a portfolio and why is it important to have one? What is a resume? What kinds of skills and experience are important to include on a resume? What is work-based learning and why is it important? 	<ul style="list-style-type: none"> Explain what a portfolio is, how to create one and its importance to a career plan. Describe the types of skills, projects, and information that should be documented in a portfolio. Explain what a resume is, how to create one and its importance to a career plan. Describe the types of skills, projects, and information that should be documented in a resume. Explain the importance of work-based learning experiences to creating effective portfolios and resumes. 	Written <ul style="list-style-type: none"> Workbook TestOut Assignments Tests and Quizzes Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Lab Simulation of computer setup Set up a computer lab (manually) Procedure Checklist Teacher Observation Checklist 	Career Ready Practices CRP 1,2,4,8,10,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1	CSDF 9-12.IC.7 9-12.DL.1,2,5
Week 17 Safety in the Computer Lab Protecting Ourselves and Our Technology	<ul style="list-style-type: none"> What is electrostatic discharge? How can users and computer components be protected from electrostatic discharge? How is safety maintained at all times when dealing with computer hardware and peripherals? What does professionalism look like in the classroom and the workplace? 	<ul style="list-style-type: none"> Explain and demonstrate how to protect oneself and components from electrostatic discharge. Explain and demonstrate how to safely handle computer hardware and peripherals. Explain and demonstrate how to conduct oneself professionally in the classroom, lab room, and workplace. 	Written <ul style="list-style-type: none"> Workbook TestOut Assignments Self-Assessment Performance <ul style="list-style-type: none"> ESD lab Anti-static wrist wrap and mat assignment Procedure Checklist Teacher Observation Checklist 	Career Ready Practices CRP 1,2,3,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,4	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1	CSDF 9-12.NSD.2,3 9-12.DL.
Week 18			Written	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Introduction to the Computer Lab, Tools, and Resources	<ul style="list-style-type: none"> Where is the computer lab and when will it be used? What are the classroom procedures? How are computers, surge protectors, and uninterruptable power supplies maintained? What tools are used in the field of computer maintenance and repair and what are they used for? How are tools used safely to avoid damage to users and computer hardware? 	<ul style="list-style-type: none"> Describe the spaces that are used for teaching and learning and the procedures for sharing it. Explain the rules and expectations for using the lab. Explain how computers, surge protectors, and uninterruptable power supplies are maintained. Explain the tools that are used in the field of computer maintenance and repair and what are they used for. Demonstrate how to properly use and put away tools necessary to assemble and repair computers. Demonstrate how to use tools safely to avoid damage to users and computer hardware. 	<ul style="list-style-type: none"> Workbook TestOut Assignments Tests and Quizzes Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Procedure Checklist Teacher Observation Checklist 		9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1	CSDF 9-12.NSD.2,3 9-12.DL.2,4,5
Week 19 File Management, Storage and Backups Work-Based Learning: Career Coaching	<ul style="list-style-type: none"> What is a drive and what are the different types? What are files and file extensions? What are the most important file types and what do they do? How is data transferred, shared, and backed up? How is data protected from loss, damage, or attack? How is data restored? What can be learned from computer information systems professionals? 	<ul style="list-style-type: none"> Define and explain the function of different types of drives, including hard drives, network drives, cloud drives, internal and external drives, and thumb drives. Describe programs and methods for navigating drives, folders, and files on a computer. Explain the importance of folder creation in order to keep files organized and easy to find. Explain how data is transferred, shared, explained how data is protected from loss, damage, or attack. Explain how data is restored. Participate in Career Coaching process. 	Written <ul style="list-style-type: none"> Workbook TestOut Assignments Tests and Quizzes Career Coaching Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Procedure Checklist Teacher Observation Checklist 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3,5	CSDF 9-12.NSD.1,2,3 9-12.DL.1,2,4,5
Weeks 20-23 Introduction to Word Processing and Microsoft Word	<ul style="list-style-type: none"> What is word processing and what is it used for? How are documents edited for errors? What types of professional documents can be created? How are documents manipulated to improve the professional appearance? 	<ul style="list-style-type: none"> Explain the importance of word processing. Use of keyboarding skills to create word processing documents. Navigate, highlight, format and edit word processing documents. Use document templates to create commonly used text documents. Create resumes, memos, business letters, and other professional documents. 	Written <ul style="list-style-type: none"> Workbook TestOut Assignments Tests and Quizzes Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Procedure Checklist Teacher Observation Checklist 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3	CSDF 9-12.NSD.2 9-12.DL.1,2,4,5
Weeks 24-25 Introduction to Presentation Software and	<ul style="list-style-type: none"> What is a presentation and what is its purpose? What makes an effective presentation? 	<ul style="list-style-type: none"> Explain what a presentation is and what it is used for. Describe the qualities of an effective presentation. 	Written <ul style="list-style-type: none"> Workbook TestOut Assignments Tests and Quizzes Self-Assessment 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards	Literacy

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Microsoft PowerPoint	<ul style="list-style-type: none"> What tools can be used to improve the appearance and effectiveness of a presentation? What can be done to deliver a presentation in a way that engages and informs the audience? 	<ul style="list-style-type: none"> Explain how to deliver a presentation that will engage and inform people about the subject. 	<ul style="list-style-type: none"> Professional Portfolio Performance Class Presentation Procedure Checklist Teacher Observation Checklist 	IT 1,11,12	9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3	CSDf 9-12.NSD.2 9-12.DL.1,2,4,5
Weeks 26-27 Introduction to Spreadsheets and Microsoft Excel	<ul style="list-style-type: none"> What is a spreadsheet and what is its purpose? What makes an effective spreadsheet? What tools can be used to share data and information from a spreadsheet? 	<ul style="list-style-type: none"> Describe what a spreadsheet is and what it can be used for. Explain the different parts of a spreadsheet. Create a spreadsheet and add data. Perform basic calculations using spreadsheet formulas. Sort and filter data. Create visual representations of spreadsheet data. Explain the relationship between spreadsheets and databases. 	Written <ul style="list-style-type: none"> Workbook TestOut Assignments Tests and Quizzes Self-Assessment Professional Portfolio Performance Class Presentation Procedure Checklist Teacher Observation Checklist 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3	CSDf 9-12.NSD.3 9-12.DL.1,2,4,5
Weeks 28-29 Introduction to Databases and Microsoft Access Work-Based Learning: Career Coaching	<ul style="list-style-type: none"> What is a database and what is its purpose? What makes an effective database? What tools can be used to share data and information from a database? What can be learned from computer information systems professionals? 	<ul style="list-style-type: none"> Describe what a database is and what it can be used for. Explain the different parts of a database. Create a database file. Use spreadsheets and forms to input, track and filter data. Participate in Career Coaching process. 	Written <ul style="list-style-type: none"> Workbook TestOut Assignments Tests and Quizzes Career Coaching Self-Assessment Professional Portfolio Performance Class Presentation Procedure Checklist Teacher Observation Checklist 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3 IT-PRG 10	CSDf 9-12.NSD.3 9-12.DL.1,2,4,5
Weeks 30-31 Introduction to Hardware	<ul style="list-style-type: none"> What is computer hardware? What are the key components that make-up a computer system? What is the responsibility or function of each component? 	<ul style="list-style-type: none"> Define computer hardware. Describe the key hardware components that make up a computer system. Explain the function of each component. 	Written <ul style="list-style-type: none"> Workbook TestOut Assignments Tests and Quizzes Self-Assessment Professional Portfolio Performance Class Presentation Procedure Checklist Teacher Observation Checklist 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3	CSDf 9-12.NSD.2,3 9-12.DL.1,2,4,5
Week 32 Introduction to Software	<ul style="list-style-type: none"> What is computer software? What are the key categories of software used and what is each used for? 	<ul style="list-style-type: none"> Define computer software. Describe the key categories of computer software and explain the uses of each category. 	Written <ul style="list-style-type: none"> Workbook TestOut Assignments Tests and Quizzes Self-Assessment Professional Portfolio 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 9-10RST 1,2,4,7,8,9

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
	<ul style="list-style-type: none"> How is software delivered to users and how has this evolved? What are the qualities of an effective program? What is coding? 	<ul style="list-style-type: none"> Explain how computer software can be delivered and how these processes have evolved. Describe the qualities of an effective program. Explain the function of computer coding. List and describe the basic components of different types of codes. 	Performance <ul style="list-style-type: none"> Class Presentation Procedure Checklist Teacher Observation Checklist 		9-10WHST 2,5,6,7 Pathway Standards IT-SUP 1,2,3 CSDF 9-12.NSD.2,3 9-12.DL.1,2,4,5
Weeks 33-34 Introduction to Networking and Wireless Computing	<ul style="list-style-type: none"> What is the networking? What is the history and evolution of networking? How does a network function? 	<ul style="list-style-type: none"> Explain what networking is. Describe the history and evolution of networking. Explain how a network functions. 	Written <ul style="list-style-type: none"> Workbook TestOut Assignments Tests and Quizzes Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Procedure Checklist Teacher Observation Checklist 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3,5 IT-NET 2	CSDF 9-12.NSD.2,4,5 9-12.DL.1,2,4,5
Weeks 35-36 Introduction to the Internet	<ul style="list-style-type: none"> What is the internet? What is the history and evolution of the internet? How does the Internet function? 	<ul style="list-style-type: none"> Explain what the internet is. Describe the history and evolution of the internet. Explain how the internet functions. 	Written <ul style="list-style-type: none"> Workbook TestOut Assignments Tests and Quizzes Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Procedure Checklist Teacher Observation Checklist 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3 IT-NET 2	CSDF 9-12.NSD.2,4,5 9-12.DL.1,2,4,5
Week 37 Safe Use of the Internet, Social Media, and other Digital Tools	<ul style="list-style-type: none"> How can the internet be dangerous? What can users do to protect themselves? What are the pros and cons of social media? What can users do to avoid negative experiences with social media? What other digital tools are there and how can they be used in healthy ways? 	<ul style="list-style-type: none"> Describe some possible dangers in using the internet. Explain ways that internet users can protect themselves from possible online dangers. Describe the pros and cons of social media. Identify ways to avoid negative experiences with social media. List other digital tools and explain how they can be used in healthy ways. 	Written <ul style="list-style-type: none"> Workbook TestOut Assignments Tests and Quizzes Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Procedure Checklist Teacher Observation Checklist 	Career Ready Practices CRP 1,2,3,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,4,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3 IT-NET 1,2	CSDF 9-12.IC.4 9-12.NSD.2,3,4,5 9-12.CY.1,2,3 9-12.DL.1,2,4,5
Week 38 The Evolution of Technology Careers, Technology	<ul style="list-style-type: none"> How have technology careers evolved over time? What are different careers available in the technology field 	<ul style="list-style-type: none"> Describe how technology careers have evolved over time. List different careers available in the technology field and explain what types of skills they require. 	Written <ul style="list-style-type: none"> Workbook TestOut Assignments Tests and Quizzes Self-Assessment 	Career Ready Practices CRP 1,2,4,7,8,10,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards	Literacy

