

# REPORT OF ACADEMIC STANDARDS COMMITTEE

## Report #W2013–5; June 2013

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

- an Optional Specialization in Zone Education

## A. OPTIONAL SPECIALIZATION IN ZONE EDUCATION

### 1. OVERVIEW

This proposal presents a model for an Optional Specialization in Zone Education. The Optional Specialization in Zone Education is meant to be a framework that will make it possible for all sectors of the Ryerson academic community to offer experiential learning opportunities in one or more Ryerson University Entrepreneurship Zones.<sup>1</sup>

Ryerson University's Entrepreneurship Zones are built upon a unique model designed to respond to the needs of the market and of society. Student-led innovation is at the heart of the zone approach. Students bring energy and entrepreneurship that, combined with research strengths across the university, lead to real solutions for industry and service-sector/community-sector challenges as well as commercialized products. Critically, students themselves generate the new ideas and develop them to the product, business, process or service stage. Students are supported in innovation, entrepreneurship, and the creation of business plans to develop innovative ideas and companies that are judged to have commercial or social value.

Zone Education is student driven and motivated. It is multi-disciplinary and collaborative, facilitating the cross-pollination of ideas from students across a variety of academic backgrounds. Students are provided with active mentorship, coaching and support from Ryerson faculty and sector professionals, and evaluation to enable success. Zone participants gain real world experience, make strategic decisions and have access to broader community networks of entrepreneurs, investors and funders, potential customers/clients and leaders to advance the company – be it a private or social enterprise, technology, product or service they develop.

The Optional Specialization in Zone Education creates a link between Ryerson's successful models of student-driven innovation, as demonstrated by Ryerson's Digital Media Zone, and our curriculum. But it goes well beyond digital media. The Optional Specialization provides a framework within which students from all six Faculties can enjoy experiential learning opportunities in one or more of Ryerson University's Entrepreneurship Zones – devoted to health, energy, design, fashion, digital media, social innovation and beyond.

The Optional Specialization in Zone Education is a six-credit curriculum consisting of a single "umbrella course". Within the structure of the course there is scope for preparation, development and application activities for student teams working on innovative ideas with an entrepreneurial approach. The umbrella course also allows participation of all Faculties and cross-fertilization and partnerships amongst them.

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<sup>1</sup> Currently the Digital Media Zone. Ryerson anticipates creating additional entrepreneurship zones in fields such as fashion, aerospace, design, health and social entrepreneurship.

Successful completion of the umbrella course leads to the awarding of the Optional Specialization in Zone Education. This Optional Specialization is external to degree programming.

## 2. CONCEPT

Ryerson's Entrepreneurial Zone Education is a year-round, on-campus experiential learning<sup>2</sup> environment for teams of students to conceive ideas, create, incubate and accelerate start-up companies, test prototypes, and develop solutions to industry and community challenges.

While the term entrepreneurship is often associated with for-profit business activities, the key elements of the entrepreneurial approach can be applied in any area in which innovation is sought, including the not-for-profit sector and government. Key elements include motivation and commitment, abilities and skills, resources, strategy and vision, planning and organization, and the idea in relation to the market/sector. Implied is the ability to identify an opportunity, to generate an idea, to develop a productive outcome from that opportunity, and the skills to plan and build in order to bring the idea to a concrete product, service or process that yields the desired outcome.

The Entrepreneurship Zones will enable Ryerson University to create synergies among student entrepreneurs, including graduate students, and propel Canadian SMEs into the global marketplace.<sup>3</sup> Young entrepreneurs who are accepted into an Entrepreneurship Zone will receive an unequalled range of support in the form of equipment, mentoring, and exposure to industry and share a development space with other innovators who are passionate about launching new ideas.

Ryerson's highly successful Digital Media Zone (DMZ) is the prototype for the Optional Specialization in Zone Education. It has quickly demonstrated that it represents an ideal environment to support industry and service-sector collaborations. Since it opened its doors in 2010, student innovation successes have raised the public image of Ryerson as a centre for digital media studies, research, and entrepreneurship.<sup>4</sup> The proposed Optional Specialization in Zone Education will expand this concept to the areas of fashion, aerospace, design, energy, health, and social entrepreneurship. The Zones will also have synergies with the newly approved Masters in Digital Media degree program, a program with a strong focus on innovation and entrepreneurship.<sup>5</sup>

The Optional Specialization in Zone Education will have students engaged in highly skilled, high-value added activities. In this context "value-added" may refer to for-profit activities, but may also include

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<sup>2</sup> Experiential learning encompasses a wide range of participatory activities both inside and outside of the classroom that should involve student experimentation, reflection, critical and integrative thinking, application of theory, problem-solving and creativity. Key elements include a real-world context and the scope to learn through experimentation and reflection on the experimentation.

<sup>3</sup> 98% of Canadian businesses hire fewer than 100 employees, and thus come under the Industry Canada heading of "small business." Small firms account for 37% of jobs created in Canada between 1999-2009, and are responsible for about 21% of Canada's total value of exports. *Key Small Business Statistics (July 2010)*, published by Industry Canada, [www.ic.gc.ca](http://www.ic.gc.ca), accessed April 7, 2011.

<sup>4</sup> Since April 2010, there have been 84 start-ups incubated and accelerated, 76 of these were companies. Over 134 projects have been initiated. Thirty three DMZ-incubated start-ups have moved out of the DMZ space and of these 25 are companies. In addition, over 710 jobs have been created through newly formed startups and market-driven research. Currently there are 253 innovators working in 51 start-ups in the DMZ.

