

CAUCE 2025

Brock University • Niagara • May 28-30

Knowledge Knows No Boundaries



CAUCE

Canadian Association for
University Continuing Education



Productive New Programs in our AI Age of Disruption

Anne-Marie Brinsmead
TMU
Melanie Hains, WatSPEED



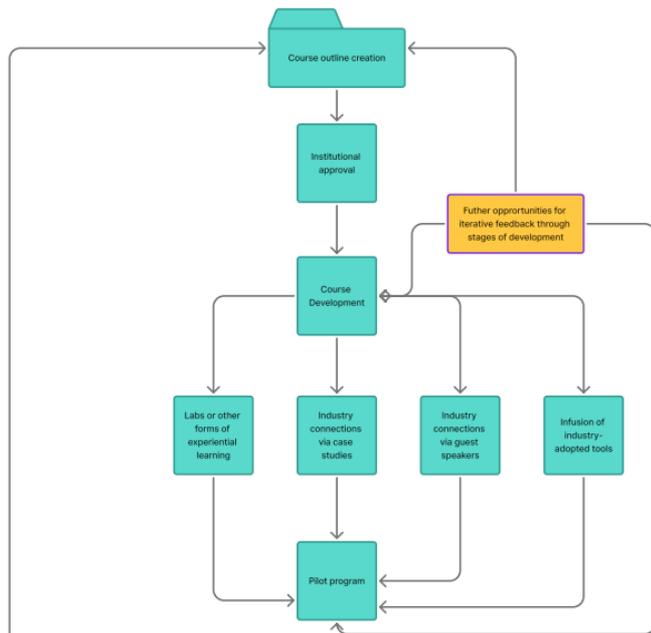
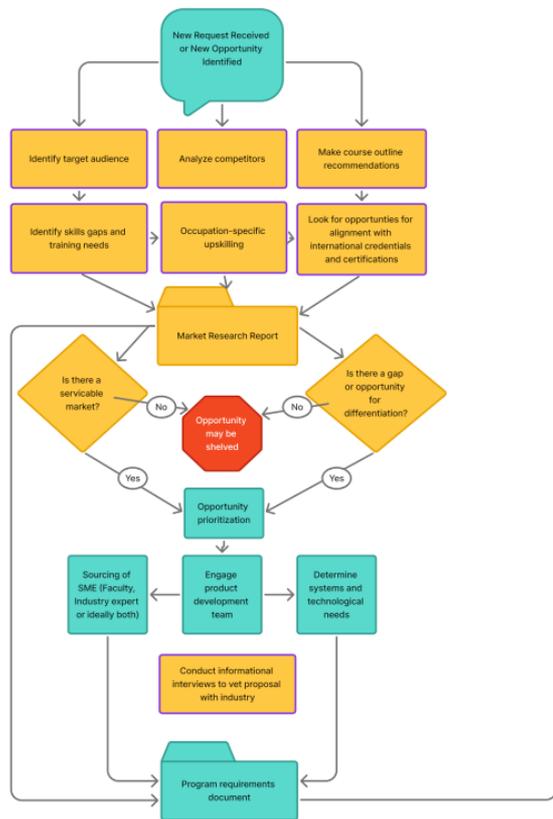
The 'new normal' in our AI age of disruption



Takeaways

By the end of this session, participants will be able to:

- Strategize
- Leverage and action
- Adapt

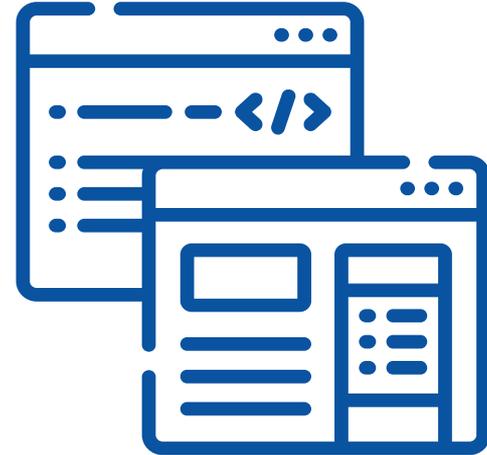


Two use cases

WatSPEED's Cyber programs



TMU's Full Stack Program



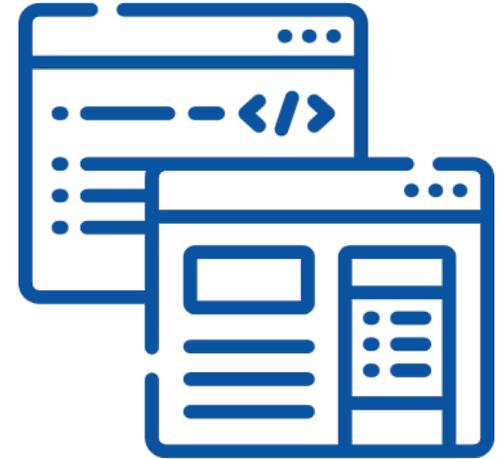
Roadmap 1: WatSPEED Cybersecurity Program

- WatSPEED students acquire critical skills with cybersecurity through hands on work-based scenarios and well as virtual labs to execute more secure code, understand systems and platform security and security in the cloud.
- WatSPEED's program is designed to address the shortage of cybersecurity professionals, focusing on workers who are already working in IT.

