



Capstone Engineering Academy
Education Plan
2022 - 2025

Capstone Engineering Academy
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A Message from the School Owner/CEO – Mr. Dean White, P.Eng.

The 2022-2023 school year will be a building year filled with developing new STEM education curriculum, partnerships with the local and remote communities and building our school.

Our partnership with Roots 2 STEM has provided both financial support and years of experience teaching the Calgary community to help the school take its first step to become an independent accredited funded school. Roots 2 STEM will continue to provide use of their Lab of Discovery, lab equipment and instructors. Capstone Engineering Academy will use this stepping stone to build the school to become Calgary's best STEM focused school.

Roots 2 STEM has had a long standing relationship with North Point School. This coming year Capstone Engineering Academy will build upon that relationship by co-locating and delivering STEM education classes at North Point's Currie Barracks campus.

This last year has also seen us develop a growing partnership with Third Academy/URSA. We will continue to develop this relationship and provide online STEM education to Alberta communities. It takes a community to raise a child and our partnerships allow Capstone Engineering Academy to build a community of knowledge.

We look forward to this new year.

Best wishes,

Dean White, P.Eng.
CEO & Founder
Capstone Engineering Academy



Accountability Statement

This Education Plan for Capstone Engineering Academy commencing August 30, 2022 was prepared under the direction of the Board of Directors in accordance with the responsibilities under the *Private Schools Regulation* and the *Education Grants Regulation*. This Education Plan was developed in the context of the provincial government's business and fiscal plans. The Board has used its performance results to develop the plan and is committed to implementing the strategies contained within the plan to improve student learning and results.

The Board approved this Education Plan for 2022/2023 to 2024/2025 on May 31, 2022. The report was submitted to Alberta Education on May 31, 2022 and was also posted to the school's website. (PERMANENT LINK)

(original signed)

Eeva White
Board Chair
Capstone Engineering Academy



A Profile of the School Authority

Capstone Engineering Academy is a school with a different approach to classroom learning with more experiential learning and solution based education. Going from the classroom to the laboratory to the real world.

Capstone Engineering Academy is a unique, inclusive STEM classroom and laboratory workshop for students. The school adheres to the Alberta Education curriculum with the core learning classes while focusing on the hands-on learning that STEM education provides.

Capstone Engineering Academy is an independent accredited funded school with advanced experiential education. The school provides a safe and collaborative environment where students can discover science, technology, engineering and mathematics in every day life contexts. Our Lab of Discovery weaves creativity and innovation through learning what are typically regarded as “the tough subjects”.

Capstone Engineering Academy’s program teaches young people to build STEM skills by applying ingenuity and talent to tough STEM challenges. STEM is much more than subjects but embodies a philosophy of how we approach everyday problems. STEM is a curriculum based on the idea of educating students in the major disciplines in an interdisciplinary and applied approach. Capstone Engineering Academy integrates the STEM subjects into a cohesive learning structure based on real-world applications.

Capstone Engineering Academy’s vision is to challenge youth with STEM at a young age so that they have greater opportunities to explore their individual interests and potential while understanding the variety of STEM related careers.

The need for inspiring students in STEM education has never been greater.

“Less than half of Canadian high school students graduate with senior STEM courses, although 70 per cent of top jobs require expertise in science, technology, engineering and math.”

Report by Let’s Talk Science - The Globe and Mail

Not only are youth learning about STEM too late, current STEM programs and curriculum in all types of educational organizations are not adequate to meet the needs and desires of today’s youth in relation to STEM learning.

The demand for skilled people in the STEM areas is growing and will continue to do so. Canada currently is unable to fulfill 165,000 technology jobs due to the lack of trained people. Capstone Engineering Academy programs are the foundational steps to help meet future



gaps, positioning young people to succeed on a global platform and to work in the STEM field of their choice.

In addition to STEM technical learning, Capstone Engineering Academy's unique approach through hands-on experiential education combined with the utilization of the Science Testing Process and the Engineering Design Process, leads to the development of vital 21st Century technical and non-technical skills and dispositions:

- collaboration
- creative problem solving and solution making
- confidence and courage to work through the unknown
- critical thinking
- a growth life-long learning mindset
- leadership, mentoring, global citizenry

STEM is a Way of Life

Capstone Engineering Academy offers students a look at the different sciences, technologies, and engineering disciplines. A STEM career is a long journey, and our approach allows students to make mistakes and learn what works and what does not in a safe and innovative environment. Students soon learn that mistakes can be made but it is what we learn from them that counts.

