

DFAB 207 - Advanced CNC Technologies

Introduces students to 4 and 5 axis subtractive manufacturing. Including design consideration, safe operation and tool selection.

DFAB 208 - Digital Fabrication and Design - Art

Introduces students to digital design and fabrication techniques within the context of contemporary art and design. Students will complete a series of projects exploring 3D polygonal modeling, solid modeling applications, 3D scanning technologies, and experimental approaches to digital model generation. Simultaneously, digital models will be made physical through a variety of fabrication technologies including 3D printing, CNC milling, and laser cutting.

DFAB 209 - Capstone

Provides students with the opportunity to employ their cumulative skills and talents in a chosen area of focused study. Each student must declare an area of interest that will be the basis of a unique product, requiring a series of scheduled tasks to complete.

Invested in your success

At Selkirk College, students come first. Whether you live on campus or in the community, we are committed to ensuring you have access to the support, information and tools you need.

FINANCIAL AID FOR SELKIRK COLLEGE STUDENTS

Once you are a Selkirk College student, you can apply for a variety of Financial Aid options in each year of your studies. Find out more and apply at:

+ selkirk.ca/financial-aid

More than \$425,000 in scholarships and bursaries to more than 400 students

What makes you tick?

Reflect on who you are and what you are passionate about as you determine what you want to study. Consider your strengths and weaknesses. What are your skills? What are your values? Check out our Selkirk College programs to find a fit for you.

SCHOOL OF THE ARTS

- Artistic
- Independent
- Open to fresh ideas
- Curious and inquisitive
- Expressive

BUSINESS

- A strong leader
- Unstoppable
- Motivated
- Adaptable
- Organized

HEALTH & HUMAN SERVICES

- Idealistic
- Generous
- Communicator
- Empathetic
- Courageous

HOSPITALITY & TOURISM

- Team player
- Cultural awareness
- Committed to guest satisfaction
- Multitasker
- Adventurer

INDUSTRY & TRADES TRAINING

- Critical reasoning skills
- Strength and stamina
- Mechanical ability
- Ability to plan and organize
- Adept with technology

ENVIRONMENT & GEOMATICS

- Keen observation with critical thinking
- Problem solving
- Values the natural world
- Strong communicator
- Tech savvy

UNIVERSITY ARTS & SCIENCES

- Creative and analytical thinker
- Innovative and attentive
- Explorer
- Seeking understanding of self and world
- Strong writer and researcher

Remember, you may fit in more than one program. Do you want to explore further with one of our Selkirk College recruiters? It's their job to help you toward the career that will make you tick! Contact us at hello@selkirk.ca



Free parking
Except for Victoria Street Campus



Free wifi



Free gym pass

DIGITAL FABRICATION & DESIGN

SELKIRK COLLEGE



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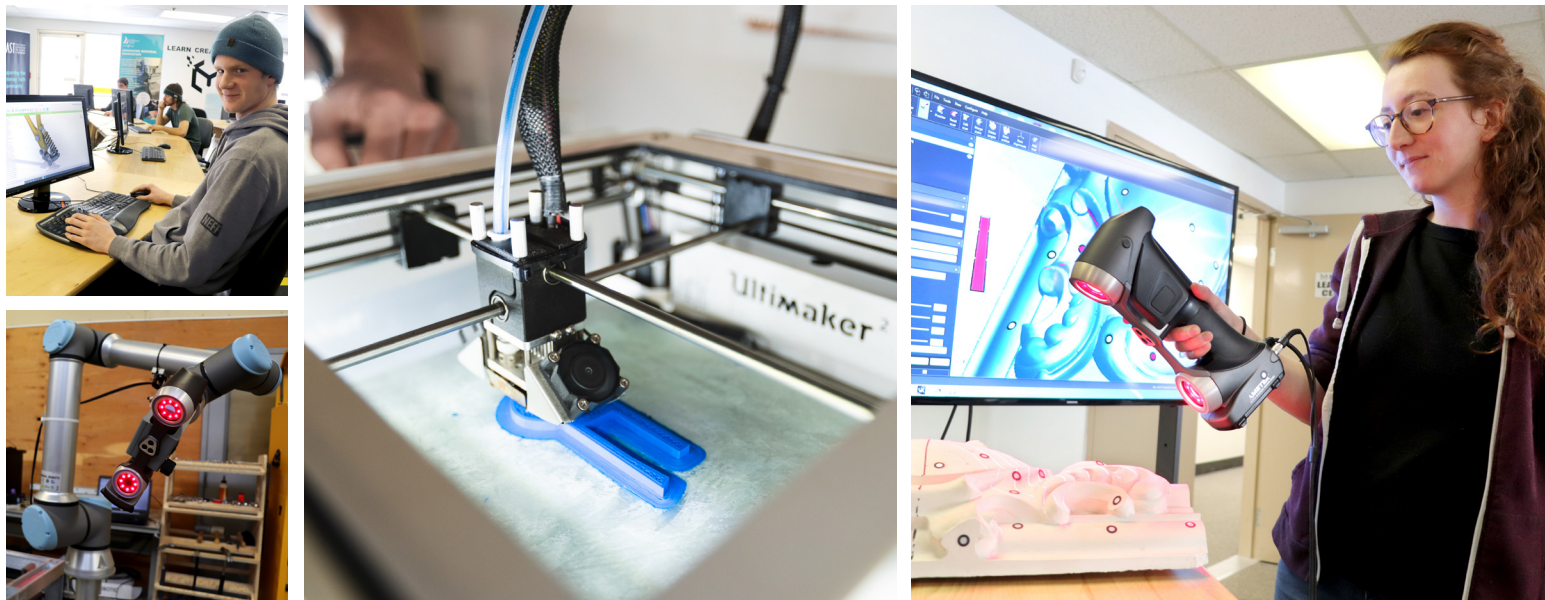