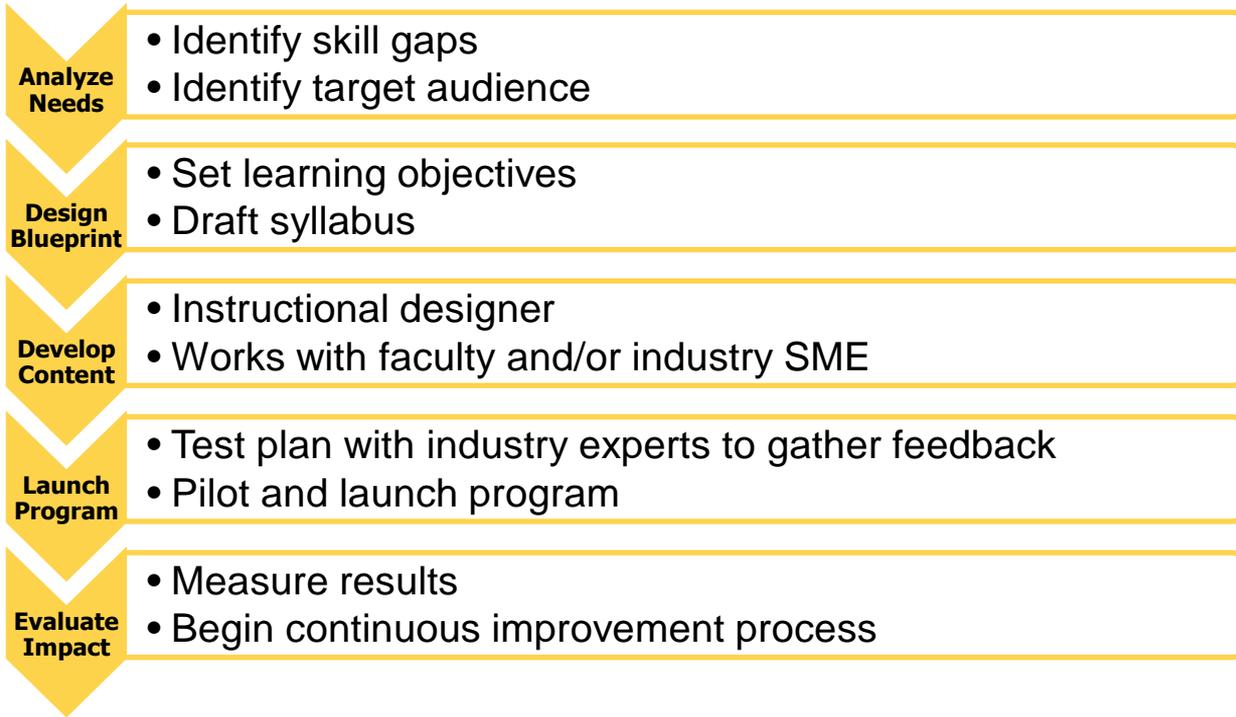


Roadmap 2: TMU's Full Stack Developer Certificate

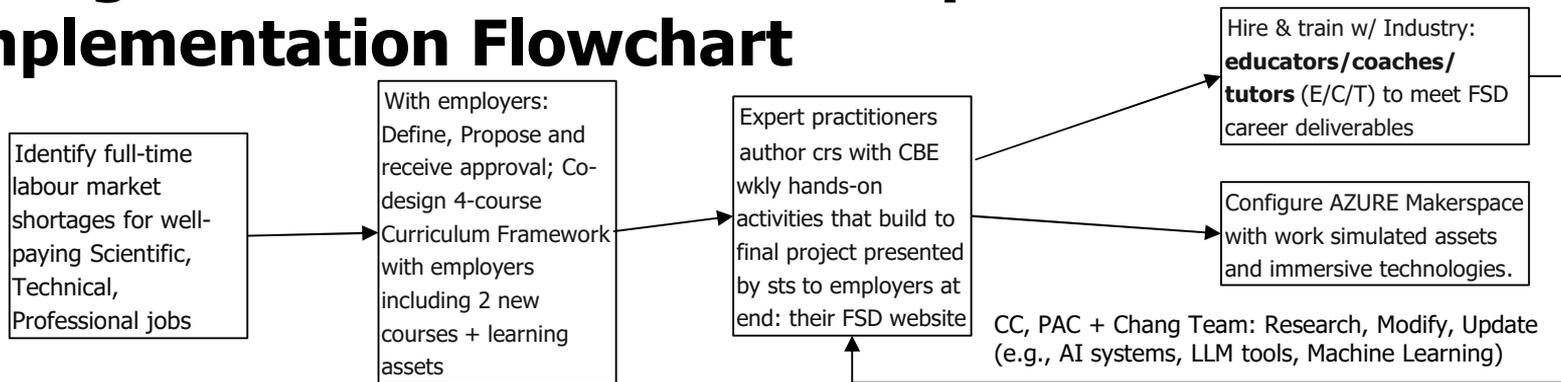
- Leveraging competency-based, skills' acquisition teaching practices:
 - TMU CE students gain Full Stack Built website development expertise and AI Assisted Coding skills in an Anaconda-based, online learning sandbox environment and perform virtual hands-on, real-work weekly end-to-end web development activities to produce their own websites.
- Grads report back to us at TMU that they are being hired into full stack web developer roles in the e-commerce and e-services sector (TMU).



