

**Agriculture, Food and  
Natural Resources**

**-Agribusiness Systems**

**-Animal Systems**

**-Plant Systems**

**-Power, Structural and  
Technical Systems**

## Marshall High School and Saline County Career Center

### Program of Study for the Path: Natural Resources and Agriculture Career Cluster: Agriculture, Food and Natural Resources Career Pathway: Agribusiness Systems

*This Career Pathway Plan of Study can serve as a guide, along with other career planning materials, as you continue your career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. All plans should meet high school graduation requirements as well as college entrance requirements.*

Education Levels	Grade	English 4 credits	Math 3 credits	Science 3 credits	Social Studies 3 credits	Other Required Courses 4 credits <small>PE 1 credit Fine Art 1 credit Practical 1 credit Health 1/2 credit Pers Fin 1/2 credit</small>	Electives 8 Credits <small>Career &amp; Technical Courses and/or Degree Major Courses</small>	Credit Totals each year <small>(25 credits for graduation)</small>	SAMPLE Occupations Relating to this Pathway	
<b>Secondary</b>	9	Eng I (1)	Algebra 1 (1)	IPC (1)	American History (1)	PE (1) Fine Art (any) (1) KB/Office Tech (1)	Ag. Science 1 (1) Intro to Business (1)		Occupations Requiring Postsecondary Education <ul style="list-style-type: none"> <li>• Agricultural Chemical Dealer</li> <li>• Aquaculturalist</li> <li>• Bank/Loan Office</li> <li>• Environmental Compliance-Assurance Manager</li> <li>• Equine Manager</li> <li>• Farm Manager</li> <li>• Health and Safety Sanitarian</li> <li>• Meat Cutter-Meat Grader</li> <li>• Park Manager</li> <li>• Produce Buyer</li> <li>• Recycling Technician</li> <li>• Wildlife Manager</li> <li>• Cooperative Manager</li> <li>• Seed-stock Producer</li> <li>• Ag Marketing</li> <li>• Crop Adjuster</li> <li>• Insurance Agent</li> </ul>	
	10	Eng II (1)	Geometry (1)	Biology (1)	Choose 2 Sociology (1/2) Mod Am Hist (1/2) World Civ. (1/2) Honors W. Civ. (1/2) Contemp. Iss. (1/2 or 1) Sociology II (1/2)	Health (1/2) Personal Finance (1/2)	Ag. Science 2 (1) (Shop or Plant) Accounting (1)			
	11	Choose one English III (1) Eng II Wt (1) Pre-AP (1)	Algebra II (1)	Choose one Chemistry (1) Environmental Science (1)	Government (1)			Adv. Animal Sci. (1) Ag. Management and Economics (1) Fundamentals of Marketing (1) Conservation and Natural Resources (1) Comp Bus Apps (1) Public Speaking (1/2) ACT Prep (1/2) Accounting II (1)		
12	Choose one English IV (1) EN 130/160 (1) AP English (1) Tech Writing (1) Myth to Modern (1) Shakespeare/ Modern Novels (1)	Math Electives College Algebra (1) Honors Adv Math (1) AP Stats (1) Calculus (1)	Science Elective Adv Biology (1)				Adv Crops (1/2) Food Sci Tech (1/2) Adv Marketing (1) Ag Structures (1) Ag Construction (2) Ag Leadership (1)			Occupations Requiring Baccalaureate Degree <ul style="list-style-type: none"> <li>• Agricultural Educator</li> <li>• Botanist</li> <li>• Ecologist</li> <li>• Environmental Engineer</li> <li>• Fish and Game Officer</li> <li>• Plant Pathologist</li> <li>• Veterinarian</li> <li>• Agricultural Sales Representative</li> </ul>
Credit Totals in each area								(25 or more)		

\*See back for college information.