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Digital Fabrication & Design

With an emphasis on technologies and strategies, Digital Fabrication @ Design prepares you for employment or further education in the emerging fields of digital fabrication and advanced manufacturing.

Design and manufacturing are evolving industries. In Selkirk College's new Digital Fabrication & Design Program, gain broad entry-level skills or take your trade, craft or digital prowess in a new digital direction. This field combines the artistry of digital design with the skills necessary to create the physical form. Our training ensures your value in the digitally driven world of design, fabrication and manufacturing, with emerging hands-on computer skills for a wide variety of production facilities – from large-scale industrial operations to inventors needing prototypes.

Our program instruction is primarily delivered in workgroups, with peers, mentors, and machines. Delivery focuses on a problem-solving learning approach, which reflects standard industry practice in the field of advanced manufacturing.

You will experience the “design-to-part” process from the initial design concept to the finished product. Working in groups, you will identify the required deliverables, develop a timeline, assign and schedule project activities, identify/procure needed raw material and equipment, and determine a per unit production cost. This experiential approach encourages learning by doing and, thereby, develops the problem solving and teamwork-skills fundamental to industry practice.

LENGTH OF STUDY:
2-year
ACCREDITATION:
Diploma
CAMPUS:
Trail Campus

“A strong foundation of skills and workforce competencies will help people adapt to changes and opportunities that come along with increased automation.”

BC LABOUR MARKET OUTLOOK

CAREER POTENTIAL

Digital manufacturing skills are in demand, as industries embrace improved technology that allows for more design choice, increased accuracy and a shorter design-to-manufacturing process. This program provides graduates with practical, interdisciplinary skills to apply cutting-edge manufacturing and design techniques in an increasingly wide range of industries.

COURSE INFORMATION

- 2D and 3D Design for Advanced Manufacturing (CAD/CAM)
- 3D Scanning and Reverse Engineering
- Additive Manufacturing (3D printing)
- Subtractive Manufacturing (CNC machining)
- Entrepreneurial Studies
- Automation and Robotics for Advanced Manufacturing
- Emerging Technologies

APPLICATION REQUIREMENTS

In addition to meeting the general admission requirements to Selkirk College, applicants to the Digital Fabrication & Design Program must meet the following admission requirements:

- Math 11 (Foundations or Pre-Calculus) with a minimum of 73% or higher
- English 12 with minimum of 67% or higher
- Recommended but not mandatory: Physics 11 with a minimum of 67% or higher
- Completed applicant questionnaire.

INQUIRIES?

Recruitment Specialists Aimie Chernoff and Matt Martin are amazing ambassadors ready to share all they know with you. Contact them at hello@selkirk.ca.

COURSE DESCRIPTIONS

DFAB 101 - Introduction to Digital Fabrication and Design

Survey the basic history and techniques of digital fabrication - diving into the systems themselves as well as real world utilization. Via examples and case studies students will examine systems of measurement, considerations for hardware and material choices, and specific machine workflows.