<sup>5</sup> The Masters in Digital Media was approved by Ryerson's Board of Governors and the Quality Council in the spring of 2013. It will accept its first student cohort in September 2013.

added social/community value<sup>6</sup> in the form of improved services and processes. The Zones will generate companies and services and expand Ryerson's culture of innovation. The alignment of industry expertise and entrepreneurship with a progressive, urban university will enhance Ryerson's profile and reputation. Finally, and central to this proposal, Ryerson University is committed to incorporating the Zone experience as part of student curriculum and that up to 10% of Ryerson undergraduates will have a Zone experience during their tenure at the university.

### **3. ENTREPRENEURIAL ZONE EDUCATION AT RYERSON**

Ryerson's Faculty of Arts, Faculty of Communication and Design (FCAD), Faculty of Science (FOS), Faculty of Engineering and Architectural Science, Faculty of Community Services (FCS) and the Ted Rogers School of Management (TRSM), have extensive expertise in the areas of digital media, fashion, aerospace, energy, design, health, and social entrepreneurship. Therefore, additional Entrepreneurship Zones beyond Digital Media will be supported by a leading school of business, practice-based centres of art and design research, a vibrant health and related services group, and two Faculties with strong, existing links to engineering and science-based industries and with a reputation for applied development. Together, the Faculties offer a unique breadth of coverage and depth of expertise. The Entrepreneurial Zones will contribute to existing and new synergies within and across the Faculties. Cross-fertilization and a multidisciplinary approach are at the heart of Zone Education and the Optional Specialization in Zone Education, described in more detail below, is a venue where this cross-fertilization may be fostered and partnerships built.

Finally it is important to note that, as in the case of the DMZ, the research/scholarly strengths of Ryerson's six Faculties will serve to inform Zone experiences for students although the activities in the Zones will not be conventional research projects.

### **4. STUDENT PROFILE**

Expectations for students who enroll in the Optional Specialization in Zone Education include the following traits: multi-disciplinary, team-focused and collaborative, industry/sector-facing, highly-qualified, able to prototype and innovate, passionate, confident, disciplined, and able to leverage real-world experience.

### **5. THE ZEDXXX COURSE DESCRIPTION<sup>7</sup>**

The following course description<sup>8</sup> is being proposed:

*This fully experiential course provides students with the skills to work together as members of high-performance teams, to successfully develop innovative products, processes or services, to launch these products/services in the market/client group or to spin-off the technology into independent start-ups. The course is built around a major team-based project that may last up to 4 semesters. Students may pursue their own entrepreneurial ideas that have the potential to become a product, process or service,*

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<sup>6</sup> Although not as clearly defined as "profit" there is some global consensus on "the common good". For example, the United Nations Millennium Goals.

<sup>7</sup> The code ZEDxxx will be used for full-time zone participants, those who are not enrolled in full-time Ryerson programming. An alternate code, ZEDxxy, will be used to register part-time zone participants, those who have full-time Ryerson program registration. The course descriptions, admission requirements and evaluation components for both versions will be identical.

<sup>8</sup> Course Outline: The course must be amenable to team efforts in a wide variety of fields or (multi/inter-)disciplines. As such, the detailed course content will be variable depending on the interests of a given team. Analogy to a graduate research thesis project is appropriate – project milestones are defined and evaluated regularly (see section 2.1), but a week-by-week course outline of the type seen with a conventional undergraduate course is not feasible or meaningful.

*an industry/community organization-requested and focused project or a specifically assigned project relevant to an external “client” or opportunity. This session is graded on a Pass/Fail basis.*

**TOTAL CREDITS = 6**

## **6. CURRICULUM**

The curriculum structure being proposed is a single “umbrella course”, the Entrepreneurial Zone Course ZEDxxx, for full-time zone participants (an alternate course code ZEDxxy will be used for part-time zone participants; however, the descriptions of both courses and the details of admission and evaluation will be identical). The design ensures that the course has the range to permit zone-based experiential learning in virtually any field. In essence, ZEDxxx is meant to serve as a framework to allow students from any Ryerson Faculty to participate in Zone Education. It creates an environment where Ryerson’s academic units can design and implement Zone Education that reflects the nuances of their fields of endeavour while permitting the cross-fertilization of ideas and skills from a wide range of disciplines that is part of the ethos of Zone Education.

Regardless of the detailed field of interest of prospective students, the umbrella course will be an intensive learning experience. This fully experiential specialization will be an immersive project experience moderated by expert mentors made up of Ryerson faculty and sector professionals.

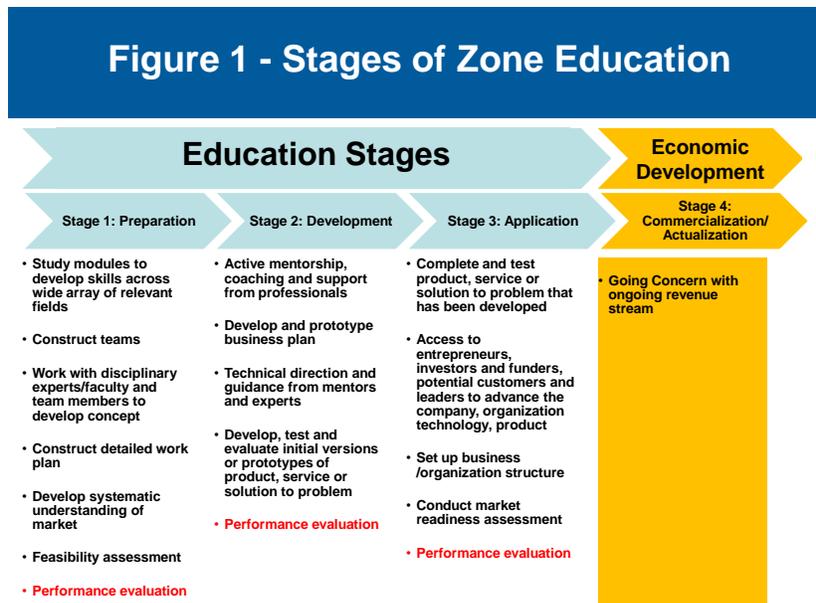
ZEDxxx will be an optional addition to a student’s undergraduate education and will appear as an additional credential on a student’s transcript. Students who complete ZEDxxx successfully will be awarded an Optional Specialization in Zone Education. Students may be registered in other Ryerson programs or they may be only registered in ZEDxxx. The Optional Specialization in Zone Education is similar to other optional specializations already active at Ryerson: the Optional Specialization in Management Science and the Optional Specialization in Digital Entrepreneurship and Innovation.

