



WELD-701: WELDING SYMBOL & BLUEPRINT APPLICATIONS

Effective Term

Fall 2025

BOT Approval Date

01/16/2025

Discipline

WELD - Welding Technology

Course Number

701

Course Title

Welding Symbol & Blueprint Applications

Short Title

Welding Symbol & Blueprint App

Credit Status (CB 04)

D - Credit - Degree applicable

Units**Lecture Units**

1.00

Lab Units

2.00

Total Units

3.00

Hours**Lecture Contact Hours**

16-18

Out of Class Hours Lecture

32-36

Lab Contact Hours

96-108

Out of Class Hours Lab

0.00

Total Contact Hours

112 - 126

Total Out of Class Hours

32 - 36

Total Student Learning Hours

144 - 162

Is this an existing Extensive Lab?

No



Do you want to propose this for Extensive Lab?

No

Distance Education

Yes

Distance Education

Distance Education Type

Both Fully Online and Hybrid Online

Fully Online Delivery Requirements:

a. Students must be notified via the college schedule of classes and the syllabus for the class if proctored tests are required for this course

b. Any planned face-to-face meetings, such as an orientation or study session, must be optional

c. The MSJC curriculum committee requires the use of accessible, asynchronous discussion as a component of every fully online course

Are you using publisher content?

No

Regular Substantive Interaction

Instructor-to-student, student-to-student, and student-to-content contact shall be distributed in a manner that will ensure regular substantive interaction (RSI) is maintained not only weekly but also for the duration of the course. Instructor interactions should be equivalent in time, quality and consistency to the engagement students would receive in a face-to-face course—for example, through announcements, discussion participation, personalized feedback, video messages, or other instructional communications. Instructors are expected to be responsive to student inquiries within a 24-72 hour time frame excluding holidays. RSI will be maintained through a variety of methods:

- Orientation - Students must be oriented to the online and face-to-face portions at the start of the course.
- Announcements - Announcements using the course management system must be posted at least weekly to keep students current on course events, due dates, materials, etc.
- Discussion Forums - Content-related discussion forums within the designated CMS will include appropriate instructor participation and will be initiated and maintained, with timely feedback provided. Instructors are required to monitor the discussions and related activities to provide guidance and direction. Open-ended discussion boards may be used to further learning and interaction.
- MSJC Communication – Instructor will use MSJC-administered communication tools (such as email or the designated CMS communication tools) to regularly communicate with and provide ease of access to students.
- Timely Feedback - Timely feedback on student work will be provided by the instructor, which may include comments and/or rubrics, within the Grades area of the designated CMS.
- Scheduled Meetings – Hybrid and synchronous courses will meet at regularly scheduled times.

ADA Compliance - All course interactions and content must be designed with accessibility in mind and meet ADA requirements.

Catalog Description

This course teaches basic techniques for interpreting and using engineering drawings or prints in the metal trades. It also introduces visualization of objects, sectional drawings, orthographic and isometric projections, welding symbols, scales, and practices used in blueprints for the metal trades.

Attach Supporting Documents

Welding Technology Regional LMI.pdf

Requisites

Prerequisite(s)

Prerequisite(s) (must be taken before)

WELD-700 (with a grade of C or better).

Codes

TOP Code (CB 03)

0956.50* - *Welding Technology

CIP Code

48.0511 - Metal Fabricator.



Repeatability Code

No

Grading Option

Letter grade OR P/NP

Learning Objectives

Learning Objectives

Learning Objective

1. Analyze industrial prints using measurement, fractions, and decimals to interpret dimensions and specifications accurately.
2. Summarize the language of industry, highlighting the alphabet of lines, types of prints, and print formats, and summarizing basic plane geometry to understand geometric relationships.
3. Explore the historical and ongoing contributions of diverse individuals in the welding industry, appreciating the role of gender, culture, race, and sexuality in shaping the field.
4. Develop knowledge of welding processes, threaded fasteners, structural metals, and common types of joints and welds, creating a foundational understanding of welding principles.
5. Design welding prints and symbols, demonstrating competence in recognizing and understanding fillet welds, groove welds, plug and slot welds, spot, seam, projection welds, surfacing welds, edge welds, and pipe welding while identifying appropriate brazed joints.
6. Differentiate inclusivity in the welding industry by examining apprenticeship programs and barriers that hinder inclusivity.