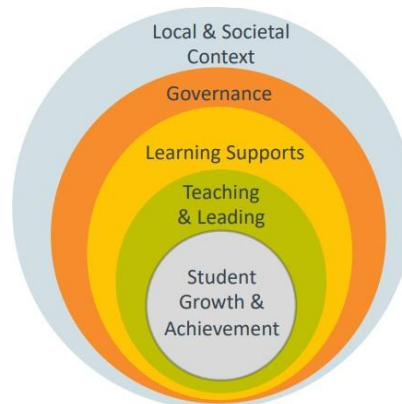
Education Plan

I. Preface

This Education Plan adopts the Assurance Framework as required by Alberta Education and has been informed by the Guiding Principles for Assurance set out in that Framework. The Plan requires a reasoned and thoughtful approach to determine priorities, outcomes, measures and strategies. This approach includes a strong commitment to continuous improvement, evidence-based decision making, and collaborative and ongoing engagement with stakeholders, the community and other education partners.

II. Assurance Framework

The accountability and assurance framework within the education system is driven by a multi-year planning and annual reporting cycle. This framework come into play when community members, system stakeholders and education partners engage across five domains.



The five domains and their key elements are:

A. Student Growth and Achievement

Student Growth and Achievement is the primary purpose of the education system and the core outcome domain for the assurance framework. It refers to the ongoing progress students make in their learning, relative to identified provincial learning outcomes and consistent with their needs, interests and aspirations.

Key Elements:

- Students use ongoing assessment feedback to reflect continuously on their progress, identify strengths and areas of need and set new learning goals.
- Students achieve prescribed provincial learning outcomes, demonstrating strengths in literacy and numeracy.
- Students are active, healthy and well.
- Students apply knowledge, understanding and skills in real life contexts and situations.
- Students advance reconciliation by acquiring and applying foundational knowledge of First Nations, Métis and Inuit experiences.
- Students demonstrate understanding and respect for the uniqueness of all learners.

B. Teaching and Leading

Teaching and Leading refers to teachers and leaders analyzing the learning context; attending to local and societal considerations; and applying the appropriate knowledge and abilities to make decisions resulting in quality teaching, leading and optimum learning for all.

Key Elements:

- Teachers and leaders respond with skill and competence to the unique learning needs, interests and cultural, social and economic circumstances of all.
- Teachers and leaders improve their professional practice through collaborative engagement in processes of growth, supervision and evaluation.
- Collaboration amongst teachers, leaders, students and their families, and other professionals enables optimum learning.
- All teachers and leaders are accountable to a standard of professional conduct and a standard of professional practice.
- University teacher education, university leadership education and on-going professional learning programs prepare teachers and leaders to meet the standards for professional practice.
- Teachers and leaders use a range of data arising from their practice to inform cycles of evidence based continuous learning.

C. Learning Supports

Learning Supports refers to the mobilization of resources (including expertise, facilities, human and community services) required to demonstrate shared, system-wide responsibility for all children and students, and the application of these resources to ensure quality teaching and leading and optimum learning for all.

Key Elements:

- Learning environments are welcoming, caring, respectful and safe.
- Learning environments are adapted as necessary to meet learner needs, emphasizing a sense of belonging and high expectations for all.
- Education partners fulfil their respective roles with a shared understanding of an inclusive education system.
- Students and their families work in collaboration with education partners to support learning.
- The school community applies the resources needed to support First Nations, Métis and Inuit student achievement.
- Cross-ministry initiatives and wraparound services enhance conditions required for optimal learning.
- Infrastructure (e.g., technology and transportation services) supports learning and meets the needs of Alberta students and their families, staff and communities.

D. Governance

Governance refers to the processes by which policy leaders attend to local and societal context; determine strategic direction; evaluate policy implementation; and manage fiscal resources to ensure learning supports, quality teaching and leading and optimum learning for all.

Key Elements:

- Governors engage students and their families, staff and community members in the creation and ongoing implementation of a shared vision for student success.
- Legislation, policy and regulation provides clarity regarding the roles and responsibilities of education partners in matters of governance.
- Fiscal resources are allocated and managed in the interests of ensuring student success, in alignment with system goals and priorities and in accordance with all statutory, regulatory and disclosure requirements.
- Curriculum is relevant, clearly articulated and designed for implementation within local contexts.

- Governors in school authorities and in government employ a cycle of evidence-based continuous improvement to inform ongoing planning and priority setting, and to build capacity.

E. Local and Societal Context

Local and Societal Context refers to the engagement practices of schools and communities, with support from the broader system, in identifying and responding to the learning needs, interests, aspirations and diverse cultural, social and economic circumstances of all students. This domain promotes engagement and thoughtful action across all five domains.

Key Elements:

- Education partners anticipate local and societal needs and circumstances and respond with flexibility and understanding.

III. Continuous Improvement Processes

Another key piece of the ongoing planning and reporting cycle is the utilization of strategies to maintain or improve performance within and across domains, and to monitor, measure and report results.