WatSPEED Cybersecurity Programs



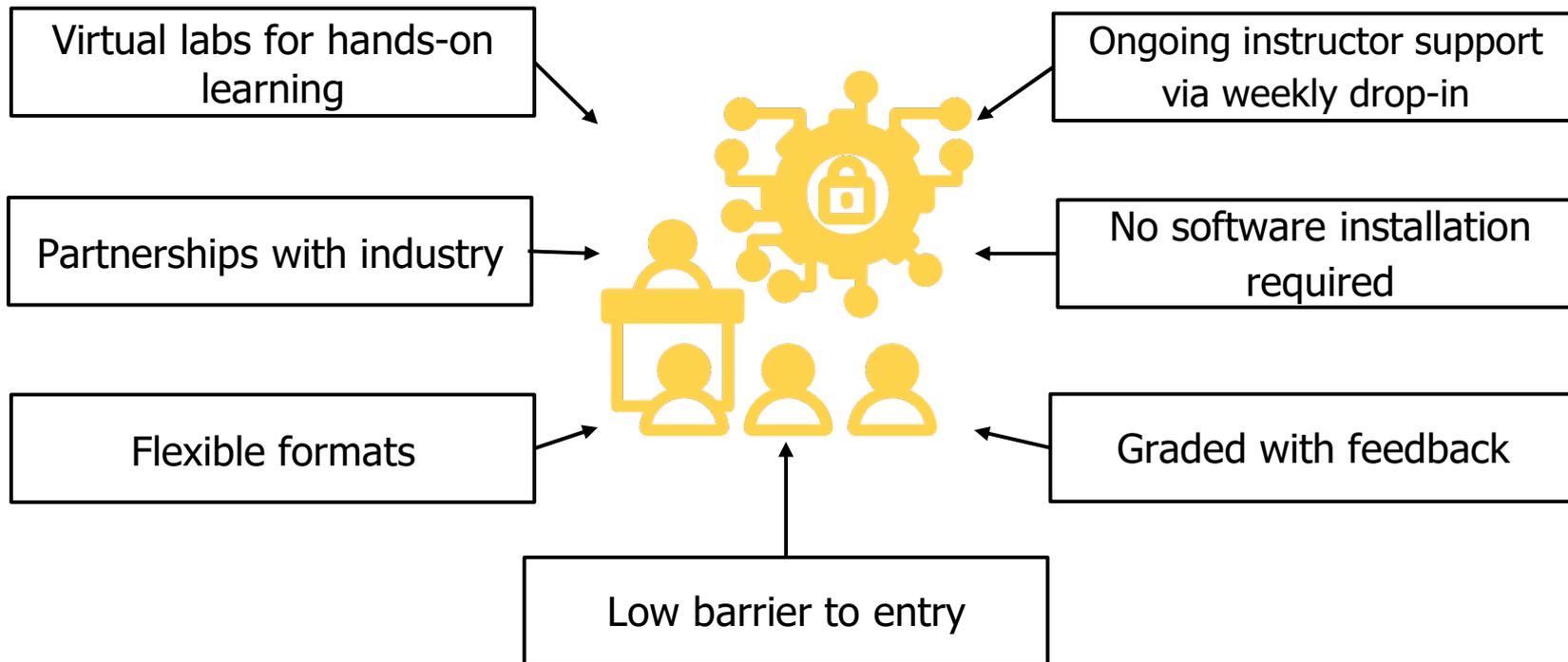
Chang School Full Stack Developers Certificate Implementation Flowchart



Other Activities,

- Zoom classes in 2 courses (instructor-led), student evaluative assessment and final project presentations to industry leaders.
- Last 2 courses: Asynchronous, instr-led with weekly zoom drop-ins, student evaluative assessment; projects → career portfolios.
- Cross-train E/C/T scaffolding students' learning programming, scripting, work apps and tools, including AI skills and AI toolkits.
- Cross-train E/C/T to deliver to students: just-in-time labour market outlooks AND post-certificate self-learning habits – including advancements in AI systems and tools – in order to grow their expertise + transferable skills (agile project management, soft skills).
- Build-Tutor weekly zoom drop-in sessions (2/week) provided every term as part of course tuition.
- Deliver 1-on-1 Career Advising when students are registered and taking their last two courses.
- Engage in continuous delivery improvement:
 - Instructor Online Class Observations visits by Certificate Ac. Coordinator
 - Between delivery terms, updating for Currency learning assets (work simulated activities) for what employers are requiring.

