

## ECONOMICS OF SUSTAINABILITY

### Course Objective

This course is designed to provide an individual the tools for understanding, developing and managing economically feasible sustainability projects in response to various sustainability market drivers. Topics that will be addressed in this course include:

- Life Cycle Assessment – costs & benefits of sustainable systems
- Value of ecosystem services
- Sustainable return on investment
- Natural Capitalism – the business of sustainability
- Contracting vehicles for sustainability delivery
- Global markets & trade impacts
- Corporate Programs/Initiatives – Social Responsibility, Global Harmonization, Product Stewardship, others.

The course is intended for those who will be managing sustainability projects/programs. It provides these individuals with the basic tools to assess, implement and manage the ‘value equation’ of sustainability projects and programs. This course does not focus on developing specific solutions to problems or issues. Rather, this course provides valuable insight regarding the interplay of technical, legal, economic and stakeholder issues and how these issues need to be managed to result in a successful or profitable sustainability project/program.

Distinctive elements of this course include:

- The students in the class are treated as stakeholders in the activity. The curriculum is adjusted to be responsive to the interests and needs of the students (stakeholders). During the first session, the instructor will review and assess the individual interests, needs and expectations of the ‘stakeholders’ to fine-tune subsequent lectures, guest speakers, student presentations and class participation projects.
- Class participation approach and role-playing for the mid-term and final exams. Depending on the size of the class, the students are divided into groups and work in teams – providing realistic examples of sustainability team dynamics and problem solution from multiple perspectives.
- Case studies, experience anecdotes and guest lecturers (when available) from engineering, regulatory, business management and legal fields that provide key insights to actual sustainability programs.

The course is presented in 10 sessions.

#### **Week 1: Course Orientation & Introduction to Economics & Sustainability**

- Course Introduction & Orientation: review objectives and goals of the course against student interests and expectations.
- Review the issues surrounding the economics of sustainability – the business of sustainability versus sustainability for ‘sustainability’s sake’.

#### **Week 2: Life Cycle Analysis**

- How to use LCA to identify and quantify costs and benefits of sustainability options.
- Current trends in how LCA is applied, where it may be required and where it can be used to identify and assess the value of a sustainability proposition.

#### **Week 3: Sustainable Return on Investment**

- How do you measure and define your return on investment in sustainable projects/programs.
- Review and analysis of issues that promote investment in sustainability programs
- Assessment of factors which discourage investment in sustainability programs

- Week 4: Natural Capitalism – the business of sustainability**
- A review of the emergence of ‘Natural Capitalism’ and sustainability business models.
  - Review of several case studies.
- Week 5: Mid-Term**
- Class participation project related to LCA and/or Natural Capitalism.
- Week 6: Sustainability Rating Systems – roles and applicability of these ‘drivers’ to implement sustainable projects/systems.**
- A review and assessment of ‘Green Building’ rating systems.
  - Green Infrastructure: Green building rating systems don’t apply to infrastructure systems. A review of available methods to ‘certify’ infrastructure will be presented.
  - ISO and other ‘green’ management registrations.
- Week 7: Global Markets and Trade – how these drivers influence sustainability programs**
- The impacts from global business markets/trade that drive sustainability decisions in various organizations – industry, services, government..
  - An examination of how sustainability is being driven by trade agreements and regulations – WTO, REACH (European), Consumer Regulations, Global Harmonization, etc..
- Week 8: Value of Eco-system services – how is value determined**
- Trading & offset systems – a review of regional, national and international systems that promote sustainability of environmental media.
  - Brownfield vs. Greenfield development.
  - Natural Resource Damage determinations – placing a value on impacts to natural resources
  - Final exam set up
- Week 9: Voluntary Programs & Initiatives – an overview of corporate programs and initiatives that promote sustainability.**
- Corporate Social Responsibility CSR – a review of CSR programs, are they voluntary ‘fluff’ or do they make a difference.
  - Product Stewardship – an analysis of market driven sustainable product management
  - ISO and other certifications – how these programs ‘standardize’ sustainability globally. How do they help achieve measurable impacts?
- Week 10: Final Exam**
- Final exam – Final Class Presentations. The final exam will be a class participation project. The specific format of these presentation will be established during the course and will be based on class size, specific student interests and key topics that were examined during the course.
  - Course wrap up.

**Time:** Weekly evening lecture, time to be determined.

**Text:** There is no text book for the course. Reading/reference materials will be provided in class handouts and via the internet. Each student, over the duration of the course, may be required to research and present course materials

(i.e. articles, research summaries) during class sessions. As part of the overall class subject matter, each student will contribute to the general discussion the ideas, information and issues presented in the article. This will allow us to bring a wide range and variety of perspectives to the topic being discussed in each session.

**Course Grade:** The course grade will consist of the following areas:

- Attendance 10%
- Assignments 20%
- Class Discussions 10%: You will be evaluated on your contributions to general discussions in class. Emphasis is placed on carefully thought out ideas and questions.
- Class Participation Projects 30%: There will be several class participation projects that will require preparation and in-class role-playing. You will be evaluated on how carefully you have thought out your issues and they pertain to role that you will play in the project.
- Final Class Project 30%: The final class participation project will be treated as a final exam that will encompass one full period at the end of the course.

**Instructor:** George Lytwynshyn, Principal – Supply Chain Risk Management, Inc.