

Teaching Engineers Leadership Principles and Positive Engagement

To meet a growing need, OU's Industrial and Systems Engineering Department is offering a "soft skills" course.



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 February 8, 2019

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Much of the study of engineering involves the application of basic sciences and mathematics. But the practice of engineering moves beyond these basics to tackle real life problems and provide solutions for industry and society.

Most of the current engineering curriculum is filled with techniques, knowledge and capabilities so a graduating student is prepared for real-world problem solving. However, the human side of problem solving, organization behavior, and leadership - called "soft skills" - is often minimized in a student's scholarly pursuit.

A short search of the internet reveals several credible sources that note the ever-increasing importance of soft skills for new engineers. For example, the [World Economic Forum](#) notes that five of the top skills needed to thrive in the Fourth Industrial Revolution are primarily soft skills:

- complex problem solving
- critical thinking
- creativity
- people management
- coordinating with others

In response to this growing need, Oakland University's [Industrial and Systems Engineering Department](#) is offering a course entitled *Leadership Principles and Positive Engagement*

The course was developed and is taught by Ron May, CEO of May Technology Group and a former EVP of Major Enterprise Projects at DTE Energy. May states, “This is a course that is envisioned to take practical leadership issues and provide insight and understanding to the participant as to the underlying attributes of the problem and the effective methods which can be used to achieve success in resolution.”

It was developed using evidenced-based outcomes from research scholars at the University of Michigan's Center for Positive Scholarship and Harvard University. The underlying premise is to teach the student leadership principles that can assist to understand why a troubling situation may exist, and to develop skills on how to react to it. Through the exercises, reports and literature examination, the student will be transformed to better handle leadership issues in a positive manner.

The leadership course covers a diverse set of topics, all approached on a positive orientation within a backdrop of project management. Course instructors have vast industry experience with an ability to take on the difficult situational issues and explain tactics that can be used in a straight forward manner. Students also hear from guest presenters who are accomplished leaders, from executives to senior practicing engineers.

Leadership topics covered in the course include:

- Goal setting, team building and vision creation
- Technical leadership
- Assumptions and understanding the affects on work and people
- Ethics and trust

- Humor
- Social and sustainability constructs
- Competition
- Change management
- Motivation, teaching, coaching, and influence
- Advocacy
- Effects on others and larger community
- Assimilation
- Quality

Course participants gain the ability to be leaders by preparing and delivering technical presentations and reports, providing insight and questions in feedback sessions with or dialogue, and by studying leadership principles with alternative approaches to problem solving.

According to [Professor Bob Van Til, Pawley Professor of Lean Studies and Chair Industrial and Systems Engineering Department](#), “*Leadership Principles and Positive Engagement* provides the student with a way of viewing the relationship between the methods to address an issue and the problem solver. It is an exciting breakthrough course with current topics, and the inspection of some of the most difficult inter-personal questions an engineering practitioner will encounter.”