

## **REPORT OF ACADEMIC STANDARDS COMMITTEE**

**Report #W2017–2; April 2017**

**In this report the Academic Standards Committee (ASC) brings to Senate its evaluation and recommendation on the following items:**

- **Periodic Program Review Business Technology Management, TRSM**
- **Variation in Graduation Requirements - BAsc Nutrition and Food**
- **Chang School Certificate in Accessibility Practices: Discontinuation**
- **Chang School Certificate in Program and Portfolio Management: Discontinuation**
- **Chang School Certificate in Magazine and Web Publishing: Discontinuation**
- **Chang School Certificate in Architectural Preservation and Conservation: Discontinuation**
- **For Information: Chang School Certificates – Revisions (Dec '16 – Jan '17)**
- **For Information: Chang School Certificates – Revisions (Feb '17)**

### **A. PERIODIC PROGRAM REVIEW BUSINESS TECHNOLOGY MANAGEMENT, TRSM**

#### **1. INSTITUTIONAL SYNTHESIS OF THE EXTERNAL EVALUATION AND INTERNAL RESPONSES AND ASSESSMENTS**

##### **1.1. PEER REVIEW TEAM REPORT – School of Information Technology Management (BTM)**

The peer review team was comprised of Dr. Jeffrey Parsons, University Research Professor, Memorial University of Newfoundland, and Dr. Richard Watson, J. Rex Fuqua Distinguished Chair for Internet Strategy, University of Georgia. The site visit took place on May 30-31, 2016. The team met with the following individuals or groups: Director of BTM, Program Peer Review (PPR) Representative, VP Academic, Dean of the Ted Rogers School of Management (TRSM), BTM faculty and staff, BTM curriculum committee, current BTM students, BTM alumni, and BTM Program Advisory Council (PAC).

##### **1.1.1. General Overview and Recommendations**

The BTM program is addressing the national need for a well-educated and appropriately skilled ICT workforce to support economic growth and innovation. The students interviewed reported the program helps them meet their aspirations, and faculty interviewed expressed a strong commitment to the students and program. The staff seem particularly devoted to helping students graduate. BTM is a quality program serving the needs of students and employers in the Greater Toronto Area (GTA).

Notwithstanding this overall positive assessment, one key concern that emerged from meetings with several stakeholders is the deteriorating trend in student faculty ratios in ITM. This will likely need to be addressed soon to maintain program quality. As the largest BTM program in Canada, Ryerson University has a distinct opportunity to be the national standard bearer for BTM program quality, rigor, and innovation.

##### **National prominence**

To achieve a national reputation, BTM will need to be singularly nurtured by recruiting two to three faculty with national or international reputations in areas central to the BTM course offerings. Such faculty should be expected to build partnerships with industry around topics critical to Toronto business (e.g., cybersecurity, big data, and financial analytics).

### **Quality improvement**

The scores of students entering BTM are below the TRSM average. BTM can either raise entry level standards, which will result in reduced enrolments, or maintain current enrolment policy but enforce standards consistently across core courses to ensure minimal quality standards are maintained. Core class standards should meet industry knowledge and skill requirements and students unable to meet them should be counselled out of BTM.

### **Laptops and open source**

All students entering the BTM program should be required to have a laptop that they can bring to class. For proprietary or server-based software, there should be a virtual lab that can be accessed remotely, possibly by a virtual private network for security reasons. Additionally, part-time students (the most time-constrained of all students) will find it more convenient if they do not need to visit Ryerson labs to complete assignments. The BTM program should be predominantly based on open source, cross-platform software. Open source software also fits the entrepreneurial goals of Ryerson and resources limits of small companies participating in the capstone project. Startups and SMEs favor open source.

### **Tacit Knowledge**

Courses should be designed to focus on using faculty members' tacit knowledge to build students' problem solving skills. A move to mandatory laptops will complement a focus on tacit knowledge. Classes that are high in explicit knowledge are targets for electronic delivery (e.g., MOOCs or programmed learning).

### **Branding**

The school is called ITM and the program is BTM. Consistent branding helps, especially for building a reputation around BTM. As part of branding and presenting a market attuned image, ITM should review the titles of all courses. To facilitate brand value maintenance, Ryerson should develop mechanisms to shorten cycle times for updating course material content and titles, particularly for fast changing areas, such as topics in the BTM program. When accreditation of the BTM program is granted by ITAC, the school can use this in its efforts to strengthen branding.

### **Curriculum**

- ITM should consider establishing a dual core for BTM: (1) business systems problem solving, and (2) business analytics.
- Streamlining the many electives based on program goals will lead to a more clearly articulated program focus.
- ITM needs to identify paths (i.e., a set of electives comprising a concentration) for students to follow to meet their career orientation and market needs.
- ITM should consider introducing R, with the RStudio IDE, as the first programming language to build skills in data handling, visualization, and data analytics as well as teaching the fundamentals of programming. ITM should consider adopting a language such as Swift as the OO language in the curriculum. This would be a market leading move as Swift is new, and it would send a strong signal that ITM is a leader. ITM should build expertise in the Internet of Things (IoT), with possible applications in areas such as sustainability, energy efficiency, and smart cities that fit with Toronto's needs. "The business of smart cities" could be a differentiator for TRSM.
- Students should be given greater assistance in finding a capstone partner. We suggest a focus on Toronto startups to give students an entrepreneurial experience, aligning with Ryerson's overall strategy.
- The co-op program should forefront curriculum design and scheduling decisions because it is a strength of the BTM program and potentially of TRSM.

### **Listening to the market**

ITM should continue to build skills in listening and reacting to the market. We advise that it strengthen alumni connections and expand the Program Advisory Council (PAC). Engagement could be strengthened by having the PAC chair elected by the members and meeting yearly to set annual goals.

#### **Feedback on Evaluation Criteria**

The self-study report comprehensively covers the issues raised by the evaluation criteria. The review team took a strategic perspective because it recognized that operational issues were generally well-handled and the BTM program was successful when judged by market standards (i.e., students are getting appropriate jobs at good salaries). We thought we could add more value by taking a broader and forward looking perspective that could take a successful program to the next level. Section two of the self study provides feedback on most of the evaluation criteria specified in the guiding document provided to us (notably objectives, standards, curriculum, quality, assessment and resources).

### **1.2. PROGRAM RESPONSE TO THE PEER REVIEW TEAM REPORT**

The Peer Review Team (PRT) team has an overall positive assessment of the program in meeting the needs of the GTA and Canadian economy. They believe that Ryerson University has a distinct opportunity to be the national standard bearer for BTM program quality, rigor, and innovation and make their recommendations accordingly. We are very excited about this outlook and agree with the peer team regarding the general outline of what needs to be done to raise BTM (and thus TRSITM) to national and possibly international prominence.

- **Student to faculty ratios** - The concern of student to faculty ratios has been acknowledged by the School. We had two new tenure track hires in 2015 and 2016, and have recently been awarded another position for the 2017-2018 academic year. We also have a new senior faculty member who joined in 2016. While these moves are encouraging and promising in building our capacity for the future of the program, we agree with the review team that there is still work to be done in this important area.
- **National prominence** - The PRT observed that the breadth and depth of course offerings in the BTM program are not available from any of the historically prestigious business schools in Canada. We believe that after next year's hiring TRS-ITM will start being more attractive to faculty with national prominence with a mix of senior and up and coming faculty talent, a freshly revised and unique program, and much stronger prospects of strong research-oriented graduate programs. We also believe that the TRSM Dean and university administration can help us immensely by not only securing financial resources, but also by using the Loretta Rogers chair for recruiting an internationally prominent scholar to the School. In the long term, we should also strive to secure another endowment for a chaired professor in the School.
- **Quality improvement** - We believe we should implement a combination of both of the PRT strategies to raise entry level standards to reduced enrolments, or maintain current enrollment policy but enforce standards consistently across core courses. The current level of enrolment to the program puts a strain on resources in meeting the needs of the first year courses.

We also agree with the PRT that high standards of rigor need to be exercised in lower level core courses to ensure that students who are promoted to higher level courses have the capability and enthusiasm required to be successful in those courses, which in turn will lead to a successful career. We believe that those standards should be identified and agreed upon by ITM faculty. Our governance model makes it more reasonable for the School director to carry out the monitoring as suggested, but we think the deviations (if any) from this policy should be brought to the Dean's attention and the Dean's office should be involved if further action is deemed necessary.

