



HOUSTON COMMUNITY COLLEGE

Course Syllabus
Intro to Blueprint Reading for Welders
WLDG 1313

**Semester with
Course Reference
Number (CRN)**

**Instructor contact
information (phone
number and email
address)**

**Office Location
and Hours** 1301 Alabama

**Course
Location/Times** Central 9:00 – 12:00 P.M.

Course	Credit Hours	3.00
Semester	Lecture Hours	3.00
Credit	Laboratory Hours	0.00
Hours		
(SCH)		
(lecture, lab) If applicable		

**Total Course
Contact Hours** 48

**Continuing
Education Units
(CEU): if
applicable** N/A

**Course Length
(number of weeks)** 16

Type of Instruction Lecture

**Course
Description:** A study of industrial blueprints. Emphasis placed on terminology, symbols, graphic description, and welding processes, including systems of measurement and industry standards.

Interpretation of plans and drawings used by industry.

Course

TECM 1301

Prerequisite(s)

**Academic
Discipline/CTE
Program Learning
Outcomes**

- Demonstrate knowledge of reading industrial welding blueprints according to Welding Procedure Specifications.
- Demonstrate the use of metric and inch measurement, conversions and systems of measurements used in weld drawings and blueprints.
- Define terminology, symbols, systems of measurements and industry standards used in welding blueprints.

**Course Student
Learning
Outcomes (SLO): 4
to 7**

1. Analyze how to read welding symbols on drawings, specifications, and welding procedure specifications (WPS).
2. Demonstrate measurement skills using inches and metric conversion.
3. Identify the uses and terms of drawings and blueprints.
4. Explain the "alphabet of lines" used in welding blueprints.
5. Describe pictorial and orthographic projections and all types of dimensions.
6. Identify weld joints and shapes and the terms that apply to each.
7. Describe what standards are and their importance.

**Learning
Objectives
(Numbering
system should be
linked to SLO -
e.g., 1.1, 1.2, 1.3,
etc.)**

- 1 Analyze how to read welding symbols on drawings, specifications, and welding procedure specifications (WPS).
 - 1.1 Explain who uses drawings and why.
 - 1.2 Understand the use of the terms drawings, blueprints, and prints
 - 1.3 Identify the part of a drawing.
 - 1.4 Explain the importance of welding information found on a print.
- 2 Demonstrate measurement skills using inches and metric conversion
 - 2.1 Identify the two measurement systems used on prints.
 - 2.2 Explain fraction inch, decimal inch, and metric graduated rule.
 - 2.3 Explain the conversion between decimal fractions and common fractions.
 - 2.4 Explain how a fractional inch, decimal inch, and metric rule to make linear measurements.
- 3 Identify the uses and terms of drawings and blueprints.
 - 3.1 Describe two types of working drawings and their uses.
 - 3.2 Describe at least two types of prints and their uses.
- 4 Explain the "alphabet of lines" used in welding blueprints.
 - 4.1 Identify the types of lines found on a print.
 - 4.2 Describe the proper use and types of lines found on a print.
- 5 Describe pictorial and orthographic projections and all types of dimensions.
 - 5.1 Identify the difference between pictorial and orthographic projection.
 - 5.2 Identify the basic views in an orthographic projection drawing.
 - 5.3 Explain all types of dimensions.
 - 5.4 Apply and work dimensional problems with tolerances.
- 6 Identify weld joints and shapes and the terms that apply to each.
 - 6.1 Identify basic joint designs by name and shape.
 - 6.2 Identify simple weld types by name and shape.
 - 6.3 Identify joint and groove style combination by name and shape.
 - 6.4 Describe and locate common parts of fillet, groove, and butt welds by name.
- 7 Describe what standards are and their importance.
 - 7.1 Explain what standards are and why they are important.

7.2 Explain the International Organization for Standardization (ISO) system for designating.

SCANS and/or Core Curriculum Competencies: If applicable

Analyze how to read welding symbols on drawings, specifications, and welding procedure specifications (WPS).

- C1- Allocates Time
- C10 Teaches Others

Demonstrate measurement skills using inches and metric conversion

- C7- Interprets and Communicates Information

Identify the uses and terms of drawings and blueprints.

- C6 – Organizes and Maintains Information

Explain the “alphabet of lines” used in welding blueprints.

- C9 – Participates as a Member of a Team

Describe pictorial and orthographic projections and all types of dimensions.

- C12 – Exercises Leadership

Identify weld joints and shapes and the terms that apply to each.

- C13 – Negotiates to Arrive at a Decision

Describe what standards are and their importance.

- C15 – Understand Systems

Course Calendar

Current Catalog (CAT 2012)

Instructional Methods

Lecture, Power Point, Demonstration

Student Assignments

Chapter Homework, Blueprint Reading Activities

Student Assessment(s)

Written Test: Students must score 70% or higher on mid-term and final exams, Physical Demonstration (Notebooks), and Oral Exams.

