

WELDING TECHNOLOGY (Preparatory Program)

LONG BEACH CITY COLLEGE

Curriculum Guide for Academic Year 2009-2010

Associate in Science and/or Certificate of Achievement or Certificate of Accomplishment

ALL INFORMATION CONTAINED HEREIN IS SUBJECT TO CHANGE WITHOUT NOTICE.

For possible updates to this guide please refer to the following website: <http://osca.lbcc.edu>

CAREER OPPORTUNITIES



Students prepare for entry level welding positions in aerospace, piping industry, and construction.

Upon the completion of the welding program, the student will be able to:

1. Set up, adjust, and light an oxyacetylene welding unit and weld in flat vertical, horizontal, and overhead welding positions.
2. Effectively operate all types of AC, DC welding equipment.
3. Identify commonly welded metals by sight, spark test, and identification standards used in the industry, and identify the properties of those metals.
4. Use the appropriate welding process in a safe, efficient, and economic manner.
5. Set up, turn on, adjust, and use the following welding processes: oxygen acetylene (AO), shielded metal arc (SMAW), gas tungsten arc (GTAW), gas metal arc (GMAW), and flux core arc (FCAW).
6. Inspect weld specimens by destructive and non-destructive testing means and describe the results by comparison with good examples.
7. Pass certification tests on one or more welding processes including A.W.S. and Los Angeles Structural Steel tests.

DEPARTMENTAL ADMISSION REQUIREMENTS

None. For more departmental information call (562) 938-3074 or 938-3054.

	Students pursuing an Associate Degree for this field of concentration need to select from specific courses in general education disciplines. For a complete listing of courses or disciplines, refer to the Associate Degree information section of this guide OR view the guide online at http://osca.lbcc.edu .	
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REQUIRED COURSES

UNITS

Select Option **ONE (1)** or Option **TWO (2)**:

In Progress	Completed Grade
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Option 1

Complete 40 units from the following courses:

WELD 211	Fundamentals of Welding & Tools of Trade	9		
WELD 212	Arc Welding & Fabrication	9		
WELD 213	Advanced Arc Welding	9		
WELD 214	Inert Gas Welding (Heliarc, MIG)	9		
WELD 221	Arc Welding Structural Certification	4		
WELD 400AD	Welding (General)	2		
WELD 410AD	Welding (Arc)	2		
WELD 460AD	Welding (Gas Acetylene)	2		
WELD 480AD	Welding (Inert Gas)	2		
SHMET 220A-D	Surface Development and Fabrication	5		
MACHT 50A	Machine Tool Operation and Practices	3		

Option 2

SHMET 220 (5 units) **AND** 35 units of Welding -18 units must be from 200 series listed above, balance of courses from any 200/400 welding series courses (no credit allowed for repetition of course).

TOTAL UNITS

40

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GRADUATION REQUIREMENTS

For CERTIFICATE OF ACHIEVEMENT:

This certificate is a one to two year program in occupational/technical areas at Long Beach City College which provides training in job skills and employment opportunities. Complete the required units with a minimum cumulative grade point average of 2.0 ("C" average). Fifty percent (50%) or more of the unit requirements for this field of concentration must be completed in residence (credit earned by exam, where applicable, may be included).

For ASSOCIATE IN SCIENCE DEGREE:

NOTE: Effective Fall 2009, Title 5, section 55063 (a) (2) requires that students must complete each course counted toward the major or area of emphasis with a grade of "C" or better or "P" if the course is taken on a "Pass/No Pass" basis.

The Associate Degree is a two-year college degree awarded by Long Beach City College which includes general education courses and a major. In addition to the requirements for the Certificate of Achievement, complete the A.S. degree requirements specified in the catalog. The requirements for general education/proficiency and the field of concentration need to be from the same catalog year. This catalog year may be any year between the year of initial enrollment to the present, provided continuous enrollment is maintained throughout (see the catalog for definition of "continuous enrollment"). Fifty percent (50%) or more of the unit requirements for this field of concentration must be completed in residence (credit earned by exam, where applicable, may be included).



Required for the Communication and Analytical Thinking requirement:

† Math Requirement: Math 120, Math 130, Math 130A **OR** a more advanced level of Mathematics.



Recommended for the Natural Sciences requirement:

Environmental Science 1, Energy for the Future **OR** †Chemistry 2.

NOTE: To receive a certificate or degree you must submit completed application forms in the Admissions and Records Office during your final semester of course work.

In general, "double-counting" is not allowed. That is, one course may not be used to fulfill both a field of concentration requirement and to fulfill a general education requirement.