Learning Outcome Information

Course Learning Outcomes

Learning Outcome

1. Students will interpret industrial prints accurately using measurement, fractions, and decimals to understand dimensions and specifications in technical documents.
2. Students will explain the fundamentals of industrial terminology, including the alphabet of lines, print types, and formats, and apply basic plane geometry to comprehend geometric relationships within engineering drawings.
3. Students will recognize the diverse historical and ongoing contributions of individuals from varying genders, cultures, races, and sexual orientations in shaping the welding industry.
4. Students will advocate for inclusivity in the welding industry by assessing apprenticeship programs and identifying inclusivity barriers, working to promote diversity and equity in the field.

Program Learning Outcomes

Learning Outcome

1. Demonstrate an understanding of welding safety practices and procedures as per AWS and NCCER standards.
2. Interpret welding symbols and technical drawings for welding requirements.
3. Apply proper welding techniques to join different metal types using specified processes.
4. Analyze welding defects, determine causes, and inspect welds for compliance with AWS and NCCER standards.

Institutional Learning Outcomes

Communication: The student will effectively express and exchange ideas through listening, speaking, reading, writing, visual works, and other modes of interpersonal expression.

Critical Thinking: The student will analyze problems, gather and synthesize relevant information, evaluate ideas, information, and evaluate alternative points of view to create, innovate and implement effective solutions.

Civic

Personal

and Professional Responsibility

Content

Course Lecture Content

1. Introduction
 - a. Prints—The Language of Industry
 - b. Review of Measurement
 - c. A Review of Fractions and Decimals
 - d. Discuss the impact of gender, culture, race, and sexuality in shaping the welding industry.
2. Print Reading Basics
 - a. Alphabet of Lines
 - b. Understanding Prints
 - c. Types of Prints
 - d. Print Format
 - e. Basic Plane Geometry
3. Dimensioning Welding Prints
 - a. Practical Applications
 - b. Geometric concepts in welding
4. Welding Fundamentals
 - a. Welding Processes
 - b. Threaded Fasteners
 - c. Structural Metals
 - d. Common Types of Joints and Welds
5. Reading Welding Prints
 - a. Welding Symbols
 - b. Fillet Welds
 - c. Groove Welds
 - d. Plug and Slot Welds
6. Spot, Seam, and Projection Welds
 - a. Surfacing Welds
 - b. Edge Welds
7. Pipe Welding
 - a. Brazed Joints
 - b. Soldered joints
8. Manufacturing and Testing for Industry
 - a. Investigate existing apprenticeship programs and their approaches to inclusivity.
 - b. Basic Metalworking Processes
 - c. Examining and Testing Welds
 - d. Print Reading Activities

Course Lab Content

Course Lab Content

1. Introduction
 - a. Lab Orientation and Safety Protocols
 - b. Introduction to Welding Equipment
 - c. Welding Safety Demonstration
2. Print Reading Basics
 - a. Hands-on Practice Interpreting Industrial Prints
 - b. Alphabet of Lines and Its Application
 - c. Understanding Different Types of Prints
 - d. Practice Interpreting Print Format
 - e. Introduction to Basic Plane Geometry
3. Dimensioning Welding Prints
 - a. Practical Exercises on Dimensioning Welding Prints
 - b. Applying Geometric Concepts to Interpret Prints
4. IV. Welding Fundamentals

- a. Welding Equipment Setup and Maintenance
 - b. Welding Processes: Demonstration and Hands-on Practice
 - c. Threaded Fasteners and Their Applications
 - d. Identifying and Handling Structural Metals
 - e. Welding of Common Types of Joints and Welds
5. Reading Welding Prints
 - a. Comprehensive Analysis of Welding Symbols
 - b. Hands-on Practice Interpreting Fillet Welds
 - c. Groove Welds: Interpretation and Execution
 - d. Plug and Slot Welds: Analysis and Practice
 6. Spot, Seam, and Projection Welds
 - a. Spot, Seam, and Projection Welds: Theory and Practical Application
 - b. Hands-on Exercises for Surfacing Welds and Edge Welds
 7. Pipe Welding and Braze Joints
 - a. Techniques for Pipe Welding: Practical Application
 - b. Interpretation and Execution of Braze Joints
 8. Manufacturing and Testing for Industry
 - a. Introduction to Basic Metalworking Processes
 - b. Examination and Testing of Welds: Procedures and Safety
 - c. Practical Application of Print Reading Skills in Real-world Activities

