

Term Information

Effective Term Autumn 2022

General Information

Course Bulletin Listing/Subject Area Engineering
Fiscal Unit/Academic Org Engineering Administration - D1400
College/Academic Group Engineering
Level/Career Undergraduate
Course Number/Catalog 2300
Course Title Exploring Diversity, Equity & Inclusion in Engineering Contexts
Transcript Abbreviation DEInEngineering
Course Description This course engages with thematic concepts and definitions of citizenship, diversity, equity, inclusion, and justice through historical and contemporary lenses. Students explore the applications and implications of these concepts across a wide range of engineering contexts. Students will approach the writing process from a rhetorical perspective.
Semester Credit Hours/Units Fixed: 3

Offering Information

Length Of Course 14 Week
Flexibly Scheduled Course Never
Does any section of this course have a distance education component? Yes
Is any section of the course offered Greater or equal to 50% at a distance
Less than 50% at a distance
Grading Basis Letter Grade
Repeatable No
Course Components Lecture
Grade Roster Component Lecture
Credit Available by Exam No
Admission Condition Course No
Off Campus Sometimes
Campus of Offering Columbus, Lima, Mansfield, Marion, Newark, Wooster

Prerequisites and Exclusions

Prerequisites/Corequisites Writing and Information Literacy Foundation
Exclusions Not open to students with credit for ENGR 2301
Electronically Enforced Yes

Cross-Listings

Cross-Listings

Subject/CIP Code

Subject/CIP Code 14.0101
Subsidy Level Baccalaureate Course

Intended Rank

Freshman, Sophomore, Junior, Senior

Requirement/Elective Designation

Citizenship for a Diverse and Just World

Course Details

Course goals or learning objectives/outcomes

- Engage in an advanced, in-depth scholarly exploration of diversity, equity, and inclusion in engineering/STEM cultures, especially how race, ethnicity, gender, sexuality, age are experienced and intersect
- Engage in critical & logical thinking about the influence of engineering culture & its technical processes on communities & society at the local, state, national, and global level, with a focus on intersections with equity & justice
- Reflect critically on processes and learning (metacognition).
- Understand the importance of rhetorical communication and writing for technical and non-technical contexts and audiences
- Understand processes for composing informative and persuasive documents and plan and deliver presentations for a variety of audiences and purposes.
- Apply strategies for common types of workplace communication

Content Topic List

- Course Intro, Conceptual and Theoretical Foundations, Rhetorical Foundations & Technical Writing Style
 - Applications, Extensions, and Intersections—Theoretical
 - Applications, Extensions, and Intersections—Equity, Justice, and Citizenship at School and Work— Equity in Hiring, Pay and Promotion
 - Applications, Extensions, and Intersections—Equity, Justice, and Citizenship in Urban Design, Transportation and the Environment
 - Applications, Extensions, and Intersections—Equity, Justice, and Citizenship in Engineering Design—Automation, Robotics, Algorithms, and Artificial Intelligence
 - Applications, Extensions, and Intersections—Equity, Justice, and Citizenship on the Internet—Social Media, Privacy and Surveillance, Big Data and Augmented Reality
- No

Sought Concurrence

Attachments

- ENGR 2300 Syllabus Exploring Diversity, Equity & Inclusion in Engineering Contexts.pdf: syllabus
(Syllabus. Owner: Casado, Ana Maria)
- ENGR 2300 GE Citizenship Theme Submission Form.pdf: GE submission form
(Other Supporting Documentation. Owner: Casado, Ana Maria)
- ENGR 2300 and 2301 Citizenship Readings Resource Database.xlsx: readings database
(Other Supporting Documentation. Owner: Casado, Ana Maria)

Comments

- - If this course is indeed requesting to be taught 100% online, please follow instructions for DL
<https://ascas.osu.edu/curriculum/distance-courses> Please look at instructions for non-ASC units
- If this course is indeed repeatable, the panel will need to have some information on how a second iteration will be different, right? *(by Vankeerbergen, Bernadette Chantal on 04/06/2022 10:50 AM)*

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Casado, Ana Maria	01/31/2022 07:34 PM	Submitted for Approval
Approved	Quinzon-Bonello, Rosario	02/23/2022 05:16 PM	Unit Approval
Approved	Quinzon-Bonello, Rosario	02/23/2022 05:17 PM	College Approval
Revision Requested	Vankeerbergen, Bernadette Chantal	04/06/2022 10:50 AM	ASCCAO Approval
Submitted	Casado, Ana Maria	04/07/2022 12:20 PM	Submitted for Approval
Approved	Quinzon-Bonello, Rosario	04/07/2022 01:02 PM	Unit Approval
Approved	Quinzon-Bonello, Rosario	04/07/2022 01:03 PM	College Approval
Pending Approval	Cody, Emily Kathryn Jenkins, Mary Ellen Bigler Hanlin, Deborah Kay Hilty, Michael Vankeerbergen, Bernadette Chantal Steele, Rachel Lea	04/07/2022 01:03 PM	ASCCAO Approval

