

Creating ePathways for Trades and Technical Programs

Some Ideas for Enhancements



Acknowledgement and attribution with thanks...

- Slides in this presentation include images and slides selected from...
 - Digitizing the Toolbox: Taking the trades online (Melissa Robertson and Stephanie Boychuck – Vancouver Island University, 2015
http://www.slideshare.net/stephanie_boychuk/etug-digitizing-the-toolbox-taking-the-trades-onlinefinal
 - Automotive Service Technician (AST) Program: Canadore College 2016
 - ePPrentice: (BCcampus, 2008), Vancouver Community College (2008)
 - Professional Chef Gap Training Program: BCcampus, 2014; GO2HR.ca, 2014
 - FAST BC: Immigrant Employment Council of BC, 2017; BCIT, 2017
 - Construction Ready Program: Alan Roberts, InSite Systems, <http://insitesystems.com>
 - Apprentice to CEO Program: BCIT, 2017

Outline

- Our backgrounds
- Trades training models
- Taking theory portions of trades online
- Some program examples – in Ontario and the West
- Enhanced programming ideas
- Conclusions – where to next?
- Questions?



We are...

- Tracie Marsh-Fior
- OntarioLearn
- David Porter
- eCampusOntario



Trades training models

Foundations Training

- Theory presented in class
- Use of tools discussed
- Practice in the shop



Apprenticeship

- 90% on the job
- 10% in class
 - Theory
 - Tool use



Taking theory portions online - benefits

BLOCK G Lesson 3 - Cook Shellfish

Overview

Cooking Principles
Preparation for Cooking

Video Demonstrations

- Deep Poaching
- Steaming Method
- Stir-fry

Lesson Overview

Dry-heat cooking methods are often used to prepare shellfish dishes, however, like fish, their lean nature makes them somewhat vulnerable to high heat.

The natural hard shell provides an ideal cooking package for the delicate shellfish, hence they are often cooked whole and then shelled.

Cooking methods such as deep-frying, sautéing, grilling, poaching and steaming are commonly used when cooking shellfish.

Lesson Competencies

Upon completion of this lesson you will be able to:

- describe the basic principles of shellfish cooking
- identify the basic cooking methods for shellfish
- identify suitable types of shellfish for various cooking methods
- prepare shellfish for cooking
- identify correct doneness of cooked shellfish
- bake and roast shellfish
- saute and stir-fry shellfish
- broil and grill shellfish
- deep-fry and pan-fry shellfish
- steam and poach shellfish



- Work and learn simultaneously
 - reduce/eliminate time on employment insurance (EI)
- Stay in home community
- Stay with employer
- Build tech skills that will be important to work futures
 - Professional Development, Health and Safety training increasingly online

Taking theory online – options for activity



- Class materials
- Self-study materials
- Safety resources
- Video tutorials
- Quizzes
- Homework and practice exercises
- Discussions
- Announcements, news

Some models of practice we'll describe

- Canadore College – Automotive Service Technician (AST)
- Vancouver Island University – AST, Welding, and others
- GO2HR – Gap training for professional chef programs
- Facilitating Access to Skilled Trades – FAST BC
- Construction Ready – badging and portfolio for trades readiness

Canadore College



Canadore – Automotive Service Technician



- Provincial funding received
- Level 1 and Level 2 complete; Level 3 in progress; Exam prep complete
- Developed as cohort model
- Learning activities collaboratively designed
- Student review during development
- Learning Outcomes requiring hands-on activities - shop session
- Beyond textbooks – use of videos, industry websites, trade documents
- High degree of instructor engagement
- Workplace discussions, worksheets, student produced videos/photos etc.

Canadore - AST

Transmission Noise

- Sometimes noise occurs only when engine is idling in neutral with clutch engaged.
- Front transmission bearing on input shaft and mainshaft pilot are only bearings rotating
- One of these bearings is probably the noise source .
- Most commonly front trans. bearing.

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Pedal Problems and Slipping Clutch

- Diagnosis on basis of pedal feel.
 - Pulsating pedal: something internal in clutch.
 - Pedal is hard to depress: binding linkage or cable.
 - Sticky release bearing to transmission bearing retainer.
- Slipping clutch.
 - Tested by putting it in the highest gear range.
- Several possible reasons clutch slip.
 - Partial engagement.
 - Partial disengagement.
 - Excessively worn materials.

