



MGEN 6340: Mining Safety Leadership and Culture: Human Centered Design (1 credit)

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Office Hours: By appointment

Zoom/IM/Canvas Conference Office Hours: By appointment

Course Description

Mining Safety Leadership and Culture: Human-Centered Design is a graduate-level course that explores the critical role of leadership and organizational culture in promoting safety excellence in mining operations. The course emphasizes the application of human-centered design principles to enhance safety performance and foster a positive safety culture. Through a combination of theoretical instruction, case studies, and interactive exercises, students will develop the skills and knowledge necessary to lead safety initiatives, create a safety-focused culture, and implement human-centered design strategies in the mining industry.

Course Outcomes

1. To understand the importance of leadership and culture in promoting safety excellence in mining.
2. To explore human-centered design principles and their application in the context of mining safety.
3. To develop the skills to lead safety initiatives and engage stakeholders in a collaborative manner.
4. To foster a deep understanding of organizational culture and its impact on safety performance.
5. To enhance students' abilities to implement human-centered design strategies to improve safety outcomes.
6. To encourage critical thinking and problem-solving skills through case studies and interactive exercises.

Grading Policy

Students will be evaluated through assignments, quizzes, exams and class project. Student professionalism demonstrated through attendance and respect for others will also be reflected in evaluation. Grading will follow the following scheme:

Homework 20%

Term project 10%

Reading quizzes 20%

Mid-term exam 20%
Final exam 20%
Professionalism 10%

Subject to change per instructor's discretion. Grading will follow the University of Utah grading scale of:

0%- 59.5%	60% - 64.5%	65%- 69.5%	70% - 74.5%	75%- 79.5%	80%- 84.5%	85%- 89.5%	90%- 94.5%	95%- 100
E	D-	D+	C-	C+	B-	B+	A-	A

Course Schedule

Week 1: Introduction to Mining Safety Leadership and Culture

- Course overview and objectives
- Importance of leadership and culture in mining safety
- Overview of human-centered design principles

Week 2: Leadership for Safety Excellence

- Characteristics of effective safety leaders
- Safety leadership styles and approaches
- Leading by example and influencing safety behavior

Week 3: Engaging Stakeholders for Safety

- Stakeholder identification and analysis
- Building collaborative relationships for safety
- Communicating and influencing safety messages

Week 4: Understanding Organizational Culture

- The concept of organizational culture and its components
- Assessing and diagnosing safety culture in mining
- Strategies for influencing and shaping safety culture

Week 5: Human-Centered Design Principles

- Introduction to human-centered design in mining safety
- User-centered design and worker involvement
- Designing for usability and error prevention

Week 6: Safety Culture Assessment and Improvement

- Methods for assessing safety culture in mining organizations
- Analyzing safety culture survey data
- Developing and implementing culture improvement initiatives

Week 7: Leading Safety Change Initiatives

- Planning and executing safety change initiatives
- Overcoming resistance to change
- Sustaining and embedding safety improvements

Week 8: Designing for Safety: Work Environment and Equipment

- Applying human-centered design principles to work environment design
- Ergonomic considerations for equipment and tools
- Designing for hazard identification and warning systems

Week 9: Designing for Safety: Procedures and Training

- Human-centered design in procedures and work instructions
- Training and competence development for safe work practices
- Assessing the effectiveness of training programs

Week 10: Incident Investigation and Learning from Failures

- Incident investigation techniques and methodologies
- Learning from failures and implementing corrective actions
- Utilizing incident data for continuous improvement

Week 11: Safety Performance Measurement and Reporting

- Key performance indicators (KPIs) for safety
- Safety data collection and analysis
- Reporting and communicating safety performance

Week 12: Leading Safety Committees and Meetings

- Effective safety committee leadership and participation
- Facilitating safety meetings and discussions
- Utilizing safety committees for continuous improvement

Week 13: Case Studies in Mining Safety Leadership and Culture

- Analysis of real-life mining safety challenges and successes
- Lessons learned and best practices
- Group discussions and presentations

Week 14: Emerging Trends in Safety Leadership and Culture

- Exploration of emerging trends and technologies

Finals Week:

Note: This syllabus is meant to serve as an outline and guide for our course. Please note that I may modify it with reasonable notice to you. I may also modify the Course Schedule to accommodate the needs of our class. Any changes will be announced in class and posted on Canvas under Announcements.

University Policies

1. ***The Americans with Disabilities Act.*** The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the Center for Disability & Access, 162 Olpin Union Building, (801) 581-5020. CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in an alternative format with prior notification to the Center for Disability & Access.

- ***If in-class attendance is a necessary component of the course for pedagogical reasons (e.g., laboratories, studios, or artistic training), state it explicitly.***

Use this standard language: “Given the nature of this course, attendance is required and adjustments cannot be granted to allow non-attendance. However, if you need to seek an ADA accommodation to request an exception to this attendance policy due to a disability, please contact the Center for Disability and Access (CDA). CDA will work with us to determine what, if any, ADA accommodations are reasonable and appropriate

2. ***University Safety Statement.*** The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit <https://safeu.utah.edu>
3. ***Addressing Sexual Misconduct.*** Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran’s status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).
4. ***Academic Misconduct Statement.*** It is expected that students adhere to University of Utah policies regarding academic honesty, including but not limited to refraining

from cheating, plagiarizing, misrepresenting one's work, and/or inappropriately collaborating. This includes the use of generative artificial intelligence (AI) tools without citation, documentation, or authorization. Students are expected to adhere to the prescribed professional and ethical standards of the profession/discipline for which they are preparing. Any student who engages in academic dishonesty or who violates the professional and ethical standards for their profession/discipline may be subject to academic sanctions as per the University of Utah's Student Code: <https://regulations.utah.edu/academics/6-410.php>