

WELDING Academy

The welding academy gives you the chance to explore a career in the welding field while earning college credit before you graduate from high school! This academy begins to prepare you for entry into the industry as a beginning production, maintenance, or job shop welder. You are trained using the latest techniques in the fabrication of materials by welding processes.

Skilled welders are in high demand by manufacturers in Southeast Iowa, the state of Iowa, and across the entire United States. Many graduates of SCC's Welding Program may earn starting wages of \$20 - \$25/hour or \$65,000 - \$70,000/year, depending upon their skill level.

You may enroll in any or all of the courses listed in the Academies through your high school guidance counselor. You are not required to take all courses within the academy to get college credit for each course.



Career Opportunities:

- Construction Welder
- Maintenance Welder
- Industrial Welder
- Pipe Welder
- Own your own welding business

How much will it cost?

Your school district pays for your courses. You and your family are saving \$180/credit hour (SCC's in-state tuition cost for 2017-2018).

If you attend a neighboring school, you may need to provide your own transportation (check with your high school guidance counselor).

You may need to purchase your textbook (check with your high school guidance counselor).

Who may participate?

Any high school student who meets the requirements. Please check with your high school guidance counselor.

What may I do after high school?

When you enroll in courses in the Welding Academy, you will earn SCC college credit and have an SCC college transcript. If you enroll in Welding Program at SCC, you may bypass the courses you have already taken, saving time and money. Some courses may apply to other programs, as well. Check with SCC college enrollment personnel. Also check out this program link on the SCC website for more information:

http://www.scciowa.edu/programpdfs/prsum_wel.pdf

May I take more?

If there are openings in appropriate classes in the full-time SCC Welding Program on the West Burlington campus, there may be a possibility for further study. Check with your high school guidance counselor.

How do I register?

Meet with your high school guidance counselor to determine course options.

Register on-line with SCC, as directed by your counselor.

Your high school counselor will send the class roster to SCC.

Questions or for more information:

Michelle Randall
Director of High School Relations
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West Burlington Campus
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West Burlington, IA 52655
Toll-free: 1-866-722-4692 x5046

Course Descriptions

English

ENG-105 Composition I

Credit: 3

A study of the principles of writing. Emphasis on rhetoric, mechanics, and development of expository patterns: narration, description, illustration, comparison/contrast, classification, process, and cause/effect. Required for AA and AS Degrees. Prerequisites: Mandatory ACCUPLACER or ACT test score and mandatory eWrite score (per SCC Writing Scores & Mandatory Course Placement Chart), or a C- or above in ENG-061, College Preparatory Writing II. No waivers.

ENG-111 Technical Writing

Credit: 3

Studies the rhetorical techniques specifically oriented to industrial requirements. Applies expository patterns as incorporated within the report apparatus, including such specialized formats as process analysis, progress/lab reports, feasibility study, and the proposal. Also includes correspondence and application of basic library research skills. Course designed to satisfy specified career program requirements. Prerequisites: Mandatory ACCUPLACER or ACT test score and mandatory eWrite score (per SCC Writing Scores & Mandatory Course Placement Chart), or a C- or above in ENG-061, College Preparatory Writing II. No waivers.

Mathematics

MAT-110 Math for Liberal Arts

Credit: 3

Math for Liberal Arts is a survey course for students who have little background in mathematics. Topics include survey of sets, numbers, algebra, geometry, probability, and statistics. This course is not intended for Mathematics and Science majors. Prerequisites: MAT-062 with a grade of at least C- or equivalent or ALEKS score of 30 or higher or ACT Math score of 20-21 or math faculty approval.

MAT-128 Precalculus

Credit: 3

This course encompasses an in-depth review of mathematical concepts necessary in preparing students for the calculus. Problem solving is emphasized. Topics from algebra, trigonometry, and analytic geometry essential in the calculus are covered in this course. Topics include: properties of lines and quadratics, absolute value equations and inequalities, functions and their graphs, polynomial and rational functions, exponential and logarithmic functions, trigonometric functions, analytic trigonometry, vectors, conics in both the rectangular and polar coordinate systems, parametric equations, systems of equations and inequalities, matrices, three-dimensional coordinate geometry, partial fractions, sequences and mathematical induction. Prerequisite: MAT-127 or equivalent.

MAT-156 Statistics

Credit: 3

This course is an applied course in statistics, designed to introduce students to some of the concepts, symbols, procedures, and vocabulary used in the field of statistics. Topics covered in this course include: organizing and graphing data, descriptive statistics, probability, various distributions, the sampling distribution of the mean, estimating a population mean, confidence intervals, inferential statistics (hypothesis testing), comparing two population parameters, analysis of variance, correlation, simple linear and multiple regression, contingency tables, and nonparametric statistics (time permitting). Prerequisite: MAT-102 or ALEKS score of 46 (or higher) or ACT score of 22 or above or math faculty approval.

MAT-210 Calculus I

Credit: 4

This course includes the study of limits and continuity, derivatives and differentiation, differentials, maximum and minimum function values and techniques of graphing, applications, and an introduction to integration. Prerequisite: MAT-127 or MAT-128 with a grade of at least C- or ALEKS score of 76 (or higher) or ACT score of 29 or above or math faculty approval.

MAT-216 Calculus II

Credit: 4

The study of integration, techniques of integration, applications and accompanying mathematical structure. Prerequisite: MAT-210 or math faculty approval.