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Dragging Clutch

- Clutch drags: does not release properly.
 - Disc stays attached to the flywheel or pressure plate.
- Test for a dragging clutch.
 - Start engine and run it to normal operating temperature.
 - Engine at idle and transmission in neutral: depress clutch to floor.
 - Wait ten seconds.
 - Shift transmission into reverse.
 - Is there excessive grinding in transmission?

6

Oily Clutch Facings

- Oil leaking onto clutch disc:
 - Causes clutch slipping.
 - Disc may overheat and burn and glaze its friction surface which causes chatter.



8

Oily Clutch Facings

- During repair:
 - Disc and pressure plate are replaced.
 - Rest of the parts are thoroughly cleaned and possibly machining done to flywheel.
- Determine and repair oil leak source
 - Oil on front side of flywheel: crankshaft rear seal or external engine leak
 - Oil on rear side of flywheel: bad front transmission seal or overfilled transmission



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Clutch Fluid

- Becoming more common to have an internal clutch slave cylinder leak and get fluid on clutch.



Canadore – AST

Supporting Mentorship - ShopTalks

- Can include “messy questions”
- Students report on key points from on-site discussion

ShopTalk Activity 2

Have your shop mates look over the two car stats below. Compare these two cars based on work, energy, power, and torque –

Honda Fit 2009:
Horsepower 117 @ 6600 rpm
Torque (lb-ft) 106 @ 4800 rpm

VW golf 2003
Horsepower 115 @ 5,200 rpm
Torque 122 lb-ft. @ 2,600 rpm

Note: Remember to change torque to metric (you can use this website: <http://metricconversion.biz/torque-conversion.html> however, you should know how to do it manually, see this website for procedure - <http://www.thetipsbank.com/convert.htm#Torque>)

Submit a summary of your shop discussion in the **M1_L1 ShopTalk 2 - Assignment Dropbox**, including any further analysis you did on your own, including websites you visited. DO NOT copy and paste from a website – you are to SUMMARIZE the conversations you’ve had with your Shop mates and provide details from your own research.

Learn more by going to: <https://youtu.be/N-i-SdTreRA>

Critical Success Factors

- Ministry/OCOT Support
- *Right* instructor, first time around
- Support (training prior to starting, technical assistance during course)
- Communication with employers
- Communicating with apprentices – not a short-cut to apprenticeship
- Others?

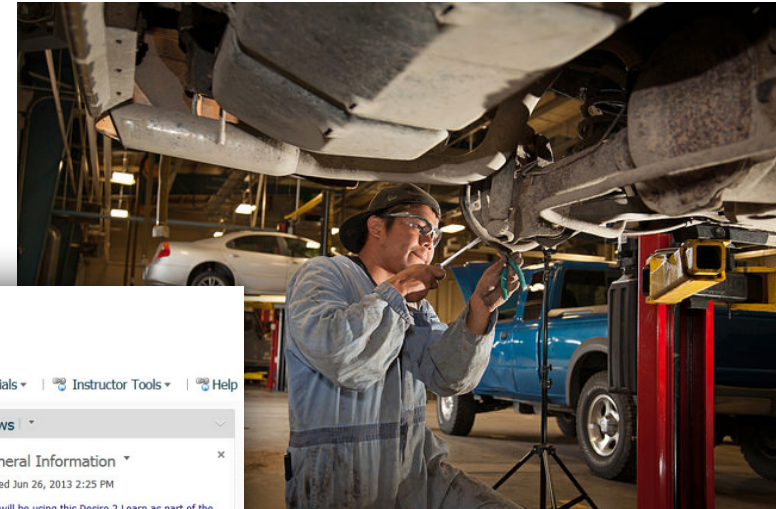
Vancouver Island University

- Automotive Service Technician
- Welder



Automotive Service Technician

- Homework
- Quizzes
- Form Submission
- All class material



VANCOUVER ISLAND UNIVERSITY **Automotive Foundations (2014/2015)**

Course Home | Assessment & Evaluation | Communication | Course Materials | Instructor Tools | Help

