

Northern Virginia (NOVA) Cloud Literacy

NSF ATE Reach for the Cloud: Building an Industry-Aligned Pathway to Careers in Cloud Computing

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STEMinar: "Cloud Computing Series"

Timeline:

Sessions ran weekly from April 20-May25, 2020

Metrics:

For all 6 sessions: (1) cumulative attendance of 82 participants (2) 43 unique (different) participants (3) average attendance per session of 14.

**Sessions were for ages 15+...could tease out # of participants under 18 and over 18, if needed...*

Topics & Agenda:

Session 1: Cloud Computing 101 (04/20/20 12pm)

In this session, we will discuss the basics every general user should know about the cloud. We will debunk cloud computing myths and go over the fundamentals of Cloud Computing.

Session 2: Cloud Computing Models (04/27/20 12pm)

In this session, we will discuss the cloud options every business leader should know when considering the cloud as a business solution. We will review and discuss the differences between the four types of Cloud Deployments (i.e., Public and Private) and three Service Models (SaaS, PaaS, IaaS).

Session 3: Cloud Computing Roles and Responsibilities (05/4/20 12pm)

In this session, we will discuss the primary cloud roles and responsibilities every student and technology professional should know. We will review the key roles, responsibilities, career paths, competencies, and certifications.

Session 4: Cloud Computing Services and Capabilities (05/11/20 12pm)

In this session, we will discuss the primary services and capabilities that all IT students, professionals, and leaders should know. We will review AWS Core Services and Capabilities.

Session 5: Cloud Computing Security Framework Fundamentals (05/18/20 12pm)

In this session, we will discuss the Cloud Security, Compliance, and Risk fundamentals that all IT and Cybersecurity Students, professionals, and leaders should know. We will review Security Control Frameworks, Risk Management Frameworks, the fundamentals of Legal/Regulatory Compliance, and the key AWS Security Services.

Session 6: Cloud Computing Architecture (5/25/2020 12 pm)

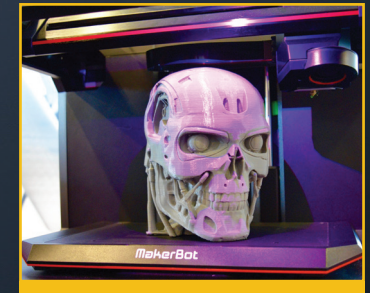
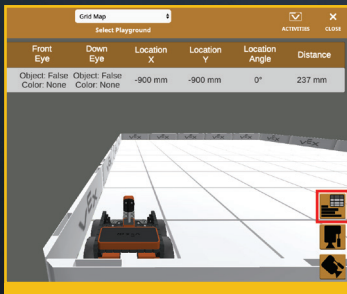
In this session, we will discuss the fundamentals of designing cloud architectures that all IT and Cybersecurity Students, professionals, and leaders should know. We will review the fundamentals of cloud solution architecture, AWS Well-Architected Framework, and the AWS Architecture Tools and best practices.



steminars

VIRTUAL

NOVA | Northern Virginia
Community College



VEXCode VR: Play and Code a Virtual Robot

Learn how to use the new VEX Robotics Virtual Robot! In this three part series, participants will learn how to incorporate sensors and use block coding to complete a variety of engineering challenges with their virtual robot.

Age 10-17. **Register 24hrs ahead at** seminar.novastem.us/free

Series:

April 27, 29, & May 1 @ 7pm
May 18, 20, & 22 @ 7pm

VEX: Strategy

Start the robotics season right! Afnan Ali, a world champion roboticist, will work through VEX IQ and VRC game strategy. Participants will learn how to analyze and breakdown previous year's games as well as document strategies that lead toward successful robot prototypes.

Age 10 & up. **Register 24hrs ahead at** seminar.novastem.us/free

VEX IQ: April 13, 20, 27
& May 4 @ 4pm

VEX VRC: April 15, 22, 29
& May 6 @ 4pm

Intro to SketchUp

Learn the basics of Sketchup Free™ - "the simplest free 3D modeling software on the web." This live tutorial will cover how to get started, understanding the virtual workspace, and basic features such as materials, shadows, and the free warehouse. After this STEMinar you will feel comfortable exploring your own designs and the basics of 3D design.