- **Laptops and open source** – We agree that all students entering the BTM program should be required to have a laptop that they can bring to class. We do use open source, cross-platform software to a certain extent (for example for the programming course where we use Java) based on the pedagogical requirements of our classes, but for many of the courses going to a purely open source strategy is infeasible. To overcome the physical constraints of the computer labs and to follow the cross platform recommendation given by the team, we advocate the use of virtualization for labs so that students (and faculty) have access to software resources from virtually anywhere, most importantly from the classrooms. TRSITM is now examining a cloud based approach.
- **Focus on tacit knowledge** - At TRS-ITM, we subscribe to the focus on tacit knowledge and continuously monitor courses to increase their fit to this profile. We also strive to provide experiential learning opportunities through case competitions and workshops. We certainly agree that a move to mandatory laptops will complement a focus on tacit knowledge and would make innovative approaches like flipped classrooms more feasible.
- **Branding** - The PRT points to the inconsistency in the school (ITM) and the program names, and add that consistent branding helps, especially for building a reputation around BTM. As recommended we can review the titles of all courses. They also recommend Ryerson should develop mechanisms to shorten cycle times for updating course material content and titles, particularly for fast changing areas, such as topics in the BTM program to facilitate brand value maintenance. We agree that the university administration should take this issue into consideration.
- **Curriculum** - The PRT's recommendations regarding curriculum are most valuable. The recommendation of a dual core, i.e. (1) business systems problem solving, and (2) business analytics is something we have debating for a long time. TRSITM has offered analytics courses (under different titles) for almost a decade now. We have two popular elective courses in the area with plans to offer two more. One of the new courses on applied big data analytics will introduce R, as recommended by the team to build skills in data handling and visualization. Faculty have both the potential and interest in developing the analytics area further than a combination of four electives. But we do agree with the team that we should work with other units in TRSM, for example, to create Toronto-relevant specializations as capstones to the analytics core (e.g., financial analytics, retail analytics, health analytics).

We agree with the PRT's assessment regarding the streamlining of the electives based on program goals and to identify paths (i.e., a set of electives comprising a concentration) for students to follow to meet their career orientation and market needs. In fact, this effort has been in place with the curriculum committee for a year now. We will also start looking into developing offerings in Internet of Things (IoT) and consider adopting Swift in our mobile application development course.

In response to the PRT recommendation that students should be given greater help in finding capstone partners we will focus on Toronto startups to give students an entrepreneurial experience. They also agree with us on the critical nature of the co-op program, and how it should be a focal point in curriculum design and scheduling decisions because it is strength of the BTM program and potentially of TRSM. We agree that decisions that might affect the viability of the co-op program, such as course sequencing, should be carefully reviewed and justified.

- **Listening to the market** - We fully agree with the team and have already spent effort in strengthening alumni connections and expanding the Program Advisory Council (PAC).

We are looking forward to support from TRSM and Ryerson administration in:

- Decreasing the size of the program to the 2013 levels;
- Increasing admission standards to the BTM program;

- Granting and funding new senior and junior tenure stream positions;
- Finalizing, funding and implementing IT lab virtualization plans; and
- Making changes in course calendar easier thus enabling responsiveness to changes in the market.

### **1.3. DEAN'S RESPONSE TO THE PEER REVIEW TEAM REPORT AND PROGRAM RESPONSE**

Both the PRT suggestions and the BTM responses offer insightful recommendations for continuing the effort to build a high quality, innovative program with potential to be viewed as a national leader in business technology education. In particular:

- The quality improvement agenda, particularly in relation student intake, is an important issue and one that we are taking active steps to address.
- We are planning to change the Grade 12 admission requirements to require that all students complete the 'Functions' math course with a minimum 70% grade as part of the acceptance criteria.
- We have embarked on a TRSM-wide core curriculum renewal process to ensure all students, regardless of program of study, achieve a set of learning outcomes consistent with standards set by the Quality Council and other accreditation bodies.
- We are committed to continued support of BTM's growth strategy through recruitment of high potential new faculty.
- The peer review team recommended that students have laptops in the classroom with access open source software as well as virtual labs, and a greater focus on using faculty members' tacit knowledge in the classroom. This aligns well with the strategic objective in the academic plan redefining experiential learning for the 21st century by ensuring that technological literacy is embedded in the curriculum, as well as creating effective learning environments through student engagement and e-learning modules. Given our classroom and lab space constraints, incorporation of virtual labs or flipped classroom models also provides potential innovative solutions to our current physical resource limitations.
- A move towards streamlining electives and establishing distinctive paths (possibly in the form of concentrations) in business systems problem solving and in business analytics holds great potential in terms of interest and relevance among the students. Moreover, related expertise exists across a number of other areas within TRSM and Ryerson, and it would be useful to explore synergistic opportunities, particularly, though not exclusively, in creating capstone course offerings.
- Confusion regarding the ITM School and BTM program names can certainly be addressed through a review of calendar course titles and descriptions, as well as other internal and externally directed communications. However, careful consideration should also be given to particular stakeholders, such as alumni, some of whom may retain stronger associations with the ITM brand. The Program Advisory Council may be able to provide helpful guidance in finding creative approaches for listening and responding to the external market.

In summary, TRSM remains supportive of the School's plans, subject to university fiscal constraints, as we move forward on a faculty-wide basis.

## **2. SIGNIFICANT STRENGTHS OF THE PROGRAM**

### **2.1. The Business Technology Management Program**

Students who successfully complete the degree requirements will receive the designation BACHELOR of COMMERCE, BUSINESS TECHNOLOGY MANAGEMENT.

Full-time Degree: Regular stream, Co-op, 2-year CAAT and Direct Entry

Part-time Degree: Regular stream, 2-year CAAT and Direct Entry

The BTM program is offered by the School of Information Technology Management (ITM), and is accredited by the Association to Advance Collegiate Schools of Business (AACSB). ITM, the largest school in Canada to offer a Business Technology Management (BTM) program, is a leader in providing a degree that prepares students to combine two sets of competencies:

- Business professionals – knowledge, skills and qualities to lead and support the effective and competitive use of information technologies
- Specialized technologists – IT-focused professionals who operate at the leading edge of innovation in fields such as energy, life sciences, financial services, government, advertising, education and many other industries.

Graduates of this program are hybrid business and ICT specialists who can define business objectives, identify technological options to meet the needs of the working organization, develop appropriate systems and implement the solutions effectively. BTM's current trajectory indicates tremendous growth reflecting the intense societal need for relevant skills at the intersection of ICT and management. ICT is an essential contributor to the innovation, creativity, productivity and competitive advantages of Canadian businesses.

## 2.2. Societal Need

According to ITAC (Information Technology Association of Canada), more than 33,500 Canadian ICT firms contribute to goods and services that provide a more innovative and competitive society.<sup>1</sup> ITAC states that the "ICT sector generates one million jobs directly and indirectly and invests \$4.8 billion annually in R&D, more than any other private sector performer."<sup>2</sup> As of early 2015, there were approximately 811,200 ICT professionals employed in Canada.<sup>3</sup> It is reported that the demand for ICT professionals continues to grow and has created competitive recruitment efforts amongst employers seeking ICT talent. The industry is cognizant of the increasing demand and continues to seek ICT professionals with analytical, interpersonal, technical and leadership skills.

The School of ITM is a leading participant in the work of the Canadian Coalition for ICT Skills (CCICT), currently called Information Technology Association of Canada (ITAC), which represents major Canadian employers and industry associations that rely on graduates with ICT skills. CCICT was focused on increasing the number of graduates with strong skills in both management and ICT. The BTM program was formulated based on the mismatch between the skills of many graduates and the skills required by employers.

According to the employer survey conducted for this review, many employers agree that the program successfully prepared graduates with the right set of skills needed to pursue a career as an ICT professional. Some of the attributes cited were oral communication, critical thinking and problem solving skills. Graduates from the BTM program are employable in virtually every industry sector, including but not limited to banking, health care, retail, education, ICT and arts.

Due to the anticipated employment growth, imbalances in the demand-supply for ICT professionals will affect high demand occupations such as software and computer engineers, graphic designers/illustrators, database analysts, information systems analysts, IT consultants, systems support technicians and computer security amongst other occupations.

