

Fanshawe College

FIRST: Fanshawe Innovation, Research, Scholarship, Teaching

Documentation (Approvals etc...)

Plumbing Techniques

2016

FANS-01328-Plumbing Techniques CVS Application

Fanshawe College

Follow this and additional works at: https://first.fanshawec.ca/cae_buildingtech_plumbingtechniques_documentation



APPLICATION FORM FOR PROGRAM PROPOSAL

A. Funding Request: This proposal will be sent to the MTCU for Approval for Funding. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No								
B. College Name: Fanshawe College								
C. College Contact(s): Person responsible for this proposal. <table border="0"> <tr> <td>Name: Tracy Gedies</td> <td>Name: Fred Varkaris</td> </tr> <tr> <td>Title: Director, Centre for Academic Excellence</td> <td>Title: Chair, Donald J. Smith School of Building Technology</td> </tr> <tr> <td>Telephone: 519-452-4430 x4733</td> <td>Telephone: 519-452-4430 x4005</td> </tr> <tr> <td>E-mail: TGedies@fanshawec.ca</td> <td>E-mail: FVarkaris@fanshawec.ca</td> </tr> </table>	Name: Tracy Gedies	Name: Fred Varkaris	Title: Director, Centre for Academic Excellence	Title: Chair, Donald J. Smith School of Building Technology	Telephone: 519-452-4430 x4733	Telephone: 519-452-4430 x4005	E-mail: TGedies@fanshawec.ca	E-mail: FVarkaris@fanshawec.ca
Name: Tracy Gedies	Name: Fred Varkaris							
Title: Director, Centre for Academic Excellence	Title: Chair, Donald J. Smith School of Building Technology							
Telephone: 519-452-4430 x4733	Telephone: 519-452-4430 x4005							
E-mail: TGedies@fanshawec.ca	E-mail: FVarkaris@fanshawec.ca							
D. Proposed Program Title: Plumbing Techniques								
E. Proposed Credential: Please select one (1). <input type="checkbox"/> Local Board Approved Certificate <input checked="" type="checkbox"/> Ontario College Certificate <input type="checkbox"/> Ontario College Diploma <input type="checkbox"/> Ontario College Advanced Diploma <input type="checkbox"/> Ontario College Graduate Certificate								
F. Program Maps (Appendix A): Please complete and attach the two (2) Program Maps. Form 1- Vocational Program Learning Outcomes Form 2- Essential Employability Skills Outcomes								
G. Program Description (Appendix B): Please complete and attach the Program Description Form.								
H. Program Curriculum (Appendix C): Please complete and attach the Program Curriculum Form.								
I. Regulatory Status Form (Appendix D): Please complete and attach the Regulatory Status Form.								
J. Date of Submission to CVS: November 27, 2015								
FOR CVS USE ONLY								
K. Date of CVS Response: December 2, 2015								
L. CVS Validation Decision: <input checked="" type="checkbox"/> Proposal Validated. APS Number: FANS 01328 Reason: Well-developed program; aligned to the MTCU code for this field and credential. <input type="checkbox"/> Proposal not Validated. Reason:								
M. CVS Signature: Karen Belfer								

Send the completed form and required appendices to: belfer@ocqas.org. For detailed information on how to complete the Application Form for Program Proposal, please refer to the *Instructions for Submission of Program Proposal* document at www.ocqas.org.



INTRODUCTION

The process established by the Credentials Validation Service (CVS) is designed to be a streamlined, seamless, effective, and efficient process that will allow colleges to submit and receive validation requests and decisions in a timely manner. The document with the instructions to complete this form (*CVS Instructions for Submission of Program Proposal*) is available to all colleges on the OCQAS website (www.ocqas.org).