Instructor's Requirements

Notebook, Rulers, Tape Measure

Program/Discipline Requirements: If applicable

Students are required to enroll in **LEAD 1200 - Critical Thinking**

HCC Grading Scale

A (90-100/ Excellent)	4 points per semester hour
B (80-89/Good)	3 points per semester hour
C (70-79/Fair)	2 points per semester hour
D (60-69/Passing *)	1 points per semester hour
F (Failing)	0 points per semester hour
FX (Failure due to non-attendance)	0 points per semester hour
IP (In Progress)	0 points per semester hour

W (Withdrawn)	0 points per semester hour
I (Incomplete)	0 points per semester hour
AUD (Audit)	0 points per semester hour

IP (In Progress) is given only in certain developmental courses. The student must re-enroll to receive credit. COM (Completed) is given in non-credit and continuing education courses. average (GPA); divide the total grade points by the total number of semester hours attempted not affect GPA.

Instructor Grading Criteria

Student Evaluation Policies/Grading Scales: <i>Class participation</i> 100 pts 10 %
<i>Attendance</i> 30 %
<i>Homework</i> 30 %
<i>Two major Tests</i>
<i>Midterm Exam</i> 20%
<i>And Final Test</i> 35 %
Total possible points = 100 pts
Total Percentage = 100%

Grading Points

The percentage of total points that students achieve is converted to a letter grade as follow:

90% to 100%	= 4.00 A	4 points per semester hour
89% to 80%	= 3.00 B	3 points per semester hour
79% to 70%	= 2.00 C	2 points per semester hour
69% to 60%	= 1.00 D	1 points per semester hour
59%	= 0.00 F	0 points per semester hour
Excessive absence = FX		
Late homework=75% grade, after 2 weeks, 0.		
No makeup for tests		

Notes: To compute grade point average (GPA), divide the total grade points by the total number of semester hours attempted.
The grades "IP", "COM" for CEU courses only, and "I" do not affect GPA.

Instructional Materials N/A

HCC Policy Statement:

Access Student Services Policies on their Web site: <http://hccs.edu/student-rights>

Distance Education and/or Continuing Education Policies

Access DE Policies on their http://de.hccs.edu/Distance_Ed/DE_Home/faculty_resources/PDFs/DE_Syllabus.pdf

Web site:

**Access CE
Policies on their
Web site:**

<http://hccs.edu/CE-student-guidelines>

COURSE POLICIES

Attendance

Students are expected to attend classes regularly, and to be on time for every class period. Students can be dropped from a class due to excessive absences. Excessive tardiness may be considered absences. Students are responsible for subjects, assignments, and projects covered during their absences. Consult the **Student Handbook** for more details or visit <http://www.hccs.edu/hccs/current-students/student-handbook>

Student Advisor Students must set up degree plan with a student advisor for certification.

Egls-Evaluation for Greater Learning Student Survey System Online Student survey of class attended.

Instructor Expectation: Student must call if late or absent to avoid negative notation.

Academic Honesty

Scholastic dishonesty is treated with the utmost seriousness by the instructor and the College. Academic dishonesty includes, but it is not limited to the willful attempt to misrepresent one's work, cheat, plagiarize, or impede other students' scholastic progress. Consult the **Student Handbook** for more details.

Students with Disabilities

The Disability Support Services Office (DSSO) assists students with physical, learning, or emotional disabilities in developing independence and self-reliance. Students with disabilities are urged to contact the DSSO prior to the first day of class.

The goal is to ensure that students with disabilities get off to a good start and have the support needed. The DSSO are committed to compliance with the Americans with Disabilities Act (ADA) and requests that students can contact by phone at 713.718.6164 - TTY 713.718.6335. Fax 713.718.1468

Course Repeater Policy:

Beginning in the Fall of 2006, students who repeat a course for a third or more times will face significant tuition increases at HCC and other Texas public colleges and universities. Please ask your instructor and or counselor for assistance prior to considering course withdrawal or if you are receiving passing grades.

Cell Phones

All cell phones must be muted, set to vibrate, or turned off during class. Cell phone activity during class is deemed disruptive to the academic process and will not be tolerated. If you need to make or receive an **emergency call**, please leave the classroom.

Calculators

The course allows the use of a calculator during class, lab projects, and exams. The student is responsible to bring his/her calculator. Cell phones are not calculators, and are not allowed to be used for that purpose during class, tests, or exams.

Student ID

Students are required to obtain a Student ID. For additional information, consult the **Student Handbook**.

Parking Rules and Regulations

Students are required to follow HCC's regulations regarding parking and permits. For additional information, visit <http://www.hccs.edu/hccs/about-hcc/police/parking/parking-rules-and-regulations>

Books, Tools and Supplies

Students are required to purchase and bring to class the required textbooks, tools, notebooks, and writing instruments as required by the instructor.

Dress Code

This is a workforce environment, students must dress accordingly.

Classroom & Laboratory Conduct

Proper behavior is expected in all classes and laboratories. Foul language and horseplay are not allowed. Making or receiving cell phone calls during class are not allowed. Sleeping in class is not allowed. If an emergency exists, inform the instructor by calling the number at the top of the page.

Course Withdrawal

It is the responsibility of the student to officially withdraw from a course before the official withdrawal deadline. A student who does not withdraw from a course by the deadline will receive an "F" as the final grade. Also note that under Section 51.907 of the Texas Education Code, an institution of higher education may not allow a student to drop more than six courses.