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<sup>1</sup> ITACT Talent, 2015 - <http://itactalent.ca/about-us/>

<sup>2</sup> *ibid*

<sup>3</sup> DAC, 2015 - <http://www.digcompass.ca/labour-market-outlook-2015-2019/2-0canada/>

### 2.3. Student Demand

The analysis of the current and anticipated demand supports the need for BTM students with hybrid knowledge in business and ICT. The relevance of the BTM program is confirmed as the ICT labour market will be impacted by excessive demand and shortage of supply. The ICT sector is characterized by a knowledge-intensive workforce. For instance, in 2013, 47.2% of ICT workers had a university degree compared to the national average of 27.4%.<sup>4</sup> ICT employees are well compensated, with workers earning an average of 48% more than the economy-wide average.<sup>5</sup> Not only is the demand for educated personnel increasing, the benefits of multiple industry sectors employing ICT professionals and the average annual earnings, provide incentives for graduates.

The increase in the ratio of applicants to registrants is demonstrative of the existing demand for the BTM program; however, a limitation of the data is the inability to distinguish amongst qualified applicants from those who lack admission qualifications. Although the program would like to accommodate for the increasing student body, due to limited resources and to ensure students receive a quality education, the number of students admitted into the program needs to be reduced. The sustainability of the program and the quality of education delivered are impacted by the high student to faculty ratio.

87.7% of students who graduated in 2012 would recommend Ryerson to others. The data provides confirmation that the BTM program is demanding and it provides graduates with skills that can be implemented and transferred into the workplace. Since the BTM program was developed in 2009, 18 post-secondary institutions across Canada are now offering the BTM program. Currently, the Ted Rogers School of IT Management has a competitive advantage as it is the largest school in Canada to offer the BTM program.

### 2.4. Program Learning Outcomes

The curriculum is structured to progressively enable students to develop and achieve the intended program outcomes at an introductory, reinforcement or proficiency level. Structurally, the curriculum is designed so that students are expected to learn the ‘business’ and ‘technology’ fundamentals early in the curriculum. ‘Hands-on’ experience and experiential learning opportunities further enable students to develop and achieve these learning outcomes.

*By the end of this program, BTM degree graduates will be able to:*

Knowledge Area	BTM PROGRAM LEARNING OUTCOMES (LO)	Learning Outcome #
<b>Integrated Learning</b>	Analyze IT-oriented business problems for a company/client (e.g. collect relevant financial and technical information; assess alternatives).	<b>LO1</b>
	Evaluate and apply appropriate solutions to an IT-oriented business problem for a company/client (i.e. compare and contrast options/risks and make recommendations).	<b>LO2</b>
	Produce professional technical reports, providing options and solutions to client situations and if applicable implement solutions.	<b>LO3</b>
<b>IT-Enabled Business Improvement</b>	Plan, manage and control information systems.	<b>LO4</b>
	Graduates will be able to:	
	Conduct business process analysis (i.e. create business architecture, identify business opportunities, conduct risk assessment, evaluate options and select the best alternative).	<b>LO5a</b>
	Develop improvement plans to integrate people, IT and business	<b>LO5b</b>

<sup>4</sup> Statistics Canada, 2014 - [https://www.ic.gc.ca/eic/site/ict-tic.nsf/eng/h\\_it07229.html](https://www.ic.gc.ca/eic/site/ict-tic.nsf/eng/h_it07229.html)

<sup>5</sup> Statistics Canada, 2014 - [https://www.ic.gc.ca/eic/site/ict-tic.nsf/eng/h\\_it07229.html](https://www.ic.gc.ca/eic/site/ict-tic.nsf/eng/h_it07229.html)

<b>Knowledge Area</b>	<b>BTM PROGRAM LEARNING OUTCOMES (LO)</b>	<b>Learning Outcome #</b>
	strategies in order to improve organizational processes.	
	Assess current technologies to identify opportunities for adopting new technology.	<b>LO5c</b>
	Apply project management, human and material resources and integrate applicable IT tools and methods to conduct an IT-enabled business solution.	<b>LO5d</b>
<b>Business Fundamentals</b>	Discuss and analyze the processes and structures of a business. (e.g., customer relationships, supply chain management, business structures and organization).	<b>LO6</b>
	Design, describe and maintain effective business models that enhance business strategic goals and decision-making processes.	<b>LO7</b>
<b>Technology Fundamentals</b>	Describe and discuss the major components of an information systems' infrastructure (e.g., networks, internet structures and e-business applications).	<b>LO8</b>
	Identify, understand and evaluate key stakeholder needs for IT solutions.	<b>LO9</b>
	Use, evaluate, and recommend computer software and applications.	<b>LO10</b>
	Analyze IT infrastructure design solutions for organizations.	<b>LO11</b>
	Analyze, design, and use databases for business applications.	<b>LO12</b>
<b>Personal and Interpersonal</b>	Demonstrate proficiency in professional communication within a business context by being able to:	
	Deliver an effective oral presentation for technical and non-technical audiences.	<b>LO13a</b>
	Create well-written documents for technical and non-technical audiences.	<b>LO13b</b>
	Demonstrate behaviour consistent with professional academic integrity and social responsibility in the context of a diverse and complex environment.	<b>LO14</b>

By the end of the program, students will be able to (not limited to): (1) identify and explain the role of information systems in the globalization of economic and cultural activities (2) explain the technological, social, and organizational components of information systems and how they interact and (3) evaluate the ethical concerns that information systems raise in society and the impact of information systems on societal issues.

## **2.5. Program Curriculum and Structure**

In the first two years of the program, students build their knowledge and skills on two core foundations: (1) Business (i.e. Marketing, Account, Finance, Human Resources, Law) and (2) ICT (i.e. Systems Analysis and Design, ICT Architecture and Infrastructure, Privacy and Security). In years 3 and 4, students learn to integrate their learning from these core foundations and strategically apply ICT-enabled solutions to business processes. Beyond providing a deep understanding of both business and ICT, the program also places emphasis on building personal and interpersonal skills by providing students with real-life work/employment experience, case studies and in-depth consulting projects with real clients.



YEAR 1	
ITM 100 Foundations of Information Systems CMN 124 Communication in BTM GMS 200 Introduction to Global Management SSH 105 Critical Thinking I ITM 107 Managerial Decision Making	ITM 207 Fundamentals of Programming MHR 405 Organizational Behaviour and Interpersonal Skills ECN 104 Introductory Microeconomics QMS 102 Business Statistics I LIBERAL STUDIES (LL)
YEAR 2	
ITM 305 Systems Analysis and Design ITM 301 IT Infrastructure MKT 100 Principles of Marketing ACC 100 Introductory Financial Accounting LIBERAL STUDIES (LL)	ITM 410 Business Process and Design ITM 500 Data and Information Management ACC 406 Introductory Management Accounting LAW 122 Business Law LIBERAL STUDIES (LL)
YEAR 3	
ITM 750 IS Project Management QMS 202 Business Statistics II FIN 300 Managerial Finance I PROFESSIONAL ELECTIVE (Table I) LIBERAL STUDIES (UL)	ITM 706 Enterprise Architecture ECN 204 Introductory Macroeconomics PROFESSIONAL ELECTIVE (Table I) PROFESSIONAL ELECTIVE (Table I) LIBERAL STUDIES (UL)
YEAR 4	
ITM 707 Strategy, Management & Acquisition ITM 90A Graduation Project PROFESSIONAL ELECTIVE (Table I) PROF-RELATED ELECTIVE (Table II) PROF-RELATED ELECTIVE (Table II)	ITM 90B Graduation Project PROFESSIONAL ELECTIVE (Table I) PROF-RELATED ELECTIVE (Table II) PROF-RELATED ELECTIVE (Table II) LIBERAL STUDIES (UL)

PROFESSIONAL TABLE I: BTM CORE ELECTIVES			
Course Code	Course Name	Course Code	Course Name
ITM 200	Fundamentals of Programming	ITM 605	Client Server Applications
ITM 315	Network Administration	ITM 610	Database Administration
ITM 330	Supply Chain Process Architecture	ITM 612	Knowledge Management / Learning Technologies
ITM 350	Concepts of eBusiness	ITM 617	Physical Database Design and Implementation
ITM 360	Establishing an eBusiness Operation	ITM 618	Business Intelligence and Analytics
ITM 407	Info Tech, Ethics and Society	ITM 702*	Summer Term Practicum
ITM 430	System Design and Implementation	ITM 703	Current Issues in Information Systems Management
ITM 445	Multimedia in Business	ITM 704	Wireless and Mobile Communications
ITM 501	Decision Analysis	ITM 720	Business Models and Game Design
ITM 505	Managing Information Systems	ITM 724	Consulting Skills for IT Professionals
ITM 513	Adv. Infrastructure Deployment and Management	ITM 732	Switching and Routing Laboratory
ITM 600	Data Communications Network Design	ITM 733	Research in IT – Independent Study
ITM 601	Advanced Business Process Methods	ITM 805	Special Topics in IT Infrastructure
ITM 602	Configuring and Implementing ERP Apps	ITM 820	Information Systems Security and Privacy

\*ITM 702 is not available to students in the co-operative or part-time program

The calendar revisions for 2015-2016 will include the following course deletions: ITM 602, ITM 702, ITM 704, ITM 720, ITM 724 and ITM 732. A course in ICT and diversity is in the development phase (to be offered in Winter 2016), as this is becoming an increasingly popular topic in the field of ICT.

