



Shaping Canada's Digital Future

WIL Digital

WIL Digital E-learning Courses Guide

Funded by the Government of Canada's Student Work Placement Program (SWPP)

Funded by the Government of Canada
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About ICTC

The Information and Communications Technology Council (ICTC) is a not-for-profit national centre of expertise for the digital economy. ICTC is the trusted source for evidence-based policy advice, forward looking research, and creative capacity building programs for the digital economy. You can learn about us through our [website](#) and explore our research and talent programs on [eTalent Canada by ICTC](#). You can stay connected with us on [LinkedIn](#), [Twitter](#), and [Facebook](#).

About the Student Work Placement (SWP) Program

Recognizing the importance of demand-driven education and training, the Government of Canada launched the SWP Program in 2017. The objective is to drive systemic change in the skills development system at the post-secondary education level, to effectively align technical, foundational and “work-ready” skills of PSE (Post-Secondary Education) students with the skills required by Canadian employers.

This is demonstrated by:

- an increase in new, sustainable work-integrated learning (WIL) opportunities for students across all disciplines; and
- continuation of collaborative partnerships of industry and the PSE system.

What is WIL Digital?

Through funding from the Government of Canada, ICTC is a service delivery provider of the Student Work Placement (SWP) Program. ICTC'S Work Integrated Learning Digital Program (WIL Digital) supports the emergence of skilled talent, business innovation, and digital adoption in Canada.

Key facts

- a. WIL Digital provides opportunities for university and college students to gain valuable on the job learning and practical experience, while contributing to the digital transformation of small and medium-sized businesses.
- c. Wage subsidies are paid to employers who hire students for a meaningful WIL opportunity. For more information about the WIL Digital subsidy, please refer to [WIL Digital Program Guide](#).

- d. WIL Digital students can take online courses to add to their on-the-job learning. The cost of the courses is funded through ICTC's contract with the Government of Canada. So, there is no cost to the employer or the student.
- e. The courses were designed with input from industry and academic experts.

What is the WIL Digital e-learning courses?

WIL Digital e-learning courses are an option offered to WIL Digital students to help them make valuable contributions to their employer early in the placement.

Furthermore, a foundational understanding of the industry, along with its key technologies and practices, enables students to participate in the collaborative water-cooler conversations at the workplace, providing a better work experience.

At this time, there are 5 e-learning courses: Advanced Manufacturing, Artificial Intelligence, Cybersecurity, FinTech, and Intelligent Retail and Commerce. More are under development and will be available for Winter 2022 term.

The e-learning courses are normally delivered three times over the year: Winter term (January to March), Spring/Summer term (May to July), Fall term (September to December).

Key facts

- a. Designed for all post-secondary students regardless of their field of study. An exception is Advanced Manufacturing where students tend to be from engineering or technology fields of study.
- b. The e-learning courses are comprised of a minimum 6 modules each, with subject matter expertise from industry, recorded interviews, interactive discussion forums, and interactive sessions with our facilitator, and real-world case studies.
- c. Students learn industry specific terminology, acronyms, key technologies, issues at stake, and career opportunities in these fields.
- d. Students work in teams to solve real-world business problems (experiential learning).
- e. On average, the time commitment is 2 hours per week for up to 12 weeks plus +6 hours of content including best business practices prep, team-based assignments, and live networking.
- f. Students complete the modules at their own pace. However, interactive sessions with the facilitator, subject matter experts, and case study debrief sessions are scheduled.
- g. Students network with the other students across Canada and learn from peers.

- h. Most employers allow students to take the course during their regular working hours.
- i. Students have access to a free, interactive [web-based skill-to-job matching tool](#) to assist them better gauge their skills against in demand occupations.

Skill-to-job matching tool features:

- Multi-factor skill-to-job matching system
- Identifies in-demand skills suitable for each job and identifies the skills they need to develop
- Over 40 in-demand jobs included initially
- Anonymous participation—registration not required
- Available in both French and English
- Streamlined and intuitive jobseeker’s experience
- Free to use
- Upon completion, students receive a Certificate of completion that can be added to their resume and LinkedIn profile.
- The course comes with an updated employability resource that includes key industry data on the most in-demand jobs and skills to help with their job search and career development.
- Students and employers complete a short end-of-course survey to provide feedback.

What are the benefits for the students?

- Discover the workplace: students attend sessions animated by subject matter experts with whom they network and receive advice about their respective industries.
- Peer learning: learners interact with their peers to benefit from idea generation, discussion and networking with others enrolled in the same course.
- Industry application: student apply their knowledge and skills to solve real-world industry problems.
- Career exploration: students learn about in demand roles in the industry to help with career pursuit after graduating.

What are the benefits for the employers?

