



College of Engineering

**TO:** The Engineering Faculty  
**FROM:** The Faculty of the School of Engineering Education  
**RE:** New graduate course - ENE 58600 - Exploring Alternative Career Paths as an Engineering Educator

The Faculty of the School of Engineering Education has approved the following new graduate course. This action is now submitted to the Engineering Faculty with a recommendation for approval.

**FROM (IF ALREADY OFFERED WITH TEMPORARY NUMBER):**

ENE 59500 - Exploring Alternative Career Paths as an Engineering Educator

Semester Offered:	<b>SPRING SEMESTER</b>		
Total Number of Credits	<b>3</b>	Credits Broken Down by Schedule Type	<b>3 LEC</b>
Prerequisite(s):	NONE		
Previous Offerings with Enrollment:	ONE WITH 9 STUDENTS		

**TO:**  
ENE 58600 - Exploring Alternative Career Paths as an Engineering Educator

Semester Offered:	<b>SPRING SEMESTER</b>		
Total Number of Credits	<b>3</b>	Credits Broken Down by Schedule Type	<b>3 LEC</b>
Prerequisite(s):	NONE		
Previous Offerings with Enrollment:	NONE		

**RATIONALE:**

ENE 59500 was developed in response to graduate student requests and was taught as a special topics course. It was well received, and we want to give it a permanent number. It is an alternative to the course, Succeeding as an Engineering Professor, in both our online Master's degree and the on-campus and online graduate certificate. Teaching and Learning in Engineering.

A handwritten signature in black ink, appearing to read 'Edward J. Berger'.

Edward J. Berger  
*Interim Head, School of Engineering Education*  
*Professor of Engineering Education*

Link to Curriculog entry:  
<https://purdue.curriculog.com/proposal:26212/form>

**SYLLABUS**  
**Engineering Education 58600**  
**Exploring Alternative Career Paths as an Engineering Educator**

**Spring Semester 2024**

**Course Time:** Tuesdays, 10:30 a.m. – 1:20 p.m.

**Course Location:** ARMS 3109

**Credit:** 3 credit hours

**Instructors:** Prof. Audeen W. Fentiman  
e-mail: [fentiman@purdue.edu](mailto:fentiman@purdue.edu)  
Phone: 765-494-7781  
Office hours: By appointment

**Course Description and Goals:** This course is designed for Engineering Education graduate students and others in STEM fields who are interested in educating current or future engineers or informing the public about engineering-related topics but are not interested in a tenure-track faculty position. It makes students aware of positions such people might hold in universities, pre-college schools, non-profit organizations, industry, and government. In addition, the course provides information on where such positions are advertised, professional societies for people with similar interests, and some skills needed to obtain and succeed in one of those positions. Students will learn and practice a few key skills. The course has been proposed as an alternative to ENE 69500, Succeeding as an Engineering Professor, in fulfilling the requirements for the Engineering Education Graduate Certificate, Teaching and Learning in Engineering.

**Learning Objectives:** Upon completion of this course, students will be able to

1. List and briefly describe 4 or more non-tenure-track positions that could be held by engineering educators
2. Describe at least one non-tenure-track career path for engineering educators
3. Find non-tenure-track positions of interest to them
4. Identify one or more professional organizations for people with interests similar to theirs and describe in some detail how they could be active in and benefit from affiliation with that organization
5. Prepare a professional development plan that lists the important skills the student will need for their selected career path along with when and how they will develop those skills
6. Write a proposal, with budget, for funding to conduct a project that they might manage in a position of interest to them
7. Summarize effective techniques for managing projects, people, and conflict
8. Compare their skills and experience to position description requirements
9. Write a cover letter that demonstrates how their skills and experience meet the position requirements
10. Outline steps to build a sustainable program that accomplishes the objectives of their position

**Grading:** Students will be graded on ten written assignments, class participation, and attendance. There will be no quizzes or exams.

<u>Assignment</u>	<u>Points</u>
<i>Written assignments</i>	
Position in a university or K-12	100 points
Position in a non-profit	100 points
Position in industry	100 points
Position in government	100 points
Professional development plan	100 points
Discussion of two professional organizations	100 points
Detailed outline of proposal	50 points
Final draft of proposal	50 points
Final proposal with budget	100 points
Cover letter	100 points
<i>Class participation</i>	
Class participation, including discussion of daily topics, assignments, interview videos, and topics of general interest	200 points

Percent ranges for letter grades: A 90%-100%, B 80%-89%, C 70%-79%, D 60%-69%

Plagiarism is a serious offense. Any document that includes materials that have been plagiarized will receive a grade of zero.

