



**Course Title:** PIPE WELDING I

**Course #:** WLD105-8

**Credit Hours:** 3

**Semester:** SPRING 2022

**Cap:** 10

**Faculty:** Lorenzo Gurule

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**Office:** NTU BWTC Room 115

**Office Phone:** 505-417-6628

**Office Hours:** By appointment only.

**Preferred Communication:** Email or text; will respond within 24 hours

**Modality:** Face-to-Face

**Class Location and Meeting Times:** BWTC 115 & Welding Lab, WED. 3:45-5:45PM.

**Required Materials**

**Textbook:** *Pipe Welding, 1<sup>st</sup> Ed.*, L. Jeffus & B. Baker, ISBN 978-1336-9184-6

**Tools:** Must have: Safety glasses, welding hood, welding gloves, cutting goggles, protective clothes, and steel toe work boots, pipe wrap, folding radius marker, pro mag level, 4 ½” grinding wheels 2, 4 ½” wire wheel, soapstone marker w/holder, Adjustable vice grips, 25’ tape measure, magnetic holder, chipping hammer. Tools & apparels can be purchased from Dr. Nez at BWTC and will be added to your Student Account.

**Laptop and Internet Access:** Every student is required to own a laptop and have internet access.

**Lab/Course Fee:** \$35.00

**Mission, Vision, and Philosophy**

*Mission:* Navajo Technical University honors Diné culture and language, while educating for the future.

*Vision:* Navajo Technical University provides an excellent educational experience in a supportive, culturally diverse environment, enabling all community members to grow intellectually, culturally, and economically.

*Philosophy:* Through the teachings of Nitsáhákees (thinking), Nahátá (planning), Íína (implementing), and Sihasin (reflection), students acquire quality education in diverse fields, while preserving cultural values and gaining economic opportunities.

**Course Description**

Students will acquire the knowledge to learn techniques for pipe fitting and pipe welding of joints using SMAW, GMAW, and FCAW, in the 2G welding position. They will also learn the set-up and adjustment of ARC and Oxy—Acetylene equipment. The welding safety procedures and terminology, skill development in laying weld beads with various patterns, position, and processes. Perform 6010 electrodes root and 7018 electrodes fill and cap in 6G (stationary 45-degree angle) positions.

<b>Course Outcomes</b>	<b>Course Assessments</b>
Students will be able to identify and perform welds in the following positions: 1G, 2G, 5G, and 6G.	Course readings, quizzes, lab observations and projects.

Students will be able to demonstrate an understanding of pipe measuring and cutting processes.	Practical welding applications and class/lab observations.
Students will be able to identify and demonstrate root, fill, and cap welds.	Practical welding applications and class/lab observations.
Students will be able to identify and describe common types of welding electrodes used for pipe welding.	Homework, lab observations, quizzes, and lab projects.
Students will be able to identify and utilize proper tools for pipe welding fabrication.	Lab observations, practical welding applications.
Students will have a strong understanding of welding safety procedures, and terminology.	Quizzes, homework, and practical lab projects.
Students will be able to correctly adjust settings of and use ARC and Oxyacetylene equipment.	Practical welding applications and class/lab observations.

### Connections to Program Assessment (Course-Embedded Measures)

Complete Reading assignments, homework assignments, exams, projects, and quizzes. At the start of class, a quiz issued for homework assignments, passing mark of 70 required to spend rest of class time in Welding lab. Less than 70 No Welding lab time.

### Course Activities

Week	Date	Class Topics/Reading Due	Assignments Due	Assessments
	<b>Jan 17 Jan 18</b>	<b>Martin Luther King Day Instruction begins</b>		
1	Jan 17 - 21	<b>Ch. 1-2, 5:</b> Intro to Pipe Welding, Welding Safety, Thermal Cutting Processes.		
	<b>Jan 19 - 20</b>	<b>Late registration w/fee</b>		
	<b>Jan 21</b>	<b>Last day to add/drop w/out "W"</b>		
2	Jan 24 - 28	<b>Ch. 3-4:</b> Shop Math, Blueprint Reading & Welding Symbols	Homework 1	Quiz
3	Jan 31-Feb 4	<b>Ch. 6:</b> Pipe Joint Design & Preparation	Homework 2	Quiz
4	Feb 7 - 11	<b>Ch. 7:</b> Pipe fit-up & alignment	Homework 3	Quiz
5	Feb 14 - 18	<b>Ch. 12-13:</b> Pipe Welding with Multiple Processes, Machine & Automatic Pipe Welding	Homework 4	Quiz
	<b>Feb 21</b>	<b>HOLIDAY President's Day</b>		
6	Feb 21 - 25	<b>Ch. 12-13:</b> Pipe welding with multiple processes, Machine & automatic pipe welding	Homework 5	Quiz
	<b>Feb 25</b>	<b>Spring Graduation Petitions due</b>		
7	Feb 28 Mar 4	<b>Ch. 15-16:</b> Welding Metallurgy, Weld Discontinuity & Defects.	Homework 6	Quiz
8	<b>Mar 7 - 11</b>	<b>Midterm</b>	<b>Midterm</b>	
	<b>Mar 11</b>	<b>Midterm grades due</b>		
9	<b>Mar 14 - 18</b>	<b>Spring Break Ch. 8, 14:</b> Shielded Metal Arc Welding, Filler Metals	Homework 7	Quiz
10	Mar 21 - 25	<b>Ch. 9-10:</b> Gas Metal Arc Welding of Pipe, Flux Cored Arc Welding of Pipe	Homework 8	Quiz
	<b>Mar 31</b>	<b>Last day to withdraw w/ "W"</b>		
11	Mar 28-Apr 1	<b>Ch. 11:</b> Gas Tungsten Arc Welding of Pipe	Homework 9	Quiz
12	Apr 4 - 8	<b>Ch. 17:</b> Pipe Weld Repairs	Homework 10	Quiz