Register 24hrs ahead at seminar.novastem.us/free

April 23 @ 7pm (ages 10-17)
May 8 @ 2pm (ages 18+)

Cloud Computing

Learn about the in-demand field of Cloud Computing. This series we will cover a wide range of Cloud Computing topics, such as the fundamentals of the industry, primary services and capabilities, cloud architecture, and more! Explore your future with cloud computing through career pathways, certifications needed, and key roles in the industry.

Age 10 & up. **Register 24hrs ahead at** seminar.novastem.us/free

April 20 & 27
May 4, 11, 18, & 25
@ 12pm all days

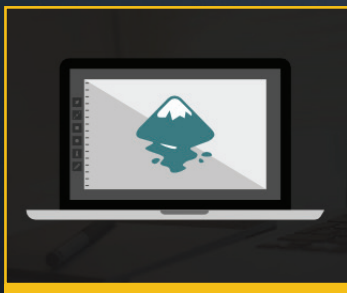
3D Scanning

Learn about the possibilities of 3D modeling. We'll discuss the current technologies such as Photogrammetry and 3D scanners and more emergent technologies such as NeRF (Neural Radiance Fields). 3D scanning methods allow users to cut cost and time without the need to design the object from scratch. Find out what engineers, artists, and scientists are using to bring their projects to life!

Age 16 & up. **Register 24hrs ahead at** seminar.novastem.us/free

April 17 & May 1 @ 7pm

PURSUE YOUR CURIOSITY AND BUILD YOUR STEM SKILLS VIRTUALLY



Intro to Inkscape

Transform your ideas into a digital representation to create physical products with this 2 part series. Inkscape produces vector images which can be used to make a physical product on a laser cutter/engraver. Create patterns, cards, and more.

Register 24hrs ahead at seminar.novastem.us/free

Age 10-17

P1: April 21 & May 5 @ 7pm
P2: April 29 & May 12 @ 7pm

Age 18 & up

P1: May 6 @ 7pm
P2: April 28 & May 13 @ 7pm



Designing with Inkscape

Apply your learned skills from Intro to Inkscape by creating your own design. Designs will be sent to the instructor for laser cutting and shipped to you. Four different sessions will be available. Two sessions will focus on Family & Consumer Science and two will focus on Engineering.

Age 10 & up. [Learn more at nvcc.edu/systemic/seminars.html](http://nvcc.edu/systemic/seminars.html)

Dates:
COMING SOON!



Fusion 360

Fusion 360 is a free CAD (computer aided design) software used in 3D design. This two part series will give an introduction for beginners with no previous experience using CAD software. The intro session will cover basic concepts including navigation, modeling, sketching, assembly, and applications. The design session will cover advanced design and tools.

Age 16 & up. Register 24hrs ahead at seminar.novastem.us/Register
Intro: May 12 @ 3pm
Designing: May 19 @ 3pm



All Things Cool about 3D Printing

In this live session, Arash will discuss and show you how much he loves the 3D printing world! You will watch 3D printers in action, be able to see some of his projects, learn about real life applications, and ask questions.

Register 24hrs ahead at seminar.novastem.us/free

April 28 & May 26 @ 10am (ages 8-14)

May 5 & June 2 @ 10am (ages 15 & up)



Cybersecurity

Check out our popular virtual Cyber Workshops, presented in partnership with ISACA and NOVA faculty and staff. All sessions have different topics and speakers and are recorded for future playback. Topics include Continuity of Operations for the Home, Personal Security Tradecraft, Cyber for High School Students, Teachers, & Parents, and more.

