



Computing & Cybersecurity

For incoming freshmen 2024-2025

Overview

The Louisiana computing and cybersecurity pathway allows students to engage in a program of study that combines computer science, cybersecurity, and mathematics through project based learning. Students will be able to apply computational thinking techniques in many different STEM disciplines and demonstrate proficiency in computing in many settings. Students will explore the implications of technology usage in social interactions, learn how to protect systems from possible cyberattacks, and create interactive websites and applications. Students will discuss the ethics of advancements in robotics and artificial intelligence as they consider the value of true autonomous devices. They will build complex systems capable of multiple sensory inputs and advanced logic structures. Pathway coursework prepares TOPS University and Jump Start TOPS Tech diploma seeking students to compete in the 21st century by immersing them in the fundamentals of the field, as well as its impacts and applications in the workplace.

College and Career Connections

Finding high-wage career opportunities directly out of high school can be challenging. It typically requires advanced capstone credentials accompanied by work experience and/or apprenticeships in the field of study.

High School to Career	Community/Technical College to Career	University to Career
Audio/Visual Support	Computer Forensic Analyst	AI Specialist
IT Support Specialist	Computer Programmer	Computer Engineer
Junior Computer Programmer	Data Security/ Data Analyst	Cybersecurity Analyst
Web Designer	IT Auditor	Security Informatics

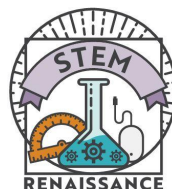
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Capstone Credentials

In order to graduate, Jump Start students must earn at least one credential from the options below.

*Please contact the individual providers to confirm if provider specific courses are structured to offer the credential.

CIW Network Technology Associate	CIW Web Development Professional	HTML, CSS, Javascript
CIW Javascript Specialist	Comp TIA A+ Certification	Fundamentals of JavaScript, Functional Programming, and Web Development (Level 1)
CIW Database Design Specialist	Comp TIA IT Fundamentals	Fundamentals of JavaScript, Functional Programming, and Web Development (Level 2)
CIW Web Security Specialist	Comp TIA Network + Certification	Fundamentals of JavaScript, Functional Programming, and Web Development (Level 3)
CIW Web Design Professional	Comp TIA Security +	PYTHON Certification

STEM Renaissance Computing & Cybersecurity Pathway Structure

To earn the **Silver STEM Diploma Seal** students must pass one course from each of the four following concentration areas: Introductory Course, Computational Thinking Principles, Introductory Cybersecurity, and a Silver Computing Focal Course. (These course options are listed on the following chart.)

To earn the **Gold STEM Diploma Seal** students must complete the requirements for the Silver STEM Diploma Seal, pass three Computer Science courses from the approved STEM Pathway listing, and pass an additional Math or Science course. (These course options are listed on the following chart.)

To complete the **TOPS Tech Diploma** students must complete the Gold STEM Diploma Seal requirements and one course from the approved Career Readiness Course list.

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Concentration Area	Course Name	Course Code	Credit
<p>To earn the Silver STEM Diploma Seal students <u>must</u> pass one course from each of the four following concentration areas: Introductory Course, Computational Thinking Principles, Introductory Cybersecurity, and a Silver Computing Focal Course.</p>			
Introductory Course (Select 1)	PLTW Computer Science Essentials OR	061100	1
	Survey of Computer Science (LSU Partnership)	061179	1
Computational Thinking Principles (Select 1)	AP Computer Science Principles OR	061177	1
	Cyber Literacy (NICERC Partnership) OR	040221	1
	Introduction to Computational Thinking (LSU Partnership)	061140	1
Introductory Cybersecurity (Select 1)	Cybersecurity (Cyber.org Partnership) OR	040224	1
	Cybersecurity (LSU Partnership) OR	040217	1
	PLTW Cybersecurity	040209	1
Silver Computing Focal Course* (Select 1) *Options continue on the next page.	Advanced Javascript, Programming, and Web Development OR	080520	1
	CIW Database Design OR	080505	1
	CIW E-Commerce Site Design and Development OR	040519	1
	CIW Essentials of Web Design OR	040517	1
	CIW Internet Business OR	040405	1
	CIW Introduction to Javascript OR	061125	1