Area Career Centers	2-Year Community Colleges	4-Year Colleges	High School Activities
Saline County Career Center <a href="http://www.marshallschools.com/sccc/index.html">http://www.marshallschools.com/sccc/index.html</a>	Crowder College, Neosho <a href="http://www.crowder.edu">http://www.crowder.edu</a>	Lincoln University, Jefferson City <a href="http://www.lincolnu.edu">http://www.lincolnu.edu</a>	FFA
	Mineral Area College, Park Hills <a href="http://www.mineralarea.edu">http://www.mineralarea.edu</a>	Missouri State University, Springfield <a href="http://www.missouristate.edu">www.missouristate.edu</a>	DECA
	North Central Missouri College, Trenton <a href="http://www.ncmissouri.edu">http://www.ncmissouri.edu</a>	Northwest Missouri State University <a href="http://www.nwmissouri.edu">www.nwmissouri.edu</a>	FBLA
	State Fair Community College, Sedalia <a href="http://www.sfccmo.edu">http://www.sfccmo.edu</a>	Truman State University <a href="http://www.truman.edu">www.truman.edu</a>	Science Club
	Three Rivers Community College, Popular Bluff <a href="http://www.trcc.edu">http://www.trcc.edu</a>	University of Central Missouri <a href="http://www.ucm.edu">www.ucm.edu</a>	
		University of Missouri-Columbia <a href="http://www.missouri.edu">www.missouri.edu</a>	
		University of Missouri-Kansas City <a href="http://www.umkc.edu">www.umkc.edu</a>	
		William Woods University, Fulton (Masters only) <a href="http://www.thewoods.edu">http://www.thewoods.edu</a>	

**Postsecondary**

**ARTICULATION/DUAL CREDIT AGREEMENT  
STATE FAIR COMMUNITY COLLEGE**

College Program: Agriculture  
Area Technical School: Saline County Career Center, Marshall

*Courses available for articulation:*

SFCC Course	SFCC CRN	SFCC Course Title	Credit Hours
Ag Science I & II AND Advanced Livestock Production	AGRI 108	Animal Science**	3
Conservation & Natural Resources AND Advanced Crop Production AND Landscaping	AGRI 129	General Horticulture**	3
Ag Science I & II AND Agriculture Economics	AGRI 131	Intro to Agribusiness Systems**	3

\*\*Dual credit is available for this course.

*Criteria for Articulation:*

- Student meets the basic standards for credit as defined in the General Articulation Agreement including earning a "D" (3.0) or better in the above courses.
- Student contacts the SFCC Admissions Office to verify that admissions file is complete. Be sure to identify themselves as a student enrolling with articulated credit.
- School (or student) submits a completed Recommendation for Articulated College Credit form to the Office of Admissions and Outreach.

*Criteria for Dual Credit:*

- The course and instructor must be set up and approved through the Admissions and Outreach office prior to any student receiving dual credit.
- Student has to complete a dual credit application at the beginning of the course in order to be eligible to receive the college credit.
- Student must have a 3.0 program GPA and a 2.5 overall GPA to apply for dual credit.
- Student must be a junior or senior in high school to receive dual credit.

\*This agreement will expire 3 years from the date of SFCC Instructor signature.

[Signature] 1-5-16  
CTC Director Date

[Signature] 1-6-16  
CTC Instructor Date

Peggy Brock 1-6-16

Selene Lewis 1/6/16

[Signature] 1-8-16  
SFCC Dean of Technical Education Date

[Signature] Dec 21, 2015  
SFCC Program Coordinator Date



[ SECTION 2 ]

PROGRAM REQUIREMENTS | AGRICULTURE



**AAS in Agriculture**

The Agriculture program provides a vast assortment of opportunities. Firms supply farmers with fertilizer, seed, feed, fuel, chemicals, machinery, equipment, marketing, credit, and supplies. Agribusinesses also produce, buy, process, package, transport, and deliver livestock and products to the consumer. In agribusiness, trained staff familiar with agriculture, marketing, accounting, economics, and public relations is a must. Agriculture is one of the largest and most diverse industries in the world. Careers in agriculture are exciting and satisfying; the opportunities are numerous and the salaries competitive. Students interested in agriculture are self-motivated, goal-oriented, and take a tenacious, creative approach to problem solving. The technical and business skills to be gained will provide an advantage to work on the family farm or pursue a job in agribusiness. The program combines instruction with job experience. In addition to regular classroom hours, students work for a major industry in their chosen career field with an occupational internship. The internship provides a unique opportunity to apply the knowledge acquired in class to work situations.