ZEDxxx is fully experiential and has three stages as outlined in Figure 1.<sup>9</sup>

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<sup>9</sup> These stages mirror the well-known three-stage phase-gate model of business development identified in the research literature on entrepreneurship: concept development, technology and market development, business development and startup (e.g., see Rafik Loutfy and Lotfi Belkhir, "Managing Innovation at XEROX", *Research Technology Management*, Vol. 44, No. 4, pp. 15-24, Jul/Aug 2001).

**Figure 1 - Stages of Zone Education**



Participants may enter into the Optional Specialization in Zone Education at any stage of the continuum moving to commercialization/actualization (Figure 1). All students wishing to pursue ZEDxxx will be evaluated in terms of prior experience/prior learning which will ensure a reasonably level playing field for students.

Many, if not all, students will have the option to use one or more of their degree credit courses as the preparation stage of ZEDxxx. Students may establish their preparedness by successful completion of a Ryerson course which has an entrepreneurial focus (Table 1). Non-Ryerson students who wish to take the Optional Specialization will be required to undergo a prior learning assessment process. In addition, ZEDxxx will include an intensive Boot camp at the start of a students’ tenure.

**Table 1 Credit courses that provide preparation for ZEDxxx**

BSM-100 The New Business: From Idea to Reality
BSM-200 The Growing Business: Breaking Even
ENT-500 New Venture Startup
ENT-526 Entrepreneurial Behaviour and Strategy
ENT-601 Identifying Opportunities
ENT-725 Management of Innovation
EMS-201 Entrepreneurship & Innovation Management (Engineering)
INT-907 Team Work for Community Services
GEO-873 Geographic Entrepreneurship and Consulting
GEO-772 Individual Research Paper *
ITM-90A/B Graduation Project
ENT830 Entrepreneurial Organizational Appraisal II
ACS-800 Senior Group Project
ACS-950 Directed Research Course
INT-912 Community Development: International Field Experience
INT-917 Urban Community Development
INT-920 Community

BDC-913 Media Entrepreneurship
WKT-99A/B Industrial Internship Program
FSN-402 Internship
BDC-820 Internship
BDC-821 Special Project
Retail Management Internship (non- credit graduation requirement)
ITM Internship
SWP-51A/B Field Practicum
SWP-638 Social Work Research: Part II
SWP-915 Independent Study I/SWP-916 Independent Study II
SWP-937 Community Engagement Capstone
SWP-938 Innovative Organizing in Precarious Times
SWP-939 Art and Social Transformation
SWP-50A/B Advanced Social Work Practice Seminar
SWP-51A/B Field Practicum

It is intended that students will have met the criteria to complete the Optional Specialization in Zone Education in no less than two and no more than four semesters<sup>10</sup> of experiential learning. Similar to a graduate research thesis, a student must meet set evaluation criteria to successfully complete the Optional Specialization, but the time required for an individual student to do so will be variable. A student remains registered “In Progress” for the duration of the time required to successfully complete the course.

ZEDxxx will be immersive and intensive in much the same way a graduate thesis course requires a high level of time and intellectual commitment. In graduate programs, the thesis course is often assigned multiple credits. In the Optional Specialization in Digital Entrepreneurship and Innovation, the experiential learning component (EID500) has been assigned five credits (plus a 6<sup>th</sup> for the lecture course EID100). Based on these precedents, there is justification in assigning six credits to ZEDxxx.

## 7. EVALUATION AND ASSESSMENT

Given that the zone education model is experiential and provides students with a sense of “real world” working experience a student’s progress in ZEDxxx is difficult to evaluate in a conventional academic format. Rather, the evaluation should be reminiscent of the type of evaluation an entrepreneur might expect as he/she develops an idea into a concrete product or process.

A performance evaluation approach is being proposed as a structure to establish student progress through the development and application stages of ZEDxxx. The process of performance evaluation is two-tiered, with evaluations being carried out by a panel of experts (the “management team”<sup>11</sup> evaluation) as well as by a group of peers (the “peer-to-peer” evaluation). It should be noted that this two-tiered system is currently used successfully to track the progress of participant teams in the DMZ and to make decisions regarding their suitability to continue as DMZ participants. Formal performance evaluation will occur at least once per semester of registration. The evaluations will be captured on a

<sup>10</sup> These could be consecutive semesters or spread over several summer sessions depending on a student’s own needs.

<sup>11</sup> The terminology comes from the world of business but it should be recognized that not-for-profits and community organizations also have boards and/or management/advisory teams.

reporting form similar to that developed to track progress in a graduate thesis used by the Yeates School of Graduate Studies.

Upon admission to ZEDxxx teams are given feedback by the management team on their business plan<sup>12</sup>, its credibility and viability, as well as their market/client group and if/how they have differentiated themselves. They are also given feedback on their proposed goals and milestones. At the outset of ZEDxxx, participant teams are required to develop formal goals and aims for their projects, including a timeline and list of milestones. These expectations may include the financial status of the project, sales targets being met, and design elements being finalized and incorporated into an overall design. The expectations become the basis for subsequent evaluation.