ENGR 2300: Exploring Diversity, Equity & Inclusion in Engineering Contexts (3 Credit Hours)

Course Syllabus

Course Description / Overview

This course engages with thematic concepts and definitions of citizenship, diversity, equity, inclusion, and justice through historical and contemporary lenses. Students explore the applications and implications of these concepts across a wide range of engineering contexts, including workplace dynamics, urban planning and built environments, transportation, design, machines, algorithms, big data, and the internet.

While engaging the thematic content of this course, students will approach the writing process from a rhetorical perspective. We will engage with the writing process (from brainstorming through final edits/submission) for multiple modes of communication. While practicing critical analysis and research skills, students learn technical writing style and genre conventions and create documents using technical/professional communications style. Genres covered include: memos, emails, recommendation reports, research proposals, and presentations. Course projects include individual and team-based assignments. Because writing conventions vary by profession and organization, students will develop and engage general communication strategies that can be applied to other writing tasks both in their academic careers and in the workplace.

Course Philosophy

We will focus on composing from a rhetorical perspective, which means we will always consider the relationships between rhetorical elements (audience, subject, purpose) and their roles in the choices we make as communicators. We will ask ourselves what, how, and especially why we use language in particular ways in our documents.

The course will also emphasize two basic tenets of writing:

1. First, the course focuses on the *process* of writing rather than on the end product alone by incorporating exercises in planning, drafting, and revising.
2. Second, writing is not always easy; improving takes time, effort, and practice, especially when learning new writing styles.

Required Texts & Materials

This course does not require purchased materials. All readings, handouts, and resources will be provided via Carmen.

Course Goals & Outcomes

As a Citizenship for a Just & Diverse World theme course at OSU, this course focuses on the below-listed goals and expected learning outcomes for the GE, for the Citizenship for a Just & Diverse World theme course, and for advanced writing embedded literacies.

Course Objectives/Goals

ENGR 2300 meets the GEC Course Goals and ELOs for the Citizenship for a Diverse & Just World Theme, goals and outcomes for the advanced writing embedded literacy, as well as specific elements of ABET Criterion 3, detailed below: Additionally, assignments and policies in this course work toward the following course goals:

1. Engage in an advanced, in-depth scholarly exploration of diversity, equity, and inclusion in engineering/STEM cultures, especially how race, ethnicity, gender, sexuality, age are experienced and intersect
2. Engage in critical and logical thinking about the influence of engineering culture and its technical processes, and products on communities and society at the local, state, national, and global level, with a focus on intersections with equity and justice
3. Reflect critically on processes and learning (metacognition).
4. Understand the importance of rhetorical communication and writing for technical and non-technical contexts and audiences.
5. Understand processes for composing informative and persuasive documents and plan and deliver presentations for a variety of audiences and purposes.
6. Apply strategies for common types of workplace communication.

GE Goals

1. INTELLECTUAL and COGNITIVE SKILLS: Successful students will demonstrate the intellectual and cognitive skills that prepare them to be engaged citizens and leaders for life.
2. MODES OF INQUIRY: Successful students will engage with and apply a range of important modes of thought, inquiry and expression.
3. EDUCATED GLOBAL CITIZENSHIP: Successful students will be interculturally competent global citizens who can engage with significant aspects of the human condition in local, state, national and global settings.
4. EMOTIONAL, SOCIAL and PROFESSIONAL ABILITIES: Successful students will demonstrate skills and abilities needed for engaged citizenship and personal and professional growth.

OSU Citizenship for a Just & Diverse World Theme Course Goals

1. Successful students will analyze concepts of citizenship, justice, and diversity at a more advanced and in-depth level than in the Foundations component.
2. Successful students will integrate approaches to understanding citizenship for a just and diverse world by making connections to out-of-classroom experiences with academic knowledge or across disciplines and/or to work they have done in previous classes and that they anticipate doing in future.
3. Successful students will explore and analyze a range of perspectives on local, national or global citizenship and apply the knowledge, skills and dispositions that constitute citizenship.
4. Successful students will examine notions of justice amid difference and analyze and critique how these interact with historically and socially constructed ideas of citizenship and membership within society, both within the United States and around the world.