DFAB 102 - Traditional Fabrication Principles and Practices

Students will learn and apply standard shop safety procedures, measurement techniques, layout and dimensioning standards, hand and power tool operation and will learn how to read and interpret drawings and apply manual fabrication processes. Math skills required for manufacturing will be reviewed and students will gain knowledge and skills in traditional fabrication processes in relation to equivalent digital fabrication processes.

DFAB 103 - Design for Digital Fabrication 2D

Will focus directly on a variety of 2D design applications. Students will gain knowledge in 2D technical drawing standards following subtractive manufacturing design criteria.

DFAB 104 - Design for Digital Fabrication 3D

Students will learn how to design for digital fabrication. Emphasis will be put on designing functional parts following industrial design standards. This course will focus directly on 3D CAD applications. Students will gain knowledge in solid, parametric and polygonal modeling, technical drawing standards and be introduced to additive and subtracted manufacturing design criteria as well as the migration between various approaches and software packages.

DFAB 105 - Design for Digital Fabrication – Additive Manufacturing

Students will gain knowledge in solid, parametric and polygonal modeling, technical drawing standards and be introduced to additive manufacturing design criteria. A variety of design techniques for additive technologies including stereolithography (SLA) and fused deposition modeling (FDM) will be explored.

DFAB 106 - Additive Manufacturing - Plastic

Students will learn standard operating and maintenance procedures for additive manufacturing machines and process and workflows, including safe operation of all systems. Design criteria for a variety of additive manufacturing processes will also be covered. A variety of additive manufacturing technologies will be explored including, but not limited to: stereolithography (SLA) and fused deposition modeling (FDM) machines.

DFAB 107 - Design for Digital Fabrication – Subtractive Manufacturing

Design criteria for a variety of subtractive manufacturing processes including 2D and 3D processes will be covered in this course. Students will gain knowledge in solid, parametric and polygonal modeling, technical drawing standards and be introduced to subtractive manufacturing design criteria. Students will learn a variety of design techniques for subtractive technologies including CNC milling, routing, water jetting and laser cutting will be demonstrated.

DFAB 108 - Subtractive Manufacturing – Wood/Plastic

Students will learn standard operating and maintenance procedures for subtractive manufacturing machines, processes and workflows, including safe operation of all systems. Design criteria for a variety of subtractive manufacturing processes will also be covered. A variety of subtractive technologies will be explored including; milling, routing, water jetting, and laser cutting.

DFAB 201 - Design for Digital Fabrication - Reverse Engineering

Students are introduced to reverse engineering where they will learn a variety of 3d scanning techniques including: photogrammetry, LiDAR, structured light and machine probing. Students will then focus their learning on scan to CAD processes, metrology functions and product analysis. A wide variety of software applications will be taught in this course.

DFAB 202 - Subtractive Manufacturing - Metal

Students further their training in CNC manufacturing with a dive into machining metal using various tools including CNC machining and turning centers. Students will learn standard setup and operation techniques for various machines, how to implement CAD/CAM software to generate the appropriate tool paths, and how to test their learning through CNC simulation before setting up and running the program on physical machines.

DFAB 203 - Additive Manufacturing - Metal

Students will be introduced to a variety of techniques, processes and machines for additive metal manufacturing.

DFAB 204 - Computer Aided Design and Rapid Prototyping

An introductory survey of the basic history and techniques of digital fabrication with a shallow dive into local and global applications of digital fabrication. Via examples and case studies, students will gain an understanding of how to quantitatively assess the suitability of advanced manufacturing for an application, and realize how this justification will change as technologies improve. Students will be introduced to standard terminology, hardware and software platforms and an introduction to systems of measurement, considerations for hardware and material choices, and specific machine workflows.

DFAB 205 - Entrepreneurship

Students identify and respond to a market need by bringing a marketable business idea to life. Simulating a start up environment students are challenged to explore new ways of team-based problem solving, ideation and business model development that will establish a working foundation for a viable business. Students will prepare a pitch deck and present their startup idea to an audience for feedback.

DFAB 206 - Molding and Casting for Advanced Manufacturing

Students are introduced to the basic fundamentals of design and implementation of advanced manufacturing. Emphasis is on practical side and will include designing for and implementing projects utilizing injection molding, vacuum forming and a variety of casting and mold making techniques.