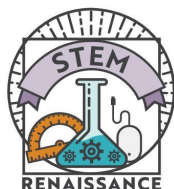
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Concentration Area	Course Name	Course Code	Credit
Silver Computing Focal Course Options Continued			
Silver Computing Focal Course (Select 1)	CIW Network Security OR	061121	1
	CIW Networking Technology OR	061120	1
	CIW Pearl Fundamentals OR	061126	1
	CIW Website Development OR	040415	1
	COMP TIA+ Fundamentals of Computer Installation and Configuration OR	061130	1
	COMP TIA+ Networking Fundamentals OR	061122	1
	COMP TIA+ Programming with PL/SQL OR	061127	1
	COMP TIA+ Security OR	061138	1
	Fundamentals of HTML, CSS, and Javascript	080523	1

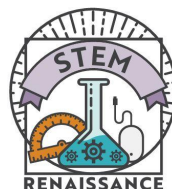
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Concentration Area	Course Name	Course Code	Credit
<p>To earn the Gold STEM Diploma Seal students must complete the requirements for the Silver STEM Diploma Seal, pass three Computer Science courses from the approved STEM Pathway listing, and pass an additional Math or Science course.</p>			
<p>Approved STEM Pathway Computer Science Options* (Select 3)</p> <p>*Options continue on the next page.</p>	AP Computer Science A OR	061177	1
	AP Computer Science Principles OR	061175	1
	Advanced Javascript, Programming, and Web Development OR	080520	1
	CDF - Qualifying CTE Internship I OR	080202	1
	CIW Database Design OR	080505	1
	CIW E-Commerce Site Design and Development OR	040519	1
	CIW Essentials of Web Design OR	040517	1
	CIW Internet Business OR	040405	1
	CIW Introduction to Javascript OR	061125	1
	CIW Network Security OR	061121	1
	CIW Networking Technology OR	061120	1
	CIW Pearl Fundamentals OR	061126	1
	CIW Website Development OR	040415	1
	Coding for the Web (LSU Partnership) OR	040244	1

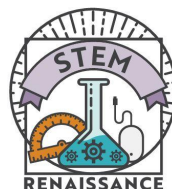
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Concentration Area	Course Name	Course Code	Credit
Approved STEM Pathway Computer Science Course Options Continued			
Approved STEM Pathway Computer Science Options* (Select 3) *Options continue on the next page.	COMP TIA+ Fundamentals of Computer Installation and Configuration OR	061130	1
	COMP TIA+ Networking Fundamentals OR	061122	1
	COMP TIA+ Programming with PL/SQL OR	061127	1
	COMP TIA+ Security OR	061138	1
	Computer Integrated Manufacturing OR	110850	1
	Cyber Literacy I (NICERC Partnership) OR	040221	1
	Cyber Literacy II (NICERC Partnership) OR	040222	1
	Cyber Society (NICERC Partnership) OR	040218	1
	Data Analysis and Manipulation (LSU Partnership) OR	080532	1
	Digital Storytelling (LSU Partnership) OR	040241	1
	First Robotics I OR	150740	1
	First Robotics II OR	150750	1
	Fundamentals of HTML, CSS, and Javascript OR	080523	1
	Interactive Computing (LSU Partnership) OR	061180	1
Introduction to Computational Thinking (LSU Partnership) OR	0611140	1	

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Concentration Area	Course Name	Course Code	Credit
Approved STEM Pathway Computer Science Course Options Continued			
Approved STEM Pathway Computer Science Options (Select 3)	Introduction to Programming OR	080500	1
	Programming for Engineers (LSU Partnership) OR	144300	1
	Robotics (LSU Partnership) OR	150780	1
	Robotics Advanced (LSU Partnership) OR	150731	1
	Survey of Computer Science (LSU Partnership) OR	061179	1
	Video Game Design (LSU Partnership)	080022	1