Updates ▾
15 New Emails

Content Browser ▾

Bookmarks Recently Visited

- Course Information >
- Shop Safety >
- Batteries and Fasteners >
- Maintenance and inspection >
- Chapter 4 Automotive systems >
- Chptr. 43, 47...Brakes, Tires, and Wheels >
- Chptr. 48 Drum Brakes and Wheel Bearings >

News ▾

General Information ×

Posted Jun 26, 2013 2:25 PM

You will be using this Desire 2 Learn as part of the Automotive Service Technician Entry Level Program at Vancouver Island University. Although D2L is primarily designed for on-line courses, we will be using it to complement the college program that is taught daily, in the classroom and the auto shop.

Here you will find your homework assignments and other assignments that you will be completing outside of the classroom and shop. You will find dates of important events and deadlines. Grades will be posted here for you to view confidentially. Learning resources will be available to you on D2L.

D2L is presented in a weekly format, so you can quickly see what is expected of you each week of the program. It is interactive and you will be encouraged to participate in discussion groups and forums.

I can be reached at 740 6148. If for some reason you are unable to make it to class, do not leave a voice message or an email message, contact myself or Kevin by phone before 8:00am on the morning of the absence.

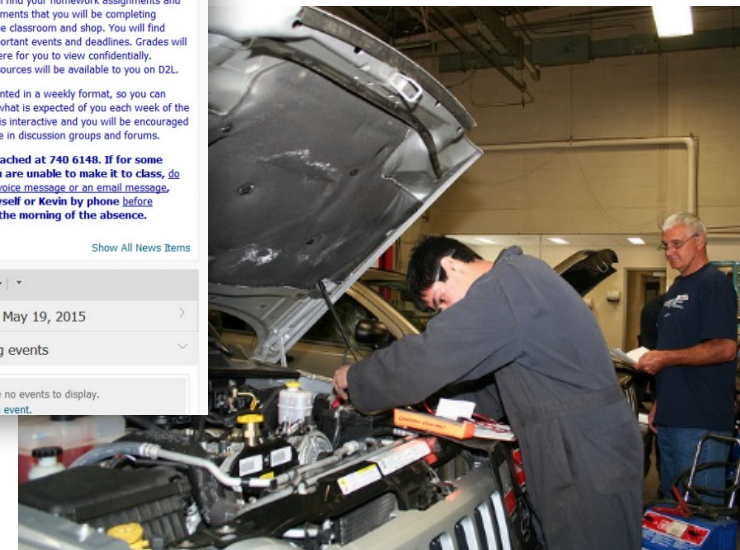
Show All News Items

Calendar ▾

Tuesday, May 19, 2015 >

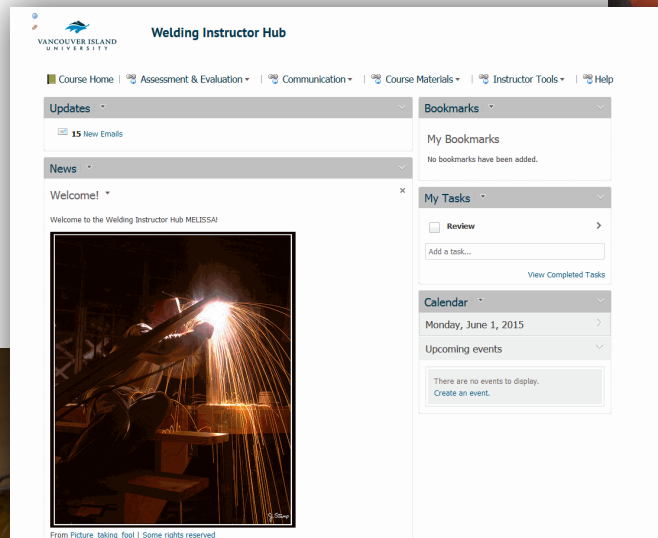
Upcoming events ▾

There are no events to display.
[Create an event.](#)