Plagiarism is defined in “Academic Integrity: A Guide for Students” (<http://www.purdue.edu/odos/osrr/academicintegritybrochure.php>) as follows:

“Plagiarism is a special kind of academic dishonesty in which one person steals another person's ideas or words and falsely presents them as the plagiarist's own product. This is most likely to occur in the following ways:

- using the exact language of someone else without the use of quotation marks and without giving proper credit to the author
- presenting the sequence of ideas or arranging the material of someone else even though such is expressed in one's own words, without giving appropriate acknowledgment
- submitting a document written by someone else but representing it as one's own

### **Attendance Policy**

In this class, students learn from each other. Your classmates will gain valuable insights from your experience, reading, and research. It is, therefore, important that you attend class and participate in the discussions if at all possible. If you are ill, please do not attend class in person. Let me know ahead of time so that I can arrange for you to participate via Zoom if you are well enough to do so. However, taking care of your mental and physical health, and that of your

family, is a top priority, so if you are not able to participate, your absence will be excused. If you are unavailable to attend in person because you are attending a conference, conducting research, or otherwise involved in an activity related to completing your degree, let me know ahead of time. I will arrange for you to join remotely or excuse you from class. If you are excused from class, it is your responsibility to make up any work missed.

After two unexcused absences, each additional unexcused absence will result in a 5 percentage point reduction of your total grade.

### **Emergency Provisions:**

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances. Here are ways to get information about changes in this course: Brightspace web page or, preferably, the instructor's email (fentiman@purdue.edu).

In case of a fire alarm, students will leave the building and assemble in the grassy area in front of the School of Nursing. Do not leave that area until you have checked in with your course instructor.

In case of tornado, assemble in the basement of Armstrong Hall. Use stairs with as few windows as possible to get to the basement. Check in with the instructor in the basement.

### **CAPS Information:**

Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, such individuals should contact Counseling and Psychological Services (CAPS) at (765)494-6995 and <http://www.purdue.edu/caps/> during and after hours, on weekends and holidays, or through its counselors physically located in the Purdue University Student Health Center (PUSH) during business hours.

## **Course Schedule – with brief descriptions of assignments**

### **Week 1 - January 10**

#### **Topics and Activities**

- Student and instructor introductions
- Course introduction, motivation, and objectives
- Course structure and conduct
  - Review syllabus, including health, safety, and emergency information
  - Encourage active student participation in discussions, including questions, relevant experience, and differing points of view
  - Student-led discussions on topics of interest to students but not covered in course materials

- Overview of four categories of non-tenure track positions
  - Formal education – universities and K-12
  - Informal education – non-profits and foundations
  - Industry – training organizations and other possibilities
  - Government – local, state, federal, international

## Week 2 - January 17

### Topics and Activities

- Career paths, a series of positions
  - Some things to consider
  - Creating your own path
- The first position
  - Some things to consider
  - The first position does not commit you to any particular path
- Non-tenure track positions for engineering educators in universities, some examples
- Where to find information about open positions for engineering educators in universities

### Assignments

- **Assignment** - Watch one interview with a person currently in a non-tenure-track university position and be prepared to discuss it in class next week.
- **Assignment #1** – Find a non-tenure track position of interest to you either in a university or related to K-12 and prepare a short report with the following information:
  - Title of position
  - Institution and location
  - Where you learned about the position
  - Summary of position requirements (can have an introductory sentence followed by bullet points)
  - Why this position interests you (~100 words)
  - What is a potential career path with this as a starting point (~100 words)
  - What knowledge, skills, or attributes (KSA) do you think you will need in this position (~100 words)

Due in Brightspace on January 31 by 10:29 a.m.

## Week 3 – January 24

### Topics and activities

- Discussion of interviews
- Positions for engineering educators in or related to K-12
- Where to find information about open positions for engineering educators in K-12
- Student-led discussion of a topic of general interest

### Assignments

- **Assignment** – Watch one interview with a person who has a position in or related to K-12 and be prepared to discuss it in class next week.
- **Reminder: Assignment #1 due on January 31**

## Week 4 – January 31

### Topics and Activities

- Discussion of interviews
- What types of non-profit organizations provide informal education related to engineering
- Positions for engineering educators in informal education organizations
- Where to learn about such positions
- Students give oral summaries of key points from their Assignment #1 (3-5 minutes, from your seat, no visual aids, information that you think would be most valuable to classmates)

### Assignments

- **Assignment** – Watch one interview with an engineering educator working in a non-profit organization and be prepared to discuss it in class next week.
- **Assignment #2** – Find a position of interest to you either in a non-profit that provides informal education or in a foundation and prepare a short report
  - Use the same format as Assignment #1
  - Due in Brightspace on February 14, 10:29 a.m.

## Week 5 – February 7

### Topics and Activities

- Discussion of interviews
- What are foundations and how do they function
- Positions for engineering educators in foundations
- Where to learn about such positions
- Student-led discussion on a topic of general interest

### Assignments

- **Assignment** – Watch one interview with a person who has a position in a foundation and be prepared to discuss it in class next week.
- Reminder, **Assignment #2** due February 14

## Week 6 – February 14

### Topics and Activities

- Discussion of interviews
- What are corporate training organizations and how is a typical one structured
- Positions for engineering educators in corporate training organizations
- Where to learn about such positions
- Students give oral summaries of key points from their Assignment #2 (3-5 minutes, from your seat, no visual aids, information that you think would be most valuable to classmates)

## Assignments

- **Assignment** - Watch one interview with a person who has a position in a corporate training organization and be prepared to discuss it in class next week.
- **Assignment #3** – Find a position of interest to you either in a corporate training organization or in another unit within a corporation and prepare a short report
  - Use the same format as Assignment #1
  - Due in Brightspace on February 28 by 10:29 a.m.

