

Robotics, Mechatronics, Digital Fabrication (RMD) Academy BOARD OF EDUCATION UPDATE – MARCH 9, 2021

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Warning issued for songbirds in local forests

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Major League Baseball
Pitcher Raimon Wick takes over as top role with Cubs

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Edgemont Village
Cautious to revive North Shore shopping experience

JEREMY MITCHELL
CANTINA NORTE

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Q&A WITH THE PRIME MINISTER

Sutherland students grill Trudeau on reconciliation

BY BRENT RICHTER

A group of Sutherland Secondary students got to grill Prime Minister Justin Trudeau Friday.

Trudeau spent an hour in the afternoon taking tough questions from Grade 11 social justice students and providing his answers.

Two days before the event, staff from North Vancouver Liberal MP Jonathan Wilkinson's office contacted Sutherland's principal and asked if they'd be interested in a quick Q&A with a "high-ranking government official." The students packed together a list of questions, but it wasn't until later they learned the official would be the prime minister.

The students did not shy away from tough questions for the PM, including asking him to account for continued boil-water



MR. ROBOTO Robotics engineering teacher Rob Olson and students Dottie Beaudin, Cameron Jenke and Pippa Carter discuss projects they built at Canon Graham Secondary. The school is hoping to open a robotics academy. See story page E2, see www.nv.com

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Q&A WITH THE FORMER
Sutherland students
Trud



MR. ROBOTO Robotics engineering teacher Bob Olson and students Oliver Soudouls, Cameron Janke and Pippa Cesar discuss projects they built at Carson Graham Secondary. The school is hoping to open a robotics academy. See story page 13. [View photos >](#)

north shore news **lifestyle** WEDNESDAY FEBRUARY 10, 2021 1A1

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HANDS-ON LEARNING
Gears set in motion for Carson robotics academy

**By Lisa-Ann
 GARDNER**

For Grade 11 Carson Graham student **Oliver Soudouls**, the hardest part of building his robot is a 54¢ part of the apron.

It's a completely different process than a lot of other students learning to build. He also has been part of Ed-M-North Vancouver high school's after-school robotics club for over a year. "You have to be able to build and make it work, probably work well. There's no build it again," she says. "You just build it and then you get something and you learn along the way. You just make it as easy as possible for your other classes."

Soudouls says he's always liked math and science, which led him to the engineering course offered at Carson Graham.

It's a popular class, says technology teacher **Bob Olson**. "We challenge, but at the same time, kids can achieve them."

The robotics club at Carson is a semi-annual program, offering higher-level challenges students can work on.

Last year the club took part in a competition where they had eight weeks to build a robot that completed a task, competing with other teams from schools all over the area.

Carson admits a 15-year-old Grade 12 student was one of the team leaders who coordinated tasks on that project. Working on the challenge is another part of the process. Soudouls has had a lot of fun working with his team, and he's looking forward to next year's challenge. He says he's looking forward to taking their problem-solving to the next level with the introduction of a proposed robotics academy at the school.

The robotics club is in a preliminary approval stage, plans to form a partnership with **Zoo Media Labs**, a local company that specializes in providing science, technology,



Robotics engineering teacher Bob Olson and student Pippa Cesar discuss robotics projects at Carson Graham Secondary. [View photos >](#)

engineering, arts and technology education to help students in both school and after-school programs to the Lower Mainland. That would also allow students to tap into connections with post-secondary institutions to do work with, including BCIT. It is the BCIT students that he has already been helping out with the club, says Olson. "And so the kids have had the ability to work with electrical engineers, mechanical engineers, and we had a number of science projects and really give them exciting opportunities that they normally wouldn't have in a regular high school classroom."

While a robotics academy already exists at West Vancouver School District, the new program will be a first for North Vancouver schools. If it gets final approval, the robotics academy at Carson Graham will be open to students from anywhere in the North Vancouver school district as of September 15. Students begin to start with a class of between 20 and 30 students. Courses for the program are estimated to be about \$18,000 - most of that for specialized robotics kits. So about \$12,000 has been committed and **Zoo Media Labs** is working on finalizing through sponsorship and donations.