Management Team Evaluation – A team of expert mentors (the “management team”) provides one level of evaluation. The management team will typically be composed of a combination of Ryerson faculty and industry/sector experts. The student teams will provide a periodic verbal and written report<sup>13</sup> to the management team indicating their perception of progress and indicating those milestones they have met and those not met. The report is evaluated by the management team on a go forward/not go forward (pass/fail) basis. Failure to meet expectations/milestones in a given time period results in alternative solutions being suggested by the management team in consultation with the student team. This provides the student teams with feedback for an iterative development process. It also mimics the real world in the sense that students have the opportunity to experience “failed experiments” and to learn from them. If a student team repeatedly fails to meet its goals/milestones, it can be asked to withdraw from the program (i.e., be assigned a failing grade). Typically student teams are given a fixed time period to demonstrate acceptable progress as judged by the management team. Teams may request an extension but this is granted at the discretion of the management team.

Peer-to-Peer (p2p) Evaluation – The p2p evaluation is most effective in the application stage once students have some experience of idea development. It is similar in intent and structure to the management team evaluation. However, in this case the student team is evaluated by other zone participants (peers). There is a periodic report delivered to the other students in the program. The presenting team is held accountable to their own stated goals and milestones by the peer group. The p2p meetings are facilitated by the management team. The p2p evaluation can contribute to the loss of participant status. The p2p process plays two roles – (i) to provide evaluation of teams and (ii) to provide students with the experience of critiquing/analyzing the progress of an entrepreneurial initiative.

Final Pitch– At the culmination of ZEDxxx, each team is required to pitch their product/service/process idea to a panel of faculty and industry experts. The panel will evaluate the pitch on elements such as delivery of specific milestones, customer interaction and final product as defined by understanding of client needs, creative execution of client opportunity, technical execution of client needs and the demonstration of professional interpersonal client driven relationships. In addition, a written report will be required that will also be evaluated by the expert panel. This ultimate evaluation element could be viewed as playing an analogous role to the oral examination in a conventional graduate-level degree.

The membership of the management team and expert panel will be crucial to the rigour of the program and to student success. It is proposed that the members are a combination of Ryerson faculty members

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<sup>12</sup> It is important to point out that a business plan is useful even for non-profit initiatives. The goal may not be to turn a profit, but viability must be established to have beneficial societal impacts.

<sup>13</sup> Reports could also be delivered as an e-Portfolio using the DMZ-developed software Who plus You (<http://www.whoplusyou.com/>).

and external experts from the relevant sector (digital media firms, design firms, community organizations, NGOs etc.). It is also proposed that the Deans of the academic Faculties, or suitable designate (e.g. Associate Dean) will vet proposed members for the management team and expert panel.

Significant consideration was given to whether ZEDxxx should be graded on a Pass/Fail basis or whether a numerical/letter grade would be preferable. The Pass/Fail designation is not unique to this type of experiential session; many skills-based programs employ a similar marking system. This is primarily because the end product is the student's passport or entry point for potential employers/clients to determine their suitability from a content, production management and technical perspective. In essence, the students are not working towards a mark; they are developing a broad portfolio of skills that culminate in a final demonstrable product. That product is their calling card for future employment or entrepreneurial opportunities. Hence, the Pass/Fail is ideally suited to an experience meant to reflect a very real-world scenario.

## **8. EXAMPLE OF THE OPTIONAL SPECIALIZATION IN ZONE EDUCATION**

This section presents an example of how the ZEDxxx umbrella course model might be deployed for an experiential learning opportunity related to engineering and leading to an Optional Specialization in Zone Education: Engineering Entrepreneurship and Innovation.

Stage 1 Preparation: Three content units/modules delivered in conventional lecture format: Principles of Engineering Economics, Entrepreneurship and Innovation Management, and Startup of Technology Ventures. Also Engineering Innovation and Entrepreneurship Practicum I: Umbrella course content covering conceptual development of a technology venture such as needs and market identification, technology screening, intellectual property, regulatory issues, competitive advantage, risk assessment, presentations and reports of ideas developed.

Stage 2 Development: Umbrella course content covering Engineering Innovation and Entrepreneurship Practicum II. Teams work on technology and market development of a technology venture including technology development, market development, and presentations and reports.

Stage 3 Application: Engineering Innovation and Entrepreneurship Practicum III - umbrella course content where teams work on business development and startup of a technology venture including financial needs, capital investment, venture capitals, resource and operational aspects, customer value, marketing, market dynamics, presentations and reports.

## **9. LEARNING OUTCOMES OF THE ENTREPRENEURIAL ZONES**

Entrepreneurial zone education represents a new model of learning that emphasizes the process of developing entrepreneurial innovation that may not be fully captured within a degree credential. A key aspect of zone education is that it is student driven and motivated – it trusts students to learn. It is team based, multi-disciplinary and collaborative. While it does not follow as set a curriculum as a conventional course, students are provided with active mentorship, coaching, support from faculty, business experts and other professionals (e.g., lawyers) and evaluation to enable success. The closest degree program parallel would be a team-based thesis program.