F. PROGRAM MAPS (APPENDIX A): Form 1 - Vocational Program Learning Outcomes

<u>Provincial Vocational Program Outcomes</u> <input type="checkbox"/> Provincial Program Standard, <i>or</i> <input checked="" type="checkbox"/> Provincial Program Description <i>MTCU code: 41010</i>	Proposed Program Vocational Learning Outcomes	Course Title / Course Code
1. Work according to contractual obligations; the project manual; and applicable laws, standards, bylaws, and codes.	1. Work according to contractual obligations; the project manual; applicable laws, standards, bylaws, and codes.	PLUM-1XXX INTRO TO PLUMBING THEORY 1 DRAF-1XXX TRADE DOCUMENTATION 1 PLUM-1XX2 TOOLS AND PIPING METHODS 1 PLUM-2XX4 TOOLS AND PIPING METHODS 2 SFTY-1XXX CONSTRUCTION HEALTH AND SAFETY PLUM-2XX3 PLUMBING THEORY 2 DRAF-2XXX TRADE DOCUMENTATION 2
2. Perform residential plumbing projects effectively and accurately by interpreting and producing basic data in graphic, oral and written formats.	2. Execute plumbing projects effectively and accurately by interpreting graphics, drawings and written documentation.	PLUM-1XXX INTRO TO PLUMBING THEORY 1 DRAF-1XXX TRADE DOCUMENTATION 1 PLUM-1XX2 TOOLS AND PIPING METHODS 1 PLUM-2XX4 TOOLS AND PIPING METHODS 2 MATH-1XXX TRADE CALCULATIONS 1 SFTY-1XXX CONSTRUCTION HEALTH AND SAFETY PLUM-2XX3 PLUMBING THEORY 2 DRAF-2XXX TRADE DOCUMENTATION 2 MATH-2XXX TRADE CALCULATIONS 2 COMP-2XXX COMPUTER APPLICATIONS



<p>3. Work responsibly and effectively with others and in accordance with appropriate practices, procedures and in compliance with health and safety legislation.</p>	<p>3. Work responsibly and effectively with others and in accordance with appropriate practices, procedures and in compliance with health and safety legislation.</p>	<p>PLUM-1XXX INTRO TO PLUMBING THEORY 1 DRAF-1XXX TRADE DOCUMENTATION 1 PLUM-1XX2 TOOLS AND PIPING METHODS 1 PLUM-2XX4 TOOLS AND PIPING METHODS 2 MATH-1XXX TRADE CALCULATIONS 1 WELD-1XXX INTRO TO WELDING SFTY-1XXX CONSTRUCTION HEALTH AND SAFETY DRAF-2XXX TRADE DOCUMENTATION 2 MATH-2XXX TRADE CALCULATIONS 2</p>
<p>4. Use tools and equipment for basic installation manufacture, and repair of components to required specifications.</p>	<p>4. Use tools and equipment for basic installation manufacture, and repair of components to required specifications.</p>	<p>PLUM-1XXX INTRO TO PLUMBING THEORY 1 PLUM-1XX2 TOOLS AND PIPING METHODS 1 PLUM-2XX4 TOOLS AND PIPING METHODS 2 MATH-1XXX TRADE CALCULATIONS 1 SFTY-1XXX CONSTRUCTION HEALTH AND SAFETY WELD-1XXX INTRO TO WELDING PLUM-2XX3 PLUMBING THEORY 2 MATH-2XXX TRADE CALCULATIONS 2 COMP-2XXX COMPUTER APPLICATIONS</p>
<p>5. Contribute to the organizing and planning of residential plumbing installation projects.</p>	<p>5. Contribute to the organizing and planning of plumbing installation projects.</p>	<p>PLUM-1XXX INTRO TO PLUMBING THEORY 1 DRAF-1XXX TRADE DOCUMENTATION 1 PLUM-1XX2 TOOLS AND PIPING METHODS 1 PLUM-2XX4 TOOLS AND PIPING METHODS 2</p>



		<p>MATH-1XXX TRADE CALCULATIONS 1 SFTY-1XXX CONSTRUCTION HEALTH AND SAFETY PLUM-2XX3 PLUMBING THEORY 2 DRAF-2XXX TRADE DOCUMENTATION 2 MATH-2XXX TRADE CALCULATIONS 2 COMP-2XXX COMPUTER APPLICATIONS</p>
<p>6. Solve routine problems related to work environments using a variety of systemic approaches.</p>	<p>6. Solve routine plumbing issues using a variety of problem solving approaches.</p>	<p>PLUM-1XXX INTRO TO PLUMBING THEORY 1 DRAF-1XXX TRADE DOCUMENTATION 1 PLUM-1XX2 TOOLS AND PIPING METHODS 1 PLUM-2XX4 TOOLS AND PIPING METHODS 2 SFTY-1XXX CONSTRUCTION HEALTH AND SAFETY PLUM-2XX3 PLUMBING THEORY 2 DRAF-2XXX TRADE DOCUMENTATION 2 COMM-2XXX COMMUNICATIONS COMP-2XXX COMPUTER APPLICATIONS</p>

Add additional rows as required to complete the mapping exercise.



