CERTIFICATE IN SUSTAINABILITY MANAGEMENT

This certificate program will benefit those who wish to gain a deeper knowledge of the growing sustainability management sector. The lessons learned in the four courses of this certificate can be used to develop, manage, and improve manufacturing processes, commercial products, and corporate practices for improving the long-term sustainability of a company. Attendees will be better positioned to contribute to their organization's financial wellbeing while alleviating the negative environmental impact of their operation. The program is designed for anyone who wants to make sustainability an important part of their organization's operations – no prior background or experience in sustainability is necessary.

1. Principles of Sustainability Management (prerequisite for the following independent courses)
2. Sustainability Management Measurement and Assessment
3. Sustainability Management Solutions
4. Sustainability Management at the Project Level

1. **Principles of Sustainability Management** (required prerequisite) – 6 lessons
   This course covers the challenges that necessitate the move toward sustainability. Definitions and interpretations of "sustainability" are presented. Finally, the role that sustainability can play in development is described.
   Attendees will learn to:
   - Describe the emerging challenges that increasingly have a measurable, detrimental effect on the environment.
   - Give a working definition of "sustainability" and illustrate "sustainable development."
   - Identify possible direct and indirect environmental impacts of a given project.
   - Understand the social, economic, and legal issues which drive sustainability development.
   - Distinguish between renewable and non-renewable resources.
   - Describe the relationship between resiliency and sustainability and give examples of resilient engineering designs.

2. **Sustainability Management Measurement and Assessment** – 6 lessons
   This course covers the metrics and tools used to assess sustainability and environmental impact.
   Attendees will learn to:
   - Understand indicators and metrics used to gauge environmental impact of a project.
   - Apply tools to determine how a project and its sustainability characteristics may positively (or negatively) contribute to human health and the environment.
   - Analyze natural material resources and their flows to aid in the design of more sustainable processes.

- Illustrate how a carbon footprint can be calculated and how carbon emissions can be reduced and/or offset.
- Demonstrate how life cycle assessment can be used to measure the environmental sustainability of products, processes or services.
- Describe how environmental health risk assessment is a necessary step for developing methods of risk management.

3. **Sustainability Management Solutions** – 6 lessons
   This course introduces sustainable practices in energy generation, waste management, buildings and civil infrastructure.
   Attendees will learn to:
   - Examine the environmental impacts of energy generation using fossil fuels, nuclear energy, strategies for clean energy, and various renewable energy sources.
   - Illustrate different methods of sustainable waste management.
   - Describe how the circular economy can support sustainability.
   - Illustrate how green building concepts can impact sustainability.
   - Demonstrate principles of sustainable infrastructure and describe how the Envision tool can support higher performance through more sustainable choices in infrastructure development.

4. **Sustainability Management at the Project Level** – 3 lessons and 3 projects
   This course focuses on how sustainable engineering practices can be applied to specific engineering projects: environmental projects, chemical projects, civil projects, materials sustainability projects and infrastructure sustainability projects.
   Attendees will learn to:
   - Define the goal and scope of the project.
   - Describe the main parts of a sustainability assessment for the specific project: environmental, economic and social.

Required Textbook

Sustainable Engineering: Drivers, Metrics, Tools, and Applications, 1st Edition (2019) by Krishna R. Reddy, Claudio Cameselle, and Jeffrey A. Adams. Wiley, ISBN 978-1119493938
The textbook will be shipped to students at no extra charge after they have registered for the class.

Instructor

Amin Sabzevari is a professional engineer, trainer, and certified carbon reduction manager with more than 20 years of engineering and training experience including: engineering, procurement and construction management experience in power generation, oil and gas, steam-assisted gravity drainage, open-pit heavy oil, petrochemical processes, off-shore platforms, green-field and brown-field facilities projects across 3 continents.

Course Delivery

The course is delivered over the University of Kansas learning management system. You will receive login instructions when you register. You can register and start at any time and will have up to four months to complete each module. Each lesson includes:

- A short video in which the instructor shares some ideas to stimulate students' thinking in preparation for readings and the unit assignment.
- Documentation from the instructor that addresses the important points from the unit. It sometimes includes links to additional online material.
- A reading assignment from the textbook
- The unit assignment: a short writing exercise (about one page) in which students present their ideas while addressing the learning objectives. These written assignments initiate a conversation between the student and the instructor. He will reply within a week with feedback on the assignment and sometimes will provide additional ideas and resources based upon the student's ideas.
- There are no tests or quizzes. The final grade for the course is based upon writing assignments alone. The final project of the fourth course, Sustainability Management at the Project Level, is a longer assignment, where students summarize what they have learned and their plans to apply it.

Certificate Requirements

Participants have up to four months after enrolling to finish each course, including submitting all writing assignments. Each of the four courses is comparable to three days of training. Therefore, the entire certificate program equals 12 days of training. Those who complete all four courses will receive a certificate stating that they have earned 9.6 Continuing Education Units (CEUs) or 96 Professional Development Hours (PDHs). However, the course does not carry any college credits and cannot be used as part of a degree-seeking program.

Refund and Cancellation Policy

No refunds will be granted for this class once the student has accessed the Blackboard class site. A full refund of registration fees, less a $30 administrative fee, will be approved if requested in writing prior to accessing the course. Requests must be made within 60 days of payment.