Methods of Instruction

Method

Lecture

Integration

Students will learn the fundamentals of welding symbols and blueprint interpretation through pre-recorded lectures and narrated slide presentations, focusing on the alphabet of lines, weld types, and joint configurations. Interactive elements like quizzes and polls will enhance engagement, while real-life case studies and virtual simulations will demonstrate practical applications of blueprint reading. Industry standards and safety protocols will be emphasized through multimedia resources, including videos and interactive modules. Discussions on inclusivity in welding will feature guest speakers from diverse backgrounds, and students will participate in Q&A sessions to clarify concepts and deepen understanding.

DE Adaptations for MOI

In ensuring accessibility and incorporating closed captions for videos, the lectures in our course will be presented electronically within the CMS platform, with careful attention paid to meeting all accessibility standards. Each video will be closed-captioned, ensuring that all students can fully engage with the content. Instructors will implement a range of accessibility features within the CMS interface to accommodate diverse student needs, such as adjustable text sizes and compatibility with screen readers.

Method

Lab Activities

Integration

Students will engage in hands-on exercises to build proficiency in interpreting welding symbols and applying them to practical scenarios. They will start by exploring the fundamentals of welding symbols through multimedia tutorials and interactive modules. Practice exercises will reinforce their understanding by requiring students to match symbols, identify them on blueprints, and annotate blueprints accurately. Blueprint interpretation challenges will simulate real-world tasks, with students working individually or in groups to analyze and apply their knowledge. Virtual welding simulations will allow students to integrate welding symbols into simulated projects, bridging the gap between theory and practice. Peer feedback sessions and reflections will promote collaborative learning, while instructor guidance will provide ongoing support and clarification throughout the lab activities.

DE Adaptations for MOI

In ensuring accessibility and incorporating closed captions for videos, the Welding Symbol & Blueprint Applications course will adapt hands-on labs and practical exercises for distance education through a virtual lab approach. Utilizing simulation software, students can participate in realistic, interactive exercises, specifically replicating Welding Symbol & Blueprint Applications. These virtual simulations enable students to manipulate digital tools, practice welding techniques, and observe outcomes in a controlled online

environment. All labs will be conducted through the CMS platform, strictly adhering to accessibility requirements to ensure inclusivity for all students.

Method

Observation and Demonstration

Integration

Observation and demonstration will be key in integrating theoretical concepts with practical skills. Recorded demonstrations will guide students through interpreting welding symbols and their applications in various scenarios, while illustrating welding techniques like fillet, groove, and plug welds. Complex procedures will be broken into step-by-step sequences, helping students understand each stage of the process. Real-life application examples and case studies will connect theoretical knowledge to industry practices. Interactive live demonstrations, including Q&A sessions, will provide opportunities for students to engage directly with instructors or guest speakers. Guided practice sessions will allow students to apply observed techniques, while constructive feedback and reflection activities will help them consolidate their learning and refine their skills.

DE Adaptations for MOI

Instructors will ensure accessibility and utilize closed captions for videos in incorporating welding demonstrations, offering step-by-step guidance and emphasizing essential concepts. To enrich remote learning, students may be prompted to conduct safe, small-scale experiments at home using welding kits or provided materials. Virtual collaborative sessions via accessible closed-captioned video conferencing tools will support group discussions, troubleshooting, and feedback sharing, enabling active application and reinforcement of welding topics. All observations and demonstrations will be conducted through the CMS, adhering strictly to accessibility requirements.