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Trends and What's to Come	and what types of skills do they require? • What are the current trends in technology careers? • What will technology careers look like in the future?	• Research and describe current trends in technology careers. • Predict what technology careers might look like in the future.	Professional Portfolio Performance • Class Presentation • Procedure Checklist • Teacher Observation Checklist	IT 1,5,6	9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1 IT-NET 1 IT-PRG 1	CSDF 9-12.IC.7 9-12.NSD.2,4 9-12.DL.1,2,4,5
Week 39 Finding and Applying for a Job Work-Based Learning: Career Coaching	• What resources can be used in a job search? • How can a job candidate identify and apply for a position? • What can be learned from computer information systems professionals?	• Locate potential job openings using both face-to-face and digital methods. • Use employment sites like Monster and Indeed. • Fill out a formal application. • Participate in Career Coaching process.	Written • Workbook • Tests and Quizzes • Career Coaching Self-Assessment Professional Portfolio Performance • Class Presentation • Procedure Checklist • Teacher Observation Checklist	Career Ready Practices CRP 1,2,4,7,8,10,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1 IT-NET 1 IT-PRG 1	CSDF 9-12.IC.7 9-12.NSD.2,3 9-12.DL.1,2,4,5
Week 40 Review and Final Exam	• Are you prepared for the Final Exam?	• Prepare and take the Final Exam.	• Final Exam	Career Ready Practices CRP 1,2,3,4,7,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3 IT-NET 1,2 IT-PRG 1,10	CSDF 9-12.IC.1,3,4,7 9-12.NSD.1,2,3,4,5 9-12.CY.1,2,3 9-12.DL.1,2,4,5

Syracuse City School District
Career and Technical Education Program
Course Syllabus
CIS200: Computer Information Systems 200



Program Overview

The PTECH Computer Information Systems program provides students with the opportunity to learn the fundamentals of information processing, networks, hardware, software applications, and web publishing toward the goal of earning college credits and an Associate's degree in Computer Information Systems from Onondaga Community College. Students will learn about common software packages for word processing, spreadsheets, databases, digital imagery and design, and desktop publishing and will use their skills to create authentic products for themselves and the community. Students will carry out computer and technical equipment maintenance and environmentally responsible hardware recycling. Students will explore and apply the concepts of digital citizenship. Within this curriculum students will have the opportunity to earn Precision Computer Systems I Certification along with CTE Endorsement and college credits. Students who successfully complete the Computer Information Systems pathway will be prepared for entry level careers or further education and training in programming, systems analysis, tech support, web development, software development and other opportunities in the computer information field.

Course Description

This course provides an overview and exploration of computer hardware and software, including memory, input/output devices, operating systems, and troubleshooting. Students will learn about the how the internet functions, as well as the uses and abuses of social media. Student will work with both wired and wireless networks and learn the basics of computer programming. Student will become familiar with the vulnerabilities in computer systems and learn about how to protect both devices and users from security threats. Students will also explore different career options within the computer science field to determine areas of personal interest. The course emphasizes practical hands-on labs and exercises that will be used by students to gain an understanding of software technologies that are relevant to computer science. By writing lab reports that document their findings and results, students will implement knowledge and skills in authentic situations.

Work-Based Learning

Students will be connected with working computer science professionals in the community through Career Coaching, field trips and job shadowing which could lead to further opportunities for direct job training and real-world experience. Students will create and maintain a portfolio of their work-based learning experiences throughout the program to document the development of their skills.

Pre-Requisites

CIS100: Computer Information Systems 100 – Introduction to Computer Information Systems

Course Objectives

6. Students will understand the historical and societal context of computer systems.
7. Students will understand the career ready practices that will lead to success in the computer science pathway.
8. Students will understand both the hardware and software technology used in computer operations.
9. Students will assemble and troubleshoot computers.
10. Students will demonstrate basic programming and data analysis skills.
11. Students will recognize security threats and identify ways to protect both computer systems and users.

Integrated Academics

N/A

Concurrent Enrollment

Upon successful completion of CIS200, students will earn 3 college credits for CIS100: Computer and Information Literacy from Onondaga Community College:

Equipment and Supplies

- **School will provide:** All necessary technology and classroom equipment
- **Student will provide:** N/A

Textbook

TestOut IT Fundamentals. Pleasant Grove, Utah: TestOut Corporation, 2020. Online Lab Simulator.

Grading

10%	Class Attendance and Participation
10%	Oral Presentation
25%	Assignments
25%	Mid-Term Exam
30%	Final Exam

Additional Course Policies

- Students are required to follow all safety procedures.
- All work is due at the time and day specified when the assignment is given. Submission details for work to be graded will be given at the time the work is assigned.
- Quizzes will be given throughout the semester. The lowest quiz score (one score only) will be dropped when calculating the final course grade.

Course Calendar

Quarter	Units of Study
1	<ul style="list-style-type: none">• Introduction to Course, Classroom Practices, and Expectations: Being Successful• Technology and Ethics• History of Computers and Their Use in Society• Digital Media: Digital Data and Media Formatting• Computer Hardware: Internal Components• Input And Output Devices and Peripherals• Work-Based Learning: Career Coaching
2	<ul style="list-style-type: none">• Storage and Devices• Hardware Troubleshooting• Operating Systems, System Software, BIOS/UEFI• File Management, Application Software, and Software Troubleshooting• Printing• The Internet and How It Works: Web Browsers, and Cloud Computing• Work-Based Learning: Career Coaching
3	<ul style="list-style-type: none">• Social Media, and Internet Communication Technologies• The Internet of Things and Internet Technology Careers• Networking Basics: Topologies, IP Addresses, and Networking Devices• Wired and Wireless Networking: Network/Ethernet Cables, Wireless Standards, and Creating a Home Network• Internet Connectivity, Networking Protocols, and Network Troubleshooting• Databases• Work-Based Learning: Career Coaching
4	<ul style="list-style-type: none">• Programming and Web Development• Data Analysis, Designing and Implementing Systems• Security Threats and Vulnerabilities• Authentication, Encryption, and Device Security• IT Career Preparation• Work-Based Learning: Career Coaching

Syracuse City School District
Career and Technical Education Program
Scope and Sequence
CIS200: Computer Information Systems 200



Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Weeks 1-2 Introduction to Course, Classroom Practices, and Expectations: Being Successful	<ul style="list-style-type: none"> What do students wish to get out of this class? How can students be successful in this course? How can students manage their time? How can students appropriately and effectively use technology? 	<ul style="list-style-type: none"> Explain and follow classroom procedures. List and explain classroom rules and safety precautions and procedures. Use tools to effectively manage their time. Use computer hardware and software to participate in class. 	Written <ul style="list-style-type: none"> Assignments Self-Assessment Performance <ul style="list-style-type: none"> Class Presentation Procedure Checklist Teacher Observation Checklist 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1 IT-NET 1	CSDF 9-12.IC.7 9-12.DL.2,5
Week 3 Technology and Ethics	<ul style="list-style-type: none"> What does ethics mean? How is ethics similar to or different from morals? How does one act ethically in the workplace? In school? How is technology used ethically? What uses of technology would be unethical? 	<ul style="list-style-type: none"> Define ethics. Differentiate between ethics and morals. Differentiate between appropriate behavior and inappropriate behavior in a business and school setting. 	Written <ul style="list-style-type: none"> Ethics in Technology Article Talking with the Text Assignment Journal Entry Performance <ul style="list-style-type: none"> Ethics Scenario Quiz 	Career Ready Practices CRP 1,2,3,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,4	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1 IT-NET 1	CSDF 9-12.IC.3,4,5
Week 4 History of Computers and Their Use in Society	<ul style="list-style-type: none"> What is a computer? What have computers been used for throughout history? How have computers and their use changed over time? 	<ul style="list-style-type: none"> Define computer. Explain the shift in use and reliance on computers and technology over time. Identify major turning points in history related to computers. 	<ul style="list-style-type: none"> Research/Presentation on Computers in Society Section Quiz 	Career Ready Practices CRP 1,2,5,7,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,6	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1	CSDF 9-12.IC.1,7
Weeks 5-6 Digital Media: Digital Data and Media Formatting	<ul style="list-style-type: none"> How do computers store data? How are numbers converted between binary and decimal systems? 	<ul style="list-style-type: none"> Describe how computers store data. Explain decimal, binary, octal, and hexadecimal number systems. Perform binary addition. Convert numbers from binary to decimal and decimal to binary forms. 	Assignments <ul style="list-style-type: none"> Binary Conversions Assignment MS Paint Exercise (Pixel Mapping) Performance <ul style="list-style-type: none"> Binary to Decimal Quiz Decimal to Binary Quiz 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3	CSDF 9-12.NSD.2,3
Weeks 7-8	<ul style="list-style-type: none"> What are the essential internal components of a PC? 	<ul style="list-style-type: none"> Identify and describe all internal PC components. 	<ul style="list-style-type: none"> Explore A Motherboard Lab Install Memory Lab 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Computer Hardware: Internal Components	<ul style="list-style-type: none"> What are the internal components responsible for and how do they function? How do the internal components interface with each other? How are components installed into a desktop PC? 	<ul style="list-style-type: none"> Describe appearance and function of each internal PC component. Describe how each component interfaces with the rest of the PC (cables, slots on motherboard, socket, etc.). Install PC components into a PC case and onto a motherboard. 	<ul style="list-style-type: none"> Upgrade A Video Card Lab Performance Hardware Quiz 		9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3	CSDf 9-12.NSD.2,3
Weeks 9-10 Input And Output I/O) Devices and Peripherals Work-Based Learning: Career Coaching	<ul style="list-style-type: none"> What is an input device? What is an output device? What types of devices are I/O devices? How do I/O devices interface with a PC? What are the main ports and cables that are used to connect PC peripherals? What can be learned from computer information systems professionals? 	<ul style="list-style-type: none"> Define input devices vs. output devices. Identify common I/O devices and peripherals. Describe ports, connectors, and cables used to connect I/O devices and peripherals. Participate in Career Coaching process. 	Labs <ul style="list-style-type: none"> Connect a Monitor Lab Set Up a Computer Lab Performance <ul style="list-style-type: none"> I/O Quiz Career Coaching Self-Assessment 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3	CSDf 9-12.NSD.2,3 9-12.DL.1,2,4,5
Week 11-12 Storage and Devices	<ul style="list-style-type: none"> What is the difference between memory and storage? What types of storage devices exist? How do different types of storage devices function to hold data? What is a file system? How is information organized on a storage device? 	<ul style="list-style-type: none"> Compare and contrast the features of different external storage devices, including hard disk drives, optical drives, flash storage, and solid-state drives. Describe common file system features, including compression, encryption, permissions, journaling, and file naming rules. Describe disk partitioning and formatting methods. 	Labs <ul style="list-style-type: none"> Install SATA Devices Lab Create Volumes Lab Format Drives Lab Perform Disk Management Lab Performance <ul style="list-style-type: none"> Storage Quiz 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3	CSDf 9-12.NSD.2,3 9-12.DL.1,2,4,5
Weeks 13-14 Hardware Troubleshooting	<ul style="list-style-type: none"> How does a malfunction in one part of the computer affect the rest of the system? What is the most effective way to troubleshoot a problem? Why is it important to troubleshoot a problem before implementing a potential solution? 	<ul style="list-style-type: none"> Identify the proper sequence of steps to follow in the troubleshooting methodology. Diagnose and resolve common motherboard problems. Diagnose and resolve common computer memory problems. Diagnose and resolve common processor problems. 	Labs <ul style="list-style-type: none"> Troubleshoot System Power Lab Troubleshoot Memory Lab Troubleshoot Processor Installation Lab Troubleshoot SATA Devices Lab Performance <ul style="list-style-type: none"> Troubleshooting Quiz 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3	CSDf 9-12.NSD.2,3 9-12.DL.1,2,4,5
Weeks 15-16 Operating Systems, System Software, BIOS/UEFI	<ul style="list-style-type: none"> What is an operating system? How does the operating system coordinate the work of hardware and software? What are the similarities and differences between mobile and desktop operating systems? 	<ul style="list-style-type: none"> Identify common operating systems, including systems designed for mobile devices. Describe the basic functions of different types of operating systems. Identify and describe components of the Windows 10 operating system. 	Labs <ul style="list-style-type: none"> Explore Windows 10 Lab Change Windows Settings Lab Explore iOS Lab Operating System History Presentation 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards	CSDf

