

ACSE 2026 - Session Details

Diving into the revised AP CS A in Grade 12 CS with Java (Grant Hutchison, St. Clements School)

The AP Computer Science A curriculum was updated for 2026 and in this session we will examine these updates. We will explore a course plan that is aligned with the ICS4U curriculum and AP CS A. Our focus will include: instructional strategies, assessment and evaluation methods, and project management tools that may want to consider for your classroom.

Note that in this session we will use an online tool (pickcode.io) and also a full IDE [Eclipse](https://www.eclipse.org/). We will explore opportunities to go beyond the curriculum with JavaFX as well.

Playing with AI - Beyond ChatGPT (Catherine Leung, Seneca)

Large Language Models (LLMs) are transforming education, but there's a whole world of models and APIs beyond the consumer products you might know. In this hands-on session, we'll move past the hype and explore the technology itself. This talk will help you understand how to evaluate different LLMs and use them for your specific task. It will explore the topic of prompt engineering and how to optimize this.

This session will allow you to explore different LLM's and understand their cost structure. You will get a chance to try out different models and leave with the practical knowledge around LLM technologies and how to make use of it for yourself and for your students.

Reclaiming Thinking: Crafting AI-Resilient, Student-Centered Assignments (Peter Beens)

Generative AI has revealed a persistent issue in assessment design: many traditional assignments can be completed without sustained student thinking. Instead of attempting to make assignments "AI-proof," this session examines how to design AI-resilient, student-centered tasks that make thinking visible, authentic, and accessible. Grounded in the ADAPT framework (Authentic, Dynamic, Active, Personalized, Transparent), the session introduces the Assignment Strengthener custom GPT as a practical design aid for stress-testing and strengthening assignments. Participants will see concrete examples across subject areas and leave with clear strategies for creating assignments that function effectively in AI-rich classrooms.

Labyrinth Game Development with Kid.js (Chris Maissan)

The activity uses the motion sensors in a tablet or smartphone to recreate the classic wooden labyrinth game. A fun introduction to JavaScript, starts off simple and builds to cover more complex topics including arrays, objects and algorithms. More information on the activity can be found here: <https://kidjs.app/activities/labyrinth>

Advanced Microcontroller Interfacing and Introduction to Circuit Design (John Rampelt)

Are you ready to go beyond breadboard circuits and simple plug-in modules? Did you know that you can easily design and build advanced interfacing circuits with your students for less than many commercial offerings, while providing students with valuable hardware and circuit design skills? We'll look at common circuits and components you'll need to know about when creating your own circuit designs, and provide a quick intro to the KiCad schematic capture and PCB layout tools that will enable you to get professionally manufactured PCBs.

Quantum Technologies Surround Us! Do you teach them? (Tim King, ICTC)

This presentation will reframe quantum from being 'the next big thing' to 'an evolution we've been experiencing for the past century'. Many aspects of digital technology are built on quantum mechanical foundations and understanding this helps both students and teachers better comprehend what's coming next. BYOD to access resources such as UBC's Quantum Arcade and see the latest being developed at University of Waterloo's Quantum Institute. Connections to our quantum centres of excellence in Canada is key to developing future Canadian talent in the field. By demystifying quantum technologies and encouraging students to play with unintuitive concepts rather than overwhelming them with speculative science fiction, the quantum nature of our technology becomes clear and students are able to prepare for participation in a quantum industry that will grow dramatically in the next decade.

Hands-on Exploration of the Operating System Layer (Tim King, ICTC)

Explore Field Effect's Ottawa cloud-based cyber range - the same one that the Canadian Forces uses for cyber training! On a Chromebook you can work in Windows or Linux virtual machines and develop the hands-on IT and networking skills required to approach interdisciplinary cybersecurity challenges - all provided freely by ICTC through federal Cancode funding. Any web-based device will work but a keyboard and mouse are handy for navigation. Introductory activities raise awareness of operating systems and build fundamental navigation skills on popular OSes. Interdisciplinary advanced cyber activities assume these fundamental skills and provide a framework for getting into concepts like firewalls, encryption and defensive operations.

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Hands-on Exploration of Cybersecurity operations (Tim King, ICTC)

Using the same training platform from the Operating System session teachers will have the opportunity to dive into cyber operations and learn how to identify and fix vulnerabilities. This session represents an ideal learning opportunity for educators to bring the Cyber Titan experience into their school.

Kick-Start your STEM Curriculum using SparkFun XRP/XRP Beta Robots - Part 1 (Dennis Cecic, IEEE)

Are you looking to kick-start your STEM curriculum or robotics club?

SparkFun's XRP and XRP Beta robots are full-featured line-following robots that can be put together in about 10 minutes. In this hands-on workshop, you will learn the hardware architecture of these robots, as well as how to easily program these robots using the "cetalib" Arduino library.