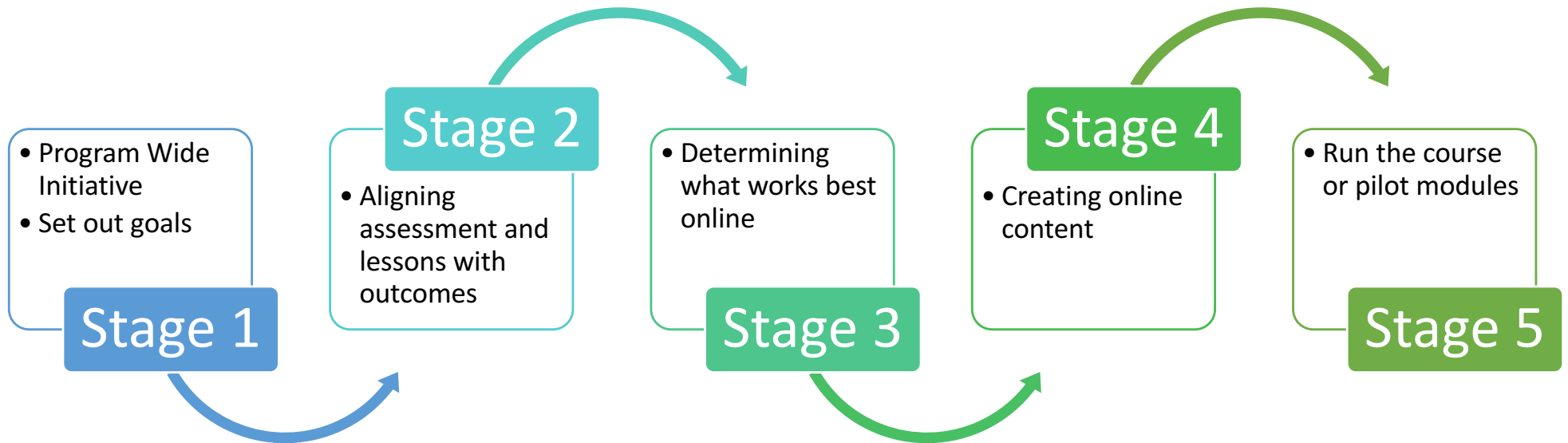


Welding Foundations

- Introduction
- Safety
- Videos
- Quizzes
- Discussions



VIU - Designing an online theory stream



Enhanced online models

- ePPrentice
- Gap Training for Red Seal Exam Success
- FAST BC – transitioning immigrants and closing knowledge gaps
- Construction Ready – Understanding the trade pre-entry

ePPrentice

- Flexible Learning for Trades branding:

ePPRENTICE

REAL TRADE. REAL TIME.



- Marketed provincially with development and delivery institutions
- E-PPRENTICE information web site for learners and employers
- Support from automotive industry associations



AUTOMOTIVE SERVICE TECHNICIAN

APPRENTICESHIP.

TRANSPORTATION TRADES
VCC continues to be a leader in apprenticeship training in the province, most recently offering new flexible on-line training options and evening and weekend classes to automotive service technician apprentices.

Vancouver Community College

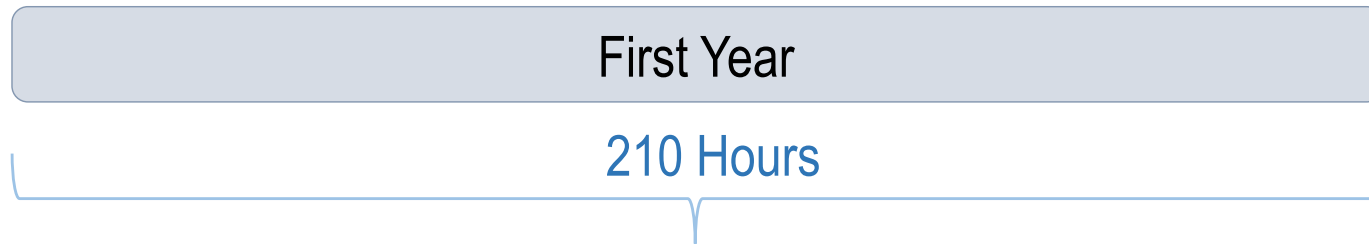
ePPRENTICE REAL TRADE. REAL TIME.