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
				IT-SUP 1,2,3,4	9-12.NSD.2,3 9-12.DL.1,2,4,5
Weeks 17-18 File Management, Application Software, and Software Troubleshooting	<ul style="list-style-type: none"> What is a file system? How does a file system organize files? What is the relationship between files and directories? What file systems do each operating system use and how are they different? What are user permissions and what do they allow an administrator to do? 	<ul style="list-style-type: none"> Compare and contrast the features of various file systems. Create folders in the Windows file system. Copy, rename, and delete files in Windows. Manage files using the command line and graphical user interface. 	Labs <ul style="list-style-type: none"> Manage Files and Folders Lab Assign File Permissions Lab Copy Files from USB Lab Configure NTFS Permissions Lab Use Windows Powershell Commands Lab 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,1,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3,4	CSDF 9-12.NSD.2,3 9-12.DL.1,2,4,5
Week 19 Printing	<ul style="list-style-type: none"> What are some common types of printers? What are the benefits and drawbacks of inkjet printers and laser printers? What is a 3D printer and what can they be used for? 	<ul style="list-style-type: none"> Describe different types of printers commonly in use. Compare and contrast inkjet and laser printers Describe 3D printers and their uses. Print a document. Install device drivers for a printer. Connect to a shared printer in Windows. 	<ul style="list-style-type: none"> Printer Type Presentation Install and Configure a Local Printer Lab Print a Document Lab 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3	CSDF 9-12.NSD.2,3 9-12.DL.1,2,4,5
Week 20 The Internet and How It Works: Web Browsers, and Cloud Computing Work-Based Learning: Career Coaching	<ul style="list-style-type: none"> What are the similarities and differences between the internet and the world wide web? How have the internet and the web impacted our lives? What can be learned from computer information systems professionals? 	<ul style="list-style-type: none"> Compare and contrast the internet and the world wide web. Describe the essential components of the web (URLS, hyperlinks, web browsers, etc.). Compare and contrast desktop applications and web applications. Participate in Career Coaching process. 	<ul style="list-style-type: none"> Clear Browser Cache Lab Configure Browser Settings Lab Use a Proxy Server Lab Internet/IoT Quiz Career Coaching Self-Assessment 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3 IT-NET 1,2	CSDF 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5
Week 21 Social Media, and Internet Communication Technologies	<ul style="list-style-type: none"> What is social media? How has social media helped and hurt society? How can social media be used as a way to reach personal goals? Why should users be careful about what they post online? 	<ul style="list-style-type: none"> Define social media and describe what it is used for. Describe the risks involved with using social media. Define what it means to be a good digital citizen. 	<ul style="list-style-type: none"> Digital Citizenship Assignment Article and TWTT Digital Citizenship Presentation Social Media Investigation Lab 	Career Ready Practices CRP 1,2,3,4,5,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,4,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3 IT-NET 1,2	CSDF 9-12.NSD.2,3,4,5 9-12.CY.1,2 9-12.DL.1,2,4,5,6,7
Week 22	<ul style="list-style-type: none"> What is the Internet of Things? 	<ul style="list-style-type: none"> Define Internet of Things. 	<ul style="list-style-type: none"> Configure Smart Devices Lab 	Career Ready Practices CRP 1,2,4,5,7,8,10,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
The Internet of Things and Internet Technology Careers	<ul style="list-style-type: none"> What kinds of devices connect to the internet? What is a smart device and how do these devices interact with a network? What new careers will the Internet of Things create? 	<ul style="list-style-type: none"> Describe IoT devices and their use cases. Explain why more and more devices are connected. Brainstorm the possibilities and new careers that will result from the evolution of IoT. 	IoT Careers Brainstorm/ Research Paper		9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,6,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3,5 IT-NET 1,2	CSDF 9-12.IC.7 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5
Weeks 23-24 Networking Basics: Topologies, IP Addresses, and Networking Devices	<ul style="list-style-type: none"> What is networking? What devices, interfaces, and protocols exist in networking? How does information travel over a network? What is an IP address? 	<ul style="list-style-type: none"> Explain difference between a LAN and a WAN. Describe network topologies and their advantages and disadvantages. Describe standard devices and interfaces used in wired and wireless networking. Describe the purposes of network interface cards, routers, switches, and hubs. 	<ul style="list-style-type: none"> Install a Network Adapter Lab Set Up an Ethernet Connection Lab Network Topology Quiz 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3,5 IT-NET 1,2	CSDF 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5
Weeks 25-26 Wired and Wireless Networking: Network/Ethernet Cables, Wireless Standards, and Creating a Home Network	<ul style="list-style-type: none"> What are the advantages and disadvantages of wireless vs. wired networks? What's the difference between wi-fi and Bluetooth? What is an RJ45 cable and how is one made? What is a wireless access point? How are resources shared over a network? 	<ul style="list-style-type: none"> Describe different types of networking cables (twisted pair, coaxial, fiber optic). Create an Ethernet/RJ45 cable. Compare public wi-fi networks with secure wireless networks. Connect to a public wi-fi network. Connect to a secure wireless network. Share a printer over a network. 	<ul style="list-style-type: none"> Use a Wireless Network Lab Configure Network Printing/Share a Printer Lab Create a Home Wireless Network Lab (Configure a Wireless Router) 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3,5 IT-NET 1,2	CSDF 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5
Weeks 27-28 Internet Connectivity, Networking Protocols, and Network Troubleshooting	<ul style="list-style-type: none"> What is an ISP? What is a VPN? How is data secured over a network? What is TCP? What is UDP? Why is it important for computers and networks to use protocols? 	<ul style="list-style-type: none"> Describe the relationship between ISPs and the Internet. Define VPN and explain what it does and how it protects transfer of data. Describe secure shell connections and encrypted traffic. Define Transmission Control Protocol and User Datagram Protocol. 	<ul style="list-style-type: none"> Connect a Cable Modem Lab Configure a Wireless Network Lab Configure a VPN Connection Lab 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3,5 IT-NET 1,2	CSDF 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5
Week 29-30 Databases Work-Based Learning: Career Coaching	<ul style="list-style-type: none"> What is a database? How are databases used in everyday life? What's the difference between a database and a spreadsheet? What can be learned from computer information systems professionals? 	<ul style="list-style-type: none"> Describe use cases of databases. Explain how databases are more complex than spreadsheets. Use Microsoft Access to explore database components. Participate in Career Coaching process. 	<ul style="list-style-type: none"> Explore an Access Database Lab Create Queries in a Database Lab Tables and Relationships Lab Intro to Databases Quiz Career Coaching Self-Assessment 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards	CSDF