Zone education will provide students with a tool box of core skills supporting specific learning outcomes. Upon successful completion of the Optional Specialization in Zone Education it is expected that students will:

1. Have an ability to apply entrepreneurial thinking in the context of sectors of importance to the Canadian economy guided and supported by the expertise within Ryerson University
2. Be effective members of high-performance interdisciplinary teams
3. Be able to collaborate effectively
4. Practice design thinking and effective communication
5. Understand how to contribute to the SMEs that drive Canada's economic growth<sup>14</sup>
6. Have the ability to generate and support start-up companies, innovative services, products and processes in the fields such as fashion, aerospace, design, digital media, energy, health, and social entrepreneurship
7. Be in a position to become highly qualified personnel, team leaders, and managers in fields that demand diverse skills and experiences
8. Be able to foster collaborative and interdisciplinary projects among students from all of Ryerson's Faculties

Relationship to ULDES – The Optional Specializations at Ryerson fall outside of the full policy requirements for new program development. As such, mapping of curriculum to university degree level expectations (UDLES) is not a requirement for this sort of small-scale curriculum package. However, it should be pointed out that the learning outcomes listed above do connect to the UDLES. For example, learning outcome #1 overlaps with the DLE of Autonomy and Professional Capacity; learning outcome # 4 overlaps with the Communication Skills DLE; learning outcome #2 supports the DLE Applications of Knowledge (e.g., the p2p evaluation component ensures that all students have the opportunity to “review, present and critically evaluate qualitative and quantitative information”).

## **10. ADMISSION REQUIREMENTS**

Admission to ZEDxxx is open to all qualified applicants - both current Ryerson students as well as others who would enroll as special students. Admission to ZEDxxx will be restricted to students who have completed the first year or higher of their undergraduate degree program with CLEAR academic standing or who have equivalent experience. Education and/or experience in the areas of engineering, business, multimedia, computer science, science, health, or design will be particularly useful.

Applicants must demonstrate that they have the necessary background to pursue intensive work in a production-oriented Entrepreneurial Zone, and portfolio<sup>15</sup> evaluation will be a critical component of the admissions process. Applicants will also be expected to present a proposal outlining their ideas for their zone experience. The “management team” (admissions committee) will screen applicants for the viability of applicant teams, business plans/models, (milestones, market/client base awareness, scalability, marketing plans etc.) and prototypes. Applicants must submit official transcripts from all post-secondary institutions. Other non-academic criteria may be required such as letters of reference. Program-specific background information such as a CV and a covering letter are also required.

As noted above, applicants will seek admission to the Optional Specialization in Zone Education with a proposal already developed. Part of this proposal will ideally be identification of team members or at least the skill sets needed for the team required to do this specific work. It is highly recommended that Ryerson's Entrepreneurial Zones create a small advisory unit to assist prospective applicants with developing their teams. Conceivably products such as Soap Box, WhoPlusYou or similar applications could be used to help applicants with this task.

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<sup>14</sup> The Ryerson Entrepreneurial Zones will supply talent both to existing SMEs in Ontario and beyond and to larger companies and organizations within targeted sectors.

<sup>15</sup> The portfolio is defined broadly for the purposes of this proposal. It might be a designed object, an app, a business plan etc.

## 11. SOCIETAL NEED

Innovation in the digital economy is rapidly changing our society. Globally, the Information and Communication Technologies industry grew 3 - 4% in 2010 and the trend continued in 2011 and beyond. Exceptional growth is projected for such areas as cloud computing, green Information and Communication Technologies (ICTs), and “smart” applications. Trends in ICT and broadband uptake are clearly stimulating the development of digital content. OECD statistics show that most areas of digital content are growing at “double-digit rates.”<sup>16</sup>

Digital media, most broadly defined as the digital production of multimedia content and tools, has a large compass. Digital media is also a growth industry. The Canadian entertainment software industry alone is growing annually at a rate of 29% and is ranked third in the world. Video game development, while employing 14,000 Canadians in highly-skilled jobs, also drives Canadian innovation in science, research, and technology.<sup>17</sup> Digital media sectors offer Canadians new and well-paid jobs in programming, game design, mobile applications, special effects, 3-D animation, sound design, computer graphics, and many other fields, including health, science, education and environmental studies.

The digital economy is here to stay. Indeed it is vital to Canada’s future. In 2010, the Canadian government launched a national consultation to develop a digital economy strategy. Digital media—a key driver of innovation—has a prominent role in Canada, where economic growth is largely advanced by small and medium enterprises (SMEs),<sup>18</sup> where over 11% of Canadians recently indicated a desire to start their own business, and where active ventures have doubled between 2009 to 2010.<sup>19</sup>

Aerospace Engineering – Globally, the military and civil aerospace industries represent approximately \$US382 billion.<sup>20</sup> Canada has a strong presence in the civil aerospace industry, with Bombardier being the 5<sup>th</sup> largest firm globally in the field (at 6.1% of global manufacturing revenues). In 2009, Canadian firms generated about \$22CAD billion in revenues – 28.9% of these revenues (\$CAD6.4 billion) were associated with firms based in Ontario. In the same year, it employed just under 79,000 individuals. Employment opportunities in the sector tend to be for highly trained staff – engineers, scientists, production staff, technicians/technologists.

One pressure facing the Canadian aerospace sector is competition from the emerging economies such as Brazil, Russia, India and China (BRIC) as well as Mexico. Canadian firms were actually positive in how they might respond to this challenge, with smaller firms seeing greater opportunities than the larger firms.<sup>21</sup> The industry believes that it is essential to maintain an evolving skilled work force with a strong technical knowledge base to respond to this challenge. A further issue of concern to the Canadian sector

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<sup>16</sup> OECD *Information Technology Outlook (Highlights) 2010*, <http://www.oecd.org/dataoecd/60/21/46444955.pdf>

<sup>17</sup> “Game On, Canada! Playing to win in the digital economy,” prepared by the Entertainment Software Association of Canada (ESAC), April 2010.

<sup>18</sup> “The success of SMEs affects the well-being of the Canadian economy and society as engines of job creation, economic growth and innovation. SMEs account for 45% of GDP, much of the economy’s growth, 60% of all jobs in the economy, and 75% of net employment growth.” Public Works and Government Services Canada website: [www.tpsgc-pwgsc.gc.ca/app-acq/pme-sme/importance-eng.html](http://www.tpsgc-pwgsc.gc.ca/app-acq/pme-sme/importance-eng.html), accessed February 20, 2011.

