

## EDGE UP 2.0 – Data Analytics

**Length:** approx. 17 weeks

### **Overview:**

EDGE UP participants have the opportunity to join a new curated learning journey at SAIT highlighting the role of data analytics professionals on energy transition and cleantech sectors.

Participants will be immersed in Data Analytics training to develop the knowledge, skills, and aptitude to apply fundamental principles of data analytics and data management. Participants will learn how to become valued members of any business by using data to support decision-making processes and provide actionable insights.

In addition to the immersive 17-week Data Analytics training program, participants will gain valuable insight from leading industry experts in SAIT's Applied Research and Innovation Services (ARIS). ARIS leaders will present on key innovations in emerging clean technologies and the intersection of data analytics. Participants will learn how their newly gained data analytics skillsets complement the advancement of energy transition.

The program is estimated to be delivered over 17 weeks with a goal of speed to market transition to secure employment in all sectors of Calgary's economy.

### **The ideal candidate for this program:**

- Previous post-secondary diploma or degree.
- Technical aptitude and a desire to combine their business and technology skills to assist businesses through technology solutions.
- Strong math background, and foundational education in statistics.
- Worked with data and are intrigued by the power of data and how it can be analyzed to support sound business decision-making.
- Previous experience working with databases is an asset.

This professional program is intensive and full-time. Candidates must be open to new ways of working and learning - including in a virtual environment - and bring a dose of curiosity to the program.

### **Program Focus:**

- Manipulate data using data modelling, ethics, ETL in a business context that is relevant to decision-making.
- Contextualize data in a format that maps to business processes and objectives and aligns data analysis to strategic outcomes.
- Use industry-recognized programs and tools to extract meaning from data.
- Present data that communicates analysis effectively and accurately for a business audience using visualizations (dashboards) and reports.
- Develop skills in Python programming specific to data analysis functions.
- Introduce cloud principles for managing data in the cloud, using Microsoft Azure as the platform.
- Understand the intersection of emerging clean technologies and data analytics.
- Develop and leverage data analytics skillsets to complement the advancement of energy transition industries.

### Topics of Instruction:

- Data Literacy
- Business Context for Data Analysis
- Data Visualization and Reporting Tools
- Programming for Data Analytics
- Data in the Cloud
- Professional and leadership skills sessions
- Innovative cleantech industry presentations with ARIS experts
- Data Analytics Capstone Project

### Program Details:

- This program schedule runs Monday to Friday, 8:00am-3:00pm (except for stat holidays)
- Courses are delivered online synchronously\* via Zoom or MS Teams
- In-person synchronous learning is pending for Q1-2023 and may include lectures on SAIT’s Main Campus in Calgary
- Course descriptions and timelines provided after acceptance into the program

### Time Dedication:

- This intensive program requires a commitment of both time and energy. There will be substantial work involved outside of the classroom.
- Students should be prepared to spend at least 3 hours daily of time outside of class learning these topics. This will include supplemental resources and independent learning outside of class hours.
- Students who experience success are those who make their training a priority throughout the program and are open to new learning experiences and working with others.
- For any on-campus sessions, students are responsible for travel or transportation to campus.

### Technology Requirements:

- All students will need a computer or laptop with camera, microphone and speakers (integrated or external) so they can participate in online classes.
- Internet and bandwidth recommendations for online learning:
  - Recommended: 25 Mbps download and 3 Mbps upload &
- Minimum: 6Mbps download and 400Kbps upload (Test your bandwidth speed at speedtest.net)
- All learners will require a computer or laptop with the following recommended specifications:

Standards	Hardware	Software
Processor	i5 processor (i7 recommended)	Windows 10 Pro 64-bit (MacOSX is not supported.)
RAM (memory)	16 GB RAM or greater	
Hard drive storage	512 GB SSD or greater	Antivirus/malware protection
Video card	On-board integrated	
Screen size	15" or greater	
Screen resolution	1920 x 1080 or greater	

# EDGE UP 2.0 – Foundations of Digital Transformation

*Length:* 14 hours

## **Overview:**

Emerging technologies are structurally changing industries, requiring organizations to adapt strategically and operationally as opportunities and threats emerge. As a result, organizations face challenges, risks, innovations, and questions which require new thinking and approaches to ensure successful navigation of an uncertain and changing industry context.

In a hyper-competitive market, digital forward organizations understand how to leverage technology to their advantage. But business transformation doesn't happen overnight. Instead, it starts with identifying opportunities for change –and using novel technology and innovative thinking to make it happen.

Learn how organizations can transform their performance through digital solutions, providing a framework for innovation through digital technologies that enable organizations, businesses, and individuals to build a unique competitive advantage. We will introduce you to the "what" and the "how" of digital solutions, exploring how digital technologies are the key components of digital solutions and explore the pathways and processes to implementing digital solutions.

We will help you explore the new opportunities that exist through digital technologies and enable you to understand the "digital art of the possible" within your organization.

This course will explore the various aspects of digital transformation within the context and from the industry's perspective as a whole, focusing on the intersection between technology and industry, impacting strategy and operations.

## **Program Focus:**

- Recognize the types of digital transformation and the impact that can occur within organizations
- Recognize the principles and technologies identified in the Industry 4.0 trend
- Identify the impact of digital transformation on an existing business model and the opportunities Industry 4.0 presents to reinvent or transition organizational structures, processes and business approaches
- Explore how digital enabling technologies can be applied and integrated to deliver digital solutions and how they support business strategy and impact business operations—delivering on business value
- Understand strategic differentiation using digital and benefits realization techniques

# EDGE UP 2.0 – Foundational Overview: Clean Technology

**Length:** approx. 24-30 hours

## **Overview:**

Cleantech is a dynamic and growing field with frequent new discoveries, innovations, and setbacks, along with ever-increasing urgency. This course will provide foundational knowledge of the cleantech landscape and the principles of Environmental, Social, and Governance (ESG) across multiple perspectives. The course will guide participants in understanding a number of clean technologies and examine and explore their impacts and viability. Industry professionals will facilitate the course and guest lecturers will provide additional insight on key topics, including the importance of data analytics – data types, techniques and its benefits.

## **Program Focus:**

1. Explore the opportunities of Cleantech
  - a. Understanding human impacts on the environment
  - b. What is Cleantech?
  - c. ESG, the UN Sustainable Development Goals (SDGs), and Cleantech impact areas
2. Examine the timeline of Cleantech
  - a. Use cases / examples of technologies used in the industrial sector
  - b. Present day compelling need, usage of data & analytics to optimize both operational and ESG impacts
  - c. Measuring Cleantech – instrumentation, data types & capture techniques, sensor types
  - d. Impact of Cleantech on future industry and investment opportunities
3. Explore Digitally enabled Cleantech opportunities
  - a. Application of digital technology capabilities to Cleantech outcomes
  - b. Examples of digitally enabled cleantech use cases
  - c. Using data to understand the full life cycle of ESG impact of products and services
4. Articulate the risks and obstacles for Cleantech
  - a. Auditability and standardization of Cleantech results
  - b. History of Cleantech investment
  - c. Global Cleantech goals and standards