Age 10 & up. Register before event at seminar.novastem.us/Cybersecurity

Tues & Thurs @ 12pm
April 7th - May 14th

MOST SEMINARS ARE **FREE** —————
————— OTHERS ARE **LOW COST**



Programming with Python

Python is a programming language used to develop software on the web and in app form, including mobile. It's easy to learn, and is used to process text, display numbers or images, solve scientific equations, and save data. Age 10 & up. Register 24hrs ahead at seminar.novastem.us/Python

- April 8th - Mad Libs
 - April 15th - Text Adventure
 - April 22nd - Guessing Game
 - April 29th - Hangman
- @ 2pm all days



3D Printing: Design a Flower Pot

Learn how to design a small, personalized flower pot and then have your design 3D printed. An instructor will guide you virtually through the process of designing in Fusion 360. Fusion 360 is a free, computer-aided-design software. Final designs will be sent to the instructor for 3D printing and then shipped to you! Age 18 & up. Register 2 days ahead at seminar.novastem.us/Register \$15

April 30 @ 7pm
May 21 @ 7pm



Bubbles & Math: Design a 3D Printed Bubble Wand

Participants design a bubble wand in TinkerCAD (a free, user friendly computer aided design software) and then their design is 3D printed and shipped! An instructor will guide the participant step-by-step through the process of designing in TinkerCAD via recorded video or live webinar. Age 10 & up. Register 2 days ahead at seminar.novastem.us/Register \$15

April 21 @ 7pm
May 12 @ 4pm



LED Emojis & Electronic Circuits

Learn about basic circuitry through the amazing world of sewable electronics. Participants create a light-up emoji with conductive thread and sewable electronic components. An instructor will guide the project via a recorded video or live webinar. All materials and support resources will be shipped to participant before the live webinar. Age 10 & up. Register 5 days ahead at seminar.novastem.us/Register \$15

April 27 @ 7pm
May 18 @ 11am



Build a Solar Car

Participants will build a solar car with a 3D printed car frame designed in TinkerCAD. An instructor will guide the participant step-by-step via recorded video or live webinar. Car designs will be sent to the instructor for 3D printing. Then, the 3D printed frame, car parts, and supplemental learning resources will be mailed to participant to build their solar car! Age 10-15. Register 2 days ahead at seminar.novastem.us/Register \$25

May 1 @ 10am
May 20 @ 1pm

NOVA TO OFFER 'JUMPSTART' TUITION-FREE SUMMER ONLINE COURSES FOR REGION'S HIGH SCHOOL STUDENTS

April 16, 2020

You are here: [Home](#) > [News](#) > [Press Releases](#) > [2020](#)

> NOVA to Offer 'JumpStart' Tuition-Free Summer Online Courses for Region's High School Students

Northern Virginia Community College (NOVA) is using institutional dollars from the Federal stimulus to launch a **new summer schedule of tuition-free online classes for approximately 70,000 qualified Northern Virginia high school students**. This is an opportunity for rising seniors through graduating seniors to JumpStart their summers and earn college credit by attending up to two online courses that will run from June 1 to July 15.

"At a time when many members of our community are struggling with the COVID-19 fallout, NOVA has an obligation to ensure our future workforce is prepared for success," said Dr. Anne Kress, NOVA's president. "The current downturn in our economy does not solve our region's critical skills gap in information technology, healthcare and skilled trades. When our economy bounces back, our students must be ready" said Kress.

The online courses have been selected because they fulfill not only NOVA degree requirements but also transfer to most colleges and universities. Also, in partnership with Amazon Web Services, the JumpStart offerings will include an online course in Cloud Computing, providing students with their first step onto an in-demand local tech pathway.



NOVA JumpStart Online Course Options

ITN 257	Cloud Computing: Infrastructure and Services
MTH 154	Quantitative Reasoning
ART 101	History and Appreciation of Art
CST 110	Introduction to Communication
ENG 111	College Composition I
HIS 112	World Civilization II

Upon completion of the [JumpStart application process](#), which includes applying to NOVA, completing their JumpStart application and uploading eligibility requirements, local high school students can start earning college credits. For students under 18, a parent or legal guardian's permission will be needed to register.