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
				IT-SUP 1,2,3 IT-PRG 1,10	9-12.NSD.2,3 9-12.DL.1,2,4,5
Weeks 31-33 Programming and Web Development	<ul style="list-style-type: none"> What is computer programming? How is computer programming related to computer hardware? What is a compiled language? What is an interpreted language? What are HTML, CSS, and JavaScript? 	<ul style="list-style-type: none"> Explain what computer programming is and what it is used for. Describe the difference between programming and scripting. Compare and contrast programming languages (interpreted vs. compiled vs. query). 	<ul style="list-style-type: none"> JS Code Labs 1-4 JavaScript Labs 1-4 Basic HTML Website Design Assignment Programming Logic Quiz 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3 IT-NET 1,2 IT-PRG 1,2,3,4	CSDF 9-12.CT.6 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5
Week 34-35 Data Analysis, Designing and Implementing Systems	<ul style="list-style-type: none"> Why do businesses use data to make decisions? How do spreadsheets, tables, charts, graphs make it easier to interpret data? 	<ul style="list-style-type: none"> Describe the steps involved in data analytics. Format data in an Excel spreadsheet. Analyze data in an Excel spreadsheet. Analyze data in Microsoft Access. 	<ul style="list-style-type: none"> Excel Tables Lab Excel Charts Analysis Lab Microsoft Access Reports/Data Analysis Lab 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3 IT-NET 1,2 IT-PRG 1,3,4,5	CSDF 9-12.CT.2,3 9-12.NSD.2,3 9-12.DL.1,2,4,5
Week 36 Security Threats and Vulnerabilities	<ul style="list-style-type: none"> Why is securing a computer/computer network important? What can a hacker/attacker do with access to someone's private information? How can users protect themselves online? 	<ul style="list-style-type: none"> Describe the components of the CIA triad. Describe the most common threats to confidentiality, integrity, and availability. Define social engineering and describe social engineering tactics used by bad actors. 	<ul style="list-style-type: none"> Recognize Social Engineering Exploits Lab 1 and 2 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,8,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3,5 IT-NET 1,2,5 IT-PRG 1,3,4	CSDF 9-12.NSD.2,3,4,5 9-12.CY.1,2,3,4,5 9-12.DL.1,2,4,5
Week 37-38 Authentication, Encryption, and Device Security	<ul style="list-style-type: none"> What do authentication, authorization, and accounting mean and how do they work together to secure a computer? How can users make their passwords secure? What is two-factor authentication and why is it important? What is encryption? 	<ul style="list-style-type: none"> Describe common forms of authentication and their purpose. Explain multifactor authentication. Secure a device using a user account and access control management software. Define encryption and explain how it secures data. 	<ul style="list-style-type: none"> Create a User Account Lab Configure Access Control and Authentication Lab Encrypt A File/Encrypt A Drive on Windows Lab 	Career Ready Practices CRP 1,2,4,8,11	ELA 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,8,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3 IT-NET 1,2,5 IT-PRG 1,3,4	CSDF 9-12.NSD.2,3,4,5 9-12.CY.1,2,3,4,5 9-12.DL.1,2,4,5
Weeks 39-40				Career Ready Practices	ELA

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
IT Career Preparation Work-Based Learning: Career Coaching	<ul style="list-style-type: none"> How has this course prepared students for a career in IT? What skills and education are required for careers in this area? How can students continue to prepare for a career in these fields? What can be learned from computer information systems professionals? 	<ul style="list-style-type: none"> Describe various career paths in the field of IT. Identify growing areas within IT and future outlook for jobs. Research and identify college programs that prepare students for IT careers. Participate in Career Coaching process. 	<ul style="list-style-type: none"> College and Career Research Project Course Reflection Paper Career Coaching Self-Assessment 	CRP 1,2,3,4,7,8,10,11	9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,3,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards IT 1,4,6,8,11,12	Literacy 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3,5 IT-NET 1,2,5 IT-PRG 1,3,4	CSDF 9-12.IC.1,2,3,4,5,7 9-12.CT.6 9-12.NSD.2,3,4,5 9-12.CY.1,2,3,4,5 9-12.DL.1,2,4,5

Syracuse City School District
Career and Technical Education Program
Course Syllabus
CIS300: Computer Information Systems 300



Program Overview

The PTECH Computer Information Systems program provides students with the opportunity to learn the fundamentals of information processing, networks, hardware, software applications, and web publishing toward the goal of earning college credits and an Associate's degree in Computer Information Systems from Onondaga Community College. Students will learn about common software packages for word processing, spreadsheets, databases, digital imagery and design, and desktop publishing and will use their skills to create authentic products for themselves and the community. Students will carry out computer and technical equipment maintenance and environmentally responsible hardware recycling. Students will explore and apply the concepts of digital citizenship. Within this curriculum students will have the opportunity to earn Precision Computer Systems I Certification along with CTE Endorsement and college credits. Students who successfully complete the Computer Information Systems pathway will be prepared for entry level careers or further education and training in programming, systems analysis, tech support, web development, software development and other opportunities in the computer information field.

Course Description

In this course, students will continue to build on their knowledge of computers, equipment, operating systems, file management, and computer storage. Students will learn to install, maintain, and troubleshoot both external and internal computer components and equipment, and will explore networking options with printers, laptops, and mobile devices. Students will learn the basics of the Windows operating system including installation, system management, troubleshooting, backup, and recovery. Students will research different career options within the computer science field to determine areas of personal interest. The course emphasizes practical hands-on labs and exercises that will be used by students to gain an understanding of hardware and software technologies that are relevant to computer science. By writing lab reports that document their findings and results, students will implement knowledge and skills in authentic situations.

Work-Based Learning

Students will be connected with working computer science professionals in the community through Career Coaching, field trips and job shadowing which could lead to further opportunities for direct job training and real-world experience. Students will create and maintain a portfolio of their work-based learning experiences throughout the program to document the development of their skills.

Pre-Requisites

CIS100: Computer Information Systems 100 – Introduction to Computer Information Systems
CIS200: Computer Information Systems 200

Course Objectives

12. Students will understand the career ready practices that will lead to success in the computer science pathway.
13. Students will understand both the hardware and software technology used in computer operations.
14. Students will assemble, maintain, and troubleshoot computers.
15. Students will demonstrate basic file management and networking skills.
16. Students will demonstrate use, maintain, and troubleshoot printers, laptops, and mobile devices.
17. Students will install and troubleshoot the Windows operating system, including backup and recovery.

Integrated Academics

N/A

Concurrent Enrollments

Upon successful completion of CIS300, students will earn 3 college credits for each of the following courses from Onondaga Community College:

- CIS125 Fundamentals of Computer Information Systems
- CIS130 Foundations of the Internet

Equipment and Supplies

- **School will provide:** All necessary technology and classroom equipment
- **Student will provide:** N/A

Textbook

TestOut IT Fundamentals. Pleasant Grove, Utah: TestOut Corporation, 2020. Online Lab Simulator.
TestOut PC Pro. Pleasant Grove, Utah: TestOut Corporation, 2020. Online Lab Simulator.

Grading

10%	Class Attendance and Participation
10%	Oral Presentation
25%	Assignments
25%	Mid-Term Exam
30%	Final Exam

Additional Course Policies

- Students are required to follow all safety procedures.
- All work is due at the time and day specified when the assignment is given. Submission details for work to be graded will be given at the time the work is assigned.
- Quizzes will be given throughout the semester. The lowest quiz score (one score only) will be dropped when calculating the final course grade.

Course Calendar

Quarter	Units of Study
1	<ul style="list-style-type: none">• Classroom Practices: Being Successful• Computer/IT Specialist: Roles and Responsibilities• Computer Basics: Hardware, Software, and Operating Systems• Safety, Protection, and Professionalism• PC Toolkit and Maintenance• Work-Based Learning: Career Coaching
2	<ul style="list-style-type: none">• Internal PC Hardware and Computer Form Factors• External PC Components and Peripherals• Storage Devices• File Systems: Creation, Storage Management, Disk Optimization, Storage Troubleshooting• Work-Based Learning: Career Coaching
3	<ul style="list-style-type: none">• Introduction to Networking• Printers, Printer Configuration, and Network Printing• Printer Maintenance and Troubleshooting• Laptops: Components, Power Management, and Troubleshooting• Mobile Devices: Networking, Security, and Troubleshooting• Work-Based Learning: Career Coaching
4	<ul style="list-style-type: none">• Windows Pre-Installation, Installation, and Post Installation• File Management• Windows System Tools• System Management and Active Directory• Windows Backup and System Recovery• Operating System Troubleshooting• Work-Based Learning: Career Coaching• Review and Final Exam

Syracuse City School District
Career and Technical Education Program
Scope and Sequence
CIS300: Computer Information Systems 300



Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Weeks 1-2 Classroom Practices: Being Successful Computer/IT Specialist: Roles and Responsibilities	<ul style="list-style-type: none"> What are the expectations for the classroom and hands-on computer lab? How can students be successful in this class? What strategies can students use to manage their time? How can students use technology appropriately and effectively? What strategies can students use to study effectively to prepare for tests? What are the essential roles and responsibilities of a computer specialist? 	<ul style="list-style-type: none"> Explain and follow classroom procedures. List and follow rules for general classroom safety. Evaluate ways to manage time. Investigate various study skills for test taking and identify two effective skills. Describe the roles and responsibilities a Computer/IT Specialist has in a professional workplace. 	Written <ul style="list-style-type: none"> Workbook/TestOut Assignments Career Exploration Research Project Written Objective Quiz Self-Assessment Performance <ul style="list-style-type: none"> Procedure Checklist Mock Lab Procedure Practical 	Career Ready Practices CRP 1,2,4,7,8,10,11	ELA 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,3	Literacy 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards IT-SUP 1 IT-NET 1 IT-PRG 1	CSDF 9-12.IC1,.7
Weeks 3-4 Computer Basics: Hardware, Software, and Operating Systems	<ul style="list-style-type: none"> What hardware components are required for a computer to function? What hardware components are optional? How do components interface with one another? What is the purpose of an operating system (OS)? What are an operating system's core functions? 	<ul style="list-style-type: none"> Describe the core components of a desktop or laptop PC. Explain what each computer component is responsible for. Set up a computer. Navigate a Windows 10 graphical user interface (GUI). 	Written <ul style="list-style-type: none"> Workbook/TestOut Assignments Self-Assessment Performance <ul style="list-style-type: none"> Simulation of Computer Setup Lab Set Up a Computer Lab (Manually) 	Career Ready Practices CRP 1,2,4,8,11	ELA 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3,4	CSDF 9-12.NSD.2,3 9-12.DL.1,2,4,5
Weeks 5-6 Safety, Protection, and Professionalism	<ul style="list-style-type: none"> What is electrostatic discharge (ESD)? How are users and computer components protected from electrostatic discharge? How is safety maintained at all times when dealing with electricity or tools? What does professional behavior look like in the classroom and workplace? 	<ul style="list-style-type: none"> Explain what electrostatic discharge is and the effects it can have on computer equipment and computer users. Explain and demonstrate how to protect oneself and components from ESD. Explain and demonstrate how to safely handle PC hardware and peripherals. Explain and demonstrate how to conduct oneself professionally in a classroom, lab room, workplace. 	Written <ul style="list-style-type: none"> Workbook/TestOut Assignments Anti-Static Wrist Wrap and Mat Assignment Self-Assessment Performance <ul style="list-style-type: none"> ESD Lab 	Career Ready Practices CRP 1,2,3,4,8,10,11	ELA 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards IT-SUP 1 IT-NET 1 IT-PRG 1	CSDF 9-12.IC.3,4,5 9-12.NSD.2,3 9-12.DL.1,2,4,5,6,7
Weeks 7-8 PC Toolkit and Maintenance	<ul style="list-style-type: none"> What tools are used in the field of PC maintenance and repair? 	<ul style="list-style-type: none"> Explain an uninterruptable power supply and how is one set up. 	Written <ul style="list-style-type: none"> Workbook/TestOut Assignments 	Career Ready Practices CRP 1,2,4,8,11	ELA 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Work-Based Learning: Career Coaching	<ul style="list-style-type: none"> What is each tool used for? How are PC surge protectors and uninterruptable power supplies maintained? How are tools used appropriately and safely that will not cause damage to PC hardware? What can be learned from computer information systems professionals? 	<ul style="list-style-type: none"> Explain and demonstrate how to use a surge protector to prevent electrical surges from damaging components. Demonstrate appropriate and safe use of tools in disassembling, assembling, and repairing PCs and components. Participate in Career Coaching process. 	<ul style="list-style-type: none"> PC Tools Quiz Career Coaching Self-Assessment Performance Labs: PC Tools Practical Application, Install a UPS 		11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3	CSDF 9-12.NSD.2,3 9-12.DL.1,2,4,5
Weeks 9-13 Internal PC Hardware and Computer Form Factors	<ul style="list-style-type: none"> What are the essential components in a PC and what are their functions? How are internal components installed in a PC? How do internal components interface with one another? 	<ul style="list-style-type: none"> Define and describe the functions of internal PC components. Differentiate between components, their installation method, interface method, and functionality. Determine the compatibility of computer components with another PC. 	Written <ul style="list-style-type: none"> Workbook/TestOut Assignments Unit Quiz Self-Assessment Performance <ul style="list-style-type: none"> Labs: Install Power Supply, Choose and Install Motherboard, Select and Install Processor 1 & 2, Install Triple Channel Memory 	Career Ready Practices CRP 1,2,4,8,11	ELA 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3	CSDF 9-12.NSD.2,3 9-12.DL.1,2,4,5
Weeks 14-15 External PC Components and Peripherals	<ul style="list-style-type: none"> What is a PC peripheral? What interfaces and ports allow external components to connect to a PC? What are the different versions and form factors of USB? 	<ul style="list-style-type: none"> Explain and demonstrate how to connect and configure peripheral devices. Differentiate between USB versions and form factors as well as their advantages and disadvantages. Explain and demonstrate how to connect and configure external components to be used with a PC. 	Written <ul style="list-style-type: none"> Workbook/TestOut Assignments Unit Quiz Self-Assessment Performance <ul style="list-style-type: none"> Labs: Connect a KVM Switch, Install USB Devices, Select and Install Dual Displays, Manage Devices 	Career Ready Practices CRP 1,2,4,8,11	ELA 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3	CSDF 9-12.NSD.2,3 9-12.DL.1,2,4,5
Weeks 16-18 Storage Devices	<ul style="list-style-type: none"> How does a computer store information? What types of storage devices allow for permanent storage of data on a PC? What is the difference between SATA and IDE? What is the difference between an HDD and an SSD? What is the difference between flash storage and magnetic storage? What is a RAID array? What is a partition and how is it configured? 	<ul style="list-style-type: none"> Explain different ways that a computer can store information. Compare and contrast SATA and IDE. Compare and contrast an HDD and an SSD. Compare and contrast flash storage and magnetic storage. Explain and demonstrate how to install a hard drive. Explain and demonstrate how to install an SSD. Differentiate between logical and physical volumes. Explain and demonstrate how to create a RAID array. 	Written <ul style="list-style-type: none"> Workbook/TestOut Assignments GPT Partitioning Questions Unit Quiz Self-Assessment Performance <ul style="list-style-type: none"> Labs: Install SATA Devices, Create RAID Arrays, Implement a Raid Solution, Format Drives 	Career Ready Practices CRP 1,2,4,8,11	ELA 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3	CSDF 9-12.NSD.2,3 9-12.DL.1,2,4,5

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
		<ul style="list-style-type: none"> Explain and demonstrate how to create partitions on a hard drive. 			
Weeks 19-20 File Systems: Creation, Storage Management, Disk Optimization, Storage Troubleshooting Work-Based Learning: Career Coaching	<ul style="list-style-type: none"> What is a file system? What file system is most popular on current Windows PC, Mac, and Linux computers? What is the Master Boot Record (MBR)? What can be learned from computer information systems professionals? 	<ul style="list-style-type: none"> Create an MBR partition. Explain the difference between FAT32 and NTFS file systems. Create new volumes with command prompt and disk management software. Explain and demonstrate how to shrink or extend disk partitions. Explain and demonstrate how to perform disk management. Participate in Career Coaching process. 	Written <ul style="list-style-type: none"> Workbook/TestOut Assignments Unit Quiz Career Coaching Self-Assessment Performance <ul style="list-style-type: none"> Labs: Format Drives, Add Space to Existing Volumes, Implement Storage Spaces, Perform Disk Management 	Career Ready Practices CRP 1,2,4,8,11	ELA 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3	CSDF 9-12.NSD.2,3 9-12.DL.1,2,4,5
Week 21-24 Introduction to Networking	<ul style="list-style-type: none"> What are network topologies and how do they operate? What network infrastructure devices exist? What is the OSI model? How are IP addresses created, classed and/or assigned? What is a subnet mask? What is a wireless network? 	<ul style="list-style-type: none"> Explain the differences between network topologies and how data is transferred between devices. Define the 7 layers of the OSI model. Explain IP address classes and how to differentiate between network and host portion of IP address. Explain default subnet mask vs. CIDR address. Explain how wireless networking and wireless networking devices work. 	Written <ul style="list-style-type: none"> Workbook/TestOut Assignments Topology Facts Questions Assignment TCP/IP Protocol Assignment Unit Quiz Self-Assessment Performance <ul style="list-style-type: none"> Labs: Select and Install Network Adapter, Configure TCP/IP Settings, Configure Internet Connection Windows Command Prompt Networking Commands Practical Assignment 	Career Ready Practices CRP 1,2,4,8,11	ELA 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3,5 IT-NET 1,2	CSDF 9-12.NSD.2,3,4,5 9-12.DL.1,2,4,5
Week 25 Printers, Printer Configuration, and Network Printing	<ul style="list-style-type: none"> What printer types exist? What is the way to select the best printer for a specific task? How is a printer connected and configured? 	<ul style="list-style-type: none"> Explain the difference between an inkjet and laser printer. List and explain the seven steps to the laser print process. Explain and demonstrate how to configure a printer. Explain and demonstrate how to find and install printer driver software. 	Written <ul style="list-style-type: none"> Workbook/TestOut Assignments Unit Quiz Self-Assessment Performance <ul style="list-style-type: none"> Labs: Choose a Printer, Select and Install a Printer, Configure Network Printing 	Career Ready Practices CRP 1,2,4,8,11	ELA 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3,5 IT-NET 1,2	CSDF 9-12.NSD.2,3 9-12.DL.1,2,4,5
Week 26 Printer Maintenance and Troubleshooting	<ul style="list-style-type: none"> What is the process for maintaining and troubleshooting a laser printer? What is the process for maintaining and 	<ul style="list-style-type: none"> Explain and demonstrate how to perform preventative maintenance on a laser printer. Explain and demonstrate how to change a toner cartridge and refill paper in a laser printer. 	Written <ul style="list-style-type: none"> Workbook/TestOut Assignments Printer Troubleshooting Quiz Self-Assessment 	Career Ready Practices CRP 1,2,4,8,11	ELA 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,7,8,9

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
	troubleshooting an inkjet printer?	<ul style="list-style-type: none"> Explain and demonstrate how to change ink cartridges and align inkjet printer. Explain and demonstrate how to stop and restart the print spooler. 	Performance <ul style="list-style-type: none"> Labs: Maintain Laser Printers, Maintain Inkjet Printers 		11-12WHST 2,5,6,7
Weeks 27-28 Laptops: Components, Power Management, and Troubleshooting	<ul style="list-style-type: none"> What benefits does a laptop have over a desktop PC? What are external facing laptop ports and their functions? What components on a laptop are modular and how are components repaired or replaced? How is laptop power managed? 	<ul style="list-style-type: none"> Determine external ports available on laptop. Describe functionality of laptop ports. Disassemble a laptop. Repair laptop keyboard, lcd, and upgrade RAM. Configure laptop power management features. 	Written <ul style="list-style-type: none"> Workbook/TestOut Assignments Self-Assessment Performance <ul style="list-style-type: none"> Laptop Special Keys Practical Assignment Labs: Install Laptop Memory, Replace Laptop Keyboard, Replace Laptop LCD, Create a Power Plan 	Career Ready Practices CRP 1,2,4,8,11	ELA 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3	CSDF 9-12.NSD.2,3 9-12.DL.1,2,4,5
Weeks 29-30 Mobile Devices: Networking, Security, and Troubleshooting Work-Based Learning: Career Coaching	<ul style="list-style-type: none"> What components are unique to mobile devices and what are their functions? What is an IMEI (international mobile equipment identity) number? What is an IMSI (international mobile subscriber identity) number? What operating systems do mobile devices run on and how are they similar to and different from their desktop counterparts? What is 3G, 4G, LTE, 5G? What can be learned from computer information systems professionals? 	<ul style="list-style-type: none"> Define and describe hardware components of mobile device (GPS, Bluetooth radio, cellular radio). Secure a mobile device. Setup and configure iOS and Android OS devices. Participate in Career Coaching process. 	Written <ul style="list-style-type: none"> Workbook/TestOut Assignments Unit Quiz Mobile Device Troubleshooting Questions Career Coaching Self-Assessment Performance <ul style="list-style-type: none"> Labs: Manage Mobile Devices, Secure Mobile Devices, Configure iPad Access Control and Authentication 	Career Ready Practices CRP 1,2,4,8,11	ELA 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3	CSDF 9-12.NSD.2,3 9-12.DL.1,2,4,5
Weeks 31 Windows Pre-Installation, Installation, and Post Installation	<ul style="list-style-type: none"> What are the different versions of Windows? How is Windows installed on a new computer? How is a Windows license activated? How is system compatibility verified? 	<ul style="list-style-type: none"> Determine OS compatibility with hardware. Install Windows on a new computer. Prepare disk for Windows installation or reinstallation. 	Written <ul style="list-style-type: none"> Workbook/TestOut Assignments Pre-Installation Planning Exercise Self-Assessment Performance <ul style="list-style-type: none"> Verify System Compatibility Assignment Labs: Prepare Disks for Installation, Install Windows 	Career Ready Practices CRP 1,2,4,8,11	ELA 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3,4	CSDF 9-12.NSD.2,3 9-12.DL.1,2,4,5
Weeks 32-33			Written	Career Ready Practices	ELA