WatSPEED Cybersecurity Programs



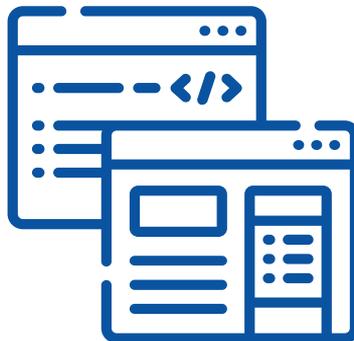
Full Stack Developer Certificate: Deep Learning through High Touch Approach

In a Lab Makerspace, with simulations fully reflecting work environment complexities

Peer-to-peer collaboration

During business hours, virtual coaching via discussion boards, instructor-student emails

FSDs as instructors + tutors
Virtual Makerspace Manager
Quality Oversight by Certificate Academic Coordinator and PD



Facilitating learning: teaching learners how to teach themselves after the program – tech + AI skills, power skills, soft skills for work

Updating for changing labour market need vis-a-vis all skills: market research, including advancements in the profession

Graded with feedback: submission of activity-based, immersive weekly work simulations in their online “Makerspace” learning environment

Periodic Program Evaluation: Evaluation Lead, Academic Coordinator, Course Leads, Instructors, Student + Alumni Focus Groups

Full Stack Developer Certificate – Learners' Feedback

Learn-by-doing format and Alignment with up-to-date
employer needs

Open Enrollment comment:

"FSDs are paid well and I am passionate about tech. This program takes you from A-Z be hired - I know. There are very few programs of this nature and it would have been difficult to learn and master the skills on my own. This program gave me direct access to FSDs w/ teaching acumen and important learning materials without having to apply or compete for a spot."

Student Support comment:

"A common obstacle for adult-education is that university bureaucracy is often in conflict with demanding work schedules. FSD Certificate's Academic Team helps overcome this problem with persistent and innovative solutions. I would go as far as to say that, due to the erratic demands of my workplace, I would not have been able to complete the program without them."

WatSPEED Secure Coding: Learners' Feedback

"I found the content to be highly informative, with many useful practical examples. Dr. Bruni is an excellent instructor—he patiently and kindly answers every question in a timely manner, his feedback motivating and inspiring me to continue learning and exploring the field of software security."

Student survey results show the exercises and activities as the greatest contributor towards understanding the course content.

WatSPEED differentiators for cyber program



Industry-aligned certifications:
ISC2, CompTIA,
ISACA



Faculty paired
with industry
expert



Different
modalities
available



No prerequisites
or work
experience
required for first
course



Contains practical
hands-on learning

Result: *A cybersecurity program that reflects the current needs of industry while still leveraging the knowledge of academia.*

WatSPEED's Career Accelerator Program

- WatSPEED applied for and was granted funding under the Palette Skills program.
- We selected our Secure Coding course as one of two courses to offer as part of this initiative.
- Participants could choose to pair this course with other WatSPEED programming at no additional cost in order to build a robust, personalized learning pathway.



Potential Next Steps for WatSPEED Cybersecurity Program

A

Core Certificate

- Cloud Computing and Security Essentials
- Systems and Platform Security in Practice
- Cryptography in the Real World

Optional add-on:

- Secure Coding

B

Add-on industry certifications

- ISC2 CISSP
- CompTIA Network+
- ISACA
- AWS?

C

Add-on 'human skills'

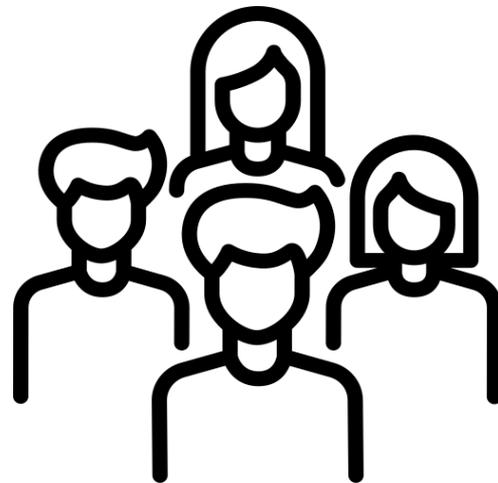
- The Art of Negotiation
- Project Management Applied Tools and Techniques
- Managing Stakeholder Expectations
- Conflict management
- Team Building and Team Dimensions

WatSPEED demographics for cyber program

WatSPEED's cybersecurity, networking, and cloud computing programs are tailored to meet the diverse needs of professionals across various stages of their careers.

