REX K-12 Computer Science for All

IU1

Everything a district needs to offer Computer Science courses.

Our Vision

To end generational poverty by providing educational opportunities in computer science for every student.

In a digital world, **learning computer skills are as important as learning how to read and write.**

K-12 computer science curriculum that enables any teacher to teach computer science.

- National and state standards-aligned, self-paced, project-based curriculum, and qualified teachers to make students future ready.
- AI platform with CS curriculum and comprehensive pathways.

Rex Curriculum Contains

Pre-tests & post-tests | Surveys | Progress checking assessments | Projects | Instructional videos | Practices | Independent activities

Highlights

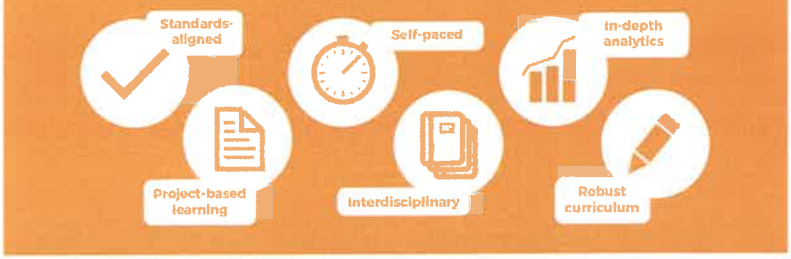
25+ courses & **5,000+** hours of content

Addresses **top 9** skills needed for modern workforce development.

Reimagining access to computer science education.

www.rexk12.academy info@rex.academy 414.268.6991

Features



High School Content

- Workforce pathways
- Industry standard certifications prep
- Earn credits to University of Wisconsin-Milwaukee while using Rex curriculum

Using Rex Curriculum

School districts can incorporate Rex curriculum (with or without Rex teachers) into their

- School day
- Summer Camps
- After School Programs

Endorsements

CSTA endorsed curriculum

CollegeBoard AP College Board approved curriculum

Customers

Boys & Girls Clubs of America | CCSD Clark County School District | Denver Public Schools | the Y

Success Stories

Guyer HS went from 78% AP CS pass rate to 100% AP CS pass rate in one year by using Rex K-12 CS Curriculum!

- Bridget Mezzanotte-Mota, Guyer HS

Rex K-12 remote teachers have solved the teacher shortage crisis for schools across the nation!

- Dr. Tonya Bonds, Folsom HS

6th grade Rex student Abhi has passed the AP CS A Exam!

- Creekmill School

Middle schooler Aasif created his own web development software business!

- Campbell ES

THE REX ACADEMY ADVANTAGE

Category Name	Rex K-12				
Curriculum & Professional Development	Y	Y	Y	Y	Y
Browser-Based Platform	Y	Y	N	N	N
Analytics / AI	Y	N	N	N	N
Career Pathways - Certifications	Y	N	N	N	N
Remote CS Teachers (Bilingual)	Y	N	N	N	N
University Dual Credit*	Y	N	N	N	N

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INDUSTRY CERTIFICATION PREP

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Certification Name	Rex course(s) that prepare them for this certification	Certification Company
Security+	Cybersecurity Levels 1 and 2	CompTIA
ITF+	IT Fundamentals+	CompTIA
Network+	Network+	CompTIA
PCEP - OpenEDG Python	Introduction to Python	Python Institute
Java SE 8 Programmer I - 1Z0-808	Introduction to Java	Oracle
W3 Schools HTML Certificate	Web Design and Development - HTML/CSS	W3 Schools
W3 Schools CSS Certificate	Web Design and Development - HTML/CSS	W3 Schools
W3 Schools HTML Certificate	Web Design and Development - Javascript	W3 Schools
Unity Certified User: Programmer	Unity Game Development	Certiport
Exam MO-200: Microsoft Excel (Office 2019)	Data Science	Microsoft

Elementary

* All PD assumes that the teacher has not taught this course before. Rex Academy does not explicitly teach every single skill in PD. We show how to use the curriculum effectively. That means we would not go over how to write 'For' loops in Python, but we would go over that chapter and talk about it.

* Browser – based implies that the content can run on any hardware with internet connection: PC, Mac, laptop, Chromebook, or tablet.

Course Name	Short Description	Program Length	System Requirements	Professional Dev (excluding TLP training)	Additional Notes
Internet Safety Grades K – 3	Students will learn the basics of getting around on the internet safely. They learn key terms like digital citizen, digital footprint, and cyberbullying.	15 hours	• **Browser based** • Requires Internet during use	1 hour recommended all initial - no support needed	Could be delivered in Summer Camp or after school setting as well
Kodu (Microsoft Game Development) Grades K – 2	Explore and learn with Kodu. Basic programming concepts are taught using interactive worlds.	15 hours	• **Requires a Windows computer** • Must download Kodu software which is free.	2 hours recommended: 1 initial and 1 hour support	Can be used offline Summer Camp Ready
Scratch Jr. Grades K – 2	Students learn the basics of animations and 2D game programming through an app called Scratch jr. It is a block based	50 hours	• Works on tablets and Chromebooks (from the play store) • The app is free.	2 hours recommended: 1 initial and 1 hour support	We have a summer camp template available at 20 hours