- Smooth onboarding: the courses are designed to provide orientation to the industry which saves time for the employer. Students learn about the industry, its jargon, its culture, and practices, as well as current topics of conversation. The main goal is to empower the students to be more productive earlier, more effectively, without wasting precious staff time.

- Enhanced work-ready skills: the courses result in students' gaining confidence, improving critical thinking and problem-solving skills, enabling them to better demonstrate the full extent of their capabilities and the value they can bring to the employer.
- Digital transformation: courses are designed with industry experts who have practical experience guiding and implementing digital transformation for their business and their clients.

WIL students are great choices for hires after they graduate, as they have gained practical experience. Many employers hire them after they graduate as they know firsthand how valuable that graduate will be to the business.

How to register

- Step 1: Learn about the WIL Digital courses through an Information Session event.
- Step 2: Upon employer's approval, Students can register here: <https://ictc-ctic.smapply.ca/prog/elearning-wil-digital/>
- Step 3: Upon registration, students and their employers will receive a confirmation email of their registration. Students will also receive an invitation to attend a pre-course meeting that will provide them an overview of the course curriculum, introduction to the facilitator and the other students, as well as instructions on how to use our learning management platform.

Overview of the WIL Digital Courses

Advanced Manufacturing

Artificial Intelligence

Cybersecurity

Fintech

Intelligent Retail and Commerce

Advanced Manufacturing

ICTC's WIL Digital Advanced Manufacturing e-learning course is a preparation to a career in the manufacturing industry. Students will learn about the 4th industrial revolution, the application of the Internet of Things, the growing importance of data management and insights for decision-making. Students will explore career opportunities and the skills required to secure their next job.

Advanced Manufacturing	
Time commitment	Approximately 2 hours per week (+6 hours of content including best business practices prep, team-based assignments, live networking)
Duration	12 weeks
Course components	
Pre-course meeting 6 self-directed modules with a quiz after each (6 in total) Facilitator check – in / case study prep (as needed) Midterm Lunch and Discovery session with subject matter expert Case study group work Debrief of case studies by subject matter expert	

Learning Objectives

- Explain foundational concepts such as sensor, actuator, and the Internet of Things (IoT)
- Describe applications of IoT in the manufacturing industry
- Describe different sensor technologies used in Industry 4.0
- Explain how sensors, gateway, collected data and cloud work together to produce valuable business outcomes
- Apply theoretical knowledge to real-world business situations through a case study

Key Concepts

Internet of Things (IoT), Industry 4.0, and digital twins	Data aggregation and processing
Key components of an IoT system	Security & Business Application of IoT
Sensors and actuators	Ethics, The Law and IoT
The role of a gateway	Applications of IoT
MQTT protocol	Case Studies <ul style="list-style-type: none"> ○ Smart Home case study ○ TakeCare Supply (Just-in- Time Supply Chain) case study
Messaging and Cloud Connections	
Comparison of IoT messaging technologies	

Artificial Intelligence

ICTC’s WIL Digital Artificial Intelligence e-learning course serves to introduce students to the field of AI. Students will understand the main concepts of AI and its applications to several industries. This course will enhance on-the-job learning. Students will explore career opportunities and the skills required to secure their next job.

Artificial Intelligence	
Time commitment	Approximately 2 hours per week (+6 hours of best business practices prep, team-based assignments, live networking)
Duration	12 weeks
Course components	
Pre-course meeting 6 self-directed modules with one short quiz in module 3 6 interactive discussion forums Midterm Lunch and Discovery session with subject matter expert Facilitator check – in / case study prep (as needed) Case study group work Debrief of case studies with subject matter expert	

Learning Objectives

- To understand foundational Artificial Intelligence (AI) technologies and their applications in industry
- To be able to critically assess the ethical implications of AI
- To understand the limitations of AI such as explainability
- To learn about career opportunities in AI

Key Concepts

- Why AI matters
- AI, Artificial Narrow Intelligence, Artificial General Intelligence
- Understanding data bias
- Explainability
- Importance of curiosity and skepticism
- Supervised and unsupervised machine learning, deep learning
- Neural networks, Natural Language Programming, Computer vision and other applications of AI
- Applications in FinTech (credit card fraud prediction), Intelligent retail, and Advanced manufacturing

Cybersecurity

ICTC's WIL Digital Cybersecurity course is an introduction to the National Initiative for Cybersecurity Education (NICE) framework. Students will learn about roles and careers in cybersecurity within various sectors. Students will learn forensic digital analysis through case study.