Key components in our dynamic Continuous Improvement Process are:

- Explore: Involves accessing, analyzing and interpreting accurate and relevant data and, identifying and understanding an issue, concern or problem.

Key question: What is going on here?

- Develop: Involves Identification of a problem or challenge that can be addressed; identification of potentially successful strategies to address learner-centered problem/challenge; and developing an action plan.

Key question: What needs to be improved? How?

- Take action: Involves learning as you implement the plan and making adjustments through formative feedback.

Key question: How are we 'actioning' the plan?

- Evaluate: Involves evaluating the impact of the plan.

Key question: Did our planned strategies have the desired outcomes? What next?

- Evidence-informed decision-making: Involves persistent attentiveness to gathering ongoing, triangulated evidence to inform next steps.
- Engagement: involves reliance on education partners working together for the purposes of bringing about positive change, with all partners recognizing that the nature of the engagement will vary according to the needs of the participants.
- Learning and Capacity Building: involves reflections on learnings to ensure opportunities for building capacity for change and improvement are recognized and engaged.

IV. Education Plan Outcomes, Measure, and Strategies

A. Student Growth and Achievement

Ensuring students engage intellectually and grow continuously as learners, in a way consistent with their individual learning needs, interests and aspirations.

KEY OUTCOMES	MEASURES
<ul style="list-style-type: none"> • All students have access to learning which aligns with their needs, interests and aspirations • Student success is demonstrated on an ongoing basis • Partner with quality STEM education providers to provide hands-on experiential learning 	<p>Provincial Measures</p> <ul style="list-style-type: none"> • Alberta Education Assurance Measures <p>Local Measures</p> <ul style="list-style-type: none"> • CEA Student Survey • School Survey

B. Teaching and Leading

Ensuring that all leaders and staff demonstrate excellence in advancing student success.

KEY OUTCOMES	MEASURES
<ul style="list-style-type: none"> • CEA has collaborative learning and mentoring relationships • Support and advance staff professional growth • Support and advance teachers' professional growth 	<p>Provincial Measures</p> <ul style="list-style-type: none"> • Alberta Education Assurance Measure Survey – Education Quality <p>Local Measures</p> <ul style="list-style-type: none"> • Professional learning opportunities and feedback

<ul style="list-style-type: none"> • All teachers continuously increase their understanding and working knowledge of current and emerging technologies • Support and advance leaders' professional growth • CEA processes support effective leadership development 	<ul style="list-style-type: none"> • Leadership development opportunities and feedback • STEM focused learning opportunities and feedback • Staff Survey
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C. Learning Supports

Establishing a learning environment where local and societal context is recognized, diversity is embraced, a sense of belonging is emphasized and all students are welcomed, cared for, respected and safe.

KEY OUTCOMES	MEASURES
<ul style="list-style-type: none"> • Implement strategies to support a safe, inclusive and diverse environment • Strengthen students' access to community and other STEM education services during non-instructional hours • Develop and implement processes and practices to improve partnership management • Foster relationships with parents by leveraging engagement and communication processes and opportunities • Obtain and maintain partnerships with post-secondary and industry in support of exploratory pathways opportunities • Embed FMNI foundational knowledge in Professional learning 	<p>Provincial Measures</p> <ul style="list-style-type: none"> • Alberta Education Assurance Measures <p>Local Measures</p> <ul style="list-style-type: none"> • CEA Student Survey • School Survey • Enrollment Trends • Staff Retention Rates • Registration in off-campus, apprenticeship opportunities or in exploratory pathways

<ul style="list-style-type: none"> Engage collaboratively with Indigenous Elders, leaders, organization and community members 	
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D. Governance

Stewardship of resources with an emphasis on student success, generative community engagement, transparency and accountability.

KEY OUTCOMES	MEASURES
<ul style="list-style-type: none"> Board remains committed to the legislative framework Board Development supports continuous improvement process Board supports community engagement Board remains engaged with system purpose 	<p>Provincial Measures</p> <ul style="list-style-type: none"> Alberta Education Assurance Measures Audited Financial Statement <p>Local Measures</p> <ul style="list-style-type: none"> Satisfaction Survey Enrollment Trend Staff retention rates Internal and External Review

E. Local and Societal Context

Processes and practices that enable attending to local and society context are woven throughout each of the other four domains addressed above.

Budget Summary for the Year Ending August 31, 2022

Allocation of Budget Revenues and Expenses to Programs

For the Year Ending August 31, 2022

Budget

Revenues:

Instruction	195,000
Alberta Education Government Grant	52,500
Operations & Maintenance	7,500
Transportation	33,000
Board & System Administration	0
290,500	

Expenses:

Instruction	155,000
Operations & Maintenance	43,000
Transportation	40,000
Board & System Administration	0
238,000	

Surplus(deficit) of revenues over expenses **52,500**