OSU Citizenship for a Just & Diverse World Theme Course Expected Learning Outcomes

Successful students are able to:

- 1.1 Engage in critical and logical thinking about the topic or idea of citizenship for a just and diverse world.
- 1.2 Engage in an advanced, in-depth, scholarly exploration of the topic or idea of citizenship for a just and diverse world.
- 2.1 Identify, describe and synthesize approaches or experiences as they apply to citizenship for a just and diverse world.
- 2.2 Demonstrate a developing sense of self as a learner through reflection, self-assessment and creative work, building on prior experiences to respond to new and challenging contexts.
- 3.1 Describe and analyze a range of perspectives on what constitutes citizenship and how it differs across political, cultural, national, global and/or historical communities.
- 3.2 Identify, reflect on and apply the knowledge, skills and dispositions required for intercultural competence as a global citizen.
- 4.1 Examine, critique and evaluate various expressions and implications of diversity, equity and inclusion, and explore a variety of lived experiences.
- 4.2 Analyze and critique the intersection of concepts of justice, difference, citizenship, and how these interact with cultural traditions, structures of power and/or advocacy for social change.

Advanced Writing Goals

1. Successful students develop advanced skills in inquiry, critical thinking, composing and communicating for a specific purpose, context and audience using an appropriate genre and modality.
2. Successful students apply knowledge of writing and research to specific contexts.

Advanced Writing ELOs

Successful students are able to:

- 1.1 Investigate and integrate knowledge of the subject, context and audience with knowledge of genres, conventions and rhetorical choices to advance a particular writing objective.
- 1.2 Use credible and relevant sources of information, evaluate assumptions, and consider alternative viewpoints or hypotheses to express ideas and develop arguments.
- 2.1 Reflect on how they adapt rhetorical and research strategies they have learned to new contexts.
- 2.2 Develop scholarly, creative or professional products that are meaningful to them and their audience.

2.3 Evaluate social and ethical implications of writing and information literacy practices.

ABET Criterion 3 Student Outcomes:

ENGR 1300 supports ABET's Student Outcomes for Engineering programs including:

Outcome 3: an ability to communicate effectively with a range of audiences

Outcome 4: an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

Outcome 7: an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Course Requirements

Individual Assignments:

- Reading Engagement/Reflection: Reading Journal or Discussion Boards (10%)
- Reading Engagement/Reflection: Reading Response (Synthesis) Memos x2 (10%)
- Recommendation Memo (15%)
- Case Study Presentation (10%)
- Peer Response (5%)
- Self- & Team Reflections/Evaluations (5%)
- Participation (5%)

Team Assignment: Research Project (White Paper / Proposal)

- Research Plan & Team Contract (5%)
- Annotated Bibliography (10%)
- Research Project (15%)
- Research Project Presentation (10%)

Sample Assignments

All assignments will guide students to approach rhetorically (engage with and demonstrate an understanding of audience, purpose, and context) and be attentive to technical writing style and genre conventions.

- 1. Reading Engagements x N; N = # of readings assigned**
- 2. Reflection Memos and Reading Responses**
 - a. *Sample Prompt:* What do citizenship and justice mean to you? (pre- / post-unit assessment)
 - b. *Sample Prompt:* What do diversity and inclusion mean to you? What does equity mean? How do you see these intersecting with citizenship and justice? (pre- / post- unit assessment)
- 3. Information Literacy and Writing Exercises; potential topics could include:**
 - a. Search Terms and Research Question Development
 - b. Source Evaluation for Credibility and Relevance
 - c. Synthesis Matrix/Annotated Bib
 - d. Constructive Peer Review Reflection and Analysis
 - e. Revising for Clarity, Concision, and Cohesion
- 4. Case Study Presentation (Individual); sample focus of case study could include:**

- a. Case Studies from Gendered Innovations
 - b. Case Studies from Project Drawdown
(<https://www.drawdown.org/solutions/table-of-solutions>)
- 5. Reading Synthesis Memo 1 & 2**
- a. What do citizenship, justice, and equity mean to you (synthesize work from class readings and research)?
 - b. What do citizenship, justice, and equity mean to you (synthesize work from class readings and research)? Critique, evaluate, extend; Where do you see yourself applying and enacting these concepts in your daily life now and in the future?
- 6. Recommendation Report**
- a. Synthesis Matrix + Outline
 - b. Rough Draft
 - c. Final Draft
 - d. Self-Reflection
- 7. Team Project: Course Project**
- a. Research Plan and Team Contract
 - b. Annotated Bib
 - c. Presentation
 - d. Rough Draft + Peer Review
 - e. Final Draft
 - f. Self- and Team Reflection/Evaluation

Course Schedule (Sample)

Assignments are scaffolded throughout the course to build upon one another. In addition to overarching topics listed below, students will be introduced to and practice technical and professional communication strategies (including technical writing style conventions document design)

Weeks 1-3: Course Intro, Conceptual and Theoretical Foundations, Rhetorical Foundations & Technical Writing Style

Assignments

- Reading Engagements
- Reading Response
- Information and Writing Exercises
- Recommendation Report: Synthesis Matrix + Outline