F. PROGRAM MAPS (APPENDIX A): Form 2 – Essential Employability Skills Outcomes

Skill Categories	Defining Skills Skill areas to be demonstrated by the graduates	Essential Employability Skills Outcomes The graduate has reliably demonstrated the ability to:	Course Title / Course Codes <i>(As indicated in Appendix A)</i>
Communication	<ul style="list-style-type: none"> • Reading • Writing • Speaking • Listening • Presenting • Visual Literacy 	<ul style="list-style-type: none"> • communicate clearly, concisely, and correctly in the written, spoken, and visual form that fulfils the purpose and meets the needs of the audience 	PLUM-1XXX INTRO TO PLUMBING THEORY 1 PLUM-1XX2 TOOLS AND PIPING METHODS 1 PLUM-2XX3 PLUMBING THEORY 2 PLUM-2XX4 TOOLS AND PIPING METHODS 2 DRAF-2XXX TRADE DOCUMENTATION 2 COMM-2XXX COMMUNICATIONS
		<ul style="list-style-type: none"> • respond to written, spoken, or visual messages in a manner that ensures effective communication 	PLUM-1XXX INTRO TO PLUMBING THEORY 1 PLUM-1XX2 TOOLS AND PIPING METHODS 1 DRAF-1XXX TRADE DOCUMENTATION 1 MATH-1XXX TRADE CALCULATIONS 1 SFTY-1XXX CONSTRUCTION HEALTH AND SAFETY PLUM-2XX4 TOOLS AND PIPING



Skill Categories	Defining Skills Skill areas to be demonstrated by the graduates	Essential Employability Skills Outcomes The graduate has reliably demonstrated the ability to:	Course Title / Course Codes (As indicated in Appendix A)
			METHODS 2 MATH-2XXX TRADE CALCULATIONS 2 COMP-2XXX COMPUTER APPLICATIONS
Numeracy	<ul style="list-style-type: none"> • Understanding and applying mathematical concepts and reasoning • Analysing and using numerical data • Conceptualizing 	<ul style="list-style-type: none"> • execute mathematical operations accurately 	MATH-1XXX TRADE CALCULATIONS 1 MATH-2XXX TRADE CALCULATIONS 2 COMP-2XXX COMPUTER APPLICATIONS
Critical Thinking & Problem Solving	<ul style="list-style-type: none"> • Analysing • Synthesizing • Evaluating • Decision-making • Creative and innovative thinking 	<ul style="list-style-type: none"> • apply a systematic approach to solve problems 	PLUM-1XX2 TOOLS AND PIPING METHODS 1 PLUM-2XX3 PLUMBING THEORY 2
		<ul style="list-style-type: none"> • use a variety of thinking skills to anticipate and solve problems 	PLUM-1XX2 TOOLS AND PIPING METHODS 1 PLUM-2XX3 PLUMBING THEORY 2 PLUM-2XX4 TOOLS AND PIPING METHODS 2
Information Management	<ul style="list-style-type: none"> • Gathering and managing information 	<ul style="list-style-type: none"> • locate, select, organize, and document information using appropriate technology and 	PLUM-1XXX INTRO TO PLUMBING THEORY 1