**Degree Requirements**

AGRI 101	Ag Leadership and Issues I	2
ENGL 101	English Composition I (or)	
ENGL 112	Technical Writing	3
AGRI 118	Plant Science	3
AGRI 119	Soils I with Lab	4
AGRI 125	Natural Resources (or)	
AGRI 129	<b>General Horticulture</b>	<b>3</b>
AGRI 131	Introduction to Agribusiness Systems	3
AGRI 102	Ag Leadership and Issues II	1
AGRI 132	Agriculture Economics	3

AGRI 127	Farm Chemicals	3
AGRI 137	Farm Management, Recordkeeping	1
<b>AGRI 108</b>	<b>Animal Science</b>	<b>3</b>
AGRI 175	Occupational Internship	4
AGRI 103	Ag Leadership and Issues III	2
<i>Wellness***</i>		1
AGRI 116	Animal Nutrition (or)	
AGRI 133	Agricultural and Food Policy	3
AGRI 134	Marketing Farm Commodities	3
AGRI 114	Livestock Management (or)	
BSMT 110	Salesmanship	3
<i>General Education*</i>		3
AGRI 138	Ag Business Management	3
AGRI 174	Crop and Insect Scouting	2
AGRI 104	Ag Leadership and Issues IV	1
<i>Mathematics**</i>		3
HIST 101	U.S. History Before 1877 (or)	
HIST 102	U.S. History Since 1877 (or)	
POLS 101	American/National Government	3
AGRI 136	Ag Credit and Finance	3
AGRI 168	Commercial Applicator Licensing	2
AGRI 121	Soils II	3

**Degree Total 68**

*General Education\** - Select 3 hours from ART 101, BADM 103, COMM 101, MUS 101, or SPAN 101

*Mathematics\*\** - Select 3 hours from MATH 101, MATH 110 (or) MATH 112

*Wellness\*\*\** - Select 1 hour from EDUC 110, HLTH 101, WELL 116, WELL 117, WELL 118, WELL 119, WELL 121, (or) WELL 122

Note: Some programs require essential qualifications to be admitted and retained. Visit [www.sfccmo.edu/essentialqualifications](http://www.sfccmo.edu/essentialqualifications) to view these requirements. Not all courses are offered every semester. Check with your advisor or the program coordinator. Refer to the course descriptions for prerequisites.

# Marshall High School and Saline County Career Center

## Programs of Study for the Career Path: Natural Resources and Agriculture Career Cluster: Agriculture, Food and Natural Resources Career Pathway: Animal Systems

This Career Pathway Plan of Study can serve as a guide, along with other career planning materials, as you continue your career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. All plans should meet high school graduation requirements as well as college entrance requirements.

Education Levels	Grade	English 4 credits	Math 3 credits	Science 3 credits	Social Studies 3 credits	Other Required Courses 4 credits PE 1 credit Fine Art 1 credit Pract Art 1 credit Health 1/2 credit Pers Fin 1/2 credit	Electives 8 Credits Career & Technical Courses and/or Degree Major Courses	Credit Totals each year (28 credits required for graduation)	SAMPLE Occupations Relating to this Pathway
<b>Secondary</b>	<b>9</b>	Eng I (1)	Algebra (1)	IPC (1)	American History (1)	PE (1) Fine Art (any) (1) KB/Office Tech (1)	Ag Science I (1)		<ul style="list-style-type: none"> <li>• Agricultural Educator</li> <li>• Livestock Producer</li> <li>• Veterinarian</li> <li>• Animal Nutritionist</li> <li>• Livestock Buyer</li> <li>• Wildlife Biologist</li> <li>• Dairy Producer</li> <li>• USDA Inspectors</li> <li>• Embryo Transfer Specialist</li> <li>• Artificial Insemination Specialist</li> <li>• Food Scientist</li> <li>• Meat Cutter</li> <li>• Ag Sales</li> <li>• Equine Science</li> <li>• Poultry Farm Manager</li> <li>• Veterinarian</li> <li>• Vet Tech</li> <li>• Aquaculturist</li> </ul>
	<b>10</b>	Eng II (1)	Geometry (1)	Biology (1)	Choose 2 Sociology ( 1/2) Mod Am Hist. ( 1/2) World Civ. ( 1/2) Honors W. Civ. ( 1/2) Contemp. Iss. ( 1/2 or 1) Sociology II ( 1/2)	Health ( 1/2) Personal Finance ( 1/2)	Ag Science II (1) (Shop or Plant) Accounting (1)		
	<b>11</b>	Choose one Eng III (1) Eng III Wt. (1) Pre AP (1)	Algebra II (1)	Choose one Chemistry (1) Zoology (1/2) Oceanography (1/2) Environmental Science (1)	Government (1)		Adv. Animal Sci (1) Ag. Management and Economics (1) Fundamentals of Marketing (1) Conservation and Natural Resources (1) Accounting (1) Comp Bus Apps (1) Accounting II (1) ACT Prep ( 1/2)		
<b>12</b>	Choose one English IV (1) EN 130/160 (1) AP English (1) Tech Writing (1) Myth to Modern (1) Shakespeare/ Modern Novels (1)	Math Elective College Algebra (1) Honors Adv Math (1) AP Stats (1) Calculus (1)	Science Elective Adv Bio (1) Human Physiology (1)	SS Elective Psychology (1) Contemporary Issues (1)		Ag Leadership (1) Adv Crops ( 1/2) Food Sci Tech ( 1/2) Adv Marketing (1)			
<b>Credit Totals in each area</b>								(28 or more)	

