Indigenizing a technical program: How to transfer process to water technology

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February 27, 2019

About Larry

SAIT

About Sarah

Source: www.simplextrans.com www.mircorp.com, www.azernews.az

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Session Agenda

- Water programs at SAIT
- Our approach to ‘Indigenize’ a technical program
- Interactive group work
- Questions and comments

The Southern Alberta Institute of Technology

- Learning for the real world.
- Established in 1916.
- Third largest post-secondary in Alberta.
- 1:20 faculty to student ratio
- [illegible]by

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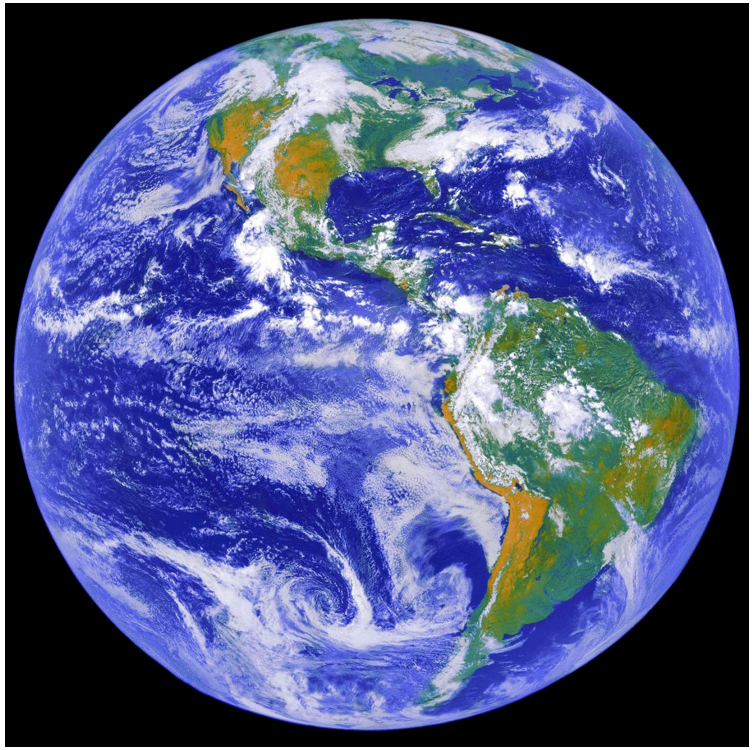
Global Employment Trends

Half of the global workforce is employed in eight water and natural resource-dependent industries:

1. Agriculture
2. Forestry
3. Fisheries
4. Energy
5. Resource-intensive manufacturing
6. Recycling
7. Building
8. Transport



Source: www.pics-about-space.com

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This has significant implications on economic development and linkages with water management in Canada, including:

- Future land development patterns
- Availability of water for both residential and industrial use
- Cost of water

The Calgary region has a clear interest to ensure sustainable water management, which would include not only new water usage technologies and less water-intensive uses, but **competency development in water**.

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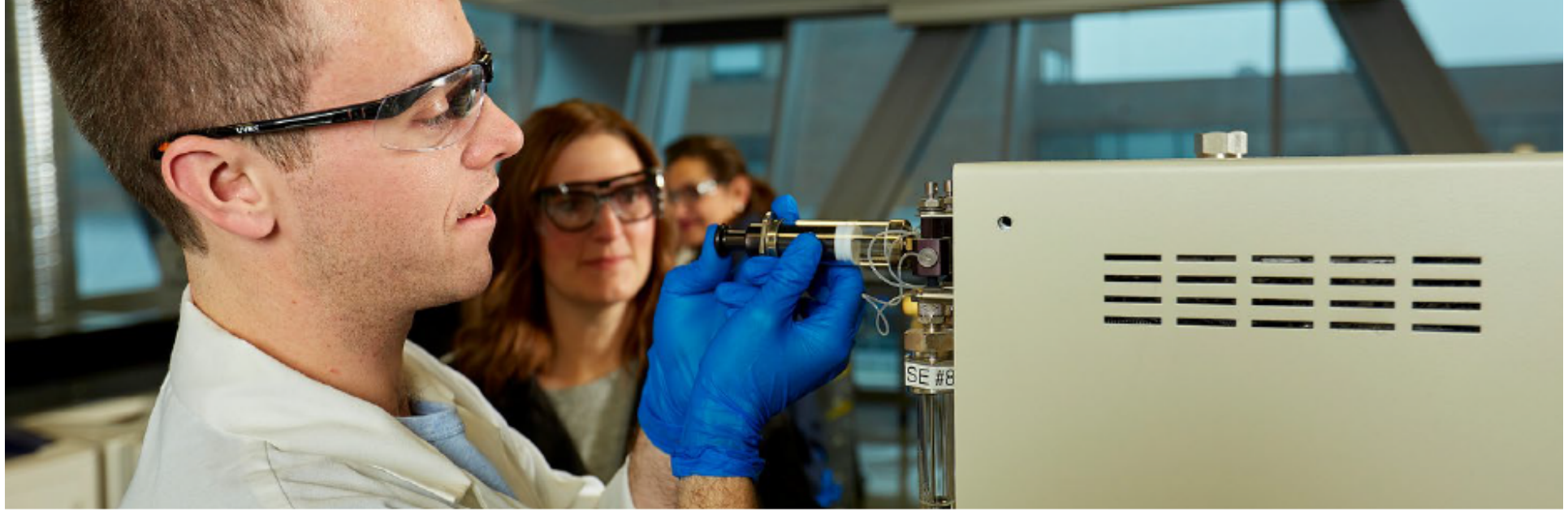