ePPrentice

- Reduce:
 - barriers to obtain in-school portion of training
 - financial hardships for apprentices to attend training
 - hardship to businesses by reducing time away from work for training
- Increase:
 - percentage of apprentices who complete
 - satisfaction rates of trainees
 - recruitment by offering alternative modes of delivery
- Enhance:
 - information and communication technology skills
- Develop:
 - accessible, shareable flexible learning materials
 - open licensed, reusable resources



Traditional Face-to-Face Model



Traditional Face-to-Face

First Year

210 Hours

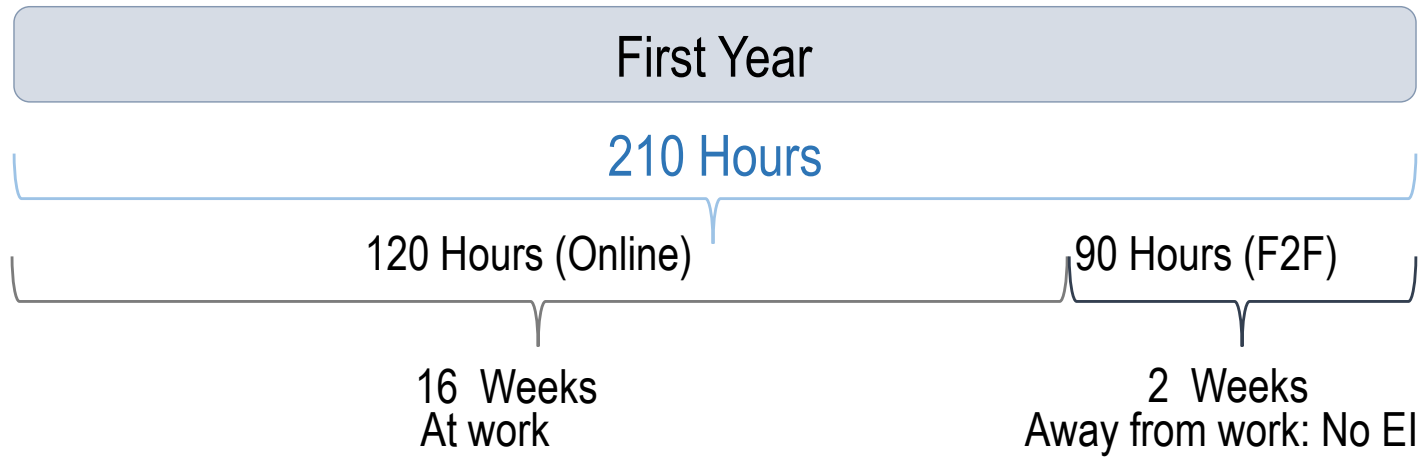
7 Weeks 30 hours/week

Away from work: Apprentices get EI

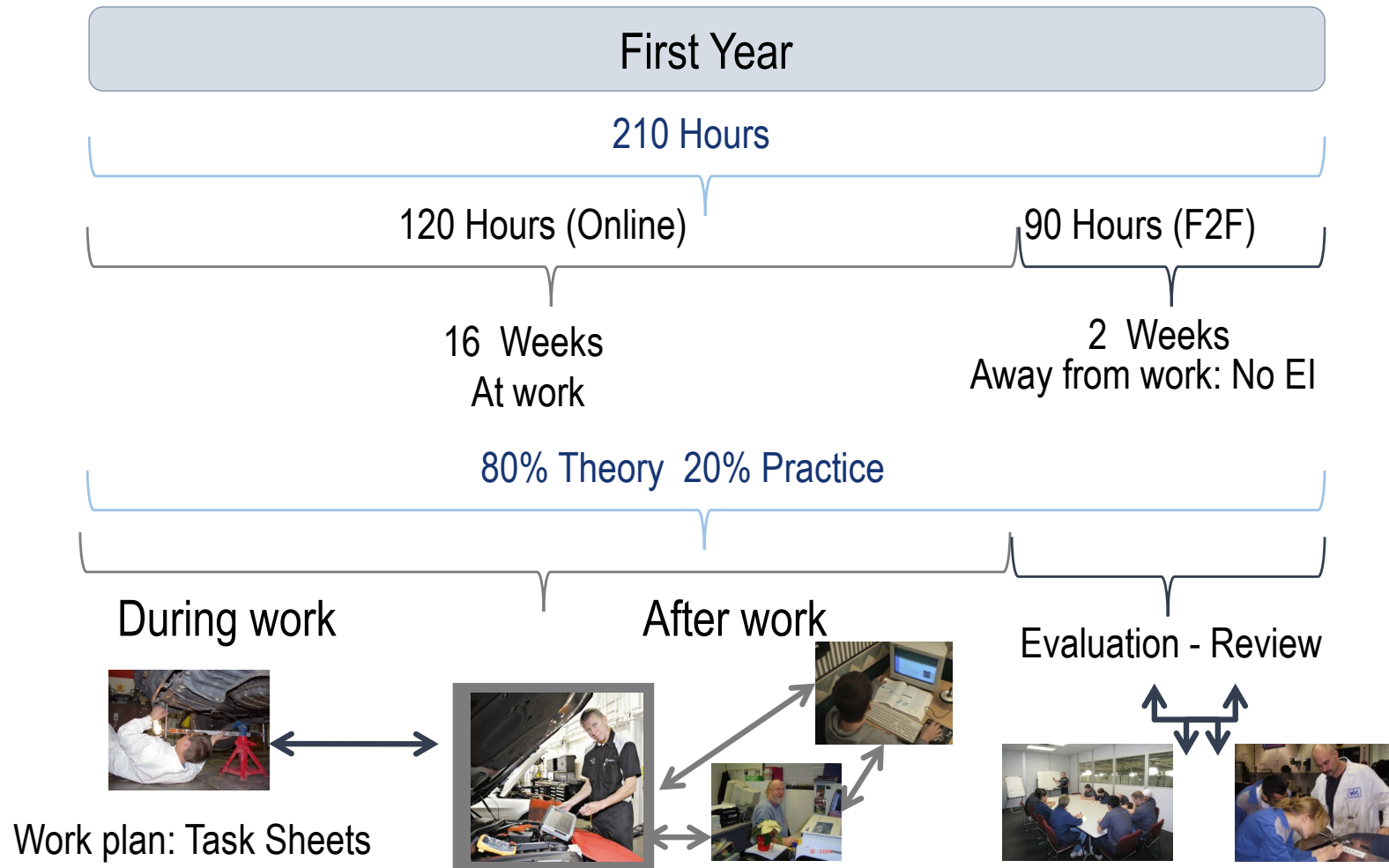
80% Theory 20% Practice



E-PPRENTICE Model



E-PPRENTICE Model



Gap Training for Red Seal Exam Success

The screenshot shows the go2HR website interface. At the top, there are navigation links: POST A JOB, EXPLORE go2HR, and SUBSCRIBE. Below these is a search bar with the text 'Keyword/Phrase' and a SEARCH button. A sidebar on the left lists various training and education options under the heading 'TRAINING & EDUCATION', including Apprenticeships, Serving It Right, Special Event Server, FOODSAFE by Distance Education, WorldHost Training Services, emerit, Tourism Training Map, High School Programs, and Degree, Diploma, Certificate Programs. The main content area features an article titled 'PROFESSIONAL COOK 3 - OPPORTUNITIES AROUND FOR RED SEAL CHEFS'. The article text describes a Friday night at Joe Fortes Seafood & Chop House, where a 29-year-old chef, Joe Fortes, is working. It mentions that behind the scenes, a 70-staff kitchen runs around the clock, providing not only great meals but also plenty of opportunities for aspiring chefs. The article also mentions Tommy Shorthouse, a newly certified Professional Cook 3 (PC3 or Red Seal) cook, who is a four-year veteran at Joe Fortes. In May 2014, after completing his PC3 apprenticeship training at Vancouver Community College, Shorthouse landed a promotion to the role of Chef de Partie. The article further describes the role of a Sous Chef, which is a key role in a large kitchen like Joe Fortes'. Besides supervising line cooks and passing instructions on from the Sous Chef team, Shorthouse also tracks stock and orders supplies. The article concludes by stating that it's a big change from his role as a Professional Cook 2 (PC2), and that with the Red Seal, one can learn more advanced cooking techniques and become more of a leader in the kitchen.