<sup>19</sup> *Canadian Entrepreneurship Status 2010*, prepared by the Fondation de l’entrepreneurship for the Business Development Bank of Canada, [http://www.bdc.ca/Resources%20Manager/misc/CES\\_2010\\_EN%20Final.pdf](http://www.bdc.ca/Resources%20Manager/misc/CES_2010_EN%20Final.pdf), accessed February 20, 2011.

<sup>20</sup> *The Strategic and Economic Impact of the Aerospace Industry*. Deloitte, October 2010. [http://www.aiac.ca/uploadedFiles/AIAC\\_ExecSummary%20-%20Final%20\\_2\\_.pdf](http://www.aiac.ca/uploadedFiles/AIAC_ExecSummary%20-%20Final%20_2_.pdf). Accessed on October 26, 2012.

<sup>21</sup> *The Strategic and Economic Impact of the Aerospace Industry*. Deloitte, October 2010. [http://www.aiac.ca/uploadedFiles/AIAC\\_ExecSummary%20-%20Final%20\\_2\\_.pdf](http://www.aiac.ca/uploadedFiles/AIAC_ExecSummary%20-%20Final%20_2_.pdf). Accessed October 26, 2012.

is access to a cost efficient supply chain. In order to face these challenges, the Canadian aerospace sector has recognized that there must be a migration to higher value added activities.<sup>22</sup> This need speaks to a drive to innovate and an entrepreneurial approach. Given Ryerson's strengths in aerospace engineering, experiential learning, and in partnership building, the University is well positioned to create Zone education opportunities that support the aerospace sector.

Design – "A growing, dynamic cultural sector is central to the success of Canada's creative, knowledge-based economy. It also serves as a magnet for skilled and creative people who, in turn, further contribute to its strength. However, the labour market of the cultural sector has grown increasingly complex, changing quickly and demanding new skills."<sup>23</sup>

The field that is referred to as "Design" is a sector of the Creative Industries. The Creative Industries belong to one of the fastest-growing economic sectors in Canada and worldwide. According to Statistics Canada, between 2001 and 2006 employment growth in this sector grew at a significantly faster rate (12%) than the economy as a whole (9%).<sup>24</sup> The growth of this sector has created a need for professionals who can combine management, leadership and entrepreneurial skills with an appreciation for the historical, theoretical, creative and production aspects of the disciplines that constitute these industries.

Since 2000 a number of studies have addressed the critical changes that will increasingly impact the Creative Industry sector. While these reports stress the importance of lifelong training for cultural workers, they also underscore the kind of competency "tool-box" that the cultural worker of the 21<sup>st</sup> century needs and that is currently in short supply. The study, Face of the Future, provides a clear impression of what those competencies must look like. It projects that "workers in the cultural sector are required to be flexible, adaptable, and possess a multiplicity of marketable skills and competencies, including softer skills like team management and interpersonal skills."<sup>25</sup> The creator, performer and cultural manager of the new millennium are increasingly in need of multi-disciplinary competencies not directly related to the artistic or creative discipline. To compete in the new economy, they must have general and strategic management skills, an ability to understand and negotiate contracts, a capacity to develop and work with international partners, knowledge of export marketing and import/export regulations, and a firm grasp of financial management, taxation, copyright and communications.<sup>26</sup> These competencies are directly supported by the Ryerson model of Zone education with its focus on entrepreneurship, team building, business skills and so on.

Energy – UN Habitat<sup>27</sup> recently released a report that states "Cities are voracious resource consumers, and as cities grow, their consumption also follows suit, absorbing more resources and increasing the ecological footprint. Cities need an uninterrupted supply of energy to fuel their activities, and this is currently being met predominantly by fossil fuels. However, fossils fuels are finite; their availability is under question, with harmful effects on the environment. The way forward is likely to be an alternative development model that is not carbon intensive, one that is economically and socially inclusive, and

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<sup>22</sup> *Adapting to the New Aerospace Reality*. Ontario Business Report <http://www.mri.gov.on.ca/obr/2012/05/adapting-to-the-new-aerospace-reality/>. Accessed October 26, 2012.

<sup>23</sup> *Labour Market Information for Canada's Cultural Sector*. The Conference Board of Canada, 2010, p. 2.

<sup>24</sup> *Labour Market Information for Canada's Cultural Sector*. The Conference Board of Canada, 2010, p. 4.

<sup>25</sup> Mercadex International, Inc., p. 10.

<sup>26</sup> Mercadex International, Inc. pp. 7-16.

<sup>27</sup> *Sustainable Urban Energy – An Asian Sourcebook*, UN Habitat For a Better Urban Future, United Nations Human Settlements Programme (UN HABITAT), 2012

focuses on the well-being of the population. A systematic understanding of today's energy consumption and production systems will provide us with some insights on how to achieve this."

This statement is echoed by the focus on sustainable urban energy initiatives adopted by Ryerson's FEAS. As articulated by FEAS<sup>28</sup> "The continued growth of large urban centres is challenging Canadian [, and indeed, global,] society in unprecedented ways. As the population surges, so does our demand for electricity, transportation, housing and all other elements that power our economy and create a high quality of life. On top of these pressures come other imperatives for the 21st century — protecting our natural environment and human health by fighting climate change, and conserving and managing our energy resources. It's all about building sustainable cities for the long term." This sector is of vital interest to the economy and to society more generally – both domestic and international. With its deep expertise in energy related research, partnered with the Centre of Urban Energy, FEAS is well positioned to contribute to Zone Education related to this area.