	programming language		• Requires Internet during use • Desktop version is available through github		
Scratch (MIT Game Development) Grades 3 – 5	Students learn the foundations of coding through the block based language, Scratch. This browser based code editor allows students to create fun 2D games and animations.	90 hours	• **Browser – based**	3 hours recommended: 1 initial and 2 hour support	Summer Camp Ready (20 hours)
Minecraft Junior Grades 2-4	Learn the basics of Minecraft and build your own worlds. Students learn how to play Minecraft. Not recommended for students who already know Minecraft.	15 hours	• This is the Windows version of Minecraft • **Requires Windows PC**: o 4 GB RAM o Intel I-3 Processor o Intel HD Graphics o 2 GB HDD memory • Students MUST buy a Minecraft account	1.5 hours recommended: 1 initial and .5 for support	Camp ONLY(15 hours) This course is for complete beginners that have not played Minecraft before.
Keyboarding and Mouse Skills	Students learn how to type using touch typing hand	Completely Customizable	• **Browser – based** • Requires internet	1 hour recommended all initial - no support needed	Can be used in any setting

Grades K – 5	placement through a gamified learning management system. Students earn points as they type accurately and race against computers to increase their fluency. Students also play games to increase their mouse skills.				
Spy Camp Grades 3 – 5		15 hours	N/A **This camp can only be done on location. Virtual is not possible.**	2 hours recommended: 1 initial and 1 hour support	Different days require a distinct set of materials. Please look at the TLP for guidelines.
Data Visualization Grades 2-4	Students learn the basics of what data is, how to gather data, and how they can format data into visual graphs and charts to make it easier to understand.	40 hours	• **Browser based** • Requires Internet during use	2 hours recommended: 1 initial and 1 hour support	
Intro to Hardware Grades 1-5	Students learn the basics of external hardware and how to treat it through the story of some online adventurers.	40 hours	• **Browser based** • Requires Internet during use	1 hour recommended all initial - no support needed	

Elementary / Middle School Overlap

Course Name	Short Description	Program Length	System Requirements	Professional Dev	Additional Notes
Mobile App Development Grades 5 – 7	Learn to create cell phone apps using block style programming language.	30 hours	• Browser – Based • Requires Internet during use • **Students need a tablet or phone to run the apps** • Students must create an online account • Students must possess a Gmail account	2 hours recommended: 1 initial and 1 hour support	Summer Camp Ready (15 hours) Students will need tablets or phones with the MIT App installed to run their code.
Alice 3.0 (Animations Using Alice) Grades 5 – 7	Visual game creator to teach the fundamentals of programming. This is Java based.	30 hours	• Must download the Alice software o 2 GB RAM o 1.5 GB HDD • Works on Windows, Apple, and Linux machines.	2 hours recommended: 1 initial and 1 hour support	Summer Camp Ready (15 hours) Can be used offline

Middle School

Course Name	Short Description	Program Length	System Requirements	Professional Dev	Additional Notes
2D Game Programming Grades 6 – 7	Learn programming concepts using 2D Game Programming in Flowlab.io.	30 hours	• **Browser – Based** • Requires Internet during use • Students must set up an account on Flowlab. A free account is acceptable.	2 hours recommended: 1 initial and 1 hour support	Summer Camp Ready (15 hours)
Minecraft Modding Grades 6 - 8	This course picks up where the introductory course leaves off. This course will build on the fundamentals of playing Minecraft and explore advanced topics.	15 hours	• **This is the Windows version of Minecraft** • Requires Windows PC: o 4 GB RAM o Intel I-3 Processor o Intel HD Graphics o 2 GB HDD memory • **Students MUST buy a Minecraft account**	2 hours recommended: 1 initial and 1 hour support	Camp Only Students MUST know how to navigate Minecraft prior to this course.
IT Fundamentals and Networking Grades 6 – 8	Learn the basics of IT terminology and study various networks.	90 hours This is a full semester course	• Browser – Based • Requires Internet during use	2 hours recommended: 1 initial and 1 hour support	Summer Camp Ready (15 hours)

Basics of Cybersecurity Grades 7 – 8	Learn to become a digital cyber defender in this course.	90 hours This is a full semester course	• Browser – Based • Requires Internet during use	3 hours recommended: 1 initial and 2 hour support	Summer Camp Ready (15 hours)
Web – Design for MS Grades 7 – 8	Create websites and learn the foundations of the Internet. This course is certification aligned Certificate Offered: W3Schools HTML Certificate	90 hours This is a full semester course	• Browser – Based • Requires Internet during use	2 hours recommended: 1 initial and 1 hour support	Summer Camp Ready (15 hours)
Digital Arts Grades 8 - 9	Create digital artwork while learning art history, art vocabulary, and discussing modern art events.	90 hours This is a full semester course	• Browser – Based • Requires Internet during use • Students must set up various free accounts for relevant digital art websites	2 hours recommended: 1 initial and 1 hour support	Summer Camp Ready (15 hours)
Intro. to Python Grades 7 - 8	Introduction to coding using Python. This course is certification aligned	90 hours This is a full semester course	• Browser – Based • Requires Internet during use	3 hours recommended: 1 initial and 2 hour support	Summer Camp Ready (15 hours)