BCcampus Collaborative Services

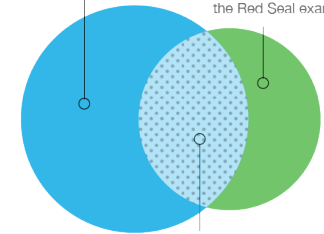
Professional Cook Gap Training Pilot Program

SNAPSHOT APRIL 1, 2013 TO MARCH 31, 2014

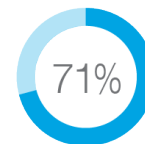
A 6-week pilot project to test online, competency-based education and training that puts the student first.



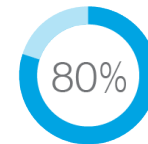
People who successfully challenged the Red Seal exam. People who, at first, unsuccessfully challenged the Red Seal exam.



After completing the pilot, over half the group who were initially unsuccessful passed the exam.

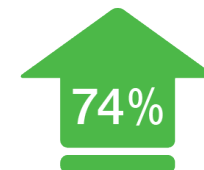


71% of participants passed their practical assessments.



80% of students who spent the most time in the program passed their written exam.

Those who were **successful** on the written exam spent on average **2x** as much time using the **training modules** than those who were unsuccessful.



Increased success rate in participants who had previously failed the written exam.

Once built, a fully realized **online professional cook gap training program** could cost about **50% less than** delivering one level of in-person apprenticeship training.

\$100 Per Student

Scaling and expanding the online pilot program can be done cost effectively for about \$100 per student for phase 2.

Program Costs



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WORKING IN TRADES IN BRITISH COLUMBIA, CANADA

Immigrating to Canada? Before you arrive, get your skills and knowledge assessed, find out what additional training you may need, and get trained.

» WE CAN HELP



(FAST BC) Facilitating Access to Skilled Trades in BC

helps qualified, internationally trained tradespersons
and BC employers succeed.

FAST BC

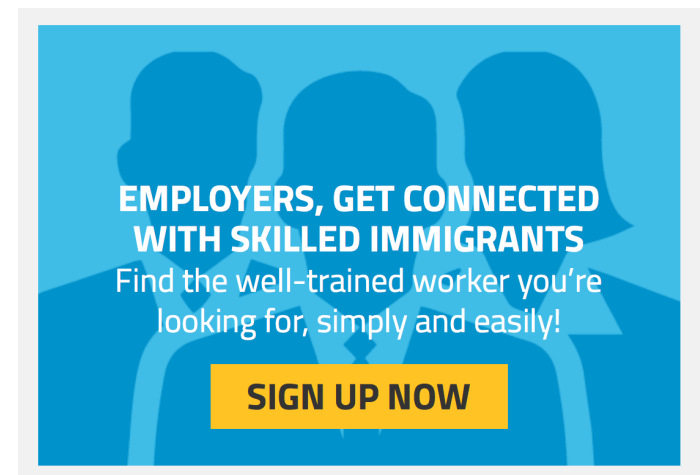


Learner benefits

- helps evaluate clients' skills and knowledge before arrival in Canada,
- provides access to online gap training to assist in upgrading needed knowledge and skills, and;
- helps them to understand the expectations of the Canadian workplace.

Employer benefits

- connecting with skilled talent that have an international perspective
- gaining a competitive edge by creating a diverse, inclusive workplace



FAST BC

CANADIAN WORKPLACE CULTURE

When you work in BC or elsewhere in Canada, workplace expectations may be different from those in your previous jobs. Even before you arrive in Canada, FAST BC will provide you with online information and training on workplace practices expected by Canadian employers.

REGISTER NOW TO LEARN ABOUT CANADIAN WORKPLACE CULTURE



SKILLS AND KNOWLEDGE ASSESSMENT



Find out if the skills and knowledge gained in your home country align with the requirements in BC or elsewhere in Canada. Learn if you are ready for a job in a Canadian workplace. Experts in your field will assess your skills and knowledge so that you can fill any gaps with appropriate online training before you come to Canada.