ADVANCE

A NOVA | MASON PARTNERSHIP

A.A.S. Information Systems Technology: Cloud Computing Specialization /
B.A.S. Applied Science - Cloud Computing
Concentration: Cloud Technology Track Pathway

A.A.S. Information Systems Technology: Cloud Computing Specialization

ADVANCE Program Milestones

1. Students must take SDV 100 or SDV 101 in the first semester at NOVA.
2. Students must begin Developmental coursework in the first semester in ADVANCE at NOVA.
3. Students must take first college-level MTH course and ENG 111 in the semester immediately following the completion of any MTT or ENF courses (excluding summer).
4. In the first 30 credits, students must:
 - a. Complete ENG 111 with a C or better.
 - b. Complete MTH 161 with a C or better.
5. Students must complete at least six degree-applicable credits with a C or better each fall and spring semester.
6. Students must maintain a 2.85 cumulative GPA.
7. Students must apply for NOVA graduation and complete their Associate's degree.

BAS degrees are designed for adult learners who have some work experience in their field of choice, but the degree is open to students of all ages. Further, BAS degrees are often considered terminal degrees (i.e. they may not lead to advanced study in master's degree or doctoral programs). Students who are interested in advanced study are encouraged to contact master's programs early to determine if the BAS program fits their requirements.

	NOVA DEGREE REQUIREMENT	Credits	Courses	MASON TRANSFER EQUIVALENT	MASON CORE/DEGREE EQUIVALENT
1	SDV Course	1	SDV 101 Orientation to Information Technology	UNIV 100	Elective
2	ENG 111	3	ENG 111 College Composition I	ENGH 101	Written Comm
3	ITE 119	3	ITE 119 Information Literacy	IT 104	Info Tech
4	ITP 100	3	ITP 100 Software Design	IT---	Major
5	MTH 154 or higher	3	MTH 161 Pre-Calculus I	None	Prerequisite
6	Social/Behavioral Sciences #1	3	ECO 201 Principles of Macroeconomics OR ECO 202 Principles of Microeconomics OR GEO 210 Introduction to Cultural Geography OR HIS 121 United States History I OR HIS 122 United States History II OR PLS 135 American National Politics OR PLS 211 United States Government I OR PSY 200 Principles of Psychology OR PSY 230 Developmental Psychology OR SOC 200 Principles of Sociology OR SOC 211 Principles of Anthropology I	ECON 104 ECON 103 GGS 103 HIST 121 HIST 122 GOVT 103 GOVT 103 PSYC 100 PSYC 211 SOCI 101 ANTH 114	Soc/Behav
7	Humanities/Fine Arts	3	ART 100 Art Appreciation OR ART 101 History and Appreciation of Art I OR ART 102 History and Appreciation of Art II OR CST 130 Introduction to Theatre OR CST 151 Film Appreciation I OR MUS 121 Music Appreciation I	ARTH 101 ARTH 200 ARTH 201 THR 101 ENGH L372 MUSI 101	Arts
8	ITN 101	3	ITN 101 Introduction to Network Concepts	IT XXX	Major
9	ITN 257	3	ITN 257 Cloud Computing: Infrastructure and Services	BAS---	Major
10	ITP Programming Elective	4	ITP 120 Java Programming I OR ITP 150 Python Programming	IT 106 IT 109	Major
11	ITD 256	3	ITD 256 Advanced Database Management	IT---	Major
12	CST Elective	3	CST 100 Principles of Public Speaking OR CST 110 Introduction to Communication	COMM 100 COMM 101	Oral Comm
13	ITN 107	3	ITN 107 Personal Computer Hardware and Troubleshooting	IT XXX	Major
14	ITN 170	3	ITN 170 Linux System Administration	BAS---	Major