Method

Discussion

Integration

Discussions will facilitate critical thinking and collaborative learning on key topics. Students will engage in group discussions to identify personal biases, explore cultural ideologies, and examine how these perspectives influence decision-making in welding. Conversations will also address diversity in the welding industry, focusing on strategies for fostering inclusivity and equity. Safety culture and best practices will be highlighted, with students discussing hazard identification, risk assessment, and maintaining safe workplaces. Sustainable practices, including waste reduction and energy efficiency, will be explored to emphasize the industry's role in environmental conservation. Additionally, career pathways and professional development opportunities will be discussed, helping students identify the necessary skills, certifications, and strategies to achieve their professional goals.

DE Adaptations for MOI

In ensuring accessibility and closed captioning for videos, course discussions within the CMS will be facilitated through accessible means such as discussion boards or closed-captioned video conferencing software. Instructors will provide timely feedback through discussion boards within a week of students' initial posts, particularly in synchronous online learning environments. All discussions conducted through the CMS will strictly adhere to accessibility requirements, ensuring that closed captioning is provided for video content and that all participants can fully engage in the content.

Method

Film/video Viewing and Discussion

Integration

Film and video viewing will be integrated to enhance comprehension and application of key concepts. Students will explore interactive virtual blueprints using specialized software, enabling them to examine welding symbols and practice interpretation in a simulated environment. Video tutorials will provide step-by-step guidance on identifying and applying welding symbols, offering clear visual demonstrations of theoretical concepts. Multimedia case studies will present real-world welding projects with annotated blueprints, combining text, images, and videos to contextualize learning. Virtual welding simulations will further engage students by allowing them to apply blueprint specifications in practical, simulated welding scenarios, reinforcing both understanding and skill development.

DE Adaptations for MOI

Online courses will include accessible video clips and/or films on course content. These accessible video clips and/or films can be delivered synchronously through closed-captioned video conferencing software or asynchronously through the CMS. Accessible video clips and/or film materials such as accessible digital slide presentations closed caption videos, or links to external articles may be incorporated to supplement lectures and made available to students within the CMS. All materials used will meet accessibility guidelines.

Method

Group Projects

Integration

Group projects will foster collaboration, critical thinking, and the application of course concepts. Students will work in small groups to explore specific topics, such as interpreting complex welding symbols or analyzing blueprint specifications. Instructors will provide guidance and resources, helping groups define objectives and develop action plans. Collaborative learning techniques, including group discussions and problem-solving, will be used to promote teamwork and shared insights. Projects may incorporate multimedia resources, such as virtual blueprints and case studies, to enhance understanding and engagement. Upon completion, groups will present their findings and receive peer feedback, fostering reflection and continuous improvement. Reflection activities will encourage students to evaluate their experiences and consider practical applications of their learning.

DE Adaptations for MOI

In ensuring accessibility and the inclusion of closed captions for videos, group projects will be accessible through various CMS tools, assignment boards, or video conferencing software designed for accessibility. Instructors will offer feedback through discussion boards within a week of students' initial posts, particularly in synchronous online learning environments. Online students can actively engage in group projects via collaboration tools like Google Workspace, Microsoft Teams, or other integrated platforms within the CMS. Video conferencing tools will facilitate group meetings and discussions, ensuring seamless communication and participation for all students.

Methods of Evaluation**Method**

Quizzes

Integration

Quizzes will be used throughout the course to assess student comprehension of key concepts and skills in each section. The quizzes will include a mix of question types tailored to the course content, such as multiple-choice, matching, calculation-based, short-answer, and scenario-based questions. This structured approach ensures that quizzes effectively measure theoretical understanding and practical application of the course material.

DE Adaptations for MOE

In ensuring accessibility and the provision of closed captions for videos, exams and tests conducted entirely online will be facilitated, graded, and evaluated within the CMS platform. Assessments will be designed to assess students' identification, understanding, and application of major topics aligned with the course content and learning objectives. To ensure fairness, exams will consist of a variety of question formats, including true or false, multiple choice, fill-in-the-blanks, and short answer questions, providing an equitable opportunity for all students to demonstrate their knowledge. Upon completion, exams will be submitted to the online grading system within the CMS, where they will be assessed for accuracy and completeness. Students will receive feedback within two weeks via the grade book, chat, or other accessible conferencing tools, with additional time allocated if necessary depending on the exam's type and complexity.