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
File Management	<ul style="list-style-type: none"> What are Windows file and folder properties? What are file attributes? How are files managed from the graphical user interface (GUI)? How are files managed from the command prompt (CMD)? 	<ul style="list-style-type: none"> Define and differentiate between file types and extensions. Explain and demonstrate how to view and manipulate file extensions and file attributes. Manage directories from GUI and CMD. 	<ul style="list-style-type: none"> Workbook/TestOut Assignments Self-Assessment Performance <ul style="list-style-type: none"> Labs: Manage Files (GUI), Manage Files and Folders (CMD) 	CRP 1,2,4,8,11	11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3,4	CSDF 9-12.CT.6,7 9-12.NSD.2,3 9-12.DL.1,2,4,5
Weeks 34 Windows System Tools	<ul style="list-style-type: none"> What is the Windows Task Manager? What is the control panel? What is Regedit? How are system commands used to manipulate the operating system and file system? 	<ul style="list-style-type: none"> Use task manager to monitor and adjust system resources. Use control panel to adjust software settings of OS. Use Regedit to make alterations to specific functions in Windows. Use system commands to manage resources and domain properties. 	Written <ul style="list-style-type: none"> Workbook/TestOut Assignments Self-Assessment Performance <ul style="list-style-type: none"> Labs: Task Manager, Use System Commands Regedit Exercise 	Career Ready Practices CRP 1,2,4,8,11	ELA 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3,4	CSDF 9-12.CT.6,7 9-12.NSD.2,3 9-12.DL.1,2,4,5
Week 35 System Management and Active Directory	<ul style="list-style-type: none"> What is Active Directory? What is the process to join a domain? What are user accounts? What are organizational units? 	<ul style="list-style-type: none"> Manage Active Directory domains and accounts. Use remote desktop to troubleshoot and assist users. Create and delete organization units. 	Written <ul style="list-style-type: none"> Workbook/TestOut Assignments Self-Assessment Performance <ul style="list-style-type: none"> Labs: Manage Users and Groups, Create User Accounts, Create and Delete OUs, Configure Remote Services 	Career Ready Practices CRP 1,2,4,8,11	ELA 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3,4	CSDF 9-12.CT.6,7 9-12.NSD.2,3 9-12.DL.1,2,4,5
Weeks 36-37 Windows Backup and System Recovery	<ul style="list-style-type: none"> How are files backed up on Windows? How is a complete backup of the OS created? How are files backed up on a Mac? 	<ul style="list-style-type: none"> Create a Windows backup. Create a file history backup. Create a Mac backup using Time Machine. Use restore points to restore Windows to a prior state. 	Written <ul style="list-style-type: none"> Workbook/TestOut Assignments Self-Assessment Performance <ul style="list-style-type: none"> Lab: Back Up a Windows Computer, Configure File History, Create a Time Machine Backup, Create A Restore Point 	Career Ready Practices CRP 1,2,4,8,11	ELA 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,7,11,12	Literacy 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3,4	CSDF 9-12.CT.6,7 9-12.NSD.2,3 9-12.DL.1,2,4,5
Weeks 38-39 Operating System Troubleshooting	<ul style="list-style-type: none"> What is Windows "Automatic Repair" and why might Windows boot into it? 	<ul style="list-style-type: none"> Explain and demonstrate how to determine what a Windows error code means and resolve the issue. 	Written <ul style="list-style-type: none"> Workbook/TestOut Assignments 	Career Ready Practices CRP 1,2,4,8,11	ELA 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Work-Based Learning: Career Coaching	<ul style="list-style-type: none"> What is the process to troubleshoot a Windows PC that is booting into automatic repair repeatedly? What is the process to troubleshoot a Windows PC that won't boot? What can be learned from computer information systems professionals? 	<ul style="list-style-type: none"> Explain and demonstrate how to configure the boot order. Explain and demonstrate how to troubleshoot issues at system startup. Participate in Career Coaching process. 	<ul style="list-style-type: none"> Career Coaching Self-Assessment Performance Labs: Troubleshoot System Startup, Use Advanced Boot Options 		11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,7,11,12	Literacy 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3,4	CSDF 9-12.CT.6,7 9-12.NSD.2,3 9-12.DL.1,2,4,5
Week 40 Review and Final Exam	<ul style="list-style-type: none"> What were the learning goals this year? What are the roles and responsibilities of an individual who works as a computer specialist? 	<ul style="list-style-type: none"> Complete assessment demonstrating a thorough knowledge of the technical concepts covered throughout the course. 	<ul style="list-style-type: none"> Final Assessment 	Career Ready Practices CRP 1,2,4,8,11	ELA 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,4,6,7,8,11,12	Literacy 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7
				Pathway Standards IT-SUP 1,2,3,4,5 IT-NET 1,2	CSDF 9-12.IC.1,3,4,5,7 9-12.CT.6,7 9-12.NSD.2,3,4,5 9-12.CY.1,2,3 9-12.DL.1,2,4,5

Syracuse City School District
Career and Technical Education Program
Course Syllabus
CIS400: Computer Information Systems Level 400



Program Overview

The PTECH Computer Information Systems program provides students with the opportunity to learn the fundamentals of information processing, networks, hardware, software applications, and web publishing toward the goal of earning college credits and an Associate's degree in Computer Information Systems from Onondaga Community College. Students will learn about common software packages for word processing, spreadsheets, databases, digital imagery and design, and desktop publishing and will use their skills to create authentic products for themselves and the community. Students will carry out computer and technical equipment maintenance and environmentally responsible hardware recycling. Students will explore and apply the concepts of digital citizenship. Within this curriculum students will have the opportunity to earn Precision Computer Systems I Certification along with CTE Endorsement and college credits. Students who successfully complete the Computer Information Systems pathway will be prepared for entry level careers or further education and training in programming, systems analysis, tech support, web development, software development and other opportunities in the computer information field.

Course Description

In this course, students will learn the final and most formal pieces of all technology (hardware building/maintenance and advanced software techniques), digital citizenship and college and career readiness skills to support the broad spectrum of their post-secondary plans. Students will advance their knowledge and skills in installing, configuring and troubleshooting mobile devices, networks, and computer hardware. Using a multitude of digital sources and industry partners when available, students will revisit and research the many career options available in technology. Students will have the opportunity to download and manipulate digital files as they learn to take, edit and publish high quality portraits, which they have the option of using as their portrait for graduation and their senior photo for the yearbook. Students will have the opportunity earn industry accepted certification using the Precision Computer Systems 1 Exam. Students they will complete their employability profile focusing on career ready practices, proper communication techniques and professionalism.

Work-Based Learning

Students will be connected with working computer science professionals in the community through Career Coaching, job shadowing, and internships which could lead to further opportunities for direct job training and real-world experience. Students will create and maintain a portfolio of their work-based learning experiences throughout the program to document the development of their skills.

Pre-Requisites

CIS100: Computer Information Systems 100 – Introduction to Computer Information Systems
CIS200: Computer Information Systems 200
CIS300: Computer Information Systems 300

Course Objectives

Students will:

- Develop a detail-oriented post-secondary plan.
- Participate in a year-long community outreach/senior project.
- Review and apply technical vocabulary and jargon accurately in documentation and discussion.
- Identify types of mobile devices and explain feature differences,
- Identify and describe the function of hardware and components,
- Describe cloud storage and how it is used.
- Identify common networks, their purposes and benefits.
- Identify networking protocols and networking hardware devices.
- Describe and demonstrate the installation and configuration of various hardware components and peripherals,
- Explain and demonstrate the troubleshooting process
- Describe and demonstrate proper communication techniques and professionalism:
- Complete Precision Computer Systems I Exam
- Build a functional computer and install the Microsoft Windows Operating System.

Integrated Academics

1 CTE Integrated English Credit

Concurrent Enrollments

Upon successful completion of CIS400, students will earn 3 college credits for each of the following courses from Onondaga Community College:

- CFS140 Computer Forensics and Security
- CIS170 Network Fundamentals
- MA114 Intermediate Algebra with Applications
- MAT143 Precalculus with Trigonometry

Equipment and Supplies

- **School will provide:** All necessary technology and classroom equipment
- **Student will provide:** N/A

Textbook

TestOut IT Fundamentals. Pleasant Grove, Utah: TestOut Corporation, 2020. Online Lab Simulator.

TestOut PC Pro. Pleasant Grove, Utah: TestOut Corporation, 2020. Online Lab Simulator.

Grading

10%	Class Attendance and Participation
10%	Oral Presentation
25%	Assignments
25%	Mid-Term Exam
30%	Final Exam

Additional Course Policies

- Students are required to follow all safety procedures.
- All work is due at the time and day specified when the assignment is given. Submission details for work to be graded will be given at the time the work is assigned.
- Quizzes will be given throughout the semester. The lowest quiz score (one score only) will be dropped when calculating the final course grade.

