



**Disruptive Technology:** *one that displaces an established technology, or has the potential to reshape the world in which we live and work.*

The **Internet of Things (IoT)** is changing the way we live and work by providing unprecedented connectivity between the various devices we use. **Industrial IoT (I<sup>2</sup>oT)** is reshaping the workplace in manufacturing, utility and medical sectors of business. Through the collection of data and control of networked elements, industry can experience greater agility with automated processes, as well as benefit from the analysis of huge amounts of data using artificial intelligence tools. Interconnectivity of network elements can lead to greater safety and reliability of large systems.

Interconnectivity can also create disruptive issues, such as the cyber-security of industrial networks. Power utilities and large industrial users of automation processes face the threat of business interruption by hostile infiltration or through non-malicious errors made internal to their businesses.

Today's engineering technology specialists not only need to be experts in their respective areas of expertise, but they must deal with the ever-increasing demands of interfacing to and dealing with industrial networks in their daily activities.

## Market Trends

Industry feedback through RRC advisory committees indicates a growing need for a mix of engineering and network technology skillsets in the work place. Input from Manitoba companies indicates an accelerated pace of adoption of IoT technology, affecting the reliability, safety and cyber-security of power utility operations, manufacturing and processing facilities, and even medical facilities operations. Greater automation requires a mix of engineering and network technology skillsets. There is a growing need for a 'hybrid' technologist, one that has strong technical skills and a thorough understanding of IoT.

“As the industrial plant floor and corporate enterprise become more connected, the demand for skilled professionals who understand the exchange between information technology (IT) and operations technology (OT) is increasing. IT and OT professionals are looking to overcome the challenges of converging their network technologies....

... An individual who understands the interplay between the operational and IT technology is key to the ongoing health of your organization.”

*Georgene Berman, Global Product Manager, Rockwell Automation, February 2015*

## Introducing Red River College's Advanced Certificate program in Industrial Networking Technology

Enhance your knowledge and understanding of the role that Ethernet/IP-based data transport plays in industrial systems, such as manufacturing automation, and power utility protection and control.

The graduate technologist or engineer in the industrial control and power utility professions are the targeted groups for this training. No Information Technology pre-knowledge is required.

Our graduates will have a strong foundational knowledge of networking technologies and understand the implications of standards (both industry and legislated) on system reliability, safety and cyber security. The growing need for industrial engineering professionals with a stronger understanding of network technologies drives us to explore how these technologies influence the roles and responsibilities of engineering-oriented professionals.

The successful graduate will have a basic to intermediate understanding of a number of industrial networking areas. These include:

- Best Practice Industrial Network Architecture
- Industrial Network Equipment Infrastructure
- Industrial Network Cable Plant Infrastructure
- Industrial Wireless Communications
- Instrumentation and Process Control
- Electrical Utility Measurement and Control
- Quality of service and low latency support
- Regulatory and Legislated Security and Safety Standards

## The Program

### Length

4-months (One Term)

### Entrance Requirements

Red River College diploma from one of the following disciplines: Electrical Engineering Technology, Electronic Engineering Technology or Instrumentation and Control Engineering Technology. *Equivalent credentials will be considered.*

### Campus

Exchange District Campus (formerly Princess Street Campus), Winnipeg

### Intake

January 2018 and September 2018

### Fees

Program/Student Fees (estimated, subject to change): \$2,921

### How to Apply

[www.rrc.ca/howtoapply](http://www.rrc.ca/howtoapply)