13	Apr 11 - 15	<b>Ch. 18: Testing &amp; Inspecting Welds</b>	Homework 11	Quiz
14	Apr 18 - 22	<b>Ch. 19: Pipe Welding Certification – Welding Procedures</b>	Homework 12	Quiz
15	Apr 25 - 29	Final Prep lab		
16	May 2 - 6	Final practical practice lab		
17	<b>May 9 – 12</b>	<b>Final exams</b>	<b>Final Exams</b>	
	<b>May 12</b>	<b>Grades due to the Registrar</b>		
	<b>May 13</b>	<b>Spring Graduation</b>		

**Schedule Disclaimer:** The course schedule outlined in the table above is subject to adjustment depending on the needs of the class to focus more on a specific chapter.

### Grading Plan

Homework/Lab work: 20%	A = 100-90%
Class Participation: 10%	B = 89-80%
Quizzes: 20%	C = 79-70%
Mid-term: 25%	D = 69-60%
Final Exam: 25%	F = 59% or less

### Grading Policy

Students must do their own work. Cheating and plagiarism are strictly forbidden. Cheating includes (but is not limited to) plagiarism, submission of work that is not one's own, submission or use of falsified data, unauthorized access to exams or assignments, use of unauthorized material during an exam, or supplying or communicating unauthorized information for assignments or exams.

### Participation

Students are expected to attend and participate in all class activities. Points will be given to students who actively participate in class activities including guest speakers, field trips, laboratories, and all other classroom events.

### Cell phone and headphone use

Please turn cell phones off **before** coming to class. Cell phone courtesy is essential to quality classroom learning. Headphones must be removed before coming to class.

### Attendance Policy

Students are expected to attend all class sessions. A percentage of the student's grade will be based on class attendance and participation. Absence from class, regardless of the reason, does not relieve the student of responsibility to complete all course work by required deadlines. Furthermore, it is the student's responsibility to obtain notes, handouts, and any other information covered when absent from class and to arrange to make up any in-class assignments or tests if permitted by the instructor. Incomplete or missing assignments will necessarily affect the student's grades. Instructors will report excessive and/or unexplained absences to the Counseling Department for investigation and potential intervention. **Instructors may drop students from the class after three (3) absences unless prior arrangements are made with the instructor to make up work and the instructor deems any excuse acceptable.**

### Study Time Outside of Class for Face-to-Face Courses

**For every credit hour in class, a student is expected to spend two hours outside of class studying course materials.**

### Study Time for Hybrid or Blended Courses

**For a hybrid or blended course of one credit hour, a student is expected to spend three hours per week studying course materials.**

### **Study Time for Online Courses**

**For an online course of one credit hour, a student is expected to spend four hours per week studying course materials.**

### **Academic Integrity**

Integrity (honesty) is expected of every student in all academic work. The guiding principle of academic integrity is that a student's submitted work must be the student's own. Students who engage in academic dishonesty diminish their education and bring discredit to the University community. Avoid situations likely to compromise academic integrity such as: cheating, facilitating academic dishonesty, and plagiarism; modifying academic work to obtain additional credit in the same class unless approved in advance by the instructor, failure to observe rules of academic integrity established by the instructor. **The use of another person's ideas or work claimed as your own without acknowledging the original source is known as plagiarism and is prohibited.**

### **Diné Philosophy of Education**

The Diné Philosophy of Education (DPE) is incorporated into every class for students to become aware of and to understand the significance of the four Diné philosophical elements, including its affiliation with the four directions, four sacred mountains, the four set of thought processes and so forth: Nitsáhákees, Nahát'á, Ílna and Siih Hasin which are essential and relevant to self-identity, respect and wisdom to achieve career goals successfully.

### **A:shiwí Philosophy of Education**

At NTU's Zuni Campus, the **A:shiwí Philosophy of Education** offers essential elements for helping students develop Indigenous and Western understandings. Yam de bena: dap haydoshna: akkya hon detsemak a:wannikwa da: hon de:tsemak a:ts'umme. *Our language and ceremonies allow our people to maintain strength and knowledge.* A:shiwí core values of hon i:yyułashik'yanna:wa (respect), hon delank'oha:willa:wa (kindness and empathy), hon i:yyayumola:wa (honesty and trustworthiness), and hon kohol lewuna:wediyahnan, wan hon kela i:tsemanna (think critically) are central to attaining strength and knowledge. They help learners develop positive self-identity, respect, kindness, and critical thinking skills to achieve life goals successfully.

### **Students with Disabilities**

Navajo Technical University is committed to serving all students in a non-discriminatory and accommodating manner. Any student who feels that she or he may need special accommodations should contact the Accommodations Office (<http://www.navajotech.edu/student-services#accomodations-services>) in accordance with the university's Disability Accommodations Policy (see [http://www.navajotech.edu/images/about/policiesDocs/Disability\\_Exhibit-A\\_6-26-2018.pdf](http://www.navajotech.edu/images/about/policiesDocs/Disability_Exhibit-A_6-26-2018.pdf)).

### **Email Address**

Students are required to use NTU's email address for all communications with faculty and staff.

**Final Exam Date: Wednesday, May 11, 2022.**