

Enterprise Innovation Course: Exploring the Intersection of ESD and Entrepreneurship Education

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I. Introduction

This paper discusses the conceptualization of an undergraduate entrepreneurship course at a small liberal arts college with an institutionally embedded mission of social justice and social equity. The course, entitled “Enterprise Innovation: Circular and Shared Economy Business Models” (EI course), focuses on the concept of a circular economy and shared economy models. Foundationally, the course combines elements of the United Nations’ (UN) Education for Sustainable Development (ESD) goals, which are a subset of the UN’s Sustainable Development Goals (SDG), and Entrepreneurship Education (EE) best practices with the college’s mission of social justice and social equity. More specifically, the course supports the charge made by the United Nations Educational, Scientific, and Cultural Organization’s (UNESCO) Executive Board in 2019 to prioritize education’s role in “exploring the tensions between different concepts such as economic growth versus sustainable development.”¹ This is cited as a key structural change within the ESD 2030 approach framework.

In Spring 2022, the EI course was approved by the college’s curriculum committee as part of a new Bachelor of Science degree in Entrepreneurship and Organizational Innovation (BS in EOI). A key program learning outcome (PLO) of the BS in EOI is to have students apply social responsibility, sustainability, access, diversity, equity, and inclusion considerations to their decision-making and to evaluate all business decisions through the lens of the triple bottom line (TBL). In contrast to the conventional ‘bottom line’ driven decision-making process which focuses solely on profitability, organizations applying the TBL metric focus decision making with considerations for people, planet, and profit. The EI course is a 3000-level course required for the BS in EOI and is planned to be offered every fall semester. The course will first be offered in Fall 2023; students enrolled in this this first offering are expected to both include majors and non-majors, including existing entrepreneurship minors and students with interests in sustainable impact issues who have taken the prerequisite classes.

This working paper reviews the curricular elements including syllabus development, course design, proposed course assignments, and intended assessments as well as an overview the development of the BS in EOI program. The assessment parameters connect with the Sustainable Development Goals (SDG) Target 4.7 which states: “By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable

¹ United Nations Educational, Scientific and Cultural Organization (UNESCO), "Framework for the Implementation of Education for Sustainable Development (ESD) beyond 2019," United Nations (2019): 19, <https://unesdoc.unesco.org/ark:/48223/pf0000370215>

development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development."² The curricular elements are modeled on an intersectional paradigm between ESD and EE, or what Wyness and Jones have identified as "a broad and complex landscape of practice, comprising limited boundary crossings between the two distinct 'communities of practice' of EE and ESD."³ Curricular elements are listed in the appendices.

The criticality of achieving the SDGs (see Figure 1), and more specifically SDG4, was an integral factor in formulating the ESD 2030 framework. UNESCO identified three key approaches including transformative action, structural changes, and the technological future. The pedagogical practices applied in this course, as well as the BS in EOI program as whole, were designed to align with the ESD 2030 approach. As such, they are constructivist, experiential, reflective, collaborative, and integrative, with an emphasis on encouraging students to embrace innovation and transformation, and leverage technology for social good.

Figure 1: SDG Goals



The development of students' entrepreneurial mindset through the lens of social responsibility and diversity, equity, and inclusion (DEI) practices serves as the foundation for the BS in EOI program. The program curriculum focuses on developing creativity, resilience, collaboration, and negotiation and communication skills, all of which are necessary building blocks for the entrepreneurial mindset. Students are further enabled to build their entrepreneurial mindset through curricular, cocurricular, and extra-curricular experiences. Examples of the cocurricular and extra-curricular activities include use of the college's maker space to develop prototypes for course projects, pitch-contests, case competitions, hackathons, and a fashion show featuring student designs. The program was developed to align with the evolving institutional mission of

² Ibid.

³ Lynn Wyness and Paul Jones, "Boundary crossing ahead: perspectives of entrepreneurship by sustainability educators in higher education," *Journal of Small Business & Entrepreneurship*, vol. 31, issue 3 (2019): 183-200.

the college and the growing 'entrepreneurial intention and desire' and 'social impact intention' of Generation Z (born c.1996-2010) and Generation Alpha (born c.2011-2025).

The program's major courses examine social impact through the lens of entrepreneurship and organizational innovation with particular focus on the functional organizational areas of research and development, marketing, operations, finance, human resources, and supply chain. Learning outcomes for these courses are aligned with the departmental PLOs. Of the four PLOs, one directly measures social impact intentions by stating: "Apply innovation to human resource policy, reward systems, business processes, marketing, and strategic decision-making through the lens of social responsibility and diversity, equity, and inclusion practices." This PLO is measured against the institutional learning outcome (ILO) that reads as "Value diverse perspectives of human experience." The importance of and focus on global citizenship and DEI are being measured at the course, program, and institutional level.