The target demographics for these courses include:

- Early-Career IT professionals and aspiring cybersecurity specialists
- Mid-Career IT professionals and engineers
- IT networking professionals



TRANSFORMATION: Full Stack Developer Certificate:

- Additional student supports, Chang's course design (immersive CBT), new technologies (e.g. Online Makerspace learning environment, AI-Human Assistant systems and tools (FSD), refreshing courses for currency quarterly)
- **Result:** Student retention, solid graduation rates, alumni hired as FSDs.

Demographics in 2023-2025 – 30% of students are women

- Majority of students are Gen Z + late-born Millennials with ugrad degree.
- FSD Students: Recent ugrad grads, Career Stop-Outs, Career Repositioners
- STEM FT and PT Professionals' Demographics in Canada: 23% women.
- Hiring Employers include: BMC Software Consulting, Electronic Arts (EA), Real Estate Webmasters Inc., Marketing Appco Group

Projected Job Outcomes for Certificate Grads

In drilling down to Canada's present reality:

- *43,300 Software Developers and Programmers are estimated to be currently employed in Canada.*
- Between 2022 and 2028, the expected number of job openings for Full Stack Developers (not including the many allied roles) is 10,900 (Government of Canada).
- Living in the Greater Toronto Area, the "Silicon Valley of the North", there is a particularly strong demand for technically proficient Full Stack Developers - a job which can have many related titles.

By 2025, software developer jobs (which include full stack and mobile development) will be in the following occupational domains:

1. Professional Services
2. Financial Services
3. Technology
4. Healthcare
5. Insurance
6. Telecommunications
7. Manufacturing
8. Automotive
9. Energy and Utilities
10. Consumer Goods

Evaluation methodology: WatSPEED

Evaluation Techniques:

- Monitor student completion rates against internal benchmarks.
- Monitor NPS score against internal and external benchmarks and over time.

Continuous improvement model

- Debrief with program manager, SME, producer after each offer.
- Identify changes that need to be put in place before the next offering based on learner feedback and outcomes.
- Optional drop-in synchronous sessions are attended by the program manager and producer in order to monitor progress and student experience and provide additional support.

Evaluation methodology: The Chang School

Evaluation Techniques:

- Use nimbly a checklist to quickly assess existing/updated curriculum components.
- Retrieve data + perform SWOT analyses of each cohort's skill-based learning outcomes (e.g. Final Course Projects)
- Evaluation Team: Program Director, Evaluation Lead, Academic Coordinator, Course Leads, Instructors, Curriculum and Program Advisory Council. Student Reps, Alumni.

Certificate Program Delivery Evaluation: Ongoing Activities:

- Iterative actionings when required to update courses for currency of skills and supporting practical knowledge acquisition, based on quarterly employer consultations across industry verticals.
- Mini touchpoints and evaluation briefs throughout; Update direction responsively the learning outcomes, the "use instances" for skills learning, student activities, and course final projects.

Rinse and Repeat.

OPPORTUNITIES: Full Stack Developer Targeted Audiences

2 Evenings & Sat. am Online Synchronous (zoom)

A

Domestic Delivery

26 weeks

Two 39-hour courses per term for total of two terms

Evenings & Sat. am Online Synchronous (zoom)

B

Delivery to International students in their home country GuyanaOne (Cohorted)

26 weeks

Two 39-hour courses per term for total of two terms

Fast-Track Online Synchronous

C

Delivery to Domestic or International

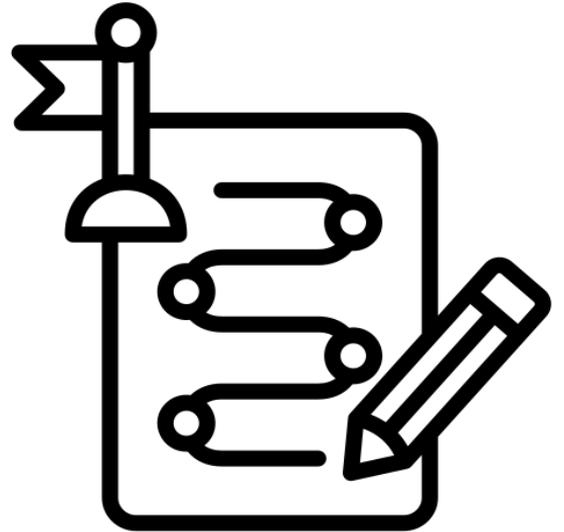
14 weeks

Note: 4 courses total:
Weeks 1-7: 2 courses (4 eves/wk)
Weeks 8-14: 2 courses (4 eves/wk)

3 weekly Drop-in tutor sessions incl. Saturdays

Step-by-Step Roadmaps

To thrive as adults in our constantly changing AI world, the two CE roadmaps shared include step-by-step tried and true “recipes” participants may duplicate and optimize so that their CE students go on to attain, as our success stories will show, gainful-salaried jobs and careers where employers are struggling to find skilled talent due to acute skill gaps.