MAT-702 Introduction to Math Applications

Credit: 3

This course is offered to students who can profit from an applied course in mathematics and will prepare students who need to develop skills for MAT-704. It is designed as an introductory level algebra course recommended for students with one year of high school algebra. Emphasis is on the building of basic algebra skills and the application of these mathematical techniques. The course studies the relationship of geometry and algebra as they apply to various fields. This course will also cover whole numbers/decimals, integers, fractions/percents, direct measurement, basic geometric concepts/relationships, linear equations, and right-triangle trigonometry. Prerequisite: MAT-052 or ALEKS score of 14 or higher or ACT Math score of 18-19 or math faculty approval.

Welding

WEL-111 Welding Blueprint Reading

Credit: 3

A course concerned with basic fundamentals of interpreting drafting as applied in the welding trade. Emphasis is placed on developing the ability to interpret blueprints from which the welder must work. A thorough coverage of welding symbols is integrated within the course.

WEL-130 Oxyacetylene Welding

Credit: 2

To provide a thorough technical understanding of metallurgy, oxyacetylene welding, flame cutting and brazing fundamentals and to develop skills necessary to produce high quality fillet and square groove welds in 3/16" plate and schedule 50 carbon steel pipe. Students develop understanding of weld hazards and safety procedures throughout the course.

WEL-160 Arc Welding (SMAW)

Credit: 5

Provides a thorough technical understanding of shielded metal arc welding fundamentals, weld hazards and weld safety, power sources and electrode selection. Provides ample time and direction to develop skills necessary to make high quality welds on 16 gauge to 1/4" mild steel in all positions.

WEL-164 Arc Welding II (SMAW)

Credit: 4

An advanced course designed to develop skills, integrity, and confidence necessary to pass skill tests on pre-qualified joints on plate and structural steel as required of code welding by the American Society of Mechanical Engineers and American Welding Society. Prerequisite: WEL-160 or equivalent.

WEL-172 Advanced Shielded Metal Arc Welding II

Credit: 4

Provides understanding and skill development necessary to produce high quality welds on 3/8" to 1" mild steel in all positions. Includes information relating to air-arc cutting and gouging, procedures and welder qualifications, testing of welds and metals identification. Prerequisite: WEL-160 or equivalent.

WEL-182 FCAW

Credit: 2

Provides thorough technical understanding of the flux cored arc welding process including adjustment and operation of power source, types of arc shielding, and safe operating procedure. Quality welds are produced on 3/8" to 1" carbon steel in all positions. Prerequisite: WEL-186.

WEL-186 GMAW

Credit: 4

Provides a technical understanding of the gas metal arc welding process, power sources and adjustment, metal transfer, shielding gases and weld safety. Develops skills necessary to produce high quality welds of 1/16" at 3/8" mild steel in all positions. Students will develop skills necessary to produce and bend-test single vee groove welds on 3/8" carbon steel in all positions according to American Welding Society code requirements.

WEL-192 Gas Tungsten Arc Welding

Credit: 4

Provides a thorough technical understanding of the TIG (Heliarc) process including metal characteristics, electrode, filter metals, and shielding gases with emphasis on weld safety and procedures. Prerequisite: completion of WEL-131 or equivalent.

WEL-197 Gas Tungsten Arc Welding — Tube

Credit: 3

Develops skills necessary for making high quality all position welds on schedule 10 to schedule 40 carbon steel pipe; preparation and testing of pipe is included. Prerequisite: WEL-192.

Will these courses transfer to other colleges?

Check out this link: www.transferiniowa.org to see how courses may transfer to other colleges. It's also recommended that you double check with the college to make sure how/if courses will transfer.

WELDING Academy Locations

BURLINGTON

SPRING	WEL-160	Arc Welding (SMAW)
	WEL-186	Gas Metal Arc Welding
	MAT-110**	Math for Liberal Arts
	MAT-128**	Precalculus
	MAT-156**	Statistics

***substitute for MAT-702 in SCC Welding Program*

***Any of the MAT courses may substitute for the MAT-702 (Introduction to Math Applications) requirement*

FORT MADISON - YEAR 1

FALL	WEL-130	Oxyacetylene Welding
	WEL-160	Arc Welding (SMAW)
	MAT-702	Introduction to Math Applications
	ENG-105*	Composition I

SPRING	WEL-111	Welding Blueprint Reading
	WEL-186	Gas Metal Arc Welding
	WEL-192	Gas Tungsten Arc Welding
	ENG-105*	Composition I

**substitute for ENG-111 in the SCC Welding Program*

FORT MADISON - YEAR 2

FALL	WEL-164	Arc Welding II (SMAW)
	WEL-172	Advanced Shielded Metal Arc Welding II
	ENG-105*	Composition I

SPRING	WEL-182	FCAW
	WEL-197	Gas Tungsten Arc Welding–Tube
	ENG-105*	Composition I

**substitute for ENG-111 in the SCC Welding Program*

If students successfully complete ALL courses at FMHS, they will be granted an SCC Welding Diploma.

MOUNT PLEASANT

FALL	WEL-130	Oxyacetylene Welding
	WEL-186	Gas Metal Arc Welding

SPRING	WEL-160	Arc Welding (SMAW)
	WEL-192	Gas Tungsten Arc Welding

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FALL	ENG-105*	Composition I
	WEL-160	Arc Welding (SMAW)

SPRING	WEL-160	Arc Welding (SMAW)
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Southeastern Community College (SCC) is committed to providing equal access to all persons who seek post-secondary and related educational assistance, within our stated mission and statutory authority. We remain committed to helping all persons to the level of their ability to benefit, regardless of age, disability, ethnicity, gender, national origin, race, religious creed, marital status, or sexual orientation. We will accomplish this commitment through our offering of a broad spectrum of quality educational programs, activities, educational assistance, and related support services. We value diversity as a rich enhancement of student experiences here and we are thereby committed to policies that promote fairness and inclusion for all who attend SCC.