The School is also responsible for offering ITM 102: Business Information Systems I to students enrolled in Business Management (regardless of their declared major), ITM 595: Auditing of Information Systems and ITM 696: Accounting Information Systems. Students in the BTM program are restricted from enrolling into these courses, as they are geared towards student outside of ITM and therefore, they do not count as professional electives.

## **2.6. Comparator Programs**

The curriculum improvement process (shift from ITM to BTM) initiated a benchmarking process to compare the scope and structure of the BTM curriculum to similar programs, offered by a wide spectrum of North American Schools. In conjunction with the benchmarking process, the content and learning objectives of the BTM curriculum were studied in comparison to the IS2010 Model Curriculum and AACSB standards. Currently, the BTM program offered at Ryerson University is the largest BTM program in Canada; however, the notion of hybridity – of building excellence in both business and IT skills – is not unique to Ryerson’s BTM program. It is important to note that more programs across Canada are offering a BTM program; therefore, a threat is imminent if more institutions deliver the program within close proximity.

## **2.7. Courses to Program Outcomes**

Key highlights analyzed from the curriculum mapping process include the following:

- The BTM program has ensured that all of the intended outcomes are adhered to in the core curriculum (required courses) of the BTM program.
- Each learning outcome is introduced, reinforced or requires proficiency, all of which are gradually achieved through progression in the program.
- ITM core electives are primarily centered on reinforcing concepts or creating proficiency. This is relevant as these courses are designed to enable students to seek more depth in an area of interest within the realm of IT-enabled business analysis and solutions.
- All of the learning outcomes are successfully mapped to the Undergraduate Degree Level Expectations.
- ITM 700/800 and ITM 90A/B address all of the program outcomes at a level of reinforcement or proficiency. The goal of the capstone course is to help students learn to integrate and apply knowledge gained from the multi-disciplinary curriculum and vast range of IT courses (in the preceding academic years).
- A notable difference between ITM 700/800 and ITM90A/B are LO9, LO13a, LO13b and LO14. ITM 700/ITM 800 creates proficiency for the specified learning outcomes; however, ITM 90A/B creates reinforcement. As ITM 90 A/B is the ‘new’ capstone course, this should be reviewed to determine if these learning objectives should be developed at a degree of proficiency.
- Experiential learning is in its highest form as proficiency in the capstone course. BTM co-op students are academically strong and perform at a high rate of proficiency, especially in the capstone course, providing the skills necessary for transition from the academic world to the job market.

## **2.8. Undergraduate Degree Level Expectations**

During the 2014-2015 academic year, curriculum mapping of the Business Technology Management Program was initiated. BTM’s fourteen (14) learning outcomes (LO) were mapped to the six Undergraduate Degree Level Expectations (UDLEs).

**BACCALAUREATE/BACHELOR’S DEGREE: HONOURS**

**This degree is awarded to students who have demonstrated:**

**1. Depth and Breadth of Knowledge**

- a) a developed knowledge and critical understanding of the key concepts, methodologies, current advances, theoretical approaches and assumptions in a discipline overall, as well as in a specialized area of a discipline  
LO3, LO6, LO7, LO8, LO9, LO10, LO11, LO12
- b) a developed understanding of many of the major fields in a discipline, including, where appropriate, from an interdisciplinary perspective, and how the fields may intersect with fields in related disciplines  
LO3, LO5a, LO5c, LO5d, LO6, LO7, LO8, LO14
- c) a developed ability to: i) gather, review, evaluate and interpret information; and ii) compare the merits of alternate hypotheses or creative options, relevant to one or more of the major fields in a discipline  
LO3, LO1, LO2, LO5a, LO6, LO8, LO10, LO11, LO12
- d) a developed, detailed knowledge of and experience in research in an area of the discipline  
LO1, LO2, LO3, LO5a, LO5c, LO6, LO8, LO11, LO12
- e) developed critical thinking and analytical skills inside and outside the discipline  
LO1, LO2, LO5a, LO5b, LO5c, LO4, LO6, LO8, LO9, LO11, LO12
- f) the ability to apply learning from one or more areas outside the discipline  
LO1, LO2, LO3, LO5b, LO5d, LO7, LO14

**2. Knowledge of Methodologies**

- an understanding of methods of enquiry or creative activity, or both, in their primary area of study that enables the student to:
- a) evaluate the appropriateness of different approaches to solving problems using well established ideas and techniques;  
LO1, LO2, LO4 LO5b, LO5c, LO5d, LO10, LO11, LO12
- b) devise and sustain arguments or solve problems using these methods; and  
LO1, LO2, LO3, LO5b, LO5c, LO5d, LO7, LO9, LO10, LO11, LO12
- c) describe and comment upon particular aspects of current research or equivalent advanced scholarship.  
LO2, LO3, LO8, LO9, LO10, LO11, LO12

**3. Application of Knowledge**

- a) the ability to review, present and critically evaluate qualitative and quantitative information to:
- i) develop lines of argument;
- ii) make sound judgments in accordance with the major theories, concepts and methods of the subject(s) of study;
- iii) apply underlying concepts, principles, and techniques of analysis, both within and outside the discipline;
- iv) where appropriate use this knowledge in the creative process; and  
LO1, LO2, LO3, LO5a, LO5b, LO5d, LO4, LO11, LO12
- b) the ability to use a range of established techniques to:
- i) initiate and undertake critical evaluation of arguments, assumptions, abstract concepts and information;
- ii) propose solutions;
- iii) frame appropriate questions for the purpose of solving a problem;
- iv) solve a problem or create a new work; and  
LO1, LO2, LO3, LO4, LO5d, LO6, LO10, LO11, LO12
- c) the ability to make critical use of scholarly reviews and primary sources.  
LO3, LO6, LO7, LO8, LO9, LO10, LO11, LO12

**4. Communication Skills**

- ... the ability to communicate information, arguments, and analyses accurately and reliably, orally and in writing to a range of audiences.  
LO1, LO3, LO13a, LO13b, LO14

**5. Awareness of Limits of Knowledge**

- ... an understanding of the limits to their own knowledge and ability, and an appreciation of the uncertainty, ambiguity and limits to knowledge and how this might influence analyses and interpretations.  
LO1, LO2, LO3, LO5a, LO5c, LO5d, LO7, LO8, LO10, LO11

**6. Autonomy and Professional Capacity**

- a) qualities and transferable skills necessary for further study, employment, community involvement and other activities requiring:  
the exercise of initiative, personal responsibility and accountability in both personal and group contexts;  
working effectively with others;  
decision-making in complex contexts;  
LO1, LO2, LO3, LO4, LO5a, LO5b, LO5c, LO5d, LO6, LO7, LO9, LO10, LO11, LO12, LO13a, LO13b
- b) the ability to manage their own learning in changing circumstances, both within and outside the discipline and to select an appropriate program of further study; and  
LO1, LO2, LO3, LO5b, LO9, LO14
- c) behaviour consistent with professional and academic integrity and social responsibility.  
LO14

## **2.9. Relationship to Current Discipline and Profession**

BTM students are exposed to and become familiarized with the normative and legal professional expectations in all aspects of their course-work. The course methods and assessments matrix indicates that many of the instructors used case studies. This form of delivery allows instructors to use real-world examples to discuss the ethical and moral issues facing those who develop and implement ICT-enabled solutions.

Students gain professional practice by extending their knowledge and skills in a practical environment via multiple courses, such as, the capstone course (ITM 90A/B) or the co-operative education program (more information will be provided in the experiential learning section of this report). In the capstone course, students are provided with the opportunity to work with an industry sponsor that is willing to provide a “client” environment. Students are exposed to professional academic integrity in multiple courses, especially in ITM 90 A/B (Graduation project), in which students are required to work with clients on real-world problems. This concept is in alignment with LO14 of the BTM learning outcomes.