Method

Class Performance

Integration

Class performance will be evaluated through hands-on and collaborative activities that assess students' understanding and application of blueprint reading and welding concepts. This approach emphasizes real-world application and teamwork, ensuring students develop technical skills and collaboration abilities critical to welding.

DE Adaptations for MOE

In ensuring accessibility and incorporating closed captions for videos, online evaluation and interpretation of research will be facilitated collaboratively and/or individually through the CMS platform. These assessments may take various forms, such as discussion forums, blogs, essays, audio/video presentations, live streams, or other digital presentation methods. Access to evaluation materials will be available through online resources via the MSJC Library and presented using various features within the CMS. Assessments will be evaluated based on criteria including organization, clarity, critical thinking, and the demonstration of identification, understanding, and application of welding concepts and their applications. Instructor feedback will be promptly provided through multiple components of the CMS, including gradebook comments, discussion forums, video conferencing software, or inbox messaging, ensuring accessibility for all students. Additionally, all materials and delivery methods will adhere to accessibility guidelines, and instructor-student communication will comply with accessibility and confidentiality standards. Instructors will offer feedback to individual students based on assignment results within one week of completion to support timely progress and learning.

Method

Final Performance

Integration

The final performance evaluation will assess students' overall proficiency in safety, technique, and procedures based on industry standards. Throughout the term, periodic performance exams will track students' progress in these areas, with quality levels outlined in the course rubric. Key assignments contribute to the final evaluation: Welding Symbol Interpretation tests students' ability to accurately interpret welding symbols, ensuring safe and precise welding practices; Enhancing Inclusivity in Welding Print Reading evaluates students' understanding of inclusivity and diversity in the welding industry, reflecting their commitment to safe and equitable practices; and Celebrating Diversity in Welding Industry Voices encourages students to explore and reflect on the contributions of diverse professionals in the welding field, emphasizing the role of diverse perspectives in promoting safety and effective procedures. These assignments comprehensively assess students' technical and cultural competency within the welding industry.

DE Adaptations for MOE

In ensuring accessibility and integrating closed captions for videos, exams and/or tests conducted entirely online will be administered and assessed within the CMS platform. The exam format may encompass multiple choice, short answer, essay, or other appropriate formats. Assessments will be evaluated based on the demonstration of identification, understanding, and application of major topics aligned with the course content and learning objectives. All exams/tests will adhere strictly to accessibility guidelines to accommodate diverse student needs. Instructors will offer feedback to individual students based on their performance in final exams/tests within one week of completion, promoting timely support and learning enhancement.

Assignments

Assignment Type

Other

In-class and/or outside of class

Outside of class

Formative or Summative

Summative

Assignment

Objective: To develop a strong understanding of welding symbols and their applications in the welding industry.

Task: You will be presented with various welding symbols typically used in welding blueprints. Your mission is to interpret these symbols thoroughly and comprehensively explain each component. Additionally, you need to identify the type of weld specified, its dimensions, and any supplementary information the symbol conveys. This assignment is designed to reinforce your ability to read and comprehend welding symbols accurately, a crucial skill in welding.

Instructions:

Access the Welding Symbols: You will be provided with a set of welding symbols, which resemble those frequently encountered in welding blueprints and represent different welding requirements.

Interpret the Symbols: For each symbol you encounter, meticulously analyze its components. Pay careful attention to the following details:

The reference line

Arrow and its tail

The welding symbol itself

Supplementary symbols, if present

Any specified dimensions, angles, or additional requirements

Provide Explanations: Draft a comprehensive explanation for each welding symbol. Elaborate on what each symbol signifies, the type of weld it calls for, and any extra information relevant to the weld joint.

Illustrate Your Understanding: Consider creating a sketch or diagram for each symbol to reinforce your comprehension, visually representing the welding requirements.

Submission Guidelines:

Prepare your assignment using a document format like Microsoft Word or Adobe PDF.

Clearly label and assign a detailed explanation for each welding symbol.

If you include sketches or diagrams, ensure they are neatly integrated into the document.

Grading Criteria:

Your assignment will be assessed based on the following criteria:

The accuracy of your interpretations and explanations.

The clarity and completeness of the explanations for each welding symbol.