15	ITN 213	3	ITN 213 Information Storage and Management	BAS---	Major
16	IT Electives	3	ITN 106 Microcomputer Operating Systems OR	BAS---	Major
			ITN 290 Coordinated Internship OR ITN 295 Topics In---		
17	Social/Behavioral Sciences #2	3	HIS 101 History of Western Civilization I OR	HIST 101	Western Civ
			HIS 102 History of Western Civilization II OR	HIST 102	
			HIS 112 History of World Civilization II	HIST 125	
18	ITD 110	3	ITD 110 Web Page Design I	IT---	Major
19	ITN 200	3	ITN 200 Administration of Network Resources	BAS---	Major
20	ITD 254	4	ITD 254 Virtual Infrastructure: Installation & Configuration	BAS---	Major
21	ITN 260	3	ITN 260 Network Security Basics	IT---	Major

A.A.S. IST CLOUD DEGREE TOTAL 63

For academic policies and procedures, please see NOVA catalog - <http://www.nvcc.edu/catalog/index.html>

B.A.S. Applied Science Cloud Computing Concentration: Cloud Technology Track

This pathway only applies to the Cloud Technology track within the Cloud Computing Concentration.

	MASON DEGREE REQUIREMENT	Credits	Course	MASON CORE/DEGREE EQUIVALENT
22	Concentration Requirements	3	MATH 108 Introductory Calculus with Business Applications	Quantitative
23	Concentration Requirements	3	IT 102 Discrete Structures	Major
24	Concentration Requirements	3	IT 105 IT Architecture Fundamentals	Major
25	Core Program Requirements	3	BAS 300 Building Professional Competencies	Major
26	Mason Core: Literature	3	Any approved Literature course* (Upper-Level)	Literature
27	General Electives	3	Any General Elective course (Upper-level)	Elective
28	Concentration Requirements	3	IT 300 Modern Telecommunications	Major
29	Mason Core: Written Communication (Upper-Level)	3	ENGH 302 Advanced Composition	Written Comm
30	Mason Core: Natural Science without Lab	3	Any approved Natural Science without Lab course*	Nat Science
31	Mason Core: Global Understanding	3	Any approved Global Understanding course* (Upper Level)	Global
32	Concentration Requirements	3	IT 341 Data Communication and Network Principles	Major
33	Concentration Requirements	3	IT 343 IT Project Management	Major & Writing Intensive
34	Concentration Requirements	3	IT 451 Cloud Services Management	Major
35	Concentration Requirements	3	IT 461 Application Development in Cloud	Major
36	Core Program Requirements	3	BAS 490 Introduction to Research Methods	Major
37	Concentration Requirements	3	IT 442 Cloud Infrastructure	Major
38	Concentration Requirements	3	IT 471 Big Data on Cloud Systems	Major
39	Concentration Requirements	3	IT 481 Cloud Security	Major
40	Mason Core: Natural Science with Lab	4	Any approved Natural Science with Lab course*	Nat Science
41	Core Program Requirements	3	BAS 491 Applied Sciences Capstone	Synthesis

B.A.S. APPLIED SCIENCE -

CLOUD COMPUTING DEGREE 124

TOTAL

For academic policies and procedures, please see Mason catalog - <https://catalog.gmu.edu/policies/>

***For approved Mason Core courses, please visit - <https://catalog.gmu.edu/mason-core/>**

Students in this pathway will receive credit for all of the above courses at Mason if the grade earned is C or better.

General Note: If English is not your first language or you have completed ESL coursework, you must complete ENG 111 and ENG 112 prior to matriculating to George Mason University to meet the English Language Proficiency requirement.

Students seeking a bachelor's degree must apply at least 45 credits of upper-level courses (numbered 300 or above) toward graduation requirements.

GOVERNOR NORTHAM ANNOUNCES EXPANSION OF CLOUD COMPUTING DEGREE PROGRAMS WITH AMAZON WEB SERVICES

September 20, 2019



WOODBIDGE—Northern Virginia Community College, Amazon Web Services (AWS) and Governor Ralph Northam today announced a new collaboration (<https://www.governor.virginia.gov/newsroom/all-releases/2019/september/headline-847384-en.html>) between AWS and select K-12 school divisions, the Virginia Community College System (VCCS), and leading four-year universities. This collaboration will create opportunities and build pathways to high-skilled and high-wage cloud computing careers for students in all regions of the Commonwealth. Further speakers included at the event were; NOVA's own President, Dr. Mel Schiavelli, Virginia Secretary of Education Atif Qarni, Virginia Community College System Chancellor Glenn DuBois, and Amazon Web Services Vice President of Worldwide Public Sector Teresa Carlson, as well as other education and economic development leaders from across the Commonwealth.