Water and Wastewater Treatment Operations Certificate

One-year certificate program specializing in water, wastewater, and power engineering

Through in-class learning and lab experience, they will be able to write the 4th class power engineering certification exam through Alberta Boilers Safety Association (ABSA).

Upon graduation, they will have completed a four-month practicum that could count towards the one-year work experience requirement by the Province of Alberta to acquire a Water and Wastewater Operator Certification.

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Program map

Semester 1	Semester 2
Power Qualifications Theory	Power Qualifications Theory 2
MS Office: An Introduction	Water Treatment and Distribution Fundamentals
Technical Communications	Wastewater Treatment and Collection Fundamentals
Regulatory, Health, Safety and Environment	Bio-Chemical Processes for Water and Wastewater
Industrial Water and Wastewater Process and Operations	Power Qualifications Practice 2
Power Qualifications Practice 1	**Practicum (semester 3)**

Integrated Water Management Diploma

Two-year diploma program

- Water monitoring program development and execution
- Data management and analysis to inform design and decision making
- Project management and communication
- Inspection and maintenance of surface water drainage systems
- Site assessment and identifying sources of pollution and contamination
- Erosion sediment control
- Support permitting applications and reporting
- Emergency preparedness plans and response incorporating increasing risks of extreme events
- Applicable skills to support global water availability challenges, including Water, Sanitation and Hygiene (WASH)
- Hands on learning experience including field school, classroom and virtual reality labs

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Program map

Semester 1	Semester 2
Water Fundamentals	Water, Governance, and Law
Water Management 1	Data Management and Analytics
People and Project Management	Developments in Technology
Communication	Water and the Environment
Health, Safety, and Society	Applied Project Development 1

Semester 3	Semester 4
Risk Management	Water Management 2
Climate, Geopolitical, and Economic Drivers of Water Management	Capstone Project
Innovation and Disruption in Water Systems	Elective: Choose one of:
Industry and Environmental Applications	Advanced Industry Applications
Applied Project Development 2	Environmental Technology

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Pipeline Monitoring Certificate Pilot program

- Indigenized Pipeline Monitoring certificate program to three cohorts of Indigenous students representing
- 36 different Indigenous groups from across Western Canada
- The majority of students were from Alberta with the remainder from BC, Saskatchewan and Manitoba.
- 20% of the group came from urban centers, and 79% came from rural areas.
- 200 applicants for 60 funded spots
  - Age: 19 to 72-years-old
  - Gender: 41 males and 26 females
  - Represented Treaties: 1, 4, 6, 7, and 8
  - 36% were from reserves and 64% were non-reserve

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Our Approach

Interactive Group Work

1) As a polytechnic in the process of developing two water credentials, how do we honour the sacredness of water?
2) How do we present and balance Indigenous Knowledge and/with western technology and science?
3) Given it's our first venture into Water Management, we are striving to create an excellent experience for our learners and to meet the needs of our Indigenous Communities. How do we do that?

Questions & Comments

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