Course withdrawal, Official Day of Record, and last day of withdrawal (See Summer 2013 Calendar)

COURSE TEXT:

Print Reading for Welding and Fabrication: Kevin Corgan, Pearson Education, 2011

PPM Practical Problems in Mathematics for Welders, 6th Edition, Robert Chassan, Delmar, 2012

Supplemental handouts: Welding and Print Reading, Walker and Polanin, 2001

SUPPLY LIST

Notebook 3-ring binder with 3 dividers and notebook paper

Writing instrument

Measurement Tools: Ruler, Metric and Inch Combination, Tape Measure, Metric and Inch

Basic Four Function Calculator

WEEK # 1a:

- Introduction, Syllabus review, PowerPoint Ch.1
- Purpose of the course, textbook assignments
- Importance of Required materials, textbook(s), notebooks, supplies, and resources.
- Explain blueprint drawings, parts, areas of a drawing, types of drawings, Ch. 1,
- Homework assignments: Chapter 1 questions, PPM, unit 1, 2 , 3.
- Measurement assessment exercise

WEEK # 1b:

- Homework Due-Powerpoint Review Chapter 1, Chapter 2 PowerPoint
- Written test chapter1
- Identify Types of Lines, when and why each line is used, Ch. 2
- Learn and demonstrate metric and inch measurement procedures and conversions used in welding industry. Learn welding positions.
- homework assignments: Text. Ch.2, PPM. unit 4, 5, 6. Handout

WEEK # 2a: Homework Due-Powerpoint Chapter 2 Review, Chapter 3 PowerPoint

Written test, Chapter 2

- Explain basic drawing views,
- chapter 3 homework, unit 7, 8, 9. Handout

WEEK # 2b:

- Homework Due, PowerPoint Chapter 3 Review, Chapter 4 PowerPoint
- Written Test Chapter 3
- Discuss dimensions in blueprints,
- Ch. 4 homework. PPM unit 10, 11, 12, Handout

WEEK # 3a:

- Homework Due, PowerPoint Review Chapter 4, PowerPoint Chapter 5
- Written Test Ch. 4
- Identify notes and specification, different hole types and thread specifications for holes,
- Ch 5 homework: PPM Unit 13, 14, 15, Handout

WEEK # 3b:

Homework Due-Review Chapter 5 PowerPoint, PowerPoint Chapter 6

- Written Test Chapter 5
- Identify required metals and how industry classifies metals. Identify standard shapes used in industry.
- Ch 6 Homework, PPM Unit 16, 17, 18, Handout

WEEK # 4a:

- Homework Due-Rev Chapter 6 PowerPoint, PowerPoint Chapter 7
- Written Test chapter 6
- Weld Types and joints, edge shapes, Edge Preparation
- Ch 7 Homework, PPM 19, 20, 21, Handout
- Midterm review

WEEK # 4b: MIDTERM EXAM Homework Due, Review Chapter 7 PowerPoint, Chapter 8 PowerPoint

- Midterm Exam, Ch 1-7, welding terminologies, symbols, measurements, Notebook due
- Chapter 8 hwk, PPM Unit 22, 23, 24, Handout

WEEK # 5a:

- Homework Due, Review Chapter 8 PowerPoint, Chapter 9 PowerPoint
- Written Test, Chapter 8
- Know welding symbols and interpretation, chapter 9
- Hmwk ch. 9 PPM Unit 25, 26, 27, handout

WEEK # 5b: July 4, Independence Day holiday, school closed.

WEEK # 6a:

- Homework Due-Review Chapter 9 PowerPoint, Chapter 10 PowerPoint
- Written Test chapter 9
- Interpret advanced welding symbols and key terms, chapter 10,
- Hmwk ch.9, PPM unit 28, 29, 30, Handout

WEEK # 6b

- Homework-Review Chapter 10 PowerPoint, Chapter 11 PowerPoint
- Test chapter 10
- Identify and Interpret different kinds of views, Ch 11
- hmwk Ch. 11, PPM unit 31, 32, 33, Handout

WEEK # 7a:

- Homework Due-Review Chapter 11 PowerPoint, Chapter 12 Powerpoint
-
- Test chapter 11
- Understand and Identify Welding standards., Ch. 12
- Homework ch 12, PPM unit 34, 35, 36, Handout

WEEK # 7b:

- Homework Due-Review Chapter 12 PowerPoint, Chapter 13 PowerPoint
- Test, Chapter 12
- Understand the standards and why they are important, Ch 13,
- Hmwk ch 13, PPM Unit 37, 38, 39
- Understand welding fabrication and their requirements, ch. 13 hmwk ch 13, unit 37, 38, 39

WEEK # 8a:

- Last day for Homework Due-Review Chapter 13 Powerpoint, Chapter 14 PowerPoint
- Test Ch. 13
- Review exercises for final exam: chapter 14

WEEK # 8b:

- **FINAL EXAM:**
Welding terminologies, blueprint interpretation, (ch 14 and handout prints), measurement skills
- Notebook Due for Final