

ASSIGNMENT 4: Engineering Leadership
CE 4200 Professional Practice Issues
Spring 2022 Semester
100 POINTS

Date Assigned: 29 Mar 2023
Date Due: 17 Apr 2023
Topic: Engineering Leadership
Type: Individual

I. PURPOSE

The purpose of this learning exercise is to introduce you to *civil engineering* leadership issues, to familiarize you with the *civil engineering* literature on leadership, and to develop your understanding of leadership as it applies to the *civil engineering* profession.

A. SKILLS

This assignment is to help you practice the following skills that are essential to your success in this course and in professional life beyond school:

- i. Locate articles on leadership, define leadership, explain leadership in engineering practice
- ii. Examine various aspects of leadership, identify and evaluate alternative leadership models
- iii. Judge leadership effectiveness, formulate your own leadership ideal
- iv. Grow and mature as an engineer leader, and ultimately, lead others in this process

B. KNOWLEDGE

This assignment will also help you to become familiar with the following important content knowledge in this discipline:

- i. Topic 1. Concepts of leadership
- ii. Topic 2. Practical wisdom from exemplary engineering leaders
- iii. Topic 3. Leaders vs. managers
- iv. Topic 4. Leadership issues specific to certain groups, *e.g.*, students, women, academia, etc.
- v. Topic 5. Contemporary case study examples in civil engineering leadership

II. TASK

A. WHAT TO DO

Part 1. From ASCE engineering journals on leadership, select five articles on leadership that are of interest to you, read the abstracts and write a brief summary about why you selected these particular abstracts. This should be a one page summary that discusses *all five* abstracts. This part of the assignment should be typed, 12-pt, single space, 1-inch margin. ONE page maximum. Penalty for exceeding ONE page is 50%. Print the abstracts to include with your assignment.

Part 2. From the five abstracts, select one paper that is of most interest to you. Obtain a copy of this paper to print and include with your assignment. Prepare a not-to-exceed three-page summary of the paper, emphasizing the points that you found most significant. In particular, based on your review of this paper, explain how this information will help you address the *ASCE BOK3E* leadership learning objectives:

- Apply leadership principles to direct the efforts of a small, homogenous group.
- Organize and direct the efforts of a group.

This part of the assignment should be typed, 12-pt, double space, 1-inch margin. THREE pages maximum. Penalty for exceeding THREE pages is 50%.

B. HOW TO DO IT

1) Review the ASCE BOK3E article on leadership (Outcome 17).

2) Search the ASCE engineering journals <http://ascelibrary.org/> for articles on leadership. Feel free to take your time and to see what is out there. The following journals, in particular, address this topic:

- Leadership and Management in Engineering

Leadership and Management in Engineering, a publication of the Committee on Professional Practice, examines contemporary issues and principles of leadership and management. The focus is on understanding and application of these principles through variety of venues within the publication, including news, brief and concise leadership and management "nuggets," and short articles of interest to practicing professionals in a variety of roles and industry segments. The focus includes, but is not limited to, individuals and public and/or private entities, small and large projects, and organizations. Areas of interest are leadership; teamwork; communications; team building; decision making; partnering; project management; mentoring; coaching; diversity; department, branch, and office management; professional practice and development; budgeting; financial management; productivity management, including motivational theory, incentives, and feedback techniques, and tools; globalization; networking; change management; role and involvement in political process; local, state, and national level legislative and regulatory issues; and economic and environmental sustainability.

- Journal of Management in Engineering

The *Journal of Management in Engineering* offers an avenue for researchers and practitioners to present contemporary issues associated with management and leadership for the civil engineer. The journal publishes peer-reviewed papers, case studies, technical notes, and discussions of interest to the practice of civil engineering. Management and leadership issues include contract management, project management, partnering, office management, professional practice and development, financial management, human resources management, marketing and sales, ethics, technology and innovation management, information management, continuing education, organizational theory, strategic planning, conflict management, negotiating, risk management, globalization, networking, change management, teamwork, team building, communication, mentoring, coaching, and diversity. Papers discussing legislative and regulatory issues, corporate and public policy, and the role of civil engineering in the political process at all levels of government are welcomed. Interdisciplinary studies and collaborations are encouraged. Theoretical papers submitted for publication should preferably include real-world applications of the techniques.

- Journal of Professional Issues in Engineering Education and Practice

The *Journal of Professional Issues in Engineering Education and Practice* presents issues of broad professional interest and diverse views of engineering education, and professional practice. Papers examine the relationships between civil engineering and other disciplines and professions, with emphasis on the engineer's and constructor's obligations and responsibilities. Topics include engineering education at all levels, professional practice issues, ethics, and history and heritage.

3) Identify the five abstracts that are most interesting to you. Make a copy of each abstract to include with the assignment. Then, write the first part of the assignment, namely, the one-page summary about why you selected these five particular abstracts.

4) From the five abstracts, select the one that is your very favorite. Obtain the full paper, and make a copy of the paper to include with the assignment. Then, read the paper and write the second part of the assignment, namely, the not-to-exceed three-page summary of the paper, emphasizing the points that you found most significant and interacting with the *ASCE BOK3E* leadership learning objectives.

5) Compile both parts of the assignment for submittal.

III. CRITERIA FOR SUCCESS

A. CHECKLIST

Overall, your assignment will consist of the one-page, single-spaced abstract summary and the three-page, double-spaced paper summary, for a total of four pages. Append the five abstracts and the full selected paper to your assignment. Here is the detailed grading rubric:

Task	Score	Evaluation Criteria
Part 1, Five Abstracts (30 pts)		
-Identify abstracts	5	Abstracts are from appropriate journals, on appropriate topics
-1 page abstract summary	20	A brief summary of each abstract and why you selected each one
-Include copies of abstracts	5	All abstracts included
Part 2, Leadership Paper (40 pts)		
-Summary of paper	10	Brief overview of the paper
-Points most significant	15	Identification and explanation of most significant points from your perspective
-How knowledge gained will help you address BOK objectives	10	Relate the topic of the paper to the BOK learning objectives
-Include copy of paper	5	Paper included
Grammar (30 pts)		
-Major errors	12	Subject-verb agreement, major wordiness, sentence needs major revision, informality
-Minor errors	9	Proper use of comma, hyphens, capitalization,
-Spelling	9	Number and intensity of misspelled words
TOTAL	100	

B. EXAMPLES

Refer to the course website for examples of high-quality work on this assignment.