At RIT, our passion is seeking innovative and creative solutions to some of the world’s greatest challenges. We’ve assembled some of the most brilliant minds – professors, researchers, and students – across several disciplines at one of the most sophisticated and high-tech campuses in the world. We have channeled all of that energy and our immense resources into one thing: the creation of new knowledge. For over 180 years RIT has been a launching pad – propelling its graduates into brilliant careers where they can apply their own passion for innovation and creativity to real-world problems and creating beautiful solutions. Our management development programs are an extension of our core mission and offer the following benefits: Customizable Content, Safeguarding of Proprietary/Sensitive Information and Expert Professionals.

Results:
Our programs give employees the necessary tools, confidence, and energy to: think strategically; redefine products; target new markets; cut costs; streamline supply chains; work collaboratively, to name just a few. More importantly, program participants feel empowered to initiate the changes necessary to ensure that the organization is continuously moving in the right direction.

These workshops focus on systems that create goods and services using processes that conserve energy and natural resources and are non-polluting, economically viable, and safe and healthful for workers, communities, and consumers. Workshop outcome is to develop expertise in such areas as industrial ecology, economics of sustainability, risk analysis of sustainable systems and multi-criteria decision making. For this the following methodologies will be employed: life cycle assessment, environmental risk and impact assessment, design for the environment, pollution prevention, closed loop supply chain management, and product life assessment, sustainable investment principles.

The workshops can be customized to include the following themes:
- Sustainable production
- Sustainable energy
- Sustainable mobility
- Ecological Friendly Information Technology Systems
- Sustainable Investment

Sustainability workshops offered at RIT Dubai:

Fundamentals of Sustainability Science
This workshop prepares professionals to understand multiple perspectives on sustainability such as strong and weak formulations, the importance of sustainability as an ethical concept and a life-cycle approach to organizing research related to sustainability.

Industrial Ecology
Industrial ecology is the study of the interaction between industrial and ecological systems. Professionals learn to assess the impact and interrelations of production systems on the natural environment by mastering concepts of ecology as a metaphor for industrial systems and the resultant tools from industrial ecology, including life-cycle assessment, material flow analysis, and energy and greenhouse gas accounting.

Technology Policy and Sustainability
Public policy is a multidisciplinary field aimed at understanding how policy and regulation can be used to achieve certain social goals. This workshop introduces professionals to public policy and its role in building a sustainable society. The workshop places particular emphasis on: the policy process and the relationship among technology.
Sustainable Product/Service Design
Exploring the application of sustainability and product design methods through a series of workshops will incorporate strategies such as: effective sustainability methods and life-cycle assessment; enhancement of product value and prolonged use; and balance between recycling, reusing and repurposing. Sustainable Product Design enables an interdisciplinary collaboration between Sustainability and Industrial Design.

Sustainable Product Realization Strategies
This workshop draws on concepts and methods pertaining to risk, life-cycle assessment, innovation, and policy introduced in various core elements to make strategic product-system decisions during the earliest stages of product development.

Sustainable Energy Systems
Energy will play an increasingly vital role in economic, environmental and political developments around the world. This workshop first investigates the current trends in energy production, distribution, and consumption associated with the primary incumbent energy system technologies: fossil fuel combustion and nuclear power. An understanding of the economic, environmental and social limitations of these technologies will lead to analysis of the potential benefits of three key renewable technologies: solar/wind, biomass and hydrogen/fuel cells.

Risk Analysis
This workshop examines risk identification, quantification, and management from the standpoint of the three key components of sustainability science (economics, environment, and society). Economic subjects include cost-benefit analysis, value of information, time value of money, basic decision analysis, value functions, monetizing challenges for ecosystem services, and sustainability risk management. Environmental subjects include toxicological perspectives such as fate and transport and dose-response relationships including an overview of current practice.

Thermodynamics for Sustainability
As energy plays a fundamental role in the system sustainability framework, it is essential that professionals have an understanding of the laws of thermodynamics which govern the processes of energy usage and conversion. This workshop investigates the differences between energy and exergy analysis, where the latter includes not only the quantities of energy exchanged, but also the ‘quality’ of the energy relative to some reference state. After establishing the fundamentals of exergy analysis, this concept is applied to practical sustainability problems associated with sustainable development, industrial systems and energy policy.

Applied Life Cycle Assessment
Life-cycle assessment (LCA) is a tool used in the field of industrial ecology to evaluate the environmental impacts of products or processes over their entire life cycle - from raw material extraction, manufacturing, use, and end-of-life management. This workshop will build on fundamental principles of LCA by allowing professionals to conduct project-based studies on the application of LCA to real-world sustainability issues.

Material Cycling
This workshop will explore the economic and environmental incentives for recycling and resource recovery. The focus will be on end-of-life fate of materials while setting these within the context of overall ecosystem flows. Technologies for the upgrading of secondary material streams will be studied including: physical and physico-chemical, hydrometallurgical, biotechnological, and pyrometallurgical. Production issues within the secondary industry will be explored with an emphasis on removing barriers to increased usage of scrap. Efforts for enhanced collection efforts and motivation of consumer and firm participation will also be covered.

Sustainability Program Experts

Mr. Dennis A. Andrejko
Master of Architecture program
Expertise: Environmental Design, Energy Reduction, Sustainable Building Technology

Dr. Callie Babbitt
Expertise: Environmental Engineering, Life Cycle Assessment

Dr. Gabrielle Gustad
Expertise: Materials Recycling Strategies, Materials Science

Dr. Nabil Nasr
Golisano Institute of Sustainability
Expertise: Sustainable Design, Remanufacturing, Life-cycle Engineering, Manufacturing Strategies

Dr. Michael Thurston
Systems Modernization and Sustainment Center
Expertise: Life-cycle Engineering, Asset Health Management, Product Design

Dr. Thomas A. Trabold
Center for Sustainable Mobility
Expertise: Energy Systems, Fuel Cells, Bio-fuels

Dr. Eric Williams
Expertise: Environmental and Economic Assessment of Energy Technologies, Technological Progress and Diffusion, Life Cycle Assessment

Dr. Anahita Williamson
New York State Pollution Prevention Institute
Expertise: Manufacturing Process Modification for Improved Material Recovery and Reuse, Design for the Environment, Life-cycle Assessment (LCA)

For more information on sustainability program experts please visit: www.rit.edu/gis/academics/faculty/