Course Calendar

Quarter	Units of Study
1	<ul style="list-style-type: none">• Expectations and Objectives for the Year• Planning for Work-Based Learning• Mobile Devices: Hardware• Mobile Devices: Cloud Storage• Community Outreach/Senior Project• Networking: Protocols• College Planning• Networking: Hardware• Graphic File Manipulation and Photography• Work-Based Learning: Career Coaching, Job Shadowing
2	<ul style="list-style-type: none">• Networking: Wired and Wireless Networks• Hardware• Hardware and Network Troubleshooting• Community Outreach/Senior Project• Operational Procedures• Work-Based Learning: Internship
3	<ul style="list-style-type: none">• Preparation for Precision Exam Summative Assessment• Precision Exam Administration and Retakes• Community Outreach/Senior Project• Precision Exam Administration and Retakes• Work-Based Learning: Career Coaching, Job Shadowing
4	<ul style="list-style-type: none">• Precision Exam Administration and Retakes (Continued)• Building a Computer and Project Reflection• Work-Based Learning: Internship• Post-Secondary Career Planning: Financial Literacy• Community Outreach/Senior Project• Post-Secondary Planning and Completion of Course

Syracuse City School District
Career and Technical Education Program
Scope and Sequence

CIS400: Computer Information Systems Level 400



Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Weeks 1-2 Expectations and Objectives for the Year Planning for Work-Based Learning	<ul style="list-style-type: none"> What are the expectations and objectives for the year? What is your post-secondary plan? What supports are available to students? What will be this year's community outreach/senior project? What are the options for apprenticeships, job shadows and career coaching? Why is accurate use of technical vocabulary and jargon important? 	<ul style="list-style-type: none"> Review of expectations and objectives for the year and the method of completion. List the tasks necessary to earn the Career and Technical Education endorsement and Precision Exam competency. Develop a detail-oriented post-secondary plan. Explain the supports available to students to complete these objectives. Explain the process for determining and executing the phases of the year's community outreach/senior project. Research options for apprenticeships, job shadows and career coaching based on post-secondary plans. Review and apply technical vocabulary and jargon accurately in documentation and discussion. 	Written <ul style="list-style-type: none"> Research Project Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Teacher Observation Checklist 	Career Ready Practices CRP 1,2,4,7,10,11	ELA 11-12R 1,2,4,7,8,9 11-12W 1,2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,5,7,8,9 11-12WHST 1,2,5,6,7
				Pathway Standards IT-SUP 1,2,3,4,9	CSDF 9-12.IC.6,7 9-12CT.2,9 9-12NSD.1,2,3,4,5 9-12.DL.1,2,4,5,6,7
Weeks 3-4 Mobile Devices: Hardware	<ul style="list-style-type: none"> What are the types and features of mobile devices? What is the function of different computer hardware and components? What is the difference between built-in and expansion components? 	<ul style="list-style-type: none"> Identify types of devices and explain feature differences, similarities and application of each device, including laptops, smartphones, tablets, and wearable technology devices. Identify and describe the function of hardware and components, including keyboard, hard drive, memory, CPU, battery, system board, speaker, webcam, Wi-Fi, and Bluetooth. Identify and describe components as built-in or on-board vs. expansion and upgrade. 	Written <ul style="list-style-type: none"> Project Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Teacher Observation Checklist 	Career Ready Practices CRP 1,2,4,8,11	ELA 11-12R 1,2,4,7,8,9 11-12W 1,2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,5,7,8,9 11-12WHST 1,2,5,6,7
				Pathway Standards IT-SUP 1,2,3,4	CSDF 9-12.IC.6,7 9-12CT.2,9 9-12NSD.1,2,3,4,5 9-12.DL.1,2,4,5,6,7
Weeks 5-6 Mobile Devices: Cloud Storage Community Outreach/Senior Project	<ul style="list-style-type: none"> What is cloud storage and how is it used? How is cloud storage connected and configured? How is data synchronized with the cloud storage? What data types that can be synchronized to the cloud? What will be this year's community outreach/senior project? 	<ul style="list-style-type: none"> Describe cloud storage and how it is used. Explain how to connect with and configure cloud storage. Explain why and how to synchronize data with the cloud storage. Identify and describe the data types that can be synchronized to the cloud. Make final decision on community outreach/senior project. Begin planning community outreach/senior project, including the following: <ul style="list-style-type: none"> Identify project. Define goals and target audience. 	Written <ul style="list-style-type: none"> Project Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Teacher Observation Checklist Community Outreach/Senior Project 	Career Ready Practices CRP 1,2,4,5,8,11,12	ELA 11-12R 1,2,4,7,8,9 11-12W 1,2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,5,7,8,9 11-12WHST 1,2,5,6,7
				Pathway Standards IT-SUP 1,2,3,4	CSDF 9-12.IC.6,7 9-12CT.2,9 9-12NSD.1,2,3,4,5 9-12.DL.1,2,4,5,6,7

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
		<ul style="list-style-type: none"> – Craft a clear message for audience., – Identify outreach methods. – Define roles and responsibilities. – Define a timeline. – Identify tools to measure progress and success. – Begin implementation. 			
Weeks 7-8 Networking: Protocols College Planning	<ul style="list-style-type: none"> • What are common networking protocols and their purposes? • What is FAFSA (Free Application for Federal Student Aid) why is it important? • What makes an effective college essay? 	<ul style="list-style-type: none"> • Define networking protocols and their purposes, including: <ul style="list-style-type: none"> – FTP (File Transfer Protocol) to transfer files from one system to another for backups – HTTP (Hypertext Transfer Protocol) for transferring hypermedia documents, such as HTML (Hypertext Markup Language (Web pages)). • Explain FAFSA (Free Application for Federal Student Aid) and its importance to preparing for college. • Create FAFSA account and begin application process. • Explain what makes an effective college essay.. 	Written <ul style="list-style-type: none"> • Project • Self-Assessment • Professional Portfolio Performance <ul style="list-style-type: none"> • Class Presentation • Teacher Observation Checklist • Community Outreach/Senior Project 	Career Ready Practices CRP 1,2,4,7,8,10,11	ELA 11-12R 1,2,4,7,8,9 11-12W 1,2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,5,7,8,9 11-12WHST 1,2,5,6,7
				Pathway Standards IT-NET 2,3,4,5 IT-SUP 1,2,3,4,5	CSDF 9-12.IC.6,7 9-12CT.2,9 9-12NSD.1,2,3,4,5 9-12CY.2 9-12.DL.1,2,4,5,6,7
Weeks 9-11 Networking: Hardware Graphic File Manipulation and Photography Work-Based Learning: Career Coaching, Job Shadow	<ul style="list-style-type: none"> • What are some common networking hardware devices? • How can graphic files be downloaded and organized? • How is Adobe Photoshop used to edit photos? • How are large files transferred or shared? • What can be learned from computer information systems professionals? 	<ul style="list-style-type: none"> • Compare and contrast common networking hardware devices. • Take high quality portraits, download and organize the digital files. • Use Adobe Photoshop to make specific photo edits. • Describe options for the transfer or sharing of large files. • Participate in Career Coaching process. • Participate in Job Shadow process with local computer information systems professionals. 	Written <ul style="list-style-type: none"> • Project • Career Coaching Self-Assessment • Job Shadow Reflection • Professional Portfolio Performance <ul style="list-style-type: none"> • Class Presentation • Teacher/Mentor Observation Checklist • Community Outreach/Senior Project 	Career Ready Practices CRP 1,2,4,8,10,11	ELA 11-12R 1,2,4,7,8,9 11-12W 1,2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,5,7,8,9 11-12WHST 1,2,5,6,7
				Pathway Standards IT-NET 2,3,4,5 IT-SUP 1,2,3,4,5	CSDF 9-12.IC.6,7 9-12CT.2,9 9-12NSD.1,2,3,4,5 9-12.CY.2 9-12.DL.1,2,4,5,6,7
Week 12-14 Networking: Wired and Wireless Networks	<ul style="list-style-type: none"> • What is a SOHO (Small Office and Home Office) network and how is it installed? 	<ul style="list-style-type: none"> • Describe basic wired/wireless SOHO (Small Office and Home Office) networks and explain installation standards. 	Written <ul style="list-style-type: none"> • Project • Self-Assessment • Professional Portfolio Performance	Career Ready Practices CRP 1,2,4,8,11	ELA 11-12R 1,2,4,7,8,9 11-12W 1,2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards	Literacy

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
	<ul style="list-style-type: none"> What are the similarities and differences in wireless networking protocols What are the purposes and benefits of common networks? What are common network configuration concepts? 	<ul style="list-style-type: none"> Compare and contrast wireless networking protocols, such as 802.11a and 802.11b. Identify common networks, their purposes and benefits. Explain common network configuration concepts, such as IP addressing, DNS (Domain Name System) and DHCP (Dynamic Host Configuration Protocol). 	<ul style="list-style-type: none"> Class Presentation Teacher Observation Checklist Community Outreach/Senior Project 	IT 1,11,12 Pathway Standards IT-NET 2,3,4,5 IT-SUP 1,2,3,4,5	11-12RST 1,2,4,5,7,8,9 11-12WHST 1,2,5,6,7 CSDF 9-12.IC.6,7 9-12CT.2,9 9-12NSD.1,2,3,4,5 9-12CY.2 9-12.DL.1,2,4,5,6,7
Week 15-16 Hardware	<ul style="list-style-type: none"> What are the basic component and cable types, features and purposes? How are various hardware components installed and configured? How are peripherals, used and installed? 	<ul style="list-style-type: none"> Explain basic component and cable types, features and their purposes. Describe and demonstrate the installation and configuration of various hardware components, including storage devices, motherboards, CPUs, expansion card, and power supplies. Describe and demonstrate the use of peripherals, including printers and scanners and their installation. 	Written <ul style="list-style-type: none"> Project Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Teacher Observation Checklist Community Outreach/Senior Project 	Career Ready Practices CRP 1,2,4,8,11	ELA 11-12R 1,2,4,7,8,9 11-12W 1,2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,5,7,8,9 11-12WHST 1,2,5,6,7
				Pathway Standards IT-SUP 1,2,3,4	CSDF 9-12.IC.6,7 9-12CT.2,9 9-12NSD.1,2,3,4,5 9-12.DL.1,2,4,5,6,7
Weeks 17-18 Hardware and Network Troubleshooting Community Outreach/Senior Project	<ul style="list-style-type: none"> What is the best approach to hardware and network troubleshooting? What is the troubleshooting process? What are some common networking issues? What is the progress of the community outreach/senior project? 	<ul style="list-style-type: none"> Explain the value of a procedural/best practices approach to hardware and network troubleshooting that aligns with goals or company policy. Explain and demonstrate the troubleshooting process relative to the problem and/or component. Explain and demonstrate the troubleshooting process for common networking issues. Assess implementation progress of the plan for community outreach/senior project. 	Written <ul style="list-style-type: none"> Project Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Teacher Observation Checklist Community Outreach/Senior Project 	Career Ready Practices CRP 1,2,4,5,8,11,12	ELA 11-12R 1,2,4,7,8,9 11-12W 1,2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,2,11,12	Literacy 11-12RST 1,2,4,5,7,8,9 11-12WHST 1,2,5,6,7
				Pathway Standards IT-NET 2,3,4,5 IT-SUP 1,2,3,4,5	CSDF 9-12.IC.6,7 9-12CT.2,9 9-12NSD.1,2,3,4,5 9-12CY.2 9-12.DL.1,2,4,5,6,7
Week 19 Operational Procedures Work-Based Learning: Internship	<ul style="list-style-type: none"> What is involved in proper communication? What does professionalism look like in the workplace? 	<ul style="list-style-type: none"> Describe and demonstrate proper communication techniques and professionalism: <ul style="list-style-type: none"> Use proper professional language. Maintain a positive attitude. Listen actively. Demonstrate cultural sensitivity. 	Written <ul style="list-style-type: none"> Project Self-Assessment Reflection Summary: Internship Experience Professional Portfolio Employability Profile 	Career Ready Practices CRP 1,2,4,8,10,11	ELA 11-12R 1,2,4,7,8,9 11-12W 1,2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,5,7,8,9 11-12WHST 1,2,5,6,7

