

Fanshawe College

FIRST: Fanshawe Innovation, Research, Scholarship, Teaching

Documentation (Approvals etc...)

Software and Information Systems Testing

2015

FANS 01321 Software and Information Systems Testing - CVS Application (Funded)

Fanshawe College

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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: Fanshaw College		
C. College Contact(s): Person responsible for this proposal. <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> Name: Tracy Gedies Title: Director, Centre for Academic Excellence Telephone: 519-452-4430 ext. 4733 E-mail: tgedies@fanshawec.ca </td> <td style="width: 50%; vertical-align: top;"> Name: James W. Edwards Title: Chair, School of Information Technology Telephone: 519-452-4430 ext.4629 E-mail: jwedwards@fanshawec.ca </td> </tr> </table>	Name: Tracy Gedies Title: Director, Centre for Academic Excellence Telephone: 519-452-4430 ext. 4733 E-mail: tgedies@fanshawec.ca	Name: James W. Edwards Title: Chair, School of Information Technology Telephone: 519-452-4430 ext.4629 E-mail: jwedwards@fanshawec.ca
Name: Tracy Gedies Title: Director, Centre for Academic Excellence Telephone: 519-452-4430 ext. 4733 E-mail: tgedies@fanshawec.ca	Name: James W. Edwards Title: Chair, School of Information Technology Telephone: 519-452-4430 ext.4629 E-mail: jwedwards@fanshawec.ca	
D. Proposed Program Title: <u>Software and Information Systems Testing</u>		
E. Proposed Credential: Please select one (1). <input type="checkbox"/> Local Board Approved Certificate <input type="checkbox"/> Ontario College Certificate <input type="checkbox"/> Ontario College Diploma <input type="checkbox"/> Ontario College Advanced Diploma <input checked="" type="checkbox"/> Ontario College Graduate Certificate		
F. Program Maps (Appendix A): Please complete and attach the two (2) Program Maps. <u>Form 1- Vocational Program Learning Outcomes</u> <u>Form 2- Essential Employability Skills Outcomes</u>		
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: <u>February 10, 2015</u>		
FOR CVS USE ONLY		
K. Date of CVS Response: <u>February 19, 2015</u>		
L. CVS Validation Decision: <input checked="" type="checkbox"/> Proposal Validated. APS Number: <u>FANS 01321</u> Reason: <u>There are no similar programs in system. Therefore, the mapping was done using an existing MTCU in the same level and same field. One has to consider this program a specialty in that field.</u> <input type="checkbox"/> Proposal not Validated. Reason:		
M. CVS Signature: <u>Karen Belfer</u>		

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: 70503</i>	Proposed Program Vocational Learning Outcomes	Course Title / Course Code
1. Interpret collected business requirements from organizational areas so that they can be defined as functional systems design specifications that can be successfully implemented by Information Technology (IT) specialists		
2. Provide information technology solutions, assessments and validation to a broad range of situations by eliciting, planning, monitoring and analyzing enterprise requirements	1. Design software testing protocols to evaluate functional and non-functional specification requirements for various test levels and types of information systems and technologies.	Code for Testing/INFO-6XXX End User Experience Testing/INFO-6XXX Test Methodologies/INFO-6XXX Use Case Analysis/INFO-6XXX Automated Test Tools/INFO-6XXX Capstone Project/INFO-6XXX IS Security Testing/INFO-6XXX Non-Functional Testing/INFO-6XXX
3. Adhere to standards of practice and identify ethical/contractual-based judgments in real-life		



and simulated IT business environments.		
	2. Design and use test cases to verify system and individual component functionality, usability, and regression.	End User Experience Testing/INFO-6XXX Test Methodologies/INFO-6XXX Project Management/MGMT-6084 Capstone Project/INFO-6XXX System Design/INFO-6XXX Non-Functional Testing/INFO-6XXX
	3. Audit the quality assurance procedures to assess software quality and improve software performance.	Code for Testing/INFO-6XXX End User Experience Testing/INFO-6XXX Test Methodologies/INFO-6XXX Use Case Analysis/INFO-6XXX Automated Test Tools/INFO-6XXX Capstone Project/INFO-6XXX IS Security Testing/INFO-6XXX Non-Functional Testing/INFO-6XXX
4. Use of written, verbal, and non-verbal communication, employing IT relevant knowledge, skills, and judgment in a business	4. Create technical reports and documents such as testing plans, incident reports and technical specifications to document testing protocols.	Advanced Professional Communications/COMM-1019 Code for Testing/INFO-6XXX



