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www.futurescollege.ca

MACHINIST

CERTIFICATE COURSE

Program Length: 158 Hours
Mode of Learning: Online
Students: Domestic / International
Credential: Certificate
NOC



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Program Overview

The *Machinist Program* is a modular, Red Seal-aligned training course designed to develop precision-focused tradespeople skilled in shaping metal parts and components used across manufacturing, automotive, aerospace, and heavy equipment industries. Machinists play a vital role in transforming raw materials into accurate, high-tolerance parts using manual tools and CNC machinery.

Through progressive, hands-on training, students gain expertise in blueprint reading, measuring instruments, conventional machining, CNC programming, tool setups, and safety standards. The program also explores material properties, heat treatments, and modern manufacturing technologies. Whether working with lathes, milling machines, or advanced CNC systems, students will learn to plan, execute, and inspect complex machining projects with confidence.

Graduates will be well-prepared to pursue Red Seal Certification in the Machinist trade. This nationally recognized credential increases employment flexibility across Canada, enhances career mobility, and affirms a high level of professional expertise in one of the most technical and rewarding skilled trades.

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Modules:

Module 1: Machining Fundamentals and Safety (39.5 hours)

- Introduction to machining and the role of a machinist
- Shop safety practices and PPE
- Reading technical drawings and using precision measuring tools
- Overview of manual machines: lathe, mill, grinder

Module 2: Conventional Machining Techniques (39.5 hours)

- Turning, milling, drilling, and surface grinding operations
- Tool selection and setup
- Machining to specification and tolerance
- Introduction to feeds, speeds, and cutting fluids

Module 3: CNC Machining and Programming (39.5 hours)

- Basics of CNC machine operation and safety
- G-code programming and CNC setup procedures
- Simulating and executing CNC jobs
- Basic troubleshooting and error correction

Module 4: Advanced Applications and Red Seal Preparation (39.5 hours)

- Complex part machining and project planning
- Introduction to CAM software and multi-axis machining
- Heat treatment, material behavior, and quality assurance
- Red Seal exam review, practice, and skills consolidation

Admission Requirements

- Ontario Secondary School Diploma (OSSD) or equivalent
- Minimum age: 18 years
- Language proficiency (CLB Level 6 or IELTS 5.5 overall or equivalent)
- Strong interest in manufacturing, metalwork, or mechanical trades
- Background in shop work, drafting, or math is an asset



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Futures Canadian College of Business, Health, and Technology formerly Futures Academy of Health was founded in 2009 in Toronto, Ontario. Approved and accepted in November 2018 by the International Student Program, Futures Canadian College is now a Designated Learning Institution.

At FCC, we strive to provide the world-class education every student deserves. With well-crafted lesson plans, that are both informative and practical, we ensure that you learn all you need to know to jumpstart your career. Our co-op programs are relevant and supportive of your desire to land that dream job!

We are committed to providing you with a learning environment that is well-equipped to motivate you to pursue your studies and ultimately, achieve your long-term goals.