As part of the collaboration, participating academic institutions will use AWS Educate, an initiative to support cloud technology learning for students and faculty. AWS Educate will allow schools to incorporate cloud skills into high school STEM curriculum as well as associate and bachelor degree programs. This collaboration will also help employers throughout Virginia who have a growing need for workers with cloud computing skills.

“The field of cloud computing is growing and dynamic, and we know that for our Commonwealth to reach new heights and remain a national leader in tech talent, we must build seamless pathways from classrooms to careers at all education levels,” said **Governor Northam**. “This initiative represents exactly the kind of cooperation we need to ensure that Virginians have access to the skills they need for 21st-century jobs, while also helping employers find Virginia workers with the right training to fill those jobs.”

“The growing demand for these skills is clear,” said **Chief Workforce Development Advisor Megan Healy**. “Since September 2016, job postings requiring these skills in Virginia have increased from approximately 5,000 per month to 20,000 per month.”

Northern Virginia Community College and George Mason University are two of the first higher education institutions in the country to offer cloud computing degrees. As a result of this new collaboration, these successful programs will be replicated at other community colleges and four-year institutions, and high school students will have the opportunity to receive college credit in cloud computing courses through dual enrollment and early college models.

“This new degree program marks an exciting first step in a much broader plan to bring cloud computing education throughout the state, as the degree seeks to bridge into high schools and four-year institutions,” said **Secretary of Education Atif Qarni**.

“The need for these skills extend well beyond Amazon as a company, or even what we consider the technology industry. Practically every field is growing more reliant on this technology and need people who can make it work,” said **VCCS Chancellor Glenn DuBois**. “This collaboration means our students will be at the forefront of a degree program that will help prepare them for high-demand 21st-century jobs.”

“By embedding the AWS Educate program to create a statewide cloud degree program, Virginia is providing students with an on-ramp to innovation and careers in the cloud,” said **Teresa Carlson, Vice President, Worldwide Public Sector, Amazon Web Services, Inc.** “We applaud Governor Northam and Virginia’s educational leaders for providing this workforce development opportunity for students in all corners of the Commonwealth, from K-12 to community colleges to four-year institutions and on into the workforce.”

The following institutions will participate in this initiative and have committed to implement the cloud computing degree program in Virginia.

K-12

- Fairfax County Public Schools
- Loudoun County Public Schools
- Alexandria City Public Schools
- Arlington Public Schools

Community Colleges

- **Northern Virginia Community College**

- J. Sargeant Reynolds Community College
- John Tyler Community College
- Thomas Nelson Community College
- Blue Ridge Community College
- Patrick Henry Community College
- Dabney S. Lancaster Community College
- Tidewater Community College
- New River Community College
- Lord Fairfax Community College

Universities

- George Mason University
- Virginia Polytechnic Institute and State University
- Virginia Commonwealth University
- Old Dominion University
- Hampton University
- Virginia State University

For more information, please visit the AWS Educate (<https://aws.amazon.com/education/awseducate/>) and the Virginia Community College System (<http://www.vccs.edu/>) websites.

Office of the Governor

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Northern Virginia Community College

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Northern Virginia Community College is the largest institution of higher education in the Commonwealth of Virginia and one of America's largest community colleges. NOVA enrolls more than 75,000 students at its six campuses in Alexandria, Annandale, Loudoun, Manassas, Springfield and Woodbridge, and through NOVA Online. For more information about NOVA and its programs or services, call 703-323-3000 or visit the College's Web site, www.nvcc.edu (<http://www.nvcc.edu/>).

