Examples at Seneca

Version 7

Published 12/5/2024 by Truc Chau Last updated 5/6/2025 6:26 PM by Truc Chau

Example 1: Business Law and Ethics

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Summary: Seneca's Sustainability Office hosts the Green Citizen Symposium every fall. It brings together innovators, business leaders, authors, and academics to share their experiences tackling global sustainability challenges. A Business professor asked students to attend one Symposium keynote session and create a video discussing the keynotes theme, which stakeholders were impacted and how it related to Sustainable Development Goals. The task required students to demonstrate their listening and critical thinking skills while examining how businesses engage in sustainability. For example, students learned about Canada's plastic pollution problem and discussed ways businesses can contribute to the plastic solution, and finally shared how multiple SDGs were met.

Sample Learning Objective: Students will think critically about a keynote presentation and relate it to community stakeholders, including community, employees, customers and investors

Related Activity: Students attend the Green Citizen Symposium, thus bringing awareness to Seneca's commitment to sustainability and exposing students to industry sustainability experts

Related Assessment: Students create a video verbally analyzing the keynote's presentation

Related SDGs: Multiple SDGs depending upon the keynote topics

Resource: Green Citizen Symposium

Example 2: Cosmetic Science

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Summary: In a cosmetic science course “Advanced Formulation”, a cosmetic science professor discussed “Trends in Cosmetics” in class from a sustainability perspective. They discussed the impact on sourcing ingredients, green chemistry principles, upcycling, water usage in manufacturing ingredients and products.

Sample Learning Objective: Students will review an online media resource to discuss trends in the cosmetic and personal care industry through a sustainability lens.

Related Activity: Search for an article that piques their interest and share their thoughts.

Related Assessment: Analyze “who is the target audience for the trend?” and how does it affect them and other audiences.

Related SDGs:

- SDG 3: Good Health & Well-Being
- SDG 9: Industry, Innovation and Infrastructure
- SDG 10: Reduced Inequalities
- SDG 12: Responsible Consumption & Production

Resource: Cosmetics Design North America - Cosmetics Packaging, Industry, Manufacturers - Cosmetics Ingredients, Supply

Example 3: Engineering

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Summary: A Seneca engineering professor hosted weekly “What’s the Deal with Steel” conversations based on sustainability articles about steel production. After a few weeks of discussions, students were asked to find their own relevant articles/videos and provide the class with guiding questions.

In the professor’s own words: “I started the conversation with the students, and we had regular class discussions. I also worked this topic into an asynchronous module, and we watched some videos about new technologies used to eliminate fossil fuels in the production of steel.”

Sample Learning Objective: Students will critically analyze the impact of steel production on the environment.

Related Activity: What’s the deal with steel? Discussion, debate and presentations.

Related Assessment: Informal Presentation – professor evaluates communication skills and familiarity with topic.

Related SDGs:

- SDG 9: Industry, Innovation and Infrastructure
- SDG 7: Affordable and Clean Energy
- SDG 11: Sustainable Cities and Communities

Resource: Five examples of sustainable engineering for the future

Example 4: Global Tourism

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Summary: A Seneca professor asked students to reflect on a travel experience where they witnessed or experienced sustainable business practices and/or the environmental impact of tourism on a region. Students without travel experience were asked to reflect on their own values and goals as potential tourism/hospitality employees regarding sustainability and the types of companies they may want to work for that aligned with their personal values.

Sample Learning Objective: Examine the role of tourism companies in promoting sustainable practices in specific tourist areas.

Related Activity: Reflection task on Blackboard Discussion boards.

Related Assessment 1: In groups, students propose sustainable practices in tourism for regions of the world of their choosing.

Related Assessment 2: Conduct job searches in tourism/hospitality and analyze postings that incorporate sustainability. Share your analysis with the class.

Related SDGs:

- SDG 6: Clean Water and Sanitation
- SDG 8: Decent Work and Economic Growth
- SDG 12: Responsible Consumption and Production

Example 5: Math

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Summary: A Seneca math professor actively attempted to incorporate examples of sustainability in place of the usual examples. Every day in class, the professor would introduce new concepts (ex. Derivatives, integrals, Rate of change, Rieman sums, etc.). When learning about these topics, students would first be taught the theory and mechanics of the new techniques and then would proceed to applying the mathematical concepts to “real-world” areas. To integrate sustainability, this professor consciously chose to select “real-world” examples from areas pertaining to sustainability. Here is an example of one such application.

Sample Learning Objectives:

- For a given function f(x) and n, calculate the left Riemann sum and right Riemann sum.
- For the same f(x) (as above) and double the value of n (from above), calculate and compare the left and right Riemann sums.

Related Activity: Using Riemann sums, calculate and compare the total CO2 emissions for the U.S. and China from 1980 to 2015. What are the possible effects of these CO2 emissions on the Earth's climate?

Related Assessment: Above activity could be completed and submitted or other Riemann Sums could be calculated using different sets of data. See example lesson plan.

Related SDGs:

- SDG 11: Sustainable Cities & Communities
- SDG 12: Responsible Consumption & Production
- SDG 13: Climate Action

Resource 1: Mathematics of Planet Earth

Resource 2: Sustainability Math

Note: This is an example from a First Year Calculus course, but any math class could take the data and adapt it to the mathematical methods being taught in the class (example Functions; Statistics, etc.)

Example 6: Community of Practice - Curriculum Integration Circuit

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Community of Practice: Facilitate a Curriculum Integration circuit (virtual or in-person) to generate small, yet effective, integration strategies faculty can incorporate into their course content or teaching practice.

Strategies

- Participants rotate through stations representing each of the curriculum integration pillars. Each station interval is approximately 15 minutes long.
- At each station, participants are asked to consider integration through the lens of the respective pillar and share their ideas or current integration practice(s).
- Facilitators can provide prompting questions at each station to help faculty consider the area of integration.

Deliverables

- Participants share their integration strategy ideas in different ways (post-its, whiteboard markup, chart paper, digital whiteboard, Padlet, etc.).
- Facilitators will collate the ideas collected at each station and provide them to the faculty in the course cluster/program/school through the Community of Practice hub.
- Here is an example of some integration ideas generated from the Teaching & Learning Day, Spring 2025 CI Circuit.

Looking for support? Feel free to reach out to the Curriculum Integration team by emailing teaching@senecapolytechnic.ca

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