Impact Gaps Canvas

IMPACT GAPS CANVAS TEMPLATE FOR COURSE DEVELOPMENT

Identifying learning objectives



Defining Goals

Learning outcomes

Clearly outline the intended outcomes of the course.

Format

Clearly outline the intended format of the course including duration, price point, technology used and LMS features.

Financial goals

What are the costs associated with developing this program and how much revenue could you expect to make?

Analyzing target audience



Understanding Learners

Demographics

Explore the age, educational history and prior learning, industries and job titles of the learners.

Preferences

Discover what learning styles and formats the audience prefers.

Needs

Identify the specific needs and challenges the learners face. What specific new technologies will learners need to know to be successful?

Career Trajectories

Identify the possible career progression this course can assist with. What are learners' needs to future-proof their careers?

Mapping competitors



Competitor Analysis

Pinpoint where the gaps exist in current solutions.

Identify Academic Competitors

Does anyone own the space already? What is the format, price point, main learning outcomes of that program? What is missing and who is not being served?

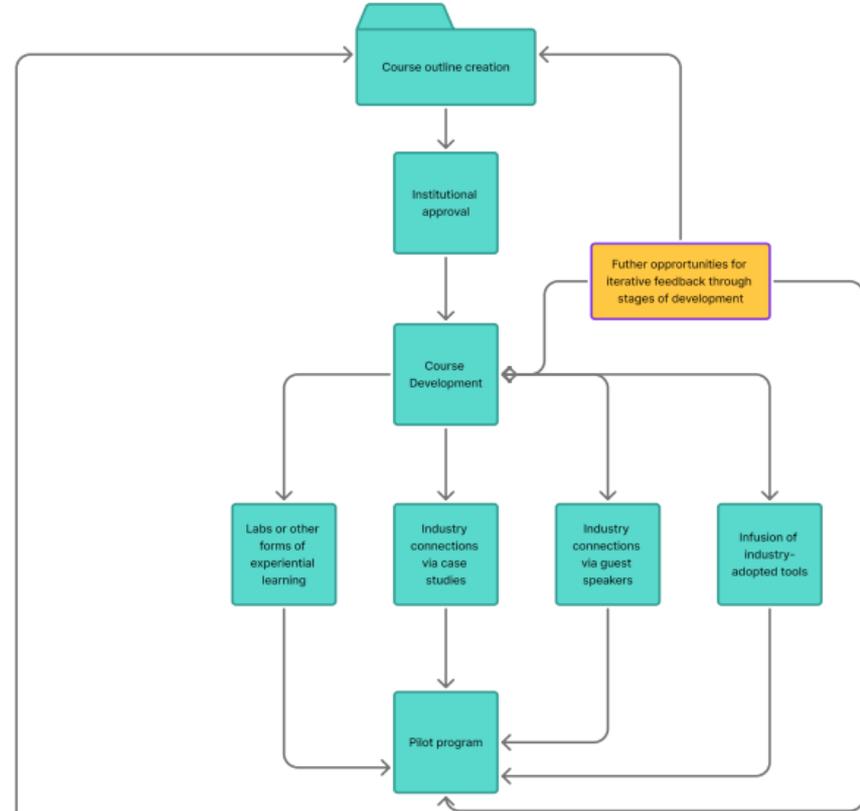
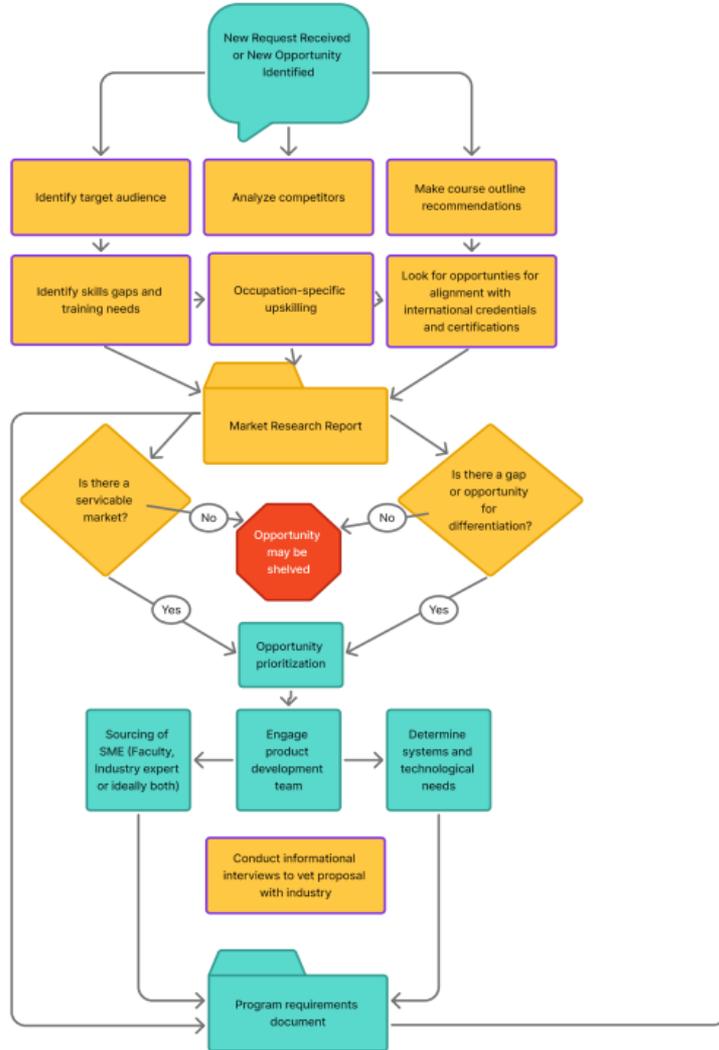
Identify Non-Academic Competitors