\*See back for college information.

Area Career Centers	2-Year Community Colleges	4-Year Colleges	High School Activities
Saline County Career Center <a href="http://www.marshall/schools.com/sccc/index.html">http://www.marshall/schools.com/sccc/index.html</a> Petropolis Academy of Grooming and Training <a href="http://www.petropolis.com">www.petropolis.com</a>	Linn State Technical College <a href="http://www.linnstate.edu">www.linnstate.edu</a> Metropolitan Community Colleges <a href="http://www.mccc.kc.edu">www.mccc.kc.edu</a> Ozarks Technical Community College <a href="http://www.otc.edu">www.otc.edu</a>	College of the Ozarks <a href="http://www.cofo.edu">www.cofo.edu</a> Missouri State University, Springfield <a href="http://www.missouristate.edu">www.missouristate.edu</a> Stephen's College <a href="http://www.stephens.edu">www.stephens.edu</a> Northwest Missouri State University <a href="http://www.nwmissouri.edu">www.nwmissouri.edu</a> Truman State University <a href="http://www.truman.edu">www.truman.edu</a>	FFA Science Club
		University of Missouri-Columbia <a href="http://www.missouri.edu">www.missouri.edu</a>	

**Postsecondary**

**ARTICULATION/DUAL CREDIT AGREEMENT  
STATE FAIR COMMUNITY COLLEGE**

College Program: Agriculture  
Area Technical School: Saline County Career Center, Marshall

*Courses available for articulation:*

SFCC Course	SFCC CRN	SFCC Course Title	Credit Hours
Ag Science I & II AND Advanced Livestock Production	AGRI 108	Animal Science**	3
Conservation & Natural Resources AND Advanced Crop Production AND Landscaping	AGRI 129	General Horticulture**	3
Ag Science I & II AND Agriculture Economics	AGRI 131	Intro to Agribusiness Systems**	3

\*\*Dual credit is available for this course.

*Criteria for Articulation:*

- Student meets the basic standards for credit as defined in the General Articulation Agreement including earning a "D" (3.0) or better in the above courses.
- Student contacts the SFCC Admissions Office to verify that admissions file is complete. Be sure to identify themselves as a student enrolling with articulated credit.
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\*This agreement will expire 3 years from the date of SFCC Instructor signature.

*[Signature]* 1-5-16  
CTC Director Date

*[Signature]* 1-6-16  
CTC Instructor Date

*[Signature]* 1-6-16  
*[Signature]* 1/6/16

*[Signature]* 1-8-16  
SFCC Dean of Technical Education Date

*[Signature]* Dec 21, 2015  
SFCC Program Coordinator Date



[ SECTION 2 ]

PROGRAM REQUIREMENTS | AGRICULTURE



**AAS in Agriculture with Emphasis in Agronomy**

The Agronomy program provides students with a strong foundation to pursue a career in an agronomic related field. As world population approaches nine billion people, agronomists will be responsible for increasing food production on fewer acres while ensuring resources will be available for future generations. Employment opportunities include crop and seed production; fertilizer sales and application; pest and weed control; seed sales; crop scouting; seed analysts, and soil scientists. Course work focuses on soil and plant sciences, soil erosion management, soil fertilization, and chemical safety and application. In addition to regular classroom hours, students work for an employer in the agronomy industry with an occupational internship. The internship provides a unique opportunity to apply the knowledge acquired in class to work situations.