Health – The importance of health and, by extension, the health care system to Canadian society hardly needs to be emphasized. Health care is the single largest expenditure in all provincial budgets amounting to approximately \$200 billion nationally in 2011.<sup>29</sup>

Therapeutic breakthroughs and races for "the cure" tend to get high profile in the mass media, and there is certainly scope for innovation and entrepreneurship in these realms. However, health care is a system, and like all systems there are myriad processes and procedures which are sometimes efficient and sometimes not. The structure and processes of the health system itself is a wide field upon which innovation and entrepreneurship can play. Issues such as improving wait times, facilitating more accurate and secure health records, streamlining ambulatory care and triage, for example, are all structural issues that are by their nature multi-disciplinary. It is in areas such as these in particular, that Ryerson's Faculty of Community Services can partner with other Faculties (e.g., Arts on policy, Engineering on processes) to create innovative solutions. It is on these synergies that the idea of Zone education in health at Ryerson rests.

Social Innovation – Social innovation, and the social entrepreneurship<sup>30</sup> that support it, is a global phenomenon driven in part by globalization and in part by technological and scientific innovation. It is also driven by an increased awareness of the complexity and intractability of global problems such as environmental change, global health, increasing poverty and socio-economic disparity. These problems, in turn, have highlighted the need for new and innovative approaches to address these social concerns – innovative approaches that require input from a range of disciplines, as well as from the private, public, not-for-profit and academic sectors.<sup>31</sup> The concept of a "social economy" was formally recognized by the Government of Canada in 2004. The valuation of this sector remains unclear, although as early as 2004 the Government of Canada was providing funding to support it at a rate of \$CAD132 million.<sup>32</sup>

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<sup>28</sup> *Knowledge Made Tangible*, Annual Report of the Faculty of Engineering and Architectural Science, Ryerson University, 2012.

<sup>29</sup> National Health Expenditure Trends 1975 to 2011, Canadian Institute for Health Information, November 3, 2011.

<sup>30</sup> Social entrepreneurship describes the mobilization of traditional aspects of entrepreneurship (innovation, ambition, risk-taking, creativity) within and/or for the social economy.

<sup>31</sup> *Social Innovation in Canada: An Update*. Canadian Policy Research Networks, Goldenberg et al. 2009. [http://www.sshrc-crsh.gc.ca/about-au\\_sujet/publications/social\\_innovation\\_report\\_E.pdf](http://www.sshrc-crsh.gc.ca/about-au_sujet/publications/social_innovation_report_E.pdf). Accessed October 26, 2012.

<sup>32</sup> *Social Innovation in Canada: An Update*. Canadian Policy Research Networks, Goldenberg et al. 2009. [http://www.sshrc-crsh.gc.ca/about-au\\_sujet/publications/social\\_innovation\\_report\\_E.pdf](http://www.sshrc-crsh.gc.ca/about-au_sujet/publications/social_innovation_report_E.pdf). Accessed October 26, 2012.

According to Goldenberg, social innovation embraces “New forms of collaboration, both within and across sectors, and new ways of working ... reflecting new media and new technologies, greater knowledge about the innovation process itself, and new understanding about complex systems, about how people organize, and how ideas move. These new ways of working involve different types of partnerships (public/private, profit/non-profit, and public/profit/non-profit); the adoption of cross-sectoral strategies; and the development of new networks and means of networking.” This strongly suggests the scope for a collaborative, cross-disciplinary, team-focussed approach to social innovation and social entrepreneurship where individuals bring their various expertise to the table to create solutions beyond the capability of any one discipline or knowledge sector. This approach is exactly aligned with Ryerson’s ambitions for Zone education.

Fashion – The apparel industry in Canada, and in fact all developed nations, continues to undergo significant changes. It is now focused on domestic product development as opposed to domestic production and has shifted from a manufacturing-centred to a service-centred environment; this demands that business models adapt to the new realities. Small firms are driving growth in the industry with a specific product category; studies show that markets for this type of niche clothing are expanding, with some clothing companies achieving success by targeting "slivers of a market". Successful companies need to be responsive, diverse and cutting-edge. Many more people are employed in the downstream end of the industry, namely, marketing, promotion and distribution.

Changing trade rules and market conditions also create a challenge. According to the Canadian Apparel Federation<sup>33</sup>, successful companies are focusing on the development of higher value added products and more efficient, low cost and flexible manufacturing processes; building capacity in product development, sourcing, marketing, and supply chain management; researching niche production and marketing opportunities; and accessing new export markets and expanding existing ones.

In the future, the industry is likely to consist of a smaller number of companies, including both medium to large companies and small, highly focused design enterprises. The common feature among successful firms, however, will be their ability to adjust their business strategies in response to trade liberalization and the changing business environment. Companies that develop a marketing focus, invest in appropriate technologies, adopt efficient production methods, implement human resources development strategies, and focus on product design and customer service should be well placed to prosper in the increasingly competitive business environment. Ryerson’s strength in fashion design, manufacturing, communication and marketing supports a potentially dynamic involvement in Zone Education.

## **12. ALIGNMENT WITH RYERSON UNIVERSITY’S ACADEMIC PLAN**

In Ryerson’s current Academic Plan (2008 - 2013) the creation and transmission of new knowledge are recognized as essential to university life. Digital media, health and well-being, cultural prosperity and technological innovation are among seven areas identified in the Academic Plan as having “special opportunities” for growth and for a vital exchange of ideas. The Academic Plan identifies the need to support students in new ways of learning, to give faculty the resources they need, and to adapt to possibilities of a virtual environment. “Arguably the technological revolution of our day will do more to reshape the nature, the rhythms, and the daily habits of students and faculty than any other changes in a very long time.”<sup>34</sup> Furthermore, the Academic Plan makes it clear that “Ryerson prides itself on creating a wide variety of experiential learning opportunities, and will continue to give high priority to

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<sup>33</sup> Canadian Apparel Federation, General Information [http://www.apparel.ca/general\\_info.html](http://www.apparel.ca/general_info.html)

<sup>34</sup> *The Academic Plan: Shaping our Future 2008-2013*

these across all of its programs”. It also expresses a commitment to be “innovative in identifying experiential learning opportunities”. This idea is echoed in the Report on Experiential Learning presented to Ryerson University Senate at its May 7, 2013 meeting.<sup>35</sup> The Zone education model is closely aligned with Ryerson’s academic priorities.