Skill Categories	Defining Skills Skill areas to be demonstrated by the graduates	Essential Employability Skills Outcomes The graduate has reliably demonstrated the ability to:	Course Title / Course Codes (As indicated in Appendix A)
	<ul style="list-style-type: none"> Selecting and using appropriate tools and technology for a task or a project Computer literacy Internet skills 	information systems	PLUM-1XX2 TOOLS AND PIPING METHODS 1 PLUM-2XX3 PLUMBING THEORY 2 COMM-2XXX COMMUNICATIONS COMP-2XXX COMPUTER APPLICATIONS
		<ul style="list-style-type: none"> analyse, evaluate, and apply relevant information from a variety of sources 	PLUM-1XXX INTRO TO PLUMBING THEORY 1 DRAF-1XXX TRADE DOCUMENTATION 1 DRAF-2XXX TRADE DOCUMENTATION 2 COMP-2XXX COMPUTER APPLICATIONS
Inter-personal	<ul style="list-style-type: none"> Team work Relationship management Conflict resolution Leadership Networking 	<ul style="list-style-type: none"> show respect for the diverse opinions, values, belief systems, and contributions of others 	PLUM-1XX2 TOOLS AND PIPING METHODS 1 PLUM-2XX4 TOOLS AND PIPING METHODS 2 COMM-2XXX COMMUNICATIONS
		<ul style="list-style-type: none"> interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals 	PLUM-1XX2 TOOLS AND PIPING METHODS 1 COMM-2XXX COMMUNICATIONS
Personal	<ul style="list-style-type: none"> Managing self 	<ul style="list-style-type: none"> manage the use of time and other resources to complete projects 	PLUM-1XXX INTRO TO PLUMBING THEORY 1



Skill Categories	Defining Skills Skill areas to be demonstrated by the graduates	Essential Employability Skills Outcomes The graduate has reliably demonstrated the ability to:	Course Title / Course Codes <i>(As indicated in Appendix A)</i>
	<ul style="list-style-type: none"> Managing change and being flexible and adaptable Engaging in reflective practice Demonstrating personal responsibility 		PLUM-1XX2 TOOLS AND PIPING METHODS 1 DRAF-1XXX TRADE DOCUMENTATION 1 WELD-1XXX INTRO TO WELDING SFTY-1XXX CONSTRUCTION HEALTH AND SAFETY PLUM-2XX4 TOOLS AND PIPING METHODS 2
		<ul style="list-style-type: none"> take responsibility for one's own actions, decisions, and consequences 	PLUM-1XX2 TOOLS AND PIPING METHODS 1 PLUM-2XX4 TOOLS AND PIPING METHODS 2



G. PROGRAM DESCRIPTION (APPENDIX B)

Program Description

Provide a brief description of the program, similar to what might be used as, or found in, advertising or a calendar description.

THE PLUMBING TECHNIQUES PROGRAM IS A ONE-YEAR ONTARIO COLLEGE CERTIFICATE, DESIGNED TO GIVE THE STUDENT AN UNDERSTANDING OF THE THEORETICAL AND PRACTICAL ASPECTS OF THE PLUMBING TRADE AND TO FAMILIARIZE THEM WITH THE ASSOCIATED TOOLS AND MATERIALS. THE PROGRAM ALSO PROVIDES THE STUDENT WITH A SOLID FOUNDATION AND PATHWAYS TO CONTINUE THEIR EDUCATION IN THE PLUMBING FIELD OR OTHER TRADE-RELATED CAREERS.

Laddering Opportunities

Provide a brief description of known laddering into and from the proposed program, e.g. certificate to diploma, diploma to degree, apprenticeship to college, diploma to apprenticeship, college to college, diploma to college degree, etc.

THE PROGRAM PROVIDES THE STUDENT WITH A SOLID FOUNDATION AND PATHWAYS TO CONTINUE THEIR EDUCATION IN THE PLUMBING FIELD OR OTHER TRADE-RELATED CAREERS.

Occupational Areas

Provide a brief description of where it is anticipated graduates will find employment. GRADUATES OF THE PLUMBING TECHNIQUES PROGRAM WILL FIND EMPLOYMENT IN THE PLUMBING RETAIL INDUSTRY AND MAY ALSO FIND AN APPRENTICESHIP IN THE PLUMBING TRADE OR OTHER RELATED TRADES.

Proposed Program Vocational Learning Outcomes

Provide the list of the proposed program vocational learning outcomes. These outcomes should be listed, verbatim as they appear in Appendix A- Form 1.

The graduate has reliably demonstrated the ability to:

1. Work according to contractual obligations; the project manual; applicable laws, standards, bylaws, and codes.
2. Execute plumbing projects effectively and accurately by interpreting graphics, drawings and written documentation.
3. Work responsibly and effectively with others and in accordance with appropriate practices, procedures and in compliance with health and safety legislation.
4. Use tools and equipment for basic installation manufacture, and repair of components to required specifications.
5. Contribute to the organizing and planning of plumbing installation projects.
6. Solve routine plumbing issues using a variety of problem solving approaches.