**Degree Requirements**

AGRI 101	Ag Leadership and Issues I	2
AGRI 118	Plant Science	3
AGRI 119	Soils I with Lab	4
AGRI 129	General Horticulture	3
AGRI 131	Introduction to Agribusiness Systems	3
ENGL 101	English Composition I (or)	
ENGL 112	Technical Writing	3
AGRI 102	Ag Leadership and Issues II	1
AGRI 137	Farm Management, Recordkeeping	1

AGRI 123	Soil Erosion and Management	3
AGRI 127	Farm Chemicals	3
AGRI 175	Occupational Internship	4
AGRI 103	Ag Leadership and Issues III	2
AGRI 125	Natural Resources	3
AGRI 174	Crop and Insect Scouting	2
AGRI 133	Agricultural and Food Policy	3
AGRI 134	Marketing Farm Commodities	3
<i>Mathematics*</i>		3
AGRI 104	Ag Leadership and Issues IV	1
AGRI 121	Soils II	3
AGRI 168	Commercial Applicator Licensing	2
AGRI 149	Chemistry of Soil Additives	3
BADM 107	Personal Finance	3
HIST 101	U.S. History Before 1877 (or)	
HIST 102	U.S. History Since 1877 (or)	
POLS 101	American/National Government	3
<i>Wellness**</i>		1

**Degree Total 62**

*Mathematics\** - Select 3 hours from MATH 101, MATH 110 (or) MATH 112

*Wellness\*\** - Select 1 hour from EDUC 110, HLTH 101, WELL 116, WELL 117, WELL 118, WELL 119, WELL 121, (or) WELL 122

Note: Some programs require essential qualifications to be admitted and retained. Visit [www.sfccmo.edu/essentialqualifications](http://www.sfccmo.edu/essentialqualifications) to view these requirements. Not all courses are offered every semester. Check with your advisor or the program coordinator. Refer to the course descriptions for prerequisites.

# Marshall High School and Saline County Career Center

## Program of Study for the Career Path: Natural Resources and Agriculture Career Cluster: Agriculture, Food and Natural Resources Pathway: Plant Systems

This Career Pathway Plan of Study can serve as a guide, along with other career planning materials, as you continue your career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. All plans should meet high school graduation requirements as well as college entrance requirements.

Education Levels	Grade	English 4 credits	Math 3 credits	Science 3 credits	Social Studies 3 credits	Other Required Courses 4 credits	Electives 8 Credits	Credit Totals each year (25 credits required for graduation)	SAMPLE Occupations Relating to this Pathway
<b>Secondary</b>	<b>9</b>	Eng I (1)	Algebra I (1)	IPC (1)	American History (1)	PE (1) Fine Art (any) (1) KB/Office Tech (1)	Ag Science I (1)		Occupations Requiring Post-Secondary Education <ul style="list-style-type: none"> <li>Agricultural Journalism</li> <li>Biotechnology Laboratory Technician</li> <li>Custom Hay/Silage Operator</li> <li>Farmer</li> <li>Golf Course Management</li> <li>Grain Operator Superintendent</li> <li>Greenhouse Operator</li> </ul>
	<b>10</b>	Eng II (1)	Geometry (1)	Biology (1)	Choose 2 Sociology ( 1/2) Mod Am Hist. ( 1/2) World Civ. ( 1/2) Honors W. Civ. ( 1/2) Contemp. Iss. ( 1/2 or 1) Sociology II ( 1/2)	Health ( 1/2) Personal Finance ( 1/2)	Ag Science II (1) (plant) Greenhouse(1)		<ul style="list-style-type: none"> <li>Occupations Requiring a Baccalaureate Degree</li> <li>Agricultural Educator</li> <li>Food Scientist</li> <li>Bioinformatics Specialist</li> <li>Plant Breeder and Geneticists</li> <li>Plant Pathologist</li> <li>Soil and Water Specialist</li> <li>Ag Sales</li> <li>Seed Analyst</li> <li>Agronomist</li> </ul>
	<b>11</b>	Choose one Eng III (1) Eng III Wt. (1) Pre AP (1)	Algebra II (1)	Choose one Chemistry (1) Environmental Science (1)	Government (1)			Floral Design (1) Ag Management (1) Computer Based Applications (1) ACT Prep ( 1/2) Landscaping Design (1)	
	<b>12</b>	Choose one English IV (1) EN 130/160 (1) AP English (1) Tech Writing (1) Myth to Modern (1) Shakespeare/ Modern Novels (1)	Math Electives Honors Adv Math (1) College Algebra (1) AP Statistics (1) Calculus (1)	Science Electives Adv Bio (1)			Crop Production (1/2) Food Sci Tech ( 1/2) Nat Res and Cons (1) Ag Leadership (1)		
<b>Credit Totals in each area</b>								(25 or more)	