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
	<ul style="list-style-type: none"> How does an employee convey professionalism in the workplace? Why are internships necessary? How does an internship experience contribute to a professional portfolio? What are areas of improvement and challenge during the internship experience? 	<ul style="list-style-type: none"> Deal with difficult customers. Maintain confidentiality. Apply job search techniques to seek out, evaluate and obtain internship opportunities. Communicate with industry/potential employers through the internship experience. Apply learned knowledge and skills to workplace situations. Explain the importance of professionalism and ethics in the workplace. Comply with workplace policies and regulations. Communicate effectively both verbally and in writing. Explain the importance of being prompt, being able to take directions and being motivated to accomplish assigned tasks. Analyze and resolve problems that arise in completing assigned tasks. 	Performance <ul style="list-style-type: none"> Class Presentation Teacher Observation Checklist Community Outreach/Senior Project Internship Checklist Employer/Mentor Observation Checklist 	Pathway Standards IT-SUP 9	CSDF 9-12.IC.6,7 9-12CT.2,9 9-12NSD.1,2,3,4,5 9-12.CY.1,2 9-12.DL.1,2,4,5,6,7
Weeks 20-26 Preparation for Precision Exam Summative Assessment Precision Exam Administration and Retakes: Computer Based Multiple Choice Community Outreach/Senior Project	<ul style="list-style-type: none"> What are some effective test-taking techniques? What is the outcome of the Precision Test? What is the progress of the community outreach/senior project? 	<ul style="list-style-type: none"> Create and verify a Precision Exam student account. Review exam format and effective test-taking techniques. Complete practice exams. Complete Precision Exam Computer Based Multiple Choice section. Evaluate test performance focusing on topics leading to passing and failing scores. Review topics to prepare for possible test re-takes, if necessary. Complete retake of Precision Exam Computer Based Multiple Choice section, if necessary. Assess implementation progress of the plan for community outreach/senior project. 	Written <ul style="list-style-type: none"> Precision Exam Computer Based Multiple Choice Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Teacher Observation Checklist Community Outreach/Senior Project 	Career Ready Practices CRP 1,2,4,8,11,12	ELA 11-12R 1,2,4,7,8,9 11-12W 1,2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,2,11,12	Literacy 11-12RST 1,2,4,5,7,8,9 11-12WHST 1,2,5,6,7
				Pathway Standards IT-NET 2,3,4,5 IT-SUP 1,2,3,4,5,9	CSDF 9-12.IC.6,7 9-12CT.2,9 9-12NSD.1,2,3,4,5 9-12.DL.1,2,4,5,6,7
Weeks 27-32 Precision Exam Administration and Retakes: Hands-on Performance	<ul style="list-style-type: none"> What are some effective test-taking techniques? What is the outcome of the Precision Test? What is the progress of the community outreach/senior project? 	<ul style="list-style-type: none"> Review exam format and effective test-taking techniques. Complete practice exams. Complete Precision Exam Hands-on Performance Based Standards section. 	Written <ul style="list-style-type: none"> Precision Exam: Hands-on Performance Based Standards Career Coaching Self-Assessment Job Shadow Reflection 	Career Ready Practices CRP 1,2,4,8,11,10,12	ELA 11-12R 1,2,4,7,8,9 11-12W 1,2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,2,11,12	Literacy 11-12RST 1,2,4,5,7,8,9 11-12WHST 1,2,5,6,7

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Based Standards Community Outreach/Senior Project Work-Based Learning: Career Coaching, Job Shadow	<ul style="list-style-type: none"> What can be learned from computer information systems professionals? 	<ul style="list-style-type: none"> Evaluate test performance focusing on topics leading to passing and failing scores. Review topics to prepare for possible test re-takes, if necessary. Complete retake of Precision Exam Hands-on Performance Based Standards section, if necessary. Evaluate test performance and create plan for next steps. Assess implementation progress of the plan for community outreach/senior project. Participate in Career Coaching process. Participate in Job Shadow process with local computer information systems professionals. 	<ul style="list-style-type: none"> Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Teacher/Mentor Observation Checklist Community Outreach/Senior Project 	Pathway Standards IT-NET 2,3,4,5 IT-SUP 1,2,3,4,5,9	CSDF 9-12.IC.6,7 9-12CT.2,9 9-12NSD.1,2,3,4,5 9-12.CY.1,2 9-12.DL.1,2,4,5,6,7
Weeks 33-37 Building a Computer and Project Reflection Work-Based Learning: Internship	<ul style="list-style-type: none"> How is a functional Windows desktop computer system assembled? What personal safety measures for working with computer equipment and power supplies need to be followed? What is involved in troubleshooting a problem? What can be learned from building a computer system? How does an employee convey professionalism in the workplace? Why are internships necessary? How does an internship experience contribute to a professional portfolio? What are areas of improvement and challenge during the internship experience? 	<ul style="list-style-type: none"> Gather all necessary components and software to build a functional Windows desktop computer system. Build a functional computer and install the Microsoft Windows Operating System. Follow all personal safety measures for working with computer equipment and power supplies. Assess progress of computer build and determine the need for troubleshooting. Troubleshoot and solve problems. Reflect on Windows Desktop computer system building project, including: <ul style="list-style-type: none"> Evaluation of what worked and what did not. System functionality when the build was complete. Need for and effects of troubleshooting. Problems that could prevent the computer from booting. What can be improved upon. Apply job search techniques to seek out, evaluate and obtain internship opportunities. Communicate with industry/potential employers through the internship experience. Apply learned knowledge and skills to workplace situations. Explain the importance of professionalism and ethics in the workplace. 	Written <ul style="list-style-type: none"> Research Project Project Self-Assessment Reflection Summary: Internship Experience Professional Portfolio Employability Profile Performance <ul style="list-style-type: none"> Class Presentation Teacher Observation Checklist Community Outreach/Senior Project Internship Checklist Employer/Mentor Observation Checklist 	Career Ready Practices CRP 1,2,4,8,10,11 Cluster Standards IT 1,2,11,12 Pathway Standards IT-NET 2,3,4,5 IT-SUP 1,2,3,4,5,9	ELA 11-12R 1,2,4,7,8,9 11-12W 1,2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6 Literacy 11-12RST 1,2,4,5,7,8,9 11-12WHST 1,2,5,6,7 CSDF 9-12.IC.6,7 9-12CT.2,9 9-12NSD.1,2,3,4,5 9-12.CY.1,2 9-12.DL.1,2,4,5,6,7

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
		<ul style="list-style-type: none"> Comply with workplace policies and regulations. Communicate effectively both verbally and in writing. Explain the importance of being prompt, being able to take directions and being motivated to accomplish assigned tasks. Analyze and resolve problems that arise in completing assigned tasks. 			
Weeks 38-39 Post-Secondary Career Planning: Financial Literacy Community Outreach/Senior Project	<ul style="list-style-type: none"> What career plans do you have? How can Microsoft Excel be used to develop a budget? Was the community outreach/senior project successful? 	<ul style="list-style-type: none"> Choose and research a career they plan to pursue. Based on researched career information, use Microsoft Excel to develop a budget using calculation and visual data presentation features. Use Microsoft Excel to calculate interest and taxes based on interest rates and state and federal taxation tables. Implement final phase of community outreach/senior project. Assess implementation success of plan for community outreach/senior project. 	Written <ul style="list-style-type: none"> Research Project Excel Budget Project Reflection: Success of Community Outreach/Senior Project Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Teacher Observation Checklist Community Outreach/Senior Project 	Career Ready Practices CRP 1,2,3,4,8,10,11,12	ELA 11-12R 1,2,4,7,8,9 11-12W 1,2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,5,7,8,9 11-12WHST 1,2,5,6,7
				Pathway Standards IT-SUP 3	CSDF 9-12.IC.6,7 9-12CT.2,9 9-12NSD.1,2,3,4,5 9-12.DL.1,2,4,5,6,7
Weeks 39-40 Post-Secondary Planning and Completion of Course	<ul style="list-style-type: none"> What is the purpose of an Employability Profile and a Portfolio? What preparations are needed for after graduation? 	<ul style="list-style-type: none"> Assemble and finalize Employability Profile and Senior Portfolio. Produce both print and digital versions of Employability Profile and Senior Portfolio. Prepare for graduation and post-secondary plans. 	Written <ul style="list-style-type: none"> Self-Assessment Professional Portfolio Performance <ul style="list-style-type: none"> Class Presentation Teacher Observation Checklist 	Career Ready Practices CRP 1,2,4,8,10,11	ELA 11-12R 1,2,4,7,8,9 11-12W 1,2,5,6,7 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,5,6
				Cluster Standards IT 1,11,12	Literacy 11-12RST 1,2,4,5,7,8,9 11-12WHST 1,2,5,6,7
				Pathway Standards IT-SUP 3	CSDF 9-12.IC.6,7 9-12CT.2,9 9-12NSD.1,2,3,4,5 9-12.DL.1,2,4,5,6,7

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