There will be a limited number of SparkFun XRP Beta robots available in the session and a free 2-month LMS subscription will also be provided. The LMS will provide additional lessons and live online help to continue the assembly and testing of this robot to complete a basic line following challenge.

Attendees will need a Windows or MacOS laptop with Wi-Fi network interface, and an available USB-A port. Attendees will need to [create an account](#) at the start of the session in order to access the workshop courseware and exercises.

Kick-Start your STEM Curriculum using SparkFun XRP/XRP Beta Robots - Part 2 (Dennis Cecic, IEEE)

Continuation of hands-on learning from Part 1.

TAS 101: A Roadmap for Teachers (Emily Crawford, TDSB / James Cordiner, TDSB)

TAS presents a challenge at schools where you don't have an established tech program with shops and tech qualified teachers.

This year at Riverdale we faced running the largest course by section with almost no qualified teachers. We will share our model and resources for our four unit program touching on robotics, circuits, graphic and tech design. And how we embedded learning skills and safety routines throughout the course.

Learning (& Teaching) Electronics through Simulation (John Rampelt)

Learn how to use Tinkercad's powerful electronic circuits simulator to demonstrate and teach everything from Ohm's law and electrical fundamentals all the way to advanced circuits and microcontroller programming. This hands-on session is designed to help you get started using Tinkercad as an electronics teaching tool, as well as to show you some best practices for creating useful Tinkercad circuits for the classroom.

Design Thinking approaches to STEM courses - Computer Science and Technology - (Dr. Christopher Anand, McMaster University)

Design Thinking is an approach to solving difficult problems, widely adopted in industry and healthcare. This interactive presentation will introduce the topic and discuss how it can be integrated into the high school curriculum, particularly in ICD20 and TAS10. DT is used in many technology areas, and we welcome input from teachers in all areas of technology, but our examples will mostly be related to software—our area of expertise.

- What is Design Thinking, and why is DT used from startups to IBM and Apple?
- History of Design Science and Design Thinking.
- Role of empathy.
- Failure modes we have observed and how to avoid them.
- Characteristics of a good design problem and one which has worked for us: "This *is* your grandfather's gaming app."
- What do professionals use for DT, and should you introduce students to them?
- Design Journey Dashboard: Our research project addressing bottlenecks to scaling up teaching of design.
- Reading list for delving deeper.

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Classroom strategies to apply Design Thinking in Computer Science and Technology courses - (Dr. Christopher Anand, McMaster University)

Design Thinking is an approach to solving difficult problems, widely adopted in industry and healthcare. This hands-on session will start with a crash course in Design Thinking, introducing our scaffolded worksheets (available as Google Slides and PowerPoints), picking one or more problems, and going through the first stages of DT. Teachers can come with their own problems, or groups will work on our pre-planned problem “How can we increase diversity in computer science and software engineering education and career pathways?” We like this problem because you will be able to role-play parents and grade 7-10 students making career decisions. Participants will get a sharable link to our worksheets, and a link to our free book, so you are ready to implement DT in your classrooms. Attendance in the first DT workshop will be helpful, but not necessary.

Implementing Unreal Engine in TAS, ICD and TGJ (Gerry Corrigan, DDSB Teacher)

This workshop will empower TAS, ICD and TGJ teachers to integrate industry-standard tools into their classrooms. Participants will explore how Unreal Engine bridges technical problem-solving and creative storytelling, aligning with curriculum expectations for both the Skilled Trades, Computer Studies and Media Production.

Through a project-based approach, we will cover:

- Unreal Engine Fundamentals: Navigating the interface and project setup.
- Game Logic & Design: Game components and level design (TAS and ICD design requirements).
- Media & Virtual Production: Digital storytelling, animation, and real-time gameplay capture (TGJ production workflows).

Whether your focus is engineering a functional game or the cinematic possibilities of a virtual set, this workshop will provide a framework for the use of Unreal Engine to meet curriculum expectations and help develop student skills using professional-grade digital tools.

This will be a hand-on workshop. Attendees of this workshop must have a downloaded and installed version of Unreal Engine to participate fully. (<https://www.unrealengine.com/en-US/download>)

Practical Machine Learning with micro:bits (German Arcila, Digital Moment)

This hands-on session explores a practical, beginner-friendly approach to introducing machine learning in the classroom. By using micro:bits and the CreateAI platform, we will transition from "Rule-Based" Computational Thinking 1.0 to "Data-Driven" Computational Thinking 2.0.

Participants will engage in the full machine learning lifecycle—collecting, filtering, and "massaging" data to train custom models. We will also discuss the critical role of representative data and how non-representative samples lead to model bias. Discover how to use the micro:bit to enhance lessons across various curriculum areas, bridging the gap between hardware and intelligent software.