### **13. CAREER PATHWAYS**

The Optional Specialization in Zone Education can potentially provide a route to productive careers in a broad range of sectors. Students may aspire to take up technical roles in the gaming industry, in communication related areas, the not-for-profit sector, education, entertainment, health care, community organizations, fields related to the STEM disciplines, the energy sector as well as others. The training in entrepreneurial approaches and teamwork provided by the Optional Specialization in Zone Education may encourage some students to make a serious commitment to develop and launch their own ideas. Their potential career paths may be as employees of firms/organizations or as independent entrepreneurs. In addition, the combination of the Optional Specialization with an undergraduate degree may strengthen a student’s application for admission to graduate studies in related disciplines.

### **14. PROJECTED ENROLMENT**

Once steady-state is achieved, the Entrepreneurial Zones will have enrollment of approximately 800 students across all Zone activities. These students will be from across the entire campus and represent all Faculties. Selective intake will ensure that effective teams can be assembled so that students’ goals will be met and to promote close collaborative, team-based learning. Ryerson’s ultimate goal is that approximately 10% of its undergraduate student body would have experiences in zone education.

### **15. ACADEMIC GOVERNANCE, COURSE MANAGEMENT AND MENTORSHIP**

Academic Governance - The Optional Specialization in Zone Education will have its academic home in the Office of a single Dean of Record with overall responsibility for this Optional Specialization. The Dean of Record, or designate, will have responsibility for teaching assignments as negotiated with individual faculty and their Chairs/Directors and Deans. It is anticipated that much of the instructional weight will be carried by Ryerson faculty and sector experts engaged as CUPE instructors. Intellectual property considerations will be based on current practices and University agreements.

It is anticipated that the Dean of Record will consult with his/her fellow Deans on aspects of the Optional Specialization in Zone Education and that the various Faculty Deans, in consultation with their Chairs/Directors, will also provide academic guidance and administrative support for initiatives from their Faculties that are facilitated under the auspices of the umbrella course.

Upon implementation, an Optional Specialization Committee will be struck and it is anticipated that a Director of Zone Education will be appointed. In addition to the Director of Zone Education, probable members for the Optional Specialization Committee will include one Associate Dean from each of the six Faculties, the Chair (or designate) of the Department of Entrepreneurship and Strategy, an Optional Specialization Program Coordinator and the Director of the Digital Media Zone (or designate), supported by an Optional Specialization program assistant. The Optional Specialization Committee will have responsibility for academic and admission decisions.

Course Management - For course management issues the Optional Specialization Committee will strike a balance between the need for arrangements unique to this program and efforts to be consistent with

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<sup>35</sup> *Report of the Senate Learning and Teaching Committee*, Ryerson University Senate, May 7, 2013.

Ryerson's policies<sup>36</sup> and practices. The Optional Specialization in Zone Education program is committed to the high academic quality and obligation to academic integrity which typify Ryerson academic programs in general. The Dean of Record, or designate, will have responsibility for elements of course management such as appeals. The Dean of Record will identify an individual or department to accept first level grade and standing appeals.

Mentorship – A key feature for success of the Optional Specialization in Zone Education will be the sustainable engagement of external sector experts as mentors. Working closely with the Optional Specialization Program Coordinator, the Director of Zone Education will be responsible for nurturing and maintaining appropriate external relationships to provide sustainability of mentorship and will pay special attention to such challenges as ensuring that there is a sufficient range of expertise to address the diverse areas of activity within the Entrepreneurial Zones (energy, health, fashion, digital media, design, social entrepreneurship etc.), ensuring that there is a consistent level of commitment from the external experts, and ensuring that the external experts have the right characteristics to function as effective mentors in an educational context.

#### **16. FOLLOW-UP REVIEW**

The ASC recommends that a follow-up review be submitted to the Dean of Record and the Provost and Vice President Academic following the first three years of the Optional Specialization in Zone Education and every six years thereafter.

#### **RECOMMENDATION**

Having satisfied itself of the merit of this proposal, ASC recommends: That Senate approve the proposed Optional Specialization in Zone Education.

Respectfully Submitted,



Chris Evans, Chair for the Committee

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ASC Members:

Chris Evans, Vice-Chair and Vice Provost Academic  
Charmaine Hack, Registrar  
Denise O'Neil Green, Assistant Vice President/Vice Provost, Equity, Diversity and Inclusion  
Mark Lovewell, Interim Secretary of Senate  
John Turtle, Faculty of Arts, Psychology  
Andrew Hunter, Faculty of Arts, Philosophy  
Kelly McKay, Ted Rogers School of Management, Hospitality & Tourism  
Ian Baitz, Faculty of Communication and Design, Graphic Communications Management  
Jean Bruce, Faculty of Communication & Design, Image Arts  
Jennifer Poole, Faculty of Community Services, Social Work  
Nick Bellissimo, Faculty of Community Services, Nutrition

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<sup>36</sup> Senate Policy 145 in particular.

Medhat Shehata, Faculty of Engineering and Architectural Science, Civil Engineering  
Noel George, Faculty of Science, Chemistry and Biology  
Trina Grover, Library  
Des Glynn, Chang School of Continuing Education  
Esztella Vezer, Faculty of Arts, Psychology  
Melissa Palermo, Faculty of Communication & Design, Image Arts – New Media