

# Engineering Ed. & Leadership Courses

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## Courses

### **EEL 5310. Foundations.**

This course is designed to encourage engineering graduate students to fulfill their considerable potential to influence fundamental issues, questions and approaches to education of engineers and engineering education and leadership practices. It includes studying past efforts to advance engineering education, current initiatives and of the field.

**Department:** Engineering Ed. & Leadership

**3 Credit Hours**

**3 Total Contact Hours**

0 Lab Hours

3 Lecture Hours

0 Other Hours

### **EEL 5320. Research Methods.**

Appraisal of methods and assessment competencies important for engineering education research, including a variety of quantitative and qualitative assessment strategies, introduces students to thinking critically about research methods including evaluation plans. Students learn the formulation of quantitative, qualitative and mixed methods and measures of reliability, in research studies. Students will learn to design and critique engineering education and leadership research that addresses various standards including rigor, quality and value.

**Department:** Engineering Ed. & Leadership

**3 Credit Hours**

**3 Total Contact Hours**

0 Lab Hours

3 Lecture Hours

0 Other Hours

### **EEL 5322. Practicum.**

Students explore the practice of teaching undergraduate engineering through experiential learning. Beginning with study of the interstices between theory and practice of teaching engineering education, students explore their own teaching. Students focus on preparation and research-based methods for providing excellent, outcomes-based engineering education. Reflecting upon formative educational experiences, students correlate theories of learning, educating and teaching engineering courses while self-articulating how they learn themselves.

**Department:** Engineering Ed. & Leadership

**3 Credit Hours**

**3 Total Contact Hours**

0 Lab Hours

0 Lecture Hours

3 Other Hours

### **EEL 5330. Innovation in Technology.**

Innovation in Technology This course introduces students to intellectual property law , with particular attention to topics of interest for the fields of engineering and computing. The course focuses on the constitutional provisions, laws and court decisions that create and define rights in intellectual property, with primary attention to patents and copyrights, and with secondary attention to trade secrets. Students will gain basic skills in critical thinking, reading, understanding and explaining statutes and cases relating to intellectual property.

**Department:** Engineering Ed. & Leadership

**3 Credit Hours**

**3 Total Contact Hours**

0 Lab Hours

3 Lecture Hours

0 Other Hours

### **EEL 5331. Intellectual Property Law.**

Intellectual Property Law This course introduces students to intellectual property law , with particular attention to topics of interest for the fields of engineering and computing. The course focuses on the constitutional provisions, laws and court decisions that create and define rights in intellectual property, with primary attention to patents and copyrights, and with secondary attention to trade secrets. Students will gain basic skills in critical thinking, reading, understanding and explaining statutes and cases relating to intellectual property.

**Department:** Engineering Ed. & Leadership

**3 Credit Hours**

**3 Total Contact Hours**

0 Lab Hours

3 Lecture Hours

0 Other Hours

**EEL 5332. Law and Commercialization.**

Law and Commercialization This course introduces students to the technology commercialization process, with particular attention to topics of interest for the fields of engineering, science, and business. The course focuses on the practical aspects of invention disclosure, patent protection, marketing, and licensing, and technology start-up formation and fundraisin. Students will gain skills in invention triaging, patent claim amendments, drafting patent marketing materials, and negotiating commercialization-related contracts.

**Department:** Engineering Ed. & Leadership

**3 Credit Hours**

**3 Total Contact Hours**

0 Lab Hours

3 Lecture Hours

0 Other Hours

**EEL 5390. Advanced Topics.**

Provides students opportunities to learn about advanced topics intended to develop in-depth areas of particular student interest in engineering education and leadership. Engineering education and leadership is being pushed and pulled into new realms. This course examines the front- edges of engineering education developments, with particular focus on those programs and innovations that are part of a growing global movement to reimagine. Students examine the pillars of engineering education, look at technologies and their impact on teaching and learning, and proceed to formulate their own philosophy of leadership engineering, and how they enact, present, and study (lifelong learning) their engineering professional cannons. May be repeated.

**Department:** Engineering Ed. & Leadership

**3 Credit Hours**

**3 Total Contact Hours**

0 Lab Hours

3 Lecture Hours

0 Other Hours

**EEL 5394. Graduate Research Capstone.**

This course provides students interested in pursuing further graduate studies, for example in doctoral programs, the opportunity to conduct research in topics pursuant to advanced graduate programs at UTEP and beyond. Research is anticipated to produce research output; for example, a grant application or a publication, under the direct supervision of a faculty member.

**Department:** Engineering Ed. & Leadership

**3 Credit Hours**

**3 Total Contact Hours**

0 Lab Hours

0 Lecture Hours

3 Other Hours

**EEL 5396. Graduate Projects.**

This course provides students opportunities to do individual research, design, or analysis on advanced phases of engineering education and leadership problems to further develop in-depth areas of particular student interest in engineering education and leadership. This course examines basic and applied engineering education research, with particular focus on local, regional and state issues, as well as developments in national and global engineering education. The courses, including a written report, are requested of all students in the non-thesis option.

**Department:** Engineering Ed. & Leadership

**3 Credit Hours**

**3 Total Contact Hours**

0 Lab Hours

0 Lecture Hours

3 Other Hours

**EEL 5398. Thesis I.**

Thesis.

**Department:** Engineering Ed. & Leadership

**3 Credit Hours**

**3 Total Contact Hours**

0 Lab Hours

0 Lecture Hours

3 Other Hours

**EEL 5399. Thesis II.**

Thesis.

**Department:** Engineering Ed. & Leadership

**3 Credit Hours**

**3 Total Contact Hours**

0 Lab Hours

0 Lecture Hours

3 Other Hours

**Prerequisite(s):** (EEL 5398 w/C or better)