Apply Now (<http://apply.vccs.edu/>)

Register ([../..../admissions/register.html](http://www.vccs.edu/apply/vccs/admissions/register.html))



Get on Track for a High-Tech Career!

Bridge Programs at NOVA

This summer, NOVA IET is offering **FREE 2-week summer bridge programs to help juniors and seniors get ready for college!** During these programs, students will receive an introduction to one of three in-demand technology fields (Computer Science, Information Technology, or Engineering Technology), tour at regional employers, and meet NOVA faculty, students and staff. Bridge students will gain critical skills and have the opportunity to **receive college credit.**

Key Details:

Engineering Technology Bridge Program (4 days/week):

June 21-30 | NOVA Manassas Campus | 9am - 4pm

Computer Science Bridge Program (4 days/week):

June 21-30 | NOVA Alexandria Campus | 9am - 4pm

Information Technology Bridge Program (4 days/week):

June 21-30 | NOVA Loudoun Campus | 9am - 4pm

August 1-11 | NOVA Manassas Campus | 9am - 4pm

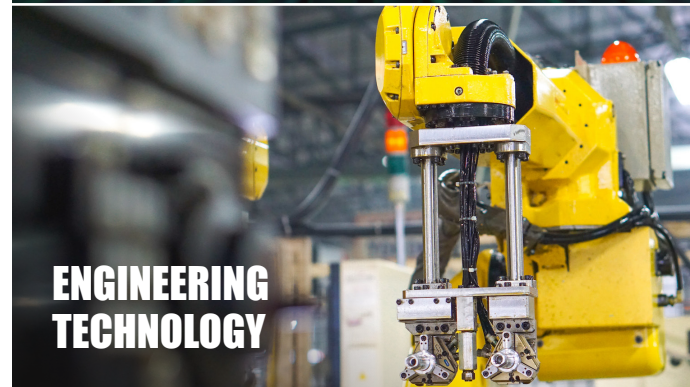
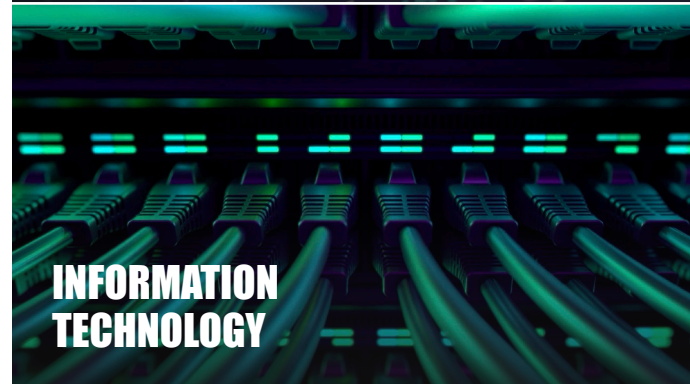
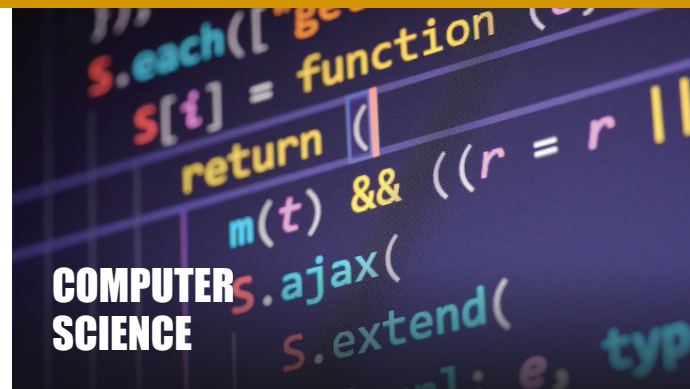
Transportation is available from your nearest NOVA campus to the bridge program.

Who Can Apply?

High School Juniors and Seniors

Bridge Programs are focused on students who have little to no experience in these in-demand tech fields.

Early application deadline is March 31, 2022



**Learn More,
Sign up for info sessions
and Apply Now!**