ITM 407 (IT, Ethics and Society) was introduced in Fall 2007 to address ethical practices and professional standards, as well as for alignment with requirements of AACSB accreditation. Additional courses that address professional practice (as indicated in LO14) include: ITM 301, ITM 305, ITM 445 and ITM 820 among others.

The BTM program is immersed in a field that fosters continuous change and innovations. The realm of IT is embedded with emerging areas of research and technological innovations that can be implemented. Recent trends in the industry such as social media, systems security and privacy, cloud computing, ICT and diversity and big data are just some of the emerging topics.

## **2.10. Accreditation**

In 2010, the Ted Rogers School of Management, including ITM, received accreditation by the Association to Advance Collegiate Schools of Business (AACSB).

## **2.11. Teaching Methods and Innovative/Creative Content/Delivery**

Technology-based learning is increasingly becoming more significant in comparison to mainstream conventional modes of delivery. Diverse learning methods are being utilized as faculty members are cognizant of the diverse learning styles of students. A variety of teaching methodologies are used such as lecture, lecture discussions, in-class activities, case studies, lab work, capstone project, problem-based learning, demonstrations, seminars and guest speakers. The hybrid mode of in-class and lab exercises is designed to provide students with in-depth, ‘hands-on’ experience; other features in the mode of delivery are made available including: co-op placement, international exchange opportunities and summer internships. The capstone course provides creative content for students. The report required at the end of the course is all encompassing as students analyze and redesign a business process that needs improvement.

The School will continue to work on its ability to network with external partners to further facilitate the knowledge and academic success of our students. In the past 10 years, over four-hundred (400) organizations from major public corporations have worked with BTM student groups in their capstone course. For further experiential learning opportunities, students can apply for the TRSM International Exchange Program. A proposed initiative is to create a mentorship program in which senior students are linked with industry mentors, providing students with a mechanism to gain knowledge of careers and allowing them to build strong ties within the ICT industry.

### **2.12. Library Resources**

An analysis of the Library Report concludes that the library's journal holdings in BTM-related areas compare favourably with the holdings of peer institutions.

### **2.13. Student Survey Results**

- 90% of respondents either 'strongly agreed' or 'agreed' that the program is academically challenging.
- 82% of students stated that the program provided good preparation for a career.
- 52% of students responded that the program helped them develop problem-solving/critical thinking skills.
- 62% of students agreed that the program helped them improve written communication either 'a great deal' or 'very much', or 'somewhat'.
- 67% of students agreed that the program helped them improve computer proficiency either 'a great deal' or 'very much'.
- Students agreed 'a great deal' or 'very much' that the program has improved their research skills (50%), understanding professional/ethical responsibilities (64%), developing a broad knowledge of the field (57%) and responding to technological innovations (61%). Many of these skills relate to the learning outcomes identified such as LO1, LO5c, and LO14.
- Students appeared to have some concern in regards to their ability to learn leadership skills, entrepreneurship skills and understanding people from different cultures.
- The majority of the responses indicated positively that tests, examinations, written assignments, learning materials, classroom instructions, laboratory experiences, experiences with computer-based technology and group work were 'fair' and 'very good.'
- The majority of students indicated that their professors are current and knowledgeable in their field, well organized in their teaching, available outside of the classroom and are intellectually challenging.
- 86% of students stated that they would recommend the program, and 90% stated they would recommend Ryerson to others.

### **2.14. Alumni Survey Results**

- The majority of respondents to the survey were in a computer and information technology organization, with a business/management organization as the second highest.
- Job levels of respondents: entry-level (63%), mid-level (30%) senior-level (7%)
- Almost half of the respondents indicated the BTM program prepared them for employment 'very well' or 'well' and that the BTM program prepared them for further education. Almost half 'agreed' or 'strongly agreed' that they were hired for their first position due to Ryerson's BTM.
- The majority of respondents were either 'mostly satisfied' or 'very satisfied' with interaction with faculty outside of the classroom, feedback on academic progress from faculty, assistance by faculty in pursuing career opportunities, faculty treated students with respect, and appropriate and fair grading practices.
- The majority either 'agreed' or 'strongly agreed' that faculty expectations were well communicated, the courses fit together to make a cohesive program, the preference for broader choices in elective courses and interest in a double major was offered.
- The majority of respondents stated 'outstanding progress' or 'considerable progress' for written communication, verbal communication, presentation skills, team work, analytical and reasoning, leadership, interpersonal skills, and time management.
- BTM alumni responded 'much more emphasis' or 'somewhat more emphasis' for application based courses related to program, working with a professor on a research project, experiential learning, developing scholarly and intellectual qualities, developing information literacy skills, and developing job-related skills and knowledge.

- A high percentage responded ‘satisfied’ or ‘very satisfied’ with the overall educational experience at Ryerson and the academic quality of the BTM program.

### **2.15. Employer Survey Results**

- The employer survey was distributed among co-operative education partners and Program Advisory Council (PAC) members.
- Almost half of the employers would likely recruit a graduate from the BTM program at Ryerson University.
- All the employers agreed with the statement “Ryerson’s BTM program has prepared its graduates to be productive and contribute effectively immediately upon hiring”.
- Employers agreed that the program has successfully prepared students for oral communication, critical thinking, creative thinking, problem solving, interpersonal skills and teamwork. Written communication skills were not ranked as highly.
- The majority of the employers stated that the BTM program prepared graduates to: develop new and valuable ideas, to learn new responsibilities and skills, use job specific computer application, plan and organize activities and projects, understand organization structure, develop and use networks of colleagues, have a high level of expertise relevant to current work requirements, take on leadership roles/opportunities, and adhere to a professional code of ethics and behave in an ethical manner.

### **2.16. Student Qualifications, Enrolment, Retention and Graduation Data**

The BTM entering averages have remained relatively consistent over the past seven years. The BTM entering average of 80% or above continues to increase; however, the percentage of students admitted with 80% or more is significantly lower compared to all of TRSM.

The full-time enrolment targets have significantly increased since the change from ITM to BTM. Drivers of this increase could include demographic trends, labour market demand and demand for graduate education. Although the headcount continues to increase, it has become problematic for the student to faculty ratio. The BTM faculty complement continues to decrease, causing resources to be stretched. The part-time enrollment numbers are decreasing; this decline is difficult to pinpoint; however, factors such as the economy, undergraduate debt or work-life balance may be influencing the data.

A decrease in the number of full-time students from year 1 to year 2 can be attributed to factors such as program withdrawal (i.e. students on probation or students who choose to leave in pursuit of their first-choice program) or retention issues. The full-time retention percentage remains below Ryerson’s average and all of TRSM. It is possible that there is a relationship between students’ high school academic performance and retention.

The retention rates after one year of the part-time degree BTM program are slightly lower than that of TRSM and Ryerson. Part-time students are often working professionals with jobs or other commitments; therefore, external factors may contribute to the lower retention rate.

The percentages of students graduating within six years are significantly lower compared to Ryerson and TRSM. Multiple factors may contribute to the lower percentage; students may choose to extend their academic career and not graduate within the normal timeframe; and students may voluntarily withdraw or be placed on probation or PPW (permanent program withdrawal). Due to the relatively lower admission requirements (i.e. lower entering average), students may be placed at a disadvantage, creating a lower graduation percentage.

### **2.17. Faculty and Staff**

The School of Information Technology Management is led by a Director and Associate Director. For the 2014-2015 academic term, the School of ITM had 15 RFA (tenured) faculty members, 3 CUPE 1 (sessional) instructors and 10 CUPE 2 (Continuing Education instructor) for the part-time degree program.

The daily operations of the School are managed by an Administrative Assistant, a Research and Departmental Administrator, Administrative and Student Affairs Manager, Student Affairs Coordinator, Full-time Degree Student Affairs Coordinator for Part-time Degree and Co-op, and two Program Assistants. The program assistants provide front-line guidance for students seeking guidance regarding course selection and counseling on career choice and development. If a student requires further guidance on a career choice, the Program Assistants may refer the student(s) to speak to a specific faculty member or refer the student to the TRSM Business Career Hub. Students requiring assistance with achieving academic success may be referred to TRSM Student Services.

Due to the uniqueness and niche offering of the program compared to the rest of TRSM, resource needs such as TA/GAs are different. The large class sizes and limited number of faculty, as evident by class size enrolment, further provide evidence of the need for TA/GA support to ensure effective delivery and quality education for BTM program students.