Cybersecurity	
Time commitment	Approximately 1 hour per week (+6 hours of best business practices prep, team-based assignments, live networking)
Duration	12 weeks
Course components	
Pre-course meeting 6 self-directed modules with a quiz after each (6 in total) Midterm Lunch and Discovery session with subject matter expert Facilitator check – in / case study prep (as needed) Case study group work Debrief of case studies by subject matter expert	

Learning Objectives

- To understand the National Initiative for Cybersecurity Education (NICE) framework
- To be able to apply secure software development practices
- To understand concrete techniques to protect personal data and to secure computer networks
- To be able to do a forensic digital analysis
- To learn about career opportunities in cybersecurity

Key Concepts

- The NICE Framework
- Stakeholder engagement to supervise, manage, and advise

- Understanding business objectives
- Cybercrime investigation disciplines
- Trends in data collection
- DevOps
- Career opportunities

FinTech

ICTC's WIL Digital FinTech course is a preparation to rewarding careers in the financial services industry. Students will learn about the key foundational financial industries concepts and practices, the role of technology, as well as the role of FinTech companies. Students will explore career opportunities and the skills required to secure their next job.

Fintech	
Time commitment	Approximately 2 hour per week (+6 hours of best business practices prep, team-based assignments, live networking)
Duration	12 weeks
Course components	
Pre-course meeting 6 self-directed modules with a quiz after each (6 in total) 6 interactive discussion forums Midterm Lunch and Discovery session with subject matter expert Facilitator check – in / case study prep (as needed) Case study group work Debrief of case studies by subject matter expert	

Learning Objectives

- To be able to describe the FinTech landscape and the role of financial services
- To be able to explain the impact of blockchain technologies on financial services and related industries
- To identify the applications and purpose of artificial intelligence in FinTech
- To be able to understand various forms of online payment (e.g., credit card, Interac e-Transfer, cryptocurrencies, and digital wallets)
- To be able to explain key FinTech applications in retail and commercial banking

Key Concepts

- Foundation of FinTech 101
- Overview of Fintech ecosystem
- Design thinking
- Digital Payments

- Digital Payments
- FinTech innovations
- Consumer/Retail segment of financial services
- Cryptocurrencies
- Applications in wealth management and Insurance Technology
- Blockchain technology and its applications
- Emerging solutions leveraging AI and Blockchain technologies

Intelligent Retail & Commerce

ICTC's WIL Digital Intelligent Retail and Commerce course is a unique preparation to exciting careers in the retail industry. Students will learn about the role of digital technology in retail and disciplines such as customer experience, omnichannel, supply chain, and the Internet of Things. Students will explore career opportunities and the skills required to secure their next job.

Intelligent Retail and Commerce	
Time commitment	Approximately 2 hours per week (+6 hours of best business practices prep, team-based assignments, live networking)
Duration	12 weeks
Course components	
Pre-course meeting 6 self-directed modules with a quiz after each (6 in total) 6 interactive discussion forums Midterm Lunch and Discovery session with subject matter expert Facilitator check – in / case study prep (as needed) Case study group work Debrief of case studies by subject matter expert	

Learning Objectives

- To have the ability to describe key technologies that are emerging in the retail industry and their application in industry
- To understand the business value of e-Commerce
- To understand how the pandemic impacted the retail field and some of the solutions adopted as a result
- To learn about career opportunities in retail

Key Concepts

- The emerging, state-of-the-art technologies in retail
- The significance of the retail industry in Canada
- The future of retail
- Impact of the coronavirus pandemic

- Exploration of trades in fashion, lifestyle, automobile and food
- Emerging careers and career trajectories in retail
- The path of the retail entrepreneur
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Appendix A: e-Learning Course Blueprint

e-Learning Course Blueprint				
Timeline	Module	Details	Supplies for the Journey	Student Workload (Total 30 hours)
Week 1	Launch	<ul style="list-style-type: none"> ▪ Students attend videoconference meeting where they are introduced to the facilitator team, walked through the login process, and quickly shown the course outlines ▪ A content delivery calendar is presented (imbedded in LMS, time release modules) 	 PROGRAM LAUNCH  LIVE NETWORKING  MODULARIZED CONTENT	1 hour
Week 1	0	<ul style="list-style-type: none"> ▪ Online course introductory content (how to videos, preparation reading) ▪ Best Business Practices Prep Content (AIM curriculum integration) 3 hr blended content 	 SOFT SKILLS COACHING  AGILE MINDSET TRAINING  VIRTUAL INSTRUCTOR LED TRAINING	3 hours
Week 2	1	<ul style="list-style-type: none"> ▪ Foundational concepts, including terminology, historical and cultural context ▪ SME input (podcast, interview, or short video) for Canadian professional context ▪ Padlet discussion forum for personalization ▪ (optional) short content quiz ▪ Supplementary resources for further interest 	 INDEPENDENT LEARNING  PODCAST CONTENT  VIDEO CONTENT  DISCUSSION FORUM  ASSESSMENT	2 hours