The Enterprise Innovation (EI) course was inspired by the need to prepare students to infuse and embed SDGs into business or economic models. The circular economy model is an amalgamation of the sustainable with sustainability, or in other words, profitable businesses focusing on positive environmental impact. Further, the circular economy allows students to identify linkages more easily between SDGs and a business model. This economic model is relatively new and perhaps not well-understood by those comfortably profiting in the traditional linear economy, hence the need to educate students to promote this model as the next generation of entrepreneurs and intrapreneurs.

Driving adoption of the circular economic model are the so-called eco-innovations, which are new or improved products or services that mitigate environmental impact and promote sustainability. Developing and implementing eco-innovations affords startups and established firms greater opportunities to more easily shift toward a circular economic model. The sharing economy is another similar alternative model; it is defined by the European Commission (EC) as "business models where activities are facilitated by collaborative platforms that create an open marketplace for the temporary usage of goods or services often provided by private individuals."⁴ Further, the EC's 2020 Circular Economy Action Plan provides strong support for the shift to a circular model from the traditional model of linear production and consumption; it further suggests the sharing model inherently fosters a more sustainability-focused economic approach.⁵

II. Syllabus

In this section, the key areas of the EI course syllabus will be excerpted and discussed. The method of syllabus development is my own and is not meant to represent the best practices of the institution or any specific pedagogical methodology. I applied a subject-centered syllabus design approach, wherein the created curriculum was a specific

⁴ Jana Valant, "A European agenda for the collaborative economy," European Parliamentary Research Service (Brussels, November 2016).
[https://www.europarl.europa.eu/RegData/etudes/BRIE/2016/593510/EPRS_BRI\(2016\)593510_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2016/593510/EPRS_BRI(2016)593510_EN.pdf)

⁵ Marzena Smol, Paulina Marcinek, Joanna Duda, and Dominika Szoldrowska, "Importance of sustainable mineral resource management in implementing the circular economy (CE) model and the european green deal strategy," *Resources*, no. 9, issue 5 (2020): 55.

subject material or educational topic.⁶ For this course, syllabus development began with reading a variety of source materials (see appendix A). After synthesizing the readings, I drafted a course description (see Figure 2) and created a schedule of topics

Figure 2: Course Description

Catalog Description:

Through the entrepreneurial viewpoint and innovation mindset, this course focuses on the circular economy business model (think recycling or reducing resource use) and shared economy business model (think ride-shares or renting out spare space in your home as a hotel room). Students will examine how these innovative business models create sustainable social impact and a unique competitive advantage (think triple bottom line). Students can expect instructor lecture, case study analysis requiring individual written assignments or small group discussions, and experiential projects to explore entrepreneurial opportunities applying the circular and shared economy models.

Upon compilation of course topics list, I established justification for two 1000-level foundational prerequisites and the course was levelled as a 3000-level course. SLOs for the course were developed (see Figure 3) based, in part, on the source material and the schedule of topics, with each SLO aligning to a PLO.

Figure 3: SLOs

XII. Student Learning Outcomes (SLOs)

Upon successful completion of this course, students will...

- 1) Explain the circular and shared economies business models. (PLO1, IR)
- 2) Identify entrepreneurial opportunities (such as eco-innovations) created or leveraged by circular and shared economies business models. (PLO1, IR and PL02, IR)
- 3) Critique the social impact and societal implications of the circular and shared economies business models. (PL02, R and PL04, R)
- 4) Analyze how market value is created when the circular and/or shared economies business models are utilized, (PL02, R)
- 5) Evaluate the application of SGDs in various industries that use the circular and/or shared economies business models. (PL02, R and PL03, R)
- 6) Collaboratively create and present original business ideas based on the circular and shared economies business models. (PL03, R and PL04, R)

Where: I = Introduced; R = Reinforced; M = Mastered; A = Assessed

There are four (4) categories of assessments: participation, quizzes, case studies, and projects. Specifically, the project assessments are both iterative (i.e., formative) and summative. The two project-based assessments are team-based and consist of multiple components including written peer reviews (see Figure 4). This hybrid approach is achieved by requiring students to, on a weekly basis, post specific parts of their projects using the discussion board feature of the learning management system (LMS). The instructor will provide feedback (both formative and graded) and students will also receive peer feedback on these weekly assignments. The peer reviews are both internal and external; each team member completes an internal peer review form for each member of their team and each student provides constructive external peer feedback via the LMS discussion board for two teams' presentations. Students will be able to