CERTIFICATES OF ACCOMPLISHMENT

FOR OFFICE USE ONLY: 4986

Name of Certificate: ADVANCED ARC WELDER

REQUIRED COURSE	COURSE TITLE	UNITS	In Progress	Completed Grade
WELD 213	Advanced Arc Welding	9		
WELD 415AD	Shielded Metal Arc Welding (SMAW) Flat/Horz Open Root Groove Welds	2		
OR	OR			
WELD 416AD	Shielded Metal Arc Welding (SMAW) Vert and O/H Open Root Groove Welds			
TOTAL UNITS		11		

ADDITIONAL REQUIREMENT:

All of the required courses must be completed within 1.5 years

FOR OFFICE USE ONLY: 4987

Name of Certificate: ARC WELDING

REQUIRED COURSE	COURSE TITLE	UNITS	In Progress	Completed Grade
WELD 410AD	Welding (ARC)	2:2:2:2		
TOTAL UNITS		8		

ADDITIONAL REQUIREMENT:

All of the required courses must be completed within 2.5 years

FOR OFFICE USE ONLY: 4988

Name of Certificate: ARC WELDING and FABRICATION

REQUIRED COURSE	COURSE TITLE	UNITS	In Progress	Completed Grade
WELD 212	Arc Welding and Fabrication	9		
WELD 413AD	Shielded Metal Arc Welding (SMAW) Flat/Horz Groove Welds with Backing	2		
OR	OR			
WELD 414AD	Shielded Metal Arc Welding (SMAW) Vert and OV/HD Groove Weld with Backing			
TOTAL UNITS		11		

ADDITIONAL REQUIREMENT:

All of the required courses must be completed within 1.5 years

FOR OFFICE USE ONLY: 4989

Name of Certificate: GAS TUNGSTEN ARC WELDING (GTAW)

REQUIRED COURSE	COURSE TITLE	UNITS	In Progress	Completed Grade
WELD 214	Inert Gas Welding (GTAW)	9		
WELD 480AD	Welding (Inert Gas) (GTAW)	2		
OR	OR			
WELD 482AD	Gas Tungsten Arc Welding (GTAW) Basic Joints			
TOTAL UNITS		11		

ADDITIONAL REQUIREMENT:

All of the required courses must be completed within 1.5 years

FOR OFFICE USE ONLY: 4990

Name of Certificate: OXYGEN ACETYLENE WELDING/CUTTING

REQUIRED COURSE	COURSE TITLE	UNITS	In Progress	Completed Grade
WELD 211	Fundamentals of Welding & Tools of the Trade	9		
WELD 460AD	Welding (Acetylene Gas)	2		
TOTAL UNITS		11		

ADDITIONAL REQUIREMENT:

All of the required courses must be completed within 1.5 years

FOR OFFICE USE ONLY: 4991

Name of Certificate: SHIELDED METAL ARC WELDING (ARC)

REQUIRED COURSE	COURSE TITLE	UNITS	In Progress	Completed Grade
WELD 412AD	Shielded Metal Arc Welding (ARC)	3:3:3:3		
TOTAL UNITS		12		

ADDITIONAL REQUIREMENT:

All of the required courses must be completed within 2.5 years

FOR OFFICE USE ONLY: 4992

Name of Certificate: STRUCTURAL CERTIFICATION

REQUIRED COURSE	COURSE TITLE	UNITS	In Progress	Completed Grade
WELD 221	Arc Welding Structural Certification	4		
WELD 414AD	Shielded Metal Arc Welding (SMAW) Vert and OV/HD Groove Weld with Backing	2		
TOTAL UNITS		6		

ADDITIONAL REQUIREMENT:

All of the required courses must be completed within 1.5 years

LEGEND

(SP = Spring) (S = Summer) (F = Fall) (INF = Infrequently) = Represents general frequency of course offering

CERTIFICATE OF ACCOMPLISHMENT REQUIREMENTS

For CERTIFICATE OF ACCOMPLISHMENT:

The Certificate of Accomplishment certifies a competency in a given area and requires less than 18 units. Complete the required units with a minimum grade point average of 2.0 ("C" average). Fifty per cent (50%) or more of the unit requirements for this field of concentration must be completed in residence. Please complete and submit application for the certificate, to the Admissions and Records Office during the final semester of course work.

Students interested in transferring to a university to continue their study in this field of concentration or other majors are strongly advised to consult an LBCC academic counselor and refer to the ASSIST website (www.assist.org) for major preparation information. Counselors can clarify the different major and admissions requirements at a university. Students may visit the Student Success/Transfer Services Center to access further educational resources. If you need to set up an appointment to see a counselor, or schedule the SOAR Test, call LAC (562)938-4561 or PCC (562)938-3920.