Does anyone own the space already? What is the format, price point, main learning outcomes of that program? What is missing and who is not being served?

Competitive Advantage

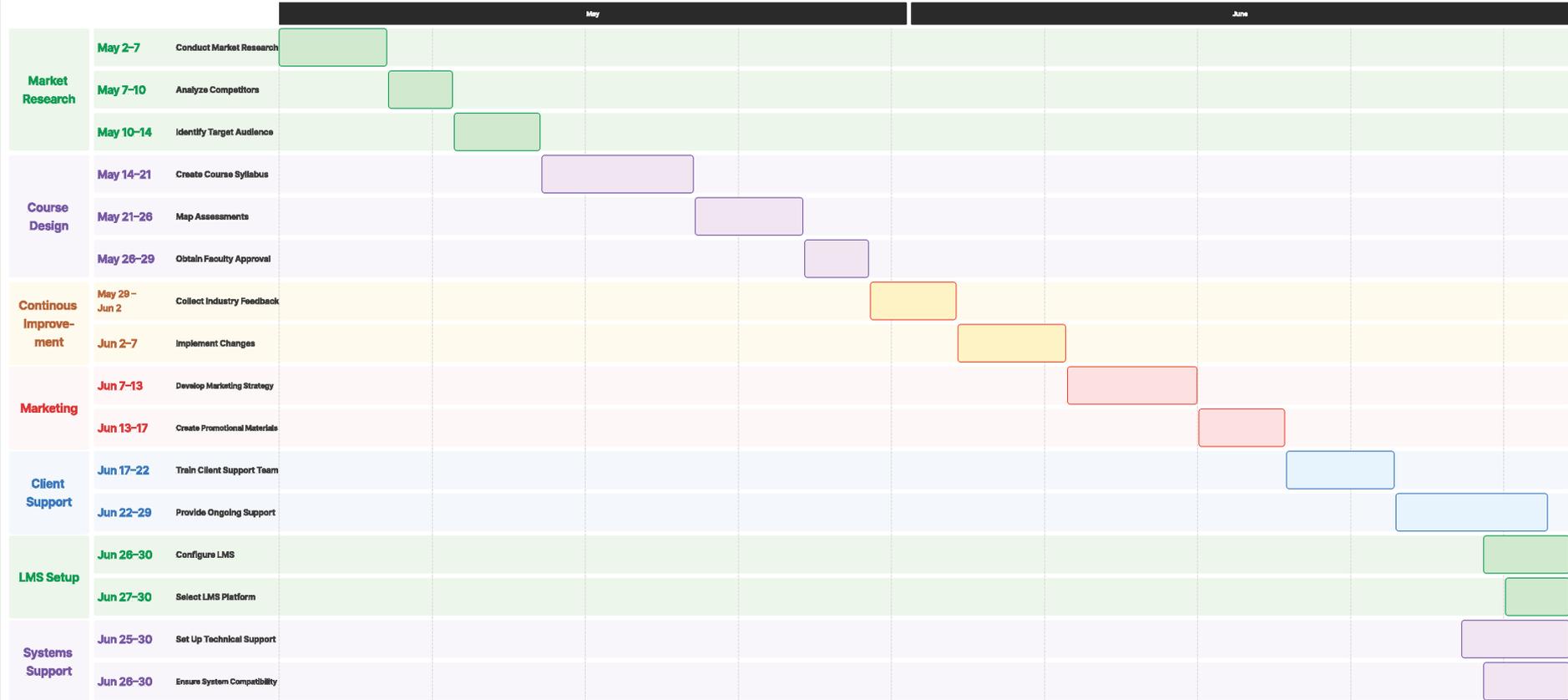
Where can you leverage the strengths of your institution to create a course/program that fills a need in the market?