The quality and relevance of any included sketches or diagrams.

How assignment will be adapted in online format

Instructors will ensure accessibility and utilize closed captions for videos in incorporating welding demonstrations, offering step-by-step guidance and emphasizing essential concepts. To enrich remote learning, students may be prompted to conduct safe, small-scale experiments at home using welding kits or provided materials. Virtual collaborative sessions via accessible video conferencing tools will support group discussions, troubleshooting, and feedback sharing, enabling active application and reinforcement of welding topics despite the distance. Feedback from instructors will be provided within a week through one of the CMS tools and/or through individual personal feedback, ensuring accessibility requirements are met to support all students.

Assignment Type

Reading

In-class and/or outside of class

Outside of class

Formative or Summative

Formative

Assignment

Overview:

For this assignment, you must read the article "Exploring the Benefits of a Female Welding Apprenticeship" by Alan Brown. The article discusses the growing demand for skilled welders, women's role in addressing the skills gap, and the importance of welding apprenticeship programs in helping women break into the traditionally male-dominated welding industry. The article also highlights the hands-on learning, mentorship, and career advancement opportunities available to women in welding through apprenticeships.

Task:

Summarize the key points of the article. Focus on:

The increasing demand for skilled welders and how women can help fill this gap.

The importance of apprenticeship programs in providing hands-on learning and mentorship for women in welding.

The various career opportunities available to women who complete welding apprenticeships.

Reflection:

In 200–300 words, reflect on how welding apprenticeship programs are helping women enter and thrive in the welding industry. Consider:

How apprenticeships address gender stereotypes in welding.

The role of mentorship and networking in supporting women welders.

The challenges women may face in welding and how they can overcome these obstacles.

Discussion Questions:

Answer the following in 100–150 words each:

What stood out to you the most about the opportunities available for women through welding apprenticeships, as described in the article? Why?

How do you think apprenticeship programs can contribute to closing the skills gap in the welding industry?

What additional measures can be taken to support women entering the welding field beyond apprenticeship programs?

Format:

Your summary should be 150–200 words.

The reflection should be 200–300 words.

Each discussion question response should be 100–150 words.

Use clear headings for each section (Summary, Reflection, and Discussion Questions).

Submission:

Submit your responses as a typed document or PDF, ensuring your work is well-organized and free from grammatical errors.

Grading and Feedback:

The instructor will review your report to ensure it is well-organized, plagiarism-free, and properly cited. Utilize a consistent citation style, such as APA or MLA, for your sources. Your evaluation in this assignment will be based on the quality of your research, the clarity of your report, and your ability to convey the individual's significance in the welding industry. Remember to submit your completed report by the specified deadline.

How assignment will be adapted in online format

Incorporating closed captions for videos, papers and reports will be assigned within the CMS platform using tools such as pages or assignments. Students will submit their papers via assignment submission links within the CMS or discussion boards to have students make comments on needed changes. The instructor will provide feedback within a week through one of the CMS tools and/or through individual personal feedback within a week; it will also meet accessibility requirements.

Assignment Type

Writing

In-class and/or outside of class

Outside of class

Formative or Summative

Summative

Assignment

Celebrating Diversity in Welding Industry Voices

Objective: To appreciate and honor the contributions of diverse individuals in the welding field, focusing on print reading.

Task: Your mission is to explore and honor the contributions of diverse individuals in the welding industry, specifically focusing on print reading. Here's how to do it:

Choose Your Interviewee: Select a professional or expert working in the welding field who embodies diversity. This person should be from a different gender, ethnicity, or cultural background.

Interview: Prepare a set of thoughtful questions for your chosen interviewee. In your interview, discuss their experiences, challenges, and accomplishments in welding, particularly in roles related to print reading. Document the conversation through writing or recording.

Celebrate Diversity: In your assignment, emphasize the importance of diverse voices and perspectives in shaping the future of the welding industry, especially in the context of print reading.

Reflection: Conclude your assignment with a reflection on what you have learned from the interview and how it has deepened your understanding of diversity in welding, particularly in print reading.

Assessment: Students will be evaluated based on the quality of their interview questions, the depth of their reflections, and their ability to convey the significance of diverse voices in the welding industry, particularly in the context of print reading.