Math OR Science Course List			
Math OR Science Course* (Select 1) *Options continue on the next page.	Advanced Math- Functions and Statistics OR	160347	1
	Advanced Math- Pre-Calculus OR	160346	1
	Advanced Math-Pre-Calculus: DE-CMAT 1223 Trigonometry OR	160501	1
	Biology II: AP Biology OR	150307	1
	AP Calculus AB OR	160327	1
	AP Calculus BC OR	160328	1
	AP Chemistry OR	150410	1
	AP Environmental Science OR	150311	1

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Concentration Area	Course Name	Course Code	Credit
Math OR Science Course List Options Continued			
Math OR Science Course* (Select 1) *Options continue on the next page.	AP Physics C: Electricity and Magnetism OR	150794	1
	AP Physics C: Mechanics OR	150795	1
	Physics I: AP Physics I- Algebra Based OR	150724	1
	Physics: AP Physics II- Calculus Based OR	150725	1
	AP Psychology OR	222004	1
	AP Statistics OR	160352	1
	Astronomy OR	140200	1
	Biology: DE CBIO 1013 General Biology I OR	150321	1
	Biology I: DE CBIO 1033 General Biology I (Science Majors) OR	150322	1
	Biology II OR	150302	1
	Biology II: DE CBIO 1033 General Biology I (Science Majors) OR	150324	1
	Biology II: DE CBIO 1043 General Biology II (Science Majors) OR	150326	1
	Biology II: DE CBIO 2103 Microbiology OR	149995	1
Calculus DE CMAT 2113-5 Calculus I OR	160506	1	

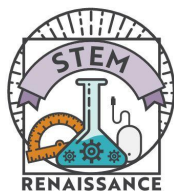
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Concentration Area	Course Name	Course Code	Credit
Math OR Science Course List Options Continued			
Math OR Science Course* (Select 1) *Options continue on the next page.	Calculus DE CMAT 2123-5 Calculus II OR	160507	1
	Chemistry I: DE CCEM 1103 Chemistry I OR	150414	1
	Chemistry I: DE CCEM 1123 General Chemistry I (Science Majors) OR	150322	1
	Chemistry II OR	150402	1
	Chemistry II: DE CCEM 1123 General Chemistry II (Science Majors) OR	150420	1
	Chemistry II: DE CCEM 1133 General Chemistry II (Science Majors) OR	150422	1
	Earth Science OR	150901	1
	Earth Science: DE - CGEO 1103 Physical Geology OR	150909	1
	Economics OR	220201	1
	Economics: AP Macroeconomics OR	220603	1
	Economics: AP Microeconomics OR	220605	1
	Economics: DE - CECN 2213 Macroeconomics OR	220608	1
	Economics: DE - CECN 2223 Microeconomics OR	220609	1
	Economics: DE - ECON 2113 Economic Principles OR	220202	1

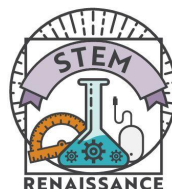
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Concentration Area	Course Name	Course Code	Credit
Math OR Science Course List Options Continued			
Math OR Science Course* (Select 1)	Environmental Science DE- CEVS 1103 OR	150914	1
	Introduction to Psychology CPSY 2013 OR	225011	1
	Physics I: DE CPHY 2113 Physics I (Algebra/Trig Based) OR	150726	1
	Physics I: DE CPHY 2113 Physics I (Calculus Based) OR	150728	1
	Physics II OR	150701	1
	Pre-Calculus OR	160348	1
	Probability and Statistics OR	160349	1
	Probability and Statistics: DE CMAT 1303 OR	160356	1
	Psychology OR	222001	1
	Psychology: DE CPSY 2013- Introduction to Psychology OR	225011	1
Statistical Reasoning	165031	1	

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