Admission Requirements

Identify the Admission Requirements for the program.

- Ontario Secondary School diploma with the majority of senior level courses at the College level
- University or University/College levels, or an Ontario High School Equivalency Certificate
- GED or Mature Student Status

OR

- Ontario High School Equivalency Certificate – GED

**H. PROGRAM CURRICULUM (APPENDIX C)**

Semester	Course Code/ Course Title <i>(As indicated in Appendix A)</i>	General Education Course <i>(indicate with an X)</i>	Total Course Hours	Course Description
1	PLUM-1XXX INTRO TO PLUMBING THEORY 1		75	This course is a detailed study of common pipe and fittings used for plumbing installations. Terminology of design, manufacture and sizing as well as approved uses of different materials will be taught. Plumbing trade terminology which is used for different drainage systems will also be explained.
1	PLUM-1XX2 TOOLS AND PIPING METHODS 1-(SHOP)		60	In this “hands on” practical course, the student will be instructed on the safe and proper use of hand tools and power equipment. The student will be expected to use, care and maintain various tools necessary to perform a plumbing related task. Safety, rigging and hoisting are criteria required for apprentices in the plumbing trade in order to develop safety and awareness on a construction site. Skills learned from the other courses in the program will be demonstrated by the student by drawing, designing and assembling a simple residential drainage, waste and vent system or part of such system either alone or with a partner.
1	DRAF-1XXX TRADE DOCUMENTATION 1		45	This preliminary drafting and blueprint course is designed to give the student the ability to design simple trade related drawings acceptable to a tradesperson. The student will be expected to identify different drawings in a set of plans including Architectural, Mechanical, Electrical, and Structural plans as well as the Specifications and use them for



				material takeoff, layout and installation.
1	MATH-1XXXX TRADE CALCULATIONS 1		45	This course introduces the basic concepts involved in metric and imperial measurement as they apply to the construction trade. Students will calculate linear measurements, piping offsets related to the plumbing trade, and square roots. Students will also solve business applications of simple interest and compound interest problems
1	WELD-1XXX INTRO TO WELDING		45	An introductory course which provides theoretical and practical training for the student to flare, swage, braze, and solder copper piping, and to cut or weld (SMAW) plate and angle steel in a safe manner.
1	SFTY-1XXX CONSTRUCTION HEALTH AND SAFETY		30	Students will learn about safe working habits and procedures in accordance with applicable safety standards and regulations in the construction industry, with particular attention to personal protective equipment, tools, working at heights, in trenches and confined spaces. Students will become aware of relevant sections of the Occupational Health and Safety Act (OHSA) and Workplace Hazardous materials Information System (WHMIS) standards.
2	PLUM-2XX3 PLUMBING THEORY 2		75	Review of Theory 1, highlighting the critical concepts and their applications. Trade terminology for different drainage systems will be explained and why only one is permitted today by code. Floor drains, funnel floor drains, priming methods and venting exceptions are discussed. Various plumbing traps and types, sizing, trap seal loss and fixture outlet pipes are explained. Sizing the drainage system and grading or sloping according to code will be shown. Venting of the drainage system according to acceptable practice and code will be discussed and demonstrated in this course. Types of individual vents, branch vents with pertinent rules and sizes are stressed. Group vents, dual vents, wet vents, and circuit vents are explained in depth. Roof flashings and vent terminals are discussed at length