The estimated cost for students to register to the academy is \$2,105 per year, an amount academy organizers are hoping to bring down through sponsorship. Robotics is "a cutting edge area to be in" for kids who are going through high school, says Olson. "It's kind of a new concept area."

There are a lot of different paths involved, he says, and collaborating as a team is one of the key skills students learn. Learning from mistakes is another key skill, he says. "These engineers will think they have the solution to a problem and they're completely wrong. And then they have to re-evaluate the problem."

Applications for next year's program are being accepted until Feb. 21.

Rationale



The proposal for this STEAM academy (Science, Technology, Engineering, Art, Mathematics) will provide learning opportunities which utilize cutting edge technology, collaboration, problem solving using math, science, and engineering principles.

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2011-2021 Strategic Plan/3 Year Operating Plan



- “develop and promote innovative and sustainable programs”
- “encourage the growth of collaborative, adaptive and personalized learning environments”
- the continued enhancement of “student engagement and skill development through active involvement in project-based learning initiatives, specialized programs and academies”

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2021-2031 Strategic Plan



Draft Goals and Operational Statements

- Student-Centred Education
- Innovative Instruction

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Applications



- Total Applications (January 18 – February 21) = 47
- Selection process for Academies:
 - Priority 1: Returning students
 - Priority 2: Wait-listed students from the previous year
 - Priority 3: Lottery for remaining students consistent with [Board Policy 605: Admission of Students to Schools](#)

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Supporting Diverse Learners

- Strategies include:
 - Chunking information
 - Realistic goals
 - Laddering basic skills to complex skills
 - SEL strategies
 - Appropriate assessment strategies to meet the needs of the learner
 - Assessment for, as, and of learning principles
 - Use of EA staff were necessary

Ethical Technologies



- Topics include:
 - The use of AI Technologies of Deep Fakes
 - Mass surveillance using applications, AI, and IOT
 - Social media's use of disinformation
 - Isaac Asimov's "Three Laws of Robotics"
 - Automation and Manual labour conflicts

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Capilano University



- Financial Support
- Faculty/Instructional Support
 - Mentorship, connection to industry, transition to post-secondary, curriculum connections
- Facilities (Main Campus, Shipyards) & Equipment
 - Field days, experiential opportunities, access to industry level equipment

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Capilano University



- RMD Academy is “future facing”
 - Students don’t have to pursue engineering, but the Academy can be a launch pad to an employment landscape that is shifting
- RMD for “social good”
- MOU – NVSD, Zen Maker Lab, Capilano University

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Finances & Fees



- Start-up costs
 - Approximately 50% raised + commitments pending Board approval
- Financial Assistance
 - Bursary assistance = up to 2-3 FTE

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Curriculum Design & Delivery



Electronics and Robotics 10

Background Information • Change Grade • Download •

Core Competencies

Communication • Thinking • Personal and Social •

Big Ideas

User needs and interests drive the design process. Social, ethical, and sustainability considerations impact design. Complex tasks require the sequencing of skills.

Curricular Competency

Students are expected to be able to do the following:

Content

Students are expected to know the following: design opportunities

Robotics 11

Background Information • Change Grade • Download •

Core Competencies

Communication • Thinking • Personal and Social •

Big Ideas

Design for the life cycle includes consideration of social and environmental impacts. Personal design interests require the evaluation and refinement of skills. Tools and technologies can be adapted for specific purposes.

Curricular Competency

Students are expected to be able to do the following:

Content

Students are expected to know the following:

Robotics 12

Background Information • Change Grade • Download •

Core Competencies

Communication • Thinking • Personal and Social •

Big Ideas

Design for the life cycle includes consideration of social and environmental impacts. Personal design interests require the evaluation and refinement of skills. Tools and technologies can be adapted for specific purposes.

Curricular Competency

Students are expected to be able to do the following:

Applied Design

Understanding context
• Engage in a period of user-centred research and empathetic observation to understand design opportunities

Define

Content

Students are expected to know the following:
advanced robotics design and production
robotic technologies in industry, research, and education
syntax language related to robotics
flow charts, hierarchy charts, and data sheets

RMD Academy Information Video