Week 3	2	<ul style="list-style-type: none"> Module 2 content SME input (podcast, interview, or short video) for Canadian professional context Padlet discussion forum for personalization (optional) short content quiz Supplementary resources for further interest 	 INDEPENDENT LEARNING  PODCAST CONTENT  VIDEO CONTENT  DISCUSSION FORUM  ASSESSMENT	2 hours
Week 4	3	<ul style="list-style-type: none"> Module 3 content SME input (podcast, interview, or short video) for Canadian professional context Padlet discussion forum for personalization Midpoint content quiz Supplementary resources for further interest 	 INDEPENDENT LEARNING  PODCAST CONTENT  VIDEO CONTENT  DISCUSSION FORUM  ASSESSMENT	2 hours
Week 4		<ul style="list-style-type: none"> Lunch and Learn with subject matter expert (30 minute presentation of professional context, with 15 minute Q&A for students) Mid-point instructor-led check in meeting 	 SMALL GROUP DISCUSSION  VIRTUAL INSTRUCTOR LED TRAINING  WEBINAR  TEAM CHECK-INS	1.5 hours
Week 5	4	<ul style="list-style-type: none"> Module 4 content SME input (podcast, interview, or short video) for Canadian professional context Padlet discussion forum for personalization (optional) short content quiz Supplementary resources for further interest 	 INDEPENDENT LEARNING  PODCAST CONTENT  VIDEO CONTENT  DISCUSSION FORUM  ASSESSMENT	2 hours

Week 6	5	<ul style="list-style-type: none"> Module 5 content SME input (podcast, interview, or short video) for Canadian professional context Padlet discussion forum for personalization (optional) short content quiz Supplementary resources for further interest 	 INDEPENDENT LEARNING  PODCAST CONTENT  VIDEO CONTENT  DISCUSSION FORUM  ASSESSMENT	2 hours
Week 7	6	<ul style="list-style-type: none"> Module 6 content SME input (podcast, interview, or short video) for Canadian professional context Padlet discussion forum for personalization Supplementary resources for further interest Cumulative assessment using student reflection and informed discussion 	 INDEPENDENT LEARNING  PODCAST CONTENT  VIDEO CONTENT  DISCUSSION FORUM  ASSESSMENT	2 hours
Week 8-11	Case Study	<ul style="list-style-type: none"> Students apply knowledge from modules in a real-world Canadian example Problem is presented in multimedia format, with industry context and a challenge question Students follow scaffolded steps to discover their own solution Students present case study solution in multimedia format, Authentic solution is presented by case study specialist after student submission 	 CASE STUDIES  SELF-DIRECTED CONTENT  TEAM-BASED ASSIGNMENTS  SMALL GROUP DISCUSSION	10 hours
Week 12		<ul style="list-style-type: none"> Student presentation of finished case study Students receive formative assessment from specialist Meet and Greet for students and case study specialist (to receive feedback and Q&A) 	 PROJECT-BASED LEARNING  LIVE NETWORKING	1.5 hours

Week 12	Wrap Up	<ul style="list-style-type: none">Post-course student surveyPost-course debrief via videoconference	 WEBINAR  TEAM CHECK-INS	1 hour
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Appendix B: Frequently Asked Questions

1. How many courses can my students take?

It is recommended that they not take any more than 2 WIL Digital e-learning courses per placement.

2. Will the courses be just a reminder of what they already know?

It is much more than a reminder of what they have already learned. In addition to the modular course content, students interact with industry experts, solve an industry problem and network with their peers.

3. If the student's background is not related to any of these courses, will they still understand the course content?

Overall, the courses are foundational and designed to be accessible for all WIL Digital students regardless of their area of study. Alternatively, the courses offer practical experiential learning for those who already have a background in the same field.

TARGETED AUDIENCE

This course is designed for students who are interested in developing fundamental skills in the subject matter, as an entry-level introduction to this topic. Students who are already proficient in one subject matter are encouraged to take another of the WIL Digital courses available, which provide an excellent lateral understanding of concepts associated with this course.

4. What if my student's contract ends before the last day of the courses?

Students complete the modules at their own pace. But we will encourage them to complete the course before their contract ends. Our staff will work with any students that are unable to complete scheduled case study work prior to the end date of their contract with the employer.

5. Are these courses mandatory?

No. We ask the employer first if they would like us to enrol the student in an e-learning course corresponding to the work integrated learning job description. As the students will be taking the course during regular work hours, employers should expect to benefit from the enhanced foundational skills the students will acquire and apply to their work placements.

6. Can employers take the courses too?

We are considering this as employers are asking to do so. Currently, the courses are designed for the WIL Digital student as the learner. We encourage students to share what they have learned with their employers and colleagues. It is an opportunity for knowledge-sharing and application within the company, and it will make for enlightening conversations around the "water-cooler."