How assignment will be adapted in online format

Incorporating closed captions for videos, papers and reports will be assigned within the CMS platform using tools such as pages or assignments. Students will submit their papers via assignment submission links within the CMS or discussion boards to have students make comments on needed changes. The instructor will provide feedback within a week through one of the CMS tools and/or through individual personal feedback within a week; it will also meet accessibility requirements.

Course Materials

Textbooks

Welding Print Reading, 8th Edition By: John R. Walker and W. Richard Polanin
Copyright: 2024 ISBN: 978-1-68584-572-8

Open Educational Resources

Basic Blueprint Reading

Class Size Information

Class Size

30

Class Size Category

F - Individualized, skills#based instruction/field practice 30

Diversity and Inclusion

Explain how diversity and inclusion(e.g., gender, culture/race, sexuality, etc.) is infused into the course.

The Welding Symbol & Blueprint Applications course embraces diversity and inclusion by incorporating inclusive language, diverse examples, and case studies representing individuals from various genders, cultures, races, and backgrounds in the welding industry. Collaborative learning activities promote interaction among students with diverse backgrounds, fostering an inclusive and supportive environment. Assessment methods focus on evaluating skills and knowledge, ensuring fairness and equity. The course emphasizes respect, empathy, and open-mindedness, creating a safe and welcoming classroom environment. By infusing diversity and inclusion principles, the course prepares students with technical skills and the ability to work effectively in a diverse workforce, contributing to a more inclusive and tolerant welding industry.

Describe how assignments, instruction, evaluation, course content, and interactions are contextualized for diverse learners promoting an equitable course.

In the Welding Symbol & Blueprint Applications course, a commitment to equity is evident through contextualized assignments, inclusive instruction, appropriate evaluation methods, diverse course content, and inclusive interactions. Online lessons offer flexibility, accommodating various learning styles and abilities. In-person instruction incorporates varied techniques to engage learners through visual aids, demonstrations, and multimedia resources. Evaluation methods are industry-based, transparent, and unbiased, providing equal opportunities for success. Course content represents diverse perspectives and experiences. Online discussions foster a respectful and inclusive environment where all voices are valued. By embracing these practices, the course creates an equitable learning experience, recognizing and supporting all learners' diverse needs and strengths.

Interactions

Explain how the course will incorporate student-to-student interaction.

Students will engage in weekly collaborative activities to enhance learning and peer interaction. These will potentially include hands-on workshops, case study analyses, and peer review sessions, where students will work together to interpret welding symbols and blueprints. Additional opportunities for collaboration will be provided through guest speakers, industry visits, and online collaboration

tools to facilitate virtual group discussions and projects. These activities promote critical thinking, practical application of concepts, and continuous student engagement throughout the course.

Explain how the course will incorporate instructor-to-student interaction.

Instructor-to-student interaction in this course will include a welcome letter and orientation video to set expectations, weekly course update announcements, and active discussion board participation. The instructor will provide timely feedback on assignments and be available through office hours and other communication channels to support student success, particularly in mastering welding symbols and blueprints.

Explain how the course will incorporate student-to-content interaction.

The course will offer interactive and engaging content on welding blueprint interpretation and symbol applications. Students will interact with online lectures, including "test your knowledge" sections, receiving immediate feedback to reinforce their learning. Supplementary video shorts will reinforce critical topics designed with accessibility in mind. Additionally, practice exams and problems will allow students to apply their knowledge, with detailed feedback to guide their understanding and correct misconceptions. This interactive approach ensures that students actively engage with the course material and deepen their knowledge throughout the course.

Explain how the course will incorporate student-to-self interaction (metacognitive).

The course incorporates student-to-self interaction by promoting metacognitive practices through reflective assignments and goal-setting activities. Reflective tasks encourage students to assess their understanding of welding blueprints and symbols, identify challenges, and articulate how their problem-solving approaches have evolved. Goal-setting activities further support this by guiding students to define specific learning objectives and outline strategies for improvement in areas of weakness. Additionally, peer feedback sessions allow students to reflect on their approaches by comparing them with their peers, fostering deeper self-awareness and continuous learning.

Key: 3111