REGISTER NOW TO FIND OUT IF YOUR SKILLS AND KNOWLEDGE ARE SUITABLE FOR EMPLOYMENT OR NEED UPGRADING!

Services provided

- evaluation of academic credentials (if required)
- familiarization with Canadian essential skills, workplace culture and communication
- a comprehensive assessment and report of knowledge, skills, and abilities (competence) for their trade and how they compare to BC or Canadian standards

Where to next?

- Add digital strategies and pathways to trades programs
- Create all instructional materials digitally from the outset
- Use technology platforms as a fundamental component of instruction
- License all materials using Creative Commons licenses for reuse, revision, remixing, redistribution, and retention by instructors

Michael Geist

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Ontario Government Welcome by Alan Levine (CC0 1.0) <https://flic.kr/p/UfcH9Y>

News

Ontario Government Placing Big Bet on Open Textbooks

May 1, 2017

Working in the Food Service Industry

BC Cook Articulation Committee

Working in the Food Service Industry is one of a series of Culinary Arts books developed to support the training of students and apprentices in British Columbia's food service and hospitality industry. Although created with the Professional Cook, Baker, and Meat Cutter programs in mind, these have been designed as a modular series, and therefore can be used to support a wide variety of programs that offer training in food service skills. Working in the Food Service Industry covers B.C. legislation and regulations for employment standards, as well as an overview of the "soft skills" of communication, conflict resolution, teamwork, and career planning.

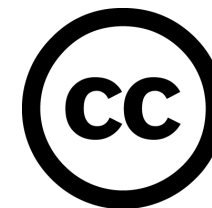
 [READ](#)



Download in the following formats:



Creating common free resources is key



Trades Access Common Core

Line A: Safe Work Practices
Competency A-1: Control Workplace Hazards



B.C. Open Textbook Project
open.bccampus.ca

BCCampus = OpenEd

Line A – Safe Work Practices

- A-1 Control Workplace Hazards
- A-2 Describe WorkSafeBC Regulations
- A-3 Handle Hazardous Materials Safely
- A-4 Describe Personal Safety Practices
- A-5 Describe Fire Safety

Trades Access Common Core

Line C: Tools and Equipment
Competency C-1: Describe Common Hand Tools and Their Uses



B.C. Open Textbook Project
open.bccampus.ca

BCCampus = OpenEd

Line C – Tools and Equipment

- C-1 Describe Common Hand Tools and Their Uses
- C-2 Describe Common Power Tools and Their Uses
- C-3 Describe Rigging and Hoisting Equipment
- C-4 Describe Ladders and Platforms

Trades Access Common Core

Line B: Employability Skills
Competency B-1: Apply Study and Learning Skills



B.C. Open Textbook Project
open.bccampus.ca

BCCampus = OpenEd

Line B – Employability Skills

- B-1 Apply Study and Learning Skills
- B-2 Describe Expectations and Responsibilities of Employers and Employees
- B-3 Use Interpersonal Communication Skills
- B-4 Describe the Apprenticeship System

Trades Access Common Core

Line D: Organizational Skills
Competency D-4: Use Codes, Regulations and Standards



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BCCampus = OpenEd


Line D – Organizational Skills


- D-1 Solve Trades Mathematical Problems
- D-2 Apply Science Concepts to Trades Applications
- D-3 Read Drawings and Specifications
- D-4 Use Codes, Regulations, and Standards
- D-5 Use Manufacturer and Supplier Documentation
- D-6 Plan Projects


Construction ready


FutureBuilderHomeCFBC


**construction
READY**



1. Discover Ready
5 of 6 items complete



2. Exploration Ready
3 of 6 items complete



3. Work Ready
3 of 6 items complete


4. Apprentice Ready
2 of 6 items complete


Badges


Contacts


Logbook


Messages

We'd be pleased to discuss futures...

Apprentice to CEO

COAST CAPITAL SAVINGS
ENTREPRENEURIAL SKILLS FOR THE TRADES AND TECHNOLOGY



- Real opportunities exist to enhance learner experiences through digitally enabled trades pathways