## Week 7 – February 21

### Topics and Activities

- Discussion of interviews
- Other types of corporations to consider
- Potential positions for engineering educators in other types of corporations
- Where to learn about such positions
- Student-led discussion on a topic of general interest

## Assignments

- **Assignment:** Watch one interview with an engineering educator working in a corporation and be prepared to discuss it in class next week
- Reminder: **Assignment #3** is due February 28

## Week 8 – February 28

### Topics and Activities

- Discussion of interviews
- Government organizations to consider
- Potential positions for engineering educators in government organizations
- Where to learn about such positions
- Students give oral summaries of key points from their Assignment #3 (3-5 minutes, from your seat, no visual aids, information that you think would be most valuable to classmates)

## Assignments

- **Assignment** – Watch one interview with an engineering educator working in a government position and be prepared to discuss it in class next week.
- **Assignment #4** - Find a position of interest to you in a government agency at the local, state, federal, or international level and prepare a short report
  - Use the same format as Assignment #1
  - Due 1 in Brightspace on March 7 by 10:29 a.m.

## Week 9 – March 7

### Topics and Activities

- Discussion of interviews
- Student feedback on the first half of the course
- Developing skills valuable in positions discussed in this class
- Professional development plan – purpose and uses

- Professional development plan – content

### Assignments

- **Assignment #5** – Prepare and submit your professional development plan. (1,000 – 1,500 words) Topics to be covered include an overview of your career goals, knowledge/skills/attributes (KSAs) important for success in that career and why they are important, an assessment of your current level of mastery of those KSAs, opportunities to develop each important KSA during graduate school, and a timeline for developing them. Be specific – which course, workshop, or activity you will use to develop each KSA and when.
  - Due in Brightspace on March 21 by 10:29 a.m.

### Week 10 – March 14 Spring Break – No Class

### Week 11 – March 21

#### Topics and Activities

- Class discussion of professional development plans – be prepared to share information about one KSA you think is particularly important and why, your current level of mastery, and how you plan to develop or strengthen that KSA in graduate school. The goal is for students to learn from each other.
- Making good use of conferences
- Professional organizations – structure and functions
- Making the most of professional organizations

#### Assignments

- **Assignment #6** – Identify two professional organizations to which people in positions like the yours (i.e., one you are considering) belong, say why each will be of value to you in your career, and describe how you plan to interact with that organization. (~500 words)
  - Due in Brightspace on March 28 by 10:29 a.m.
- **Assignment #6 – continued** – Post the names, missions, and website URLs for those two organizations on the discussion board by March 30. Students are encouraged to look at what classmates have posted in case there is an organization of potential interest that they have not considered.

### Week 12 – March 28

#### Topics and Activities

- Fundamentals of writing effective proposals
- Content of a proposal
- Discussion of proposal solicitation for this class
- Brainstorming on potential proposal topics



## Assignments

- **Assignment #7** - Prepare a detailed outline of your proposal (it should have section headings, subsection headings, and an abbreviated topic sentence for each paragraph in each subsection). Details about content and length of proposal will be in the solicitation.
  - **Due in Brightspace on Friday, March 31, by 11:59 p.m.**
  - Feedback from professor on Monday, April 3.

## Week 13 – April 4

### Topics and Activities

- Questions about proposals
- Preparing a budget for your proposal
- Managing projects
- Student-led discussion on a topic of general interest

## Assignments

- **Assignment #8** – Prepare a final draft of your proposal, without budget. Details about content and length of proposal will be in the solicitation.
  - Due in Brightspace on Friday, April 7, by 11:59 p.m.
  - Feedback from instructor on April 10.
- **Assignment #9** – Prepare revised draft of your proposal with budget.
  - Due in Brightspace on Friday, April 14, by 11:59 p.m.

## Week 14 – April 11

### Topics and Activities

- Questions about proposals and budgets
- Managing yourself
- Managing people
- Managing conflict

## Week 15 – April 18

### Topics and Activities

- Comparing your knowledge, skills, attributes, and experience to what is listed in the position description (or to what you think the organization needs if you are proposing a new position)
- Writing an effective cover letter
- Student-led discussion on a topic of general interest

## Assignments

- **Assignment #10** – Write a cover letter for a real position of interest to you. (~500 words) Also submit the description of the position for which you are applying.
  - Due in Brightspace on April 25 by 10:29 a.m.

## Week 16 – April 25

### Topics and Activities

- Building sustainable programs
- Student-led discussion on a topic of general interest
- Student feedback on the course