Weeks 4-5: Applications, Extensions, and Intersections—Theoretical

Assignments

- Reading Engagements
- Reading Synthesis Memo 1
- Information and Writing Exercises
- Recommendation Report Rough Draft + Peer Review

Weeks 6-7: Applications, Extensions, and Intersections—Equity, Justice, and Citizenship at School and Work— Equity in Hiring, Pay and Promotion

Assignments

- Reading Engagements
- Case Study Presentations
- Recommendation Report Final Draft + Reflection

Weeks 8-9: Applications, Extensions, and Intersections—Equity, Justice, and Citizenship in Urban Design, Transportation and the Environment

Assignments

- Reading Engagements
- Case Study Presentations
- Course Project: Research Plan and Team Contract

Weeks 10-12: Applications, Extensions, and Intersections—Equity, Justice, and Citizenship in Engineering Design—Automation, Robotics, Algorithms, and Artificial Intelligence

Assignments

- Reading Engagements
- Case Study Presentations
- Reading Synthesis Memo 2
- Course Project: Annotated Bib
- Course Project: Team Presentations

Weeks 13-14 + Finals Week: Applications, Extensions, and Intersections—Equity, Justice, and Citizenship on the Internet—Social Media, Privacy and Surveillance, Big Data and Augmented Reality

Assignments

- Reading Engagements
- Case Study Presentations
- Course Project: Rough Draft + Peer Review
- Course Project: Final Draft + Teamwork Assessment + Reflection (Finals Week)

GE THEME COURSES

Overview

Courses that are accepted into the General Education (GE) Themes must meet two sets of Expected Learning Outcomes (ELOs): those common for all GE Themes and one set specific to the content of the Theme. This form begins with the criteria common to all themes and has expandable sections relating to each specific theme.

A course may be accepted into more than one Theme if the ELOs for each theme are met. Courses seeking approval for multiple Themes will complete a submission document for each theme. Courses seeking approval as a 4-credit, Integrative Practices course need to complete a similar submission form for the chosen practice. It may be helpful to consult your Director of Undergraduate Studies or appropriate support staff person as you develop and submit your course.

Please enter text in the boxes to describe how your class will meet the ELOs of the Theme to which it applies. Please use language that is clear and concise and that colleagues outside of your discipline will be able to follow. You are encouraged to refer specifically to the syllabus submitted for the course, since the reviewers will also have that document. Because this document will be used in the course review and approval process, you should be *as specific as possible*, listing concrete activities, specific theories, names of scholars, titles of textbooks etc.

Course subject & number

General Expectations of All Themes

GOAL 1: Successful students will analyze an important topic or idea at a more advanced and in-depth level than the foundations.

Please briefly identify the ways in which this course represents an advanced study of the focal theme. In this context, “advanced” refers to courses that are e.g., synthetic, rely on research or cutting-edge findings, or deeply engage with the subject matter, among other possibilities. (50-500 words)

Course subject & number

ELO 1.1 Engage in critical and logical thinking about the topic or idea of the theme. Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

ELO 1.2 Engage in an advanced, in-depth, scholarly exploration of the topic or idea of the theme. Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

Course subject & number

GOAL 2: Successful students will integrate approaches to the theme by making connections to out-of-classroom experiences with academic knowledge or across disciplines and/or to work they have done in previous classes and that they anticipate doing in future.

ELO 2.1 Identify, describe, and synthesize approaches or experiences as they apply to the theme.

Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

ELO 2.2 Demonstrate a developing sense of self as a learner through reflection, self-assessment, and creative work, building on prior experiences to respond to new and challenging contexts. Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met.

(50-700 words)

Course subject & number

Specific Expectations of Courses in Citizenship

GOAL 1: Successful students will explore and analyze a range of perspectives on local, national, or global citizenship, and apply the knowledge, skills, and dispositions that constitute citizenship.

ELO 1.1 Describe and analyze a range of perspectives on what constitutes citizenship and how it differs across political, cultural, national, global, and/or historical communities. Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

ELO 1.2 Identify, reflect on, and apply the knowledge, skills and dispositions required for intercultural competence as a global citizen. Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

Course subject & number

GOAL 2: Successful students will examine notions of justice amidst difference and analyze and critique how these interact with historically and socially constructed ideas of citizenship and membership within societies, both within the US and/or around the world.

ELO 2.1 Examine, critique, and evaluate various expressions and implications of diversity, equity, inclusion, and explore a variety of lived experiences. Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)

2.2 Analyze and critique the intersection of concepts of justice, difference, citizenship, and how these interact with cultural traditions, structures of power and/or advocacy for social change. Please link this ELO to the course goals and topics and indicate *specific* activities/assignments through which it will be met. (50-700 words)