2	PLUM-2XX4 TOOLS AND PIPING METHODS 2 – (SHOP)		60	This “hands on” course continues from Plumbing Theory I and prepares the student to make quality joints as required for shop projects. By practicing the techniques taught the student will be able to safely transport, set up and use Oxy-acetylene torches, “B” tanks, Propane or Butane torches. Joint preparation, purpose of flux, proper tip use and heat will be shown. Cutting mild steel using a torch as well as soldering copper using both hard and soft solders will be demonstrated and practiced. Calculations for offsets of varying degrees, preparing and assembling of projects using skills learned from the other courses in the program will be demonstrated. Skills are required for the rigging of loads in order to move or hoist materials, equipment or tools in a safe and professional manner according to the O.H.S.A. and C.S.A.O. Skills learned from the other courses in the program will again be demonstrated by the student by drawing, designing and assembling a simple residential drainage, waste and vent system or part of such system either alone or with a partner.
2	DRAF-2XXX TRADE DOCUMENTATION 2		45	In this course, the student will learn the use of the Ontario Plumbing Code and the basics of blueprint reading. A study of the relationships involving owner, architect, builder and tradesperson is also included. This course will introduce the student to isometric drawings to scale and reinforce the ability to produce orthographic drawings and read and interpret drainage waste and vent construction trade drawings and job specifications.
2	MATH-2XXX TRADE CALCULATIONS 2		45	The calculation of perimeter, area, and volume as it relates to the capacity of pipes, cylinders and tanks in both Metric and Imperial measurements, and how these calculations may be used to determine load weights for hoisting operations. The students will also calculate ratio and proportional with percentage, using both fractions and decimals. Students will also



				perform BTU calculations
2	COMM-2XXX COMMUNICATIONS		30	Technical communication focuses on practical writing situations, such as manuals, instructions, and internal company communications. This hands-on course will give the student an opportunity to practice reading and writing with a purpose. Throughout the course there will be several applications that will provide the students with realistic situations as they apply to their field.
2	COMP-2XXX COMPUTER APPLICATIONS		45	The student is introduced to the basics of computer operating systems and file management. The student will gain practical knowledge of various software applications such as: Word, Excel.

Add additional rows as required to complete the curriculum chart.



I. REGULATORY STATUS FORM (APPENDIX D)

Please complete the following:

There IS a legislative requirement that program graduates must be certified or licensed by a regulatory authority to practice or work in the occupation

- Mandatory recognition of a regulatory authority exists and is being sought.**
(Please refer to Section A below- *Mandatory Regulatory Requirements*)

There IS or IS NOT a voluntary (i.e., not required by legislation) licensing or certification for entry to practice in the profession or trade.

- YES
 NO

- Voluntary recognition of a regulatory authority IS being sought.**
(Please refer to Section B below- *Recognition by Voluntary Association*)

- Voluntary recognition is NOT being sought*.**
Please explain why: *There are no applicable regulatory bodies for plumbing at the "techniques" level.*

**Note: There may be titling implications for programs that are not seeking recognition in an area where existing programs have secured recognition.*



A. MANDATORY REGULATORY REQUIREMENTS

Where licensing or certification is **required by legislation** for entry to practice in the profession or trade, the Ministry of Training, Colleges and Universities requires that colleges ensure that their programs will meet the requirements of the regulatory body in order to be approved for funding.

Name of regulatory authority:

Status (please select ALL that apply)

Accreditation or approval by the regulatory authority / designated third party received.

Date of recognition:

The college is working toward accreditation with the regulatory authority/ designated third party.

Describe current status of application:

Expected date of recognition:

The regulatory authority does not accredit educational programs directly or through designated third party. Formal acknowledgement (e.g. in its published or legislated registration requirements) that the program graduates will be eligible to write any required certifying or registration exam(s) or that the program is otherwise recognized for the purposes of certifying or registering a graduate is being sought.

Please submit an acknowledgement and/or evidence from the regulatory authority regarding the status of the recognition.



B. RECOGNITION BY VOLUNTARY ASSOCIATION

Colleges may choose to have a program accredited or recognized by a voluntary membership organization or association. Graduate eligibility for association recognition or adherence to standards imposed by the body is **a recommendation and not a requirement** for program funding approval by the Ministry of Training, Colleges and Universities.

Name of voluntary association:

Status (please select ALL that apply)

The college is working toward recognition.

Describe current status of application:

Expected date of recognition:

Recognition has been received.

Date of recognition:

Type of recognition (e.g. accreditation, graduates eligible to write membership exams, etc.):

The association does not recognize educational programs directly or through designated third party. Formal recognition (e.g. in its published requirements) that the program graduates will be eligible to write any required certifying or registration exam(s) or that the program is otherwise recognized for the purposes of certifying or registering a graduate is being sought.

Please submit an acknowledgement and/or evidence from the regulatory authority or voluntary association regarding the status of the recognition.