<p>setting</p>		<p>End User Experience Testing/INFO-6XXX Test Methodologies/INFO-6XXX Use Case Analysis/INFO-6XXX Project Management/MGMT-6084 Capstone Project/INFO-6XXX Non-Functional Testing/INFO-6XXX</p>
<p>5. Document, manage, research and communicate business requirements from the initial stakeholder meeting, to the final IT solution assessment and validation phase utilizing life-cycle project management practices and procedures such as metric analysis, project scope, service level agreements and constraint documentations.</p> <p>8. Collect, manage, and interpret data to identify trends and issues in the workplace to create and develop levels of measure</p>	<p>5. Collect, analyze and document testing data for a variety of stakeholders.</p>	<p>Advanced Professional Communications/COMM-1019 End User Experience Testing/INFO-6XXX Test Methodologies/INFO-6XXX Capstone Project/INFO-6XXX System Design and Analysis/INFO-6XXX</p>
<p>6. Interview clients about their business needs, facilitate meetings, and respond to stakeholder priorities in a way that meets their needs.</p>		



7. Perform a variety of IT quality control procedures including gap analysis, problem analysis, needs assessment, cost benefit analysis, business test plans and test cases	6. Manage software quality assurance and software testing projects according to current project management principles and practices.	Advanced Professional Communications/COMM-1019 Test Methodologies/INFO-6XXX Project Management/MGMT-6084 Automated Test Tools/INFO-6XXX Capstone Project/INFO-6XXX
9. Develop tools for maintaining professional standing including lifelong learning strategies.		

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 	Advanced Professional Communications/COMM-1019 End User Experience Testing/INFO-6XXX Use Case Analysis/INFO-6XXX Project Management/MGMT-6084 Capstone Project/INFO-6XXX
		<ul style="list-style-type: none"> • respond to written, spoken, or visual messages in a manner that ensures effective communication 	Advanced Professional Communications/COMM-1019 End User Experience Testing/INFO-6XXX Use Case Analysis/INFO-6XXX Project Management/MGMT-6084 Capstone Project/INFO-6XXX
Numeracy	<ul style="list-style-type: none"> • Understanding and applying mathematical concepts and reasoning 	<ul style="list-style-type: none"> • execute mathematical operations accurately 	Code for Testing/INFO-6XXX



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"> • Analysing and using numerical data • Conceptualizing 		
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 	Code for Testing/INFO-6XXX Use Case Analysis/INFO-6XXX Project Management/MGMT-6084 Automated Test Tools/INFO-6XXX Capstone Project/INFO-6XXX Non-Functional Testing/INFO-6XXX
		<ul style="list-style-type: none"> • use a variety of thinking skills to anticipate and solve problems 	Code for Testing/INFO-6XXX Test Methodologies/INFO-6XXX Use Case Analysis/INFO-6XXX Project Management/MGMT-6084 Automated Test Tools/INFO-6XXX Capstone Project/INFO-6XXX IS Security Testing/INFO-6XXX Non-Functional Testing/INFO-6XXX
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 	Advanced Professional Communications/COMM-1019



