



**Southern Alberta  
Institute of Technology**  
1301 16th Avenue NW  
Calgary, Alberta T2M 0L4  
Canada  
Toll-free: 1.877.284.7248  
sait.ca

## EDGE UP – Data Analytics

SAIT offers a 17-week (~480 hour) program in Data Analytics in association with Calgary Economic Development, with support from Future Skills Centre.

Graduates of the EDGE UP Data Analytics program will develop the knowledge, skills, and aptitude to apply fundamental principles of data analytics to support business decision-making processes, creating accurate and meaningful data to provide actionable insights. Graduates of this program will receive a SAIT Certificate of Achievement.

The ideal candidate for the Data Analytics program has an interest in working with data and is intrigued by the power of data and how it can be analyzed to support good business decision-making.

### **Program Outcomes:**

- Understand database concepts and how to design and implement databases to maintain data integrity.
- Develop skills to query data using SQL scripting.
- Manipulate data to develop a data repository that can then be analyzed in a business context that is relevant to decision-making.
- Use industry recognized programs and tools to extract meaning from data
- Present data that communicate data 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.

### **Course Topics:**

- Introduction to Databases
- Preparing Data for Analysis
- Data Analytics Tools
- Programming for Data Analytics
- Managing Data in the Cloud
- Professional & Leadership Skill Development
- Data Analytics Capstone Project



## Program Timeline:

- Foundations of Digital Transformation Course: March 29 - April 1, 2022 (8:30am – noon)
- Data Analytics Training Program: April 4 – July 29, 2022 (8:00am – 3:00pm)

## Program Details:

- Program schedule is 8:00am-3:00pm Monday to Friday (except for stat holidays)
- Time commitment (instructional and assignment/project work): 40-50 hours per week
- Virtual delivery via Zoom or MS Teams
- [Online learning expectations](#) for success in the program
- All students will require a computer or laptop for their program with the following recommended specifications:

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

## Is this program the right fit for me?

- This program requires a commitment of both time and energy. Students who experience success are those who make their education a priority throughout the program and are open to new learning experiences and working with others. We find there is a direct correlation between the time and energy invested to the amount of success achieved. Learners with strong time-management, adaptability, and discipline have a greater propensity to succeed. Remaining focused and diligent with course work is important for success in completing the program.



## Topic Descriptions:

### **Introduction to Databases**

- This course explains foundational methodologies for relational database design. The skills and concepts taught in this class will prepare you to design a database using relational database management tools. The focus of this training is to understand good database design and learning the methodologies necessary to arrive at that design.

### **Preparing Data for Analysis**

- This course will introduce the Extract, Transform and Load (ETL) processes. You will implement control flow, data flow, and logging as you create and debug Integration Services packages to enable the ETL process. Students will plan, design, implement and optimize the infrastructure for a data warehouse solution. Students will create the logical design and physical storage for multidimensional solutions. Students will implement KPIs (Key Performance Indicators) and associated actions, stored procedures and data sets.

### **Data Analytics Tools – Power BI**

- Power BI has quickly become one of the premier reporting tools amongst business users and BI professionals. This course is designed to show you how to use the capabilities within Power BI to easily ingest, cleanse, store and report on data from a variety of sources with very little effort. Participants will import data into Power BI, shaping and combining data from various sources, model the data to support end user self-service and finally create interactive data visualizations that can be easily shared across multiple platforms including mobile devices.

### **Managing Data in the Cloud – Microsoft Azure**

- This course will introduce students to the principles of cloud computing. You will become familiar with how these principles have been implemented in Microsoft Azure. In addition, this course will explain how to implement the core Azure infrastructure, consisting of virtual networks and storage. With this foundation, you will learn how to create the most common Azure services, including Azure Virtual Machines, Web Apps, and Azure SQL Database. The course will conclude by describing features of Azure AD and methods of integrating it with on-premises Active Directory. Students will also learn the fundamentals of database concepts and



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services in the Azure environment including relational and non-relational databases along with big data and analytics.

## **Python Programming for Data Analytics**

- With python being one of the most popular programming languages, the ability to read and write this legacy language is becoming increasingly important in the software industry. Python is used to power web services such as YouTube, DropBox, Google, Reddit, Yahoo, Pinterest, and Instagram and many small companies are taking advantage of this powerful, fully featured programming language. This program will provide you with a basic understanding of python and introduce you to the powerful capabilities of the python program language. After becoming familiar with the basics of Python programming, you will apply your skills to data science techniques. You will gain skills in data aggregation and summarization, as well as basic data visualization.
- Students have the opportunity to earn additional SAIT certificates, including micro-credentials and a shareable digital badge, upon successful completion of the Python courses. Eligibility criteria to be shared with students during orientation.

## **Professional & Leadership Skills Development**

- Throughout the program students will be introduced to principles and practices to enhance their professional & leadership skills. Through half-day workshops students will have the opportunity to learn from industry professionals about a variety of topics including mental toughness, conflict and credibility, team building, and trust.

## **Data Analytics Capstone Project**

- The capstone project provides you with the opportunity to work on an industry-supported project and address a problem or issue using what you have learned about data analytics. The capstone project requires you to demonstrate an integration of technical skill and knowledge, competencies and development/execution strategies.