The Ted Rogers School of IT Management continues to actively build a strong relationship with the Program Advisory Council to support the needs of our students in such areas as the co-op program, capstone course projects (which requires external clients) and curriculum revitalization.

### **2.18. Scholarly, Research and Creative (SRC) Activity**

The Ted Rogers School of Information Technology Management is a leading contributor to research activities within TRSM. Faculty members in the School of ITM publish articles in academic journals, present academic research papers at refereed academic conferences, organize research tracks and workshops in conferences, perform editorial and review duties for highly reputable journals as well as secure research funding as part of their SRC activities.

The School also has two active research centres:

The Inclusive Media and Design Centre (IMDC) designs, creates and evaluates inclusive media. The efforts of IMDC are directed towards evaluating existing conditions of production and reception of media in order to formulate solutions for access and enjoyment of media. The IMDC explores modalities of experience, examines policies and methodologies in media industries, creates tools and technologies for making inclusive media, and evaluates and documents the effects of their efforts.

The Institute for Innovation and Technology Management's (IITM) strategic mission is to find innovative solutions to real-world technology management problems. The preferred approach is multi-disciplinary collaborative research. The three broad themes for IITM's research focus are information technology management and organizational learning, developing organizational dynamic design capabilities, and information technologies and economic growth.

## **3. OPPORTUNITIES FOR PROGRAM IMPROVEMENT AND ENHANCEMENT**

As a component of the Periodic Program Review, a SWOT analysis was conducted and input was received from faculty members, students and administrative staff. Strengths of the program have been highlighted in the preceding section.

## **WEAKNESSES**

- Retention rates are relatively poorer for the ITM program in comparison to TRSM and Ryerson University.
- Admissions requirements are lower compared to the School of Accounting and Finance (SAF); the average grade percentage for incoming students is lower; students may lack the required quantitative background knowledge.
- Alumni relations are weak.
- Student to faculty ratios are high; class sizes are large; it is difficult to provide students with individual attention.
- There is a lack of resources for TAs/GAs and lab intensive components.
- Course mapping indicates that there are redundancies and gaps in course content that need to be re-evaluated; there is a lack of diversity content in the teaching methods and delivery/ assignments.

## **OPPORTUNITIES**

- Connect senior students with industry mentors through a mentorship program.
- Improve admissions criteria to enhance the quality of student intake in the first year of BTM.
- Continue the opportunity to grow existing research productivity by increasing the availability of research support and grants within ITM.
- Increase participation of the industry in the School, both through a renewed Program Advisory Council as well as continuing the focus on industry partnerships that are mutually beneficial and enhance student opportunities.
- Enhance experiential learning opportunities.
- Increase brand awareness.
- Increase female representation at both the student and faculty levels.
- Include emerging topics in courses and teaching methods (i.e. social media, cloud computing).

## **THREATS**

- Maintaining quality, relevancy and currency of courses in an evolving field and economy;
- Increasing competition from new technology and business-focused applied degrees granted by CAAT's within the GTA;
- Insufficient faculty to support the program going forward; and
- Demand for the BTM degree influenced by the cyclical nature of industry fortunes suggesting a higher volatility over time in both the size of the incoming class and its associated incoming grade point average.

## **4. RECOMMENDATIONS FOR IMPLEMENTATION (DEVELOPMENTAL PLAN)**

### **Priority 1 – Full-time Faculty Complement**

ITM needs to hire more tenure-stream faculty to further alleviate the high student to faculty ratio and to maintain the AACSB accreditation standard.

### **Priority 2 – Student Quality**

To build the necessary theoretical and practical knowledge needed by our students and the societal demand for ICT professionals with a specific skill set, a strong foundation in quantitative skills must be present. The School seeks to gradually increase admission standards every year until the same standards as the School of Accounting and Finance are met. In addition, we also will maintain high standards in the first year required courses, and measure and analyze the performance of students in those courses along with other metrics such as retention rates. By increasing the admissions requirements, the student to faculty ratio may improve, thereby allowing faculty members more opportunity to introduce, reinforce, or create proficiency in the program learning outcomes.

### **Priority 3 – Curriculum Enhancement**



The periodic program review not only disclosed a need for a strong core curriculum, but also for up-to-date electives that complement the core and lead to valuable career paths. Therefore, we need to carefully balance the technical and managerial courses that are offered. The peer review team suggested that analytics should be one of the career paths our program supports. We are very receptive to this suggestion. The faculty has both the potential and interest in developing the analytics area further than a combination of four electives.

#### **Priority 4 – Experiential Learning Opportunities**

BTM is unique in its offering of an IT component combined with a business component, thereby creating a distinctive hybridity. Over the next five (5) years, the School seeks to expand the co-op intake. Based on current employer assessments for co-op students, the results are indicative of the success in co-op positions for our students. As an example, we will focus on Toronto startups for placements to give students an entrepreneurial experience. The co-op program should be a focal point in curriculum design and scheduling decisions because it is strength of the BTM program and potentially of TRSM. We will also strive to provide experiential learning opportunities through case competitions and workshops. We are in the process of virtualizing our PC labs, where they will be accessible to students and faculty alike through internet enabled devices anywhere and anytime. As a result, we will be able to conduct regular courses in a hybrid format as opposed to a lecturing format.

#### **Priority 5 – Student Engagement for Learning and Career Success**

Some of the key initiatives relative to this objective include advancing experiential learning and improving both critical thinking and communication skills. The School will continue to work closely with student organizations in order to develop a long-term student engagement strategy across different organizations. An integral part of this objective includes engaging ITM alumni, especially with those alumni committed to student learning and career success. As evidenced in the program review report, students want to increase their communication skills and an exemplary platform is case competitions, which require students to have proficient oral and written communication skills. Thus, we propose more courses should incorporate case learning workshops. This proposal has already been implemented for the fourth year courses.

#### **Priority 6 – Diversity in the Community**

This program objective encompasses increased diversity in the student body, staff and faculty representation, as well as, embedding diversity into the curriculum and educational environment. Efforts will also be made to increase the presence of underrepresented groups in conjunction with designing the curriculum to explore and reflect topics of diversity. ITM will continue brand awareness initiatives and encourage more female representation, and to improve diversity in the faculty complement.

#### **Priority 7 – Industry Ties**

We intend to increase the amount of interaction students and faculty members get to have with the business community in Toronto. Furthermore, the alumni association needs to be revived such that business connectors are created for sourcing of co-op placements and projects for ITM 90A/B. There is an opportunity to leverage the Ryerson Zone model of cross disciplinary teams through the concept of a Business IT Zone. This will allow for a collaborate space for faculty, students and industry advisors to participate, brainstorm and generate ideas. As BTM students have a strong technology orientation, collaboration with other disciplines and industry supporters should prove favourable. Five new members were recruited to the program advisory council (PAC) in 2016, and we will keep building and nurturing this body.

#### **Priority 8 – Addressing the Competition**

In addition to a strong, innovative and up-to-date curriculum, and effective ways of delivering it (we are in the process of designing the delivery of lab intensive courses in a hybrid mode by deploying web-based virtualization technology) that give us a competitive advantage, we aim to continue working to increase the number of students involved in our co-op program. In addition, we have applied for BTM accreditation and hope to receive this certification in 2017/2018.

BTM is in the process of hiring in targeted areas that we identified as the growth areas in IT Management. Adding highly qualified experts to our already diverse faculty will allow us to research novel problems and paradigms, and be knowledge creators in our field. This will be our competitive edge going forward.

## **5. ASC EVALUATION**

The Academic Standards Committee (ASC) assessment of the Business Technology Management Periodic Program Review indicated that the review provided a reflective analysis of the program.

The Academic Standards Committee recommends that the program provide a one-year follow-up report that includes:

- Progress on the developmental plan, as outlined in the supplemental report.
- The most recent course outlines for all required courses in the program that are taught by Teaching Departments outside the School of Information Technology Management (e.g., CMN 124, GMS 200, SSH 105, ACC 100, etc.).
- The mapping of the required courses taught outside of the School to the program learning outcomes. Include an analysis of the mapping of all required courses—taught both within and outside of the School—to the program learning outcomes and a plan to address any gaps that may be identified through the revised curriculum mapping. It is recommended that Ryerson's Curriculum Development Consultant be consulted for assistance with the mapping and analysis.
- Progress on integrating equity, diversity and inclusion into the BTM curriculum.

### **Follow-up Report**

In keeping with usual practice, the one-year follow-up report which addresses the recommendation stated in the ASC Evaluation section is to be submitted to the Dean of TRSM, the Provost and Vice President Academic, and the Vice Provost Academic by the end of June, 2018.