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"> • Selecting and using appropriate tools and technology for a task or a project • Computer literacy • Internet skills 	<p>information systems</p>	<p>Project Management/MGMT-6084 Capstone Project/INFO-6XXX IS Security Testing/INFO-6XXX Non-Functional Testing/INFO-6XXX System Design and Analysis/INFO-6XXX</p>
		<ul style="list-style-type: none"> • analyse, evaluate, and apply relevant information from a variety of sources 	<p>Advanced Professional Communications/COMM-1019 End User Experience Testing/INFO-6XXX Use Case Analysis/INFO-6XXX Capstone Project/INFO-6XXX Non-Functional Testing/INFO-6XXX System Design and Analysis/INFO-6XXX</p>
<p>Inter-personal</p>	<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 	<p>Advanced Professional Communications/COMM-1019 Project Management/MGMT-6084 Capstone Project/INFO-6XXX</p>



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"> interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals 	Advanced Professional Communications/COMM-1019 Project Management/MGMT-6084 Capstone Project/INFO-6XXX
Personal	<ul style="list-style-type: none"> Managing self Managing change and being flexible and adaptable Engaging in reflective practice Demonstrating personal responsibility 	<ul style="list-style-type: none"> manage the use of time and other resources to complete projects 	Project Management/MGMT-6084 Capstone Project/INFO-6XXX
		<ul style="list-style-type: none"> take responsibility for one's own actions, decisions, and consequences 	Advanced Professional Communications/COMM-1019 Project Management/MGMT-6084 Capstone Project/INFO-6XXX



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.

This program is aimed at providing the student a better understanding of the testing paradigms and methodologies associated with Information Technology and Software development. Information Systems Testing involves a balanced understanding of Software and Hardware, Quality Assurance methodologies, Project Management approaches and Business Analysis techniques. As a comprehensive program, this graduate cert will be broad in nature, but ready students for the in-demand field of quality assurance and Quality Control.

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 new program will offer a pathway for students who graduate from any of the Diplomas offered in the School of Information Technology: Computer Systems Technician, Computer Systems Technology, Computer Systems Analyst and Interactive Web Design. Graduates of those programs at Fanshawe College or other equivalent Diplomas or Degrees from another education institution. Graduates from this program may wish to augment this program with additional Graduate Certificates offered at Fanshawe College such as the Project Management Graduate Certificate, Information Security Management, or the Game Development – Advanced Programming.

Occupational Areas

Provide a brief description of where it is anticipated graduates will find employment.

Graduates will build skills useful with numerous sectors (software design, games design, help desk, business analysis, management consulting and customer help) within the information technology industry and will gain practical experience in one or more of those sectors. They will be equipped with the knowledge and skills required to assume quality assurance testing roles and ultimately management positions in the technology industry.

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. Design software testing protocols to evaluate functional and non-functional specification requirements for various test levels and types of information systems and technologies.
2. Design and use test cases to verify system and individual component functionality, usability, and regression.
3. Audit the quality assurance procedures to assess software quality and improve software performance.
4. Create technical reports and documents such as testing plans, incident reports and technical specifications to document testing protocols.



5. Collect, analyze and document testing data for a variety of stakeholders.
6. Manage software quality assurance and software testing projects according to current project management principles and practices.

Admission Requirements

Identify the Admission Requirements for the program.

Admission Requirements

A Two- or Three-Year College Diploma, or a Degree

OR

Acceptable combination of related work experience and post-secondary education as judged by the College to be equivalent to the above

2. Recommended Academic Preparation:

Previous business or IT post-secondary education and/or training and/or work experience.

3. English Language Requirements:

Applicants whose first language is not English will be required to demonstrate proficiency in English by one of the following methods:

- A Grade 12 College Stream or University Stream English credit from an Ontario Secondary School, or equivalent, depending on the program's Admission Requirements
- Test of English as a Foreign Language (TOEFL) test with a minimum score of 570 for the paper-based test (PBT), or 88 for the Internet-based test (iBT), with test results within the last two years
- International English Language Testing System (IELTS) test with an overall score of 6.5 with no score less than 6.0 in any of the four bands, with test results within the last two years
- Canadian Academic English Language (CAEL) test with an overall score of 70 with no score less than 60 in any of the four bands, with test results within the last two years
- An English Language Evaluation (ELE) at Fanshawe College with a minimum score of 75% in all sections of the test, with test results within the last two years