⁶ Rajendra Kumar Shah, "Concepts of learner-centred teaching," *Shanlax International Journal of Education*, vol. 8, no. 3 (2020): 45-60.

incorporate this feedback into their final project submissions. Additionally, the LMS discussion board assignments are used to extend the course learning time, promote critical thinking, and afford more equitable participation for students. The LMS is also used to post detailed project instructions and rubrics (see Appendix C for sample rubric). To provide further clarity, direction, and mentoring to the students, details of the project are also embedded in class discussions, an instructor developed exemplar project will be shown for guidance purposes, and teams will meet with the instructor either in person or via video conferencing outside of standard classroom time.

Annotated Project Description

Project#2 Circular: Total 25%

In self-selected groups of 3-4 co-founders, you will use the business model canvas tool to create/develop a prelaunch startup business that uses the circular economy business model and explain the corresponding SDG's that your idea addresses. Your team will present 10-15 minute 'demo day' pitch which will include a value chain, product-market fit analysis, and a go-to-market plan. Specific details will be explained in class and on Canvas. (SLO1,2,3,4,5, & 6)

Each member of the self-selected team for Project#1 and Project #2 will complete a peer review providing feedback on each team member. This will measure each individual teammate's contribution and impact on the project (Five points will be deducted from project grade if not submitted). (SLO6)

As stated previously, the EI course will be first offered during the Fall 2023 semester and further refinement of course materials such as quizzes, case study selection, texts, weekly readings, and project deliverables is expected. Currently, the textbook adoption process is underway, and a systematic review of academic press, open-source, and popular press books is ongoing.

IV. Current Status and Summary

This is a working paper which will develop over the next 18 months into a formal case study. The anticipated final paper will use the course development process and the actual implementation of the course as material for the case study. This author is greatly looking forward to collaboratively developing the case study with two of my departmental colleagues.

Appendix A

XVI. Select Bibliography/References/Resource Material

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Appendix B

b. Schedule of Topics

- 1) Review of SDGs, global citizenship, triple bottom line, business models, identifying entrepreneurial opportunity, social impact entrepreneurship, business model canvas, lean business canvas, DEI as a competitive advantage/value proposition, systems thinking, sustainability, greenwashing, 'wicked' (complex) problems, and developing empathy for end users/customers. These topics were covered in introduction to entrepreneurship (ENT1001) and design thinking and innovation (ENT1777) and are critical foundational knowledge/tools needed for this course.
- 2) Circular and Shared theory in general with related business opportunities (including eco-innovations). This is a broad overview of theory and applicable business models. Considerations of the negative societal impact of the sharing economy will also be discussed- this will necessitate discussion of the gig economy or gig work.
- 3) Product, service and business process innovations within the circular and shared economies- through lens of SDGs, Broad overview of current entrepreneurial offerings and innovations (including eco-innovations).
- 4) The impact of auxiliary labeling and third-party certifications on product desirability/demand. Third party certifications sources such as Environmental Product Declaration (EPD), Cradle to Cradle, and Global Sustainable Enterprise System (GSES).
- 5) Stakeholder marketing, segmenting markets, and moving from niche to norm Essentially discuss who is the market and how circular and shared have moved beyond a niche market.
- 6) Product-Market Fit and Go-To-Market Strategies for circular and shared product, service, and business process innovations. Essentially how can entrepreneurs best understand consumer needs and get these products/services/processes to the target consumer.
- 7) Industry Deeper Dive: Food- More detailed exploration using case studies
- 8) Industry Deeper Dive: Transportation- Review using case studies- More detailed exploration using case studies
- 9) Industry Deeper Dive: Hospitality- More detailed exploration using case studies
- 10) Industry Deeper Dive: Fashion- More detailed exploration using case studies