	Certificate Offered: PCEP – OpenEDG Python Institute Certification				
Intro to Java Grades 6 – 8	Introduction to coding using Java. This course is certification aligned Certificate Offered: Oracle Java SE 11 Developer Certification – 1Z0-819	90 hours This is a full semester course	• Browser – Based • Requires Internet during use	3 hours recommended: 1 initial and 2 hour support	Summer Camp Ready (15 hours)
PC Applications Grades 7-9	Students learn basic microsoft office software and how to use it to create presentations, documents, spreadsheets, and graphs.	90 hours	• Browser – Based • Requires Internet during use • Requires Microsoft Office - Powerpoint, Word, and Excel	3 hours recommended: 1 initial and 2 hour support	

High School

Course Name	Short Description	Program Length	System Requirements	Professional Dev	Additional Notes
Computer Science 1 Grades 9 – 10	A foundational class for learning the basic utilities of computer science.	180 hours	• Browser – Based • Requires Internet during use	3 hours recommended: 1 initial and 2 hour support	This class is similar to AP CS Principles
AP CS Principles Grades 9 – 10	This foundational class allows students to earn AP credit from the College Board. This course allows for AP credit.	180 hours	• Browser – Based • Requires Internet during use	4 hours recommended: 2 initial and 2 hours of support	This class is similar to Computer Science 1
Web Design and Development Grades 9 – 10	In this course, students build websites and learn about the foundations of the Internet. This course is certification aligned for HTML/CSS and JavaScript. (3 Certifications)	180 hours	• Browser – Based • Requires Internet during use	3 hours recommended: 1 initial and 2 hour support	Pieces of this course will be functional by September 2022 and can be sold now.

	Certificates Offered: W3Schools HTML Certificate W3Schools CSS Certificate W3Schools JavaScript Certificate				
Intro. to Python **Grades 9 - 10**	**Introduction to coding using Python.** This course is certification aligned Certificate Offered: PCEP – OpenEDG Python Institute Certification	**90 hours** **This is a full semester course**	• **Browser – Based** • **Requires Internet during use**	**3 hours recommended: 1 initial and 2 hour support**	**Summer Camp Ready (15 hours)**
Intro to Java **Grades 9 - 10**	**Introduction to coding using Java.** This course is certification aligned	**90 hours** **This is a full semester course**	• **Browser – Based** • **Requires Internet during use**	**3 hours recommended: 1 initial and 2 hour support**	**Summer Camp Ready (15 hours)**

	Certificate Offered: Oracle Java SE 11 Developer Certification – 1Z0-819				
Networking Grades 10 – 11 Prerequisite: Advanced IT Fundamentals recommended	Learn industry – level networking standards in this course. This course is certification aligned for CompTIA Network+ Certification.	90 hours	• Browser – Based • Requires Internet during use Simulating networks in Cisco Packet Tracer requires download. This is free software.	2 hours recommended: 1 initial and 1 hour support	
AP CS A Grades 11 – 12 Prerequisite: CS1 or AP CS Principles is required	This class teaches the advanced topics of object oriented programming in Java. This course allows for AP credit.	180 hours	• Browser – Based • Requires Internet during use	5 hours recommended: 2 initial and 3 hours of support	
Cybersecurity Level 1 Grades 11 – 12	Learn industry – level cybersecurity standards in this course.	180 hours	• Browser – Based • Requires Internet during use	15 hours recommended: 2-3 hours initial and 12 hours of support	Cybersecurity Level 1 is not sufficient to pass the Security+ exam.

Prerequisite: Intro to Python and Networking is recommended	This course is certification aligned for CompTIA Security+ Certification.		Requires VM for hands-on projects.		
Cybersecurity Level 2 Grades 11 – 12 Prerequisite: Cybersecurity Level 1 is required This course will be ready in January 2024	Learn industry – level cybersecurity standards in this course. This course is certification aligned for CompTIA Security+ Certification.	180 hours	• Browser – Based • Requires Internet during use Requires VM for hands-on projects.	15 hours recommended: 2-3 hours initial and 12 hours of support	
Unity Game Development Grades 11 - 12	Game development using the Unity software.	30 hours	Requires Unity Game Engine	9 hours recommended: 3 hours initial and 6 hours of support	Computer science 1 + Intro to Python or Java
Prompt Engineering with Generative AI Grades 8-10	How to properly format text based prompts for AI to achieve desired output	15 hours	• Browser – Based • Requires Internet during use	1 hour recommended all initial - no support needed	
Mobile Apps with Flutter Grades 8-10	Develop an app using the Flutter Flow website. This is a great introduction to mobile app development. It is all drag and drop.	90 hours	• Browser – Based • Requires Internet during use • Requires a Flutter Flow Account	3 hours recommended: 1 initial and 2 hour support	