\*See back for college information.

Area Career Centers	2-Year Community Colleges	4-Year Colleges	High School Activities
Saline County Career Center <a href="http://www.marshallschools.com/sccc/index.html">http://www.marshallschools.com/sccc/index.html</a>	Linn State Technical College <a href="http://www.linnstate.edu">www.linnstate.edu</a>	Southeast Missouri State University <a href="http://www.semo.edu">www.semo.edu</a>	FFA Science Club
	Metropolitan Community Colleges <a href="http://www.mccckc.edu">www.mccckc.edu</a>	Missouri State University, Springfield <a href="http://www.missouristate.edu">www.missouristate.edu</a>	
	State Fair Community College <a href="http://www.sfccmo.edu">www.sfccmo.edu</a>	University of Central Missouri <a href="http://www.ucm.edu">www.ucm.edu</a>	
	Missouri State University-West Plains <a href="http://www.wp.missouristate.edu">www.wp.missouristate.edu</a>	Northwest Missouri State University <a href="http://www.nwmissouri.edu">www.nwmissouri.edu</a>	
		College of the Ozarks <a href="http://www.cofo.edu">www.cofo.edu</a>	
		University of Missouri-Columbia <a href="http://www.missouri.edu">www.missouri.edu</a>	
<b>Postsecondary</b>			

Industry Based Certifications obtained through SCCC programs: Floral Design, Floral Design Assistant Training

**ARTICULATION/DUAL CREDIT AGREEMENT  
STATE FAIR COMMUNITY COLLEGE**

College Program: Agriculture  
 Area Technical School: Saline County Career Center, Marshall

*Courses available for articulation:*

SFCC Course	SFCC CRN	SFCC Course Title	Credit Hours
Ag Science I & II AND Advanced Livestock Production	AGRI 108	Animal Science**	3
Conservation & Natural Resources AND Advanced Crop Production AND Landscaping	AGRI 129	General Horticulture**	3
Ag Science I & II AND Agriculture Economics	AGRI 131	Intro to Agribusiness Systems**	3

\*\*Dual credit is available for this course.

*Criteria for Articulation:*


- Student meets the basic standards for credit as defined in the General Articulation Agreement including earning a "B" (3.0) or better in the above courses.
- Student contacts the SFCC Admissions Office to verify that admissions file is complete. Be sure to identify themselves as a student enrolling with articulated credit.
- School (or student) submits a completed Recommendation for Articulated College Credit form to the Office of Admissions and Outreach.

*Criteria for Dual Credit:*

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 1-5-16  
 CTC Director Date

 1-6-16  
 CTC Instructor Date

Peggy Brock 1-6-16  
 Selene Lewis 1/6/16

 1-8-16  
 SFCC Dean of Technical Education Date

 Dec. 21, 2015  
 SFCC Program Coordinator Date



[ SECTION 2 ]

PROGRAM REQUIREMENTS | AGRICULTURE



**AAS in Agriculture with Emphasis in Horticulture**

The Horticulture program will prepare students for numerous career opportunities with practical experience in a fully equipped greenhouse and an internship to enhance the classroom learning experiences. Workers in landscaping, groundskeeping, nursery, greenhouse, and lawn service occupations are responsible for a variety of tasks necessary to achieve a pleasant and functional outdoor environment. They also care for