Flow Chart



Sample Timeline

Online Course Development Roadmap



Summary

- Highlighted successful strategies and best practices from our two continuing education (CE) units
- Demonstrated how programs:
 - Address employer needs
 - Close workforce skill gaps
 - Drive operational success
 - Arm participants against disruption

We've underscored the significance of strategic "actioning" that can generate positive and impactful outcomes for Canadian CE institutions, learners/graduates "without borders", employers, and socially progressive economies.



Thank you for attending

Questions?

Appendix

Recent Demographic Findings: Gen Zers versus Millennials



Differences

Millennials (DOB 1981 and 1996)	Gen Z (DOB 1997-2012)
<ul style="list-style-type: none"> By 2030, Millennials become the largest generational cohort in Canada, comprising approximately 23% of the population. By 2030, a substantial portion of all mid-career and senior roles within the Canadian labor market will be held by Millennials. 	<ul style="list-style-type: none"> By 2030, Generation Z (born between 1997 and 2012) is estimated to comprise approximately 20% of the Canadian population. By 2030, a substantial portion of all entry-level and junior roles within the Canadian labor market will be held by Gen Z.
<p>'Digital Adopters'</p> <ul style="list-style-type: none"> Mostly wireless only (except laptops for schoolwork and work) 	<p>'Digital Natives'</p> <ul style="list-style-type: none"> Have never known life without the internet or cell phones Wireless only (except laptops for schoolwork and work) Heavily dependent on social media, with 99% of Canadian Gen Z adults (ages 18 to 24) using social media, underscoring their heavy engagement.
<ul style="list-style-type: none"> 45.1% are living with at least 1 parent 	<ul style="list-style-type: none"> 55.8% are living with at least 1 parent
<ul style="list-style-type: none"> Highly self-confident; Go at their own pace. 	<ul style="list-style-type: none"> Dutiful and Achievement-Striving.
<p>Millennials (born 1981–1996) total approximately 7.9 million individuals in Canada.</p> <p>Millennials account for more than one-third (35.1%) of the downtown populations of large urban centres in Canada.</p> <ul style="list-style-type: none"> Podcasts, YouTube videos, audio lectures; want coach-on-the-side (Human or GEN AI). 	<p>Generation Z (born 1997–2012) comprise about 6.7 million individuals.</p> <p>downtown GEN Z populations in large urban centres is not known.</p> <ul style="list-style-type: none"> Binge-learning, Just-in-time'; want Chat GPT or Microsoft Pilot as coach-on-the-side
<p>73% have post-secondary credentials (college, university, private)</p>	<p>Question post-secondary credentials' value; open to certificates, 1 off</p>

Differences

Late-Born Millennials

Gen Z

Interests Applicable to Next Well-Paid Job [6]:

- Leadership Roles
- Project Management
- Digital Communication, Graphics and Media
- Design Thinking
- Web Design
- Interior Design
- Allied Health
- Sustainability of Earth

Interests Applicable to a Future Well-Paid Job:

- Programmer/Developer/Coder
- Nursing and Medical Technical roles
- Software Development/IT Systems Analysis
- Cybersecurity
- Human-AI-Machine Specialist
- **Personal Interests:**
- Multi-Disciplinary Global Focus
- New Technologies (incl. those to save the Earth)
- Deriving Insights and Formulating Solutions for the world

Learning Style]:

- Self-paced, with access to an expert, responsible coach on the side in real time (Human or AI)

Learning Style:

- Educator as coach at elbow (e.g.. virtual tutor - human or AI)
- Flipped Classroom (Learn-by-doing with expert in zoom class)
- Multimodal
 - Reading online
 - Listening to Podcasts, YouTube/Audio/“How To” apps
 - Attending 2-3 drop-in human tutor sessions weekly
 - Pose questions -> Discussion Board (Want Texting)

- 33.2% are employed in Tech-related leadership roles such as Team Lead, Department Lead, and Manager roles.

- % of Gen Z employed in Tech-related roles not known, but in 2024, 1.7 M Gen Zers were employed, including Tech roles.
- Executives and Managers report Gen Z workers -> poor project management + soft skills, particularly Emotional Intelligence (EQ), Integrated Teamwork, and Communication.

All Delivery Modes: Learners' Feedback

Learn-by-doing format and Alignment with up-to-date employers' needs:

88% of student rated these excellent or good

Open Enrollment comment:

"There are very few programs of this nature and it would have been difficult to cover these topics on my own. This program gave me access to important material without having to compete for a spot."

Student Support comment:

"A common obstacle for adult-education is that university-bureaucracy is often in conflict with demanding-work schedules.

Director helps overcome this problem with her persistent and innovative solutions.

I would go as far as to say that, due to the erratic demands of my workplace, I would not have been able to complete the program without her."

End