Date of next Periodic Program Review  
2024 - 2025

### **Recommendation**

- Having satisfied itself of the merit of this proposal, ASC recommends: *That Senate approve the Periodic Program Review Business Technology Management, TRSM*

## **B) VARIATION IN GRADUATION REQUIREMENTS - BASc NUTRITION AND FOOD**

The School of Nutrition and Food proposes to remove the requirement that students take one interdisciplinary, international or exchange course prior to graduation.

Students in the BASc program in Nutrition and Food now have the option to choose eleven (11) electives as part of their program. However, those intending to pursue a career in dietetics (the great majority of our students) must take 7 of those electives as courses required under the accreditation by Dietitians of Canada. By requiring the students to choose one of their electives among those courses that are interdisciplinary, international or exchange is, in effect, further limiting their options to pursue a broad range of interests, including opportunities for adding a Minor, Concentration, or Certificate to their curriculum.

The initial rationale (over 15 years ago) for this requirement was to expose students to more interdisciplinary and international issues. More recently, however, our curriculum has changed to provide more interdisciplinary courses (e.g., FND401 and FNS250) and more international perspectives (e.g.,

FND401 and FNY 403). Our proposal is also consistent with the goal in our Academic Plan 2014-2019 to strengthen student success by increasing flexibility in our curriculum.

The previous requirement of having students take one interdisciplinary/international course or exchange experience was never meant to be *the only way* for students “to gain valuable experiences in communicating with diverse groups of people in varied settings”. These experiences are available throughout our curriculum in core courses such as FNP100, FNP300, and FND401; and in electives such as FNP350 and others. The addition of FNS250 Introduction to Food Systems, a new core course in our curriculum, has further enhanced this feature of our program. And while it contributed to students’ understanding of diversity and inclusion, the original requirement of one interdisciplinary/international course or exchange experience was never meant to be *the only way* towards that understanding. For these reasons, program learning outcomes will not be affected at all by discontinuation of the graduation requirement.

Students can still pursue any interdisciplinary, international or exchange course as an elective, and the School will continue to encourage them to do so. It will simply not be a requirement for graduation.

### **Recommendation**

Having satisfied itself of the merit of this proposal, ASC recommends: *That Senate approve the Variation in Graduation Requirements - BASc Nutrition and Food*

### **C) CERTIFICATE IN ACCESSIBILITY PRACTICES: DISCONTINUATION**

Since 2011, the School of Disability Studies has been the academic home for the *Certificate in Accessibility Practices: AODA and Beyond*. It was created to address the need for human resources and other specialists to build capacity for creating fully accessible places of work, learning, commerce and recreation. Specifically, the intent was to link accessibility practices with the critical, inter-disciplinary analysis of Disability Studies. The certificate was designed for:

- Students who have attained or are in process of attaining university degrees for whom the certificate is relevant to profession and/or personal development; Disability Studies was a primary target.
- Employers/employees in public sector, private and not-for-profit organizations with obligations under the AODA.

In 2015, with Senate approval, the original title *Certificate in Advancing the AODA: Principles and Practices of Accessibility* was revised to feature *Accessibility Practices* more generally. While continuing to highlight the Ontario legislation, the new title better reflected the growing scope of practice in an international field.

The primary reason for discontinuation is low student demand – although not in a typical way. Especially at the start, registration numbers for the Certificate were good, and they have built steadily for the overview course DST 506. Some participants may also have taken DST 502 or CINT 902 as an overview of critical issues in Disability Studies. However, they tend not to take the last four of the six courses necessary. In other words, registration in the Certificate as a whole has not translated into course registrations. Thus, we have many people “on the books” (83 by last count) who are not actively taking courses, or have departed without official termination. Over the 5-6 years that the Certificate has been offered, there have been just 13 full certificate completions.

Disability Studies students wanting to complete the degree and the Certificate simultaneously were restricted by a ruling that *CE certificates cannot be pursued in combination with an undergraduate*

*degree program where the course content is identical or too similar to the content of the degree program course requirements.* Subsequently, while there is strong DST student interest in the area, a limited number of students have applied for the Certificate.

People working in public sector, private and not-for-profit sector tend to prefer short-term skills-based training workshops with little interest in taking six courses, and/or in the theoretical and political context for accessibility practices. The absence of AODA enforcement mechanisms by the province, and the emergence of private training consultants has also had an effect.

Disability Studies and the Chang School are committed to accessibility education for a range of groups and, moving forward, we will pursue parallel pathways towards that goal. The Chang School is exploring a different type of certificate that is more skills-based. Within the Disability Studies program, accessibility practices are addressed in every course on offer. All of our courses are available to Ryerson students through Open Electives, and the School is currently taking steps to make sections available to full-time Ryerson students who are interested in our program.

Any students currently registered in, and wish to complete, the Certificate will be able to do so.

### **Certificate Structure**

Three (3) required courses:

DST 506: Making Ontario Accessible

DST 501: Rethinking Disability OR INT 902: Introduction to Disability Issues OR SWP 921 Disability Issues and Social Work Practice

CVDS200: Independent Study

Three (3) elective courses:

C/CLD 445 Inclusion and Consultation

C/DST 500 A History of Madness

C/DST 502 Disability and the State

C/DST 504 Mad People's History

C/DST 525 Rethinking Images of Embodied Difference

C/DST 603 Disability and the Law

C/DST 604 Current Topics in Disability II

C/DST 614 Community Access and Technology

C/DST 725 Politics and Practices of Interventions

C/DST 726 Leadership in Human Services

C/DST 727 Leadership for Social Action

C/GER 298 Gerontology: Ability, Disability and Aging

C/INP 913 Leading through Change

C/INT 907 Team Work for Community Services

C/INT 921 Writing for Disability Studies

C/MHR 405 Organizational Behaviour and Interpersonal Skills

C/MHR 600 Diversity and Inclusion in the Workplace

C/MHR 650 Management of Change

C/OHS 477 Integrated Disability Management

C/PHL 302 Ethics and Health Care

C/PHL 400 Philosophy: Human Rights and Justice

C/PHL 507 Philosophy: Ethics and Disability

C/SWP 402 Social Work: Social Policy and Social Inclusion

### **Recommendation**

- Having satisfied itself of the merit of this proposal, ASC recommends: *That Senate approve the Chang School Certificate In Accessibility Practices: Discontinuation*

### **D) CERTIFICATE IN PROGRAM AND PORTFOLIO MANAGEMENT: DISCONTINUATION**

The Certificate in Program and Portfolio Management, which has its academic home in the Department of Architectural Science, was launched in 2011. The rationale for the certificate was to build on the popularity of the existing Project Management Certificate. It was intended to be a "next level up" certificate that would offer project management certificate graduates a natural professional development and career progression from a project manager to a program manager or a portfolio manager.

To date, there has not been as significant a demand for the certificate compared to the level originally anticipated during course development; and courses have rarely run since the certificate's inception. The low demand for the certificate may be due to the Project Management Institute taking about 20-30 years to have the industry realize the importance of formal project management education and certification, and for the support of practicing professionals. It may take another 10-15 years before program and portfolio management can gain traction in the industry.

One student has completed the certificate and one more student is working on completion. To-date there have been no significant favourable changes in the market demand to merit keeping the certificate active. Therefore, it is recommended that this certificate be discontinued, commencing Fall 2017.

With the exception of the CKPP110 and CKPP120 courses, which are electives in the Project Management Certificate, all CKPP courses will be deleted.

**Required Courses (4)**

CKPP 110 Overview of Program Management  
CKPP 120 Overview of Portfolio Management  
CKPP 130 Program and Portfolio Governance  
CKPP 140 Organizational Strategy through Projects

**Electives (select 156 hours)**

19.5-Hour Courses  
CKPP 210 Financial Measurements for Success  
CKPP 220 Managing Programs and Projects Virtually  
CKPP 230 Enterprise Risk Management  
CKPP 240 Advanced Leadership Skills  
CKPP 250 Leading Organizational Change  
CKPP 260 Creating Balanced Portfolios  
CKPP 270 Crisis Management and Program Recovery  
CKPP 280 Global Program Management  
39-Hour Courses  
CKPP 310 Program and Portfolio Management Research  
CKPP 320 Program and Portfolio Management Practicum

**Recommendation**

- Having satisfied itself of the merit of this proposal, ASC recommends: *That Senate approve the Chang School Certificate in Program and Portfolio Management*

**E) CHANG SCHOOL CERTIFICATE IN MAGAZINE AND WEB PUBLISHING: DISCONTINUATION**

The Magazine and Web Publishing is a longstanding certificate program that has existed for more than 25 years and has evolved over that time to reflect changes in the magazine publishing industry. The certificate academic home is the Chang School and is offered as part of the Communication and Design area.