Appendix C

Criteria/Weight	A to A- 90-100 Exemplary	B+ to B 81-89 Accomplished	B- to C+ 74-80 Satisfactory	C to C- 68-73 Emergent	D 65-67 Does not meet standard, improvement required	F or X 0 -64 points
Slide Deck (35%): Value chain analysis, product-market fit analysis, and a go-to-market plan., Organizational Structure, Mission, Core Values. Group Grade	Exemplary development of a value chain analysis, product-market fit analysis, and a go-to-market plan. showing strong direct alignments with the circular economy model and the selected SDGs clearly align with the value proposition(s) and organizational structure/mission/core values. Demonstrates a superior understanding of context, audience, and purpose that is responsive to and focused on all or nearly all elements and quality guidelines of the assignment.	Very good development of a value chain analysis, product-market fit analysis, and a go-to-market plan. showing direct alignments with the circular economy model and the selected SDGs clearly align with the value proposition(s) and organizational structure/mission/core values. Demonstrates a well-considered understanding of context, audience, and purpose that is responsive to most elements and quality guidelines of the assignment.	Satisfactory development of a value chain analysis, product-market fit analysis, and a go-to-market plan. showing some direct alignments with the circular economy model and the selected SDGs inconsistently align with the value proposition(s) and organizational structure/mission/core values. Demonstrates adequate consideration of context, audience, and purpose that is responsive to many elements and quality guidelines of the assignment	Some development of a value chain analysis, product-market fit analysis, and a go-to-market plan. showing limited direct or unclear alignments with the circular economy model and the selected SDGs inconsistently or unclearly align with the value proposition(s) and organizational structure/mission/core values. Demonstrates an awareness of context, audience, and purpose that is responsive to some elements and quality guidelines of the assignment	Inconsistent or unclear development of a value chain analysis, product-market fit analysis, and a go-to-market plan. showing limited direct or unclear alignments with the circular economy model and the selected SDGs unclearly or do not align with the value proposition(s) and organizational structure/mission/core values. Demonstrates minimal attention to context audience and purpose that is responsive to few elements and quality guidelines of the assignment	None or little evidence for development of a value chain analysis, product-market fit analysis, and a go-to-market plan. and very limited or no alignments with the circular economy model and the selected SDGs unclearly or do not align with the value proposition(s) and organizational structure/mission/core values. Demonstrates a very limited understanding of context, audience, and purpose that is responsive to few elements and quality guidelines of the assignment OR Did not submit
Rocket Presentation (35%) Group (Cohesiveness of presentation) and Individual Grade (Command of specific part of presentation)	Exemplary verbal explanation of the circular economy model; discussion of teamwork involved; value chain analysis, product-market fit analysis, and a go-to-market plan; and how the selected SDGs align with the value proposition(s) and organizational structure/mission/core values. Demonstrates a superior understanding of context, audience, and purpose that is responsive to and focused on all or nearly all elements and quality guidelines of the assignment.	Very good verbal explanation of the circular economy model; discussion of teamwork involved; value chain analysis, product-market fit analysis, and a go-to-market plan; and how the selected SDGs align with the value proposition(s) and organizational structure/mission/core values. Demonstrates a well-considered understanding of context, audience, and purpose that is responsive to most elements and quality guidelines of the assignment.	Satisfactory verbal explanation of the circular economy model; discussion of teamwork involved; value chain analysis, product-market fit analysis, and a go-to-market plan; and how the selected SDGs align with the value proposition(s) and organizational structure/mission/core values. Demonstrates adequate consideration of context, audience, and purpose that is responsive to many elements and quality guidelines of the assignment	Inconsistent verbal explanation of the circular economy model; discussion of teamwork involved; value chain analysis, product-market fit analysis, and a go-to-market plan; and how the selected SDGs align with the value proposition(s) and organizational structure/mission/core values. Demonstrates an awareness of context, audience, and purpose that is responsive to some elements and quality guidelines of the assignment	Unclear, inconsistent, or missing verbal explanation of the circular economy model; discussion of teamwork involved; value chain analysis, product-market fit analysis, and a go-to-market plan; and how the selected SDGs align with the value proposition(s) and organizational structure/mission/core values. Demonstrates minimal attention to context audience and purpose that is responsive to few elements and quality guidelines of the assignment	Did not present
Discussion Board (30%) **** Remember you must provide constructive feedback to TWO (2) teams. Submitting only one (1) feedback post will earn you a failing grade on this portion of the project. Individual Grade	Superiorly detailed comments on two (2) teams' rocket presentations. Demonstrates a superior understanding of context, audience, and purpose that is responsive to and focused on all or nearly all elements and quality guidelines of the assignment.	Well detailed comments on two (2) teams' rocket presentations. Demonstrates a well-considered understanding of context, audience, and purpose that is responsive to most elements and quality guidelines of the assignment.	Satisfactorily detailed comments on two (2) teams' rocket presentations. Demonstrates adequate consideration of context, audience, and purpose that is responsive to many elements and quality guidelines of the assignment	Adequately detailed comments on two (2) teams' rocket presentations. Demonstrates an awareness of context, audience, and purpose that is responsive to some elements and quality guidelines of the assignment	Comments are too generalized and lack actionable feedback on two (2) teams' rocket presentations. Demonstrates minimal attention to context audience and purpose that is responsive to few elements and quality guidelines of the assignment	Submitted feedback for only one (1) team Or Did not submit

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