4. Applicant Selection Criteria:

Where the number of eligible applicants exceeds the available spaces in the program, the Applicant Selection Criteria will be:

1. Preference for Permanent Residents of Ontario
2. Receipt of Application by February 1st (for Fall 15) (After this date, Fanshawe College will consider applicants on a first-come, first-served basis until the program is full)
3. Achievement in the Admission Requirements

**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	COMM-6019/ Advanced Professional Communications		60	This course focuses on refining and advancing students' communication abilities, from a workplace perspective, such that they prepare and demonstrate use of professional communication competencies to succeed in the present day business environment. The advanced communication tools and strategies learned include presentation skills, research of current issues, business document writing, meeting and management team strategies, business etiquette, and compilation of a professional career portfolio. Students learn about interpersonal communication, including monochromic and polychromic cultures, managerial communication techniques, and adaptive messaging in the workplace. Throughout the course, students demonstrate proficiency in group dynamics to reflect a workplace environment. This course requires students to engage in an online environment to complete assignments and communicate in group meetings.
1	INFO-6XXX/ Code for Testing		60	This course will examine the practices and procedures related to implementing test methodologies inside of software development projects. The curriculum will also prepare the student to write external test scripts, used for the execution of test procedures against target systems and solutions.
1	INFO-6XXX/ End User		45	Usability and successful solution interaction is a



	Experience Testing			key deliverable in any solution. Students of this course will learn the development of test cases, execution plans, test reports, software and hardware bug testing and Reporting, as well as different methods used in end user testing, including exploratory, usability and agile testing.
1	INFO-6XXX/ Test Methodologies		45	Software Testing plays a major role in the readiness of software for sales and deployment. This course introduces the student to a myriad of quality assurance methodologies, including black-box, white-box, grey-box, unit and other testing methods.
1	INFO-6XXX/ Use Case Analysis		45	Documenting Business behavioural and functional requirements is a key component of the business analysis and testing process. Students studying this course will learn the fundamentals of Use Cases descriptions, diagraming and UML. Outputs of these documents include Software requirement Specifications, Traceability Matrices and reporting.
1	MGMT-6084/ Project Management		45	This course introduces the essentials of the project management discipline and prepares students to manage project teams, project schedules, budgets and quality requirements. Students learn the process of analyzing, creating and managing a functional project plan and the various project management processes for managing and controlling a project through to fruition. This course brings all of the Project Management Institute (PMI) knowledge areas of project management together into a consolidated whole, and gives the student an understanding of project management methodologies as well as the tools and techniques used to plan, execute and control various types of projects.
2	INFO-6XXX/ Automated		45	Continual upgrade and improvement are normal



	Test Tools			business occurrences in software and systems solutions. Students of this course will learn the skills necessary to develop test automation solutions. The program will include a survey of the various solutions available, as well as implementation of test automation.
2	INFO-6XXX/ Capstone Project		90	As a culminating group project, students will work on a simulated software project, providing Use Cases, Systems Analysis, Test Strategy, Test methodologies (functional and non-functional), Test Case documents, results, and test plans.
2	INFO-6XXX/ IS Security Testing		60	Students will examine the industry best practices, certification bodies and tools related to IS Security testing. This course will also inform the student of risks in Web and e-Commerce deployments.
2	INFO-6XXX/ Non-Functional Testing		60	The Non-Functional Testing course provides students with an understanding of the best practices to support the non-functional testing of information systems and technology. The course covers the five main quality characteristics of performance, security, usability, dependability and supportability.
2	INFO-6XXX/ System Design and Analysis		45	Students in this course will learn the key concepts of Information Systems Design and Development, as well as requirements development, using UML. UML modelling, SDLC and AGILE approaches as well as diagramming are involved.



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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: [Click here to enter text.](#)

**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.