This certificate program is faced with some significant challenges within a rapidly evolving industry where traditional print approaches are being supplanted by digital change. Publishing companies are today struggling with the impact of the internet and concurrent growth of new technologies and digital (i.e. non-ink-on-paper) publishing.

The program has seen a slow, steady erosion of enrollment over the past several years. Furthermore, an increasingly aggressive competition from the industry itself through conferences, professional development courses, webinars and seminars, has made it more difficult to attract students to the certificate program. The frequent course cancellation has created a sense of dissatisfaction among students who have opted to pursue the certificate; courses they need are not offered, delaying their ability to complete.

The Certificate in Magazine and Web Publishing will be discontinued effective Fall 2017. Selected Magazine and Web Publishing courses will continue to be offered in order for current students to complete the required number of courses to graduate. All certificate courses will be discontinued by the end of the 2018-2019 academic year. The usual accommodations, if required, shall be made to facilitate completion of certificate graduation requirements, including course substitutions and course directives. Curriculum will be retained for future development, and the program area plans to investigate potential future programming in this field.

## **CURRICULUM STRUCTURE**

Required Courses (2)

CDJN 112 Magazine and Website Publishing

CDJN 113 Magazine and Website Editing

Electives (five 39-hour courses or equivalent combination of electives totalling 195 hours)

39-Hour Courses

CDJN 116 Introduction to Magazine Design

CDJN 117 Writing for Magazines and the Web

CDJN 118 Advanced Feature Writing

CDJN 119 Magazine Copy Editing

CDJN 205 Magazine Production

19.5-Hour Courses

Students may substitute two of the following 19.5-hour courses for any of the above 39-hour electives.

CDJN 120 Magazine Fact-Checking and Research

CDJN 202 Magazine Marketing and Circulation

CDJN 121 Magazine Packaging

CDJN 204 Layout Software for Magazine Editors

CDJN 122 Advanced Magazine Editing

CDJN 206 Creating Website Editorial

CDJN 123 Success as a Freelancer

CDJN 207 The Online Publishing Toolkit

CDJN 124 The Art of Pitching

CDJN 208 Ad Sales on the Web

CDJN 201 Magazine Advertising Sales and Marketing

## **Recommendation**

- Having satisfied itself of the merit of this proposal, ASC recommends: *That Senate approve the Chang School Certificate in Magazine and Web Publishing: Discontinuation*

## **F) CHANG SCHOOL CERTIFICATE IN ARCHITECTURAL PRESERVATION AND CONSERVATION: DISCONTINUATION**

The Certificate in Architectural Preservation and Conservation has been delivered for an estimated twenty years. Over the last five years, the priority in the construction industry in the GTA has been to build new buildings, not conserve and preserve old ones. As a result, there have only been 25 certificate enrollments in the last five years, with a total of 5 graduates, and 20 certificate candidates currently registered.

The Department of Architectural Science, the Chair of Architectural Science and the Curriculum Committee for the certificate have agreed that the certificate be discontinued, commencing in the 2017-18 academic year. Those who wish to complete the current certificate will be informed of course offerings and timelines to complete the certificate prior to course deletions. The usual accommodations, if required, shall be made to facilitate completion of certificate graduation requirements, including course substitutions and course directives. All courses will be advertised on the web calendar for the next academic year and current certificate students will be informed that they must complete CKAR 600, CKAR 604 and CKAR 610 by Spring 2019, prior to their deletion in Fall 2019. This will allow current registrants time to complete the certificate requirements. The balance of the discontinued certificate's

CKAR courses will continue to be offered as they are part of the published curriculum of the Certificate in Architecture and in the Certificate in Advanced Architecture.

### **Certificate Structure**

#### Required Courses (4)

- CKAR 600 Architecture Preservation and Conservation Workshop
- CKAR 601 Building Science for Architectural Preservation and Conservation
- CKAR 604 Management and Regulatory Framework
- CKAR 610 Architectural Preservation and Conservation Techniques

#### Electives (select two)

- |   |   |
|---|---|
| CENT 500 New Venture Startup                          | CKDA 610 Digital Architectural Modelling    |
| CKAR 203 Specifications and Contractual Documents     | CKDA 611 Digital Architectural Rendering    |
| CKAR 204 Cost Estimating and Control                  | CKLA 400 Ecology and Sustainable Landscapes |
| CKAR 209 Digital Graphics for Architecture and Design | CKLA 410 Horticultural Science              |
| CKAR 210 Toronto: An Architectural History            | CKPM 202 Fundamentals of Project Management |
| CKAR 500 Sustainable Buildings                        | CKPM 213 Management of Projects in the AEC  |
| CKAR 605 Comprehensive Seminar/Project                | CKPM 214 Project Development and Control    |

### **Recommendation**

- Having satisfied itself of the merit of this proposal, ASC recommends: *That Senate approve the Chang School Certificate in Architectural Preservation and Conservation: Discontinuation*

### **G) For Information: CHANG SCHOOL CERTIFICATES - REVISIONS (Dec '16 – Jan '17)**

Chang School Certificate in:


- i. Health Services Management: Revisions
- ii. Data Analytics, Big Data, and Predictive Analytics: Course Deletion; Course Addition (Department of Computer Science)
- iii. Food Security: Minor Revisions and Change in Course Description CFNY 404
- iv. Human Resources Management: Revisions
- v. Leadership in Organizations: Revisions
- vi. News Studies: Course Deletion; Course Addition (Elective Category)
- vii. Advanced Architecture: Course Deletions; Course Addition; Course Repositioning
- viii. Architecture: Course Deletions; Course Addition
- ix. Computer Programming Applications: Course Additions; Course Deletions
- x. Computer Security and Digital Forensics: Course Deletion (CKDM 150); Course Addition (CSCI 243)
- xii. Ethics: Course Deletion (CITM 407)
- xiii. Health Informatics Management: Selected Revisions
- xiv. Information Systems Management: Course Deletion (CITM 407)
- xv. Landscape Design: Course Deletions
- xvi. Privacy, Access and Information Management: Revisions to Course Title and Description for CZIT 427
- xvii. Project Management: Course Additions; Course Deletions
- xviii. Retail Management: Course Addition (CRMG 806); Course Deletion (CZRM 100)
- xix. Social Sciences and Humanities Foundations: Course Addition (CACS 210); Course Deletion (CACS 200)

**H) For Information: CHANG SCHOOL CERTIFICATES – REVISIONS (Feb '17)**

Chang School Certificate in:

- i. Certificate in Film Studies: Course Deletions; Course Additions
- ii. Certificate in Community Engagement, Leadership and Development: Course Addition (CSSH 502)
- iii. Certificate in Graphic Communications: Course Deletions; Course Addition
- iv. Certificate in Image Arts: Course Deletions; Course Additions
- v. Certificate in Photography Studies: Course Additions
- vi. Certificate in Sustainability Management and Enterprise Process Excellence: Course Deletions; Course Additions

Respectfully Submitted,



Marcia Moshé, Chair for the Committee

ASC Members:

Charmaine Hack, Registrar

John Turtle, Secretary of Senate

Marcia Moshé, Chair and Interim Vice Provost Academic

Denise O'Neil Green, Assistant Vice President/Vice Provost, Equity, Diversity and Inclusion

Anne Marie Singh, Faculty of Arts, Criminology

Anne-Marie Lee Loy, Faculty of Arts, English

James Nadler, Faculty of Communication & Design, Creative Industries

Wendy Freeman, Faculty of Communication & Design, Professional Communication

Thomas Tenkate, Faculty of Community Services, Occupational and Public Health

Annette Bailey, Faculty of Community Services, Nursing

Medhat Shehata, Faculty of Engineering and Architectural Science, Civil Engineering

Donatus Oguamanam, Faculty of Engineering and Architectural Science, Mechanical & Industrial Engineering

Vadim Bostan, Faculty of Science, Chemistry & Biology

Yi Feng, Ted Rogers School of Management, Finance and Accounting

Jim Tiessen, Ted Rogers School of Management, Health Services Management

Jay Wolofsky, Library

Linda Koechli, Chang School of Continuing Education

Dalia Hanna, Chang School of Continuing Education