ICL Workshop

Teaching Engineering Ethics and Professional Responsibility – Techniques and Methods

Nael Barakat, Ph.D. P.Eng. FASME

Aims:

This workshop address teaching engineering ethics and professional responsibility as well as societal impact of engineering, which are topics required by accreditation standards, to be integrated and assessed within the engineering curriculum. The workshop will expose participants to different topics and techniques in teaching engineering ethics and professionalism. Participants will be engaged in exercises guiding them to plan their offering of engineering ethics to engineering students, at their respective institutions, with consideration of the unique cultural and societal aspects of different geographical locations.

Main topics:

- Basics of engineering ethics and professionalism
- Techniques and methods to teach the topic
- Design and planning limited modules for classroom delivery
- Assessment and evaluation
- Expansions and advanced topics in engineering ethics and societal impact
- Advanced techniques and methods of teaching
- Other professional aspects and topics
- Expanding the planned material to a full course

Target Group:

The workshop is addressed to engineering educators and administrators, as well as practicing professional engineers

Background knowledge expected of the participants:

No previous knowledge is expected.

Workshop Activities:

Lectures, discussions, design and planning of material, short presentations

Workshop Time:

Four hours (half day)

The Presenter(s):

Nael Barakat is a professor and the chair of Mechanical Engineering at Grand Valley State University in Grand Rapids, MI. USA. He is also a professionally registered engineer in Ontario, Canada. Dr. Barakat is a fellow of the American Society of Mechanical Engineers (ASME) and currently serves as the chair of the Technology and Society Division within ASME. In addition, he is the incoming program chair of the Division of Engineering Ethics at the American Society of Engineering Education (ASEE). He also is a delegate with the group representing US engineers in the World Federation for Engineering Organizations (WFEO) as a member of the Anti-Corruption Committee. Dr. Barakat expertise and interest is in the areas of Mechatronics, Control, Robotics, Nanotechnology Education, and Automation, as well as Engineering Ethics, Professionalism, Leadership, and Education. He has taught numerous courses and modules, delivered workshops and seminars, and developed research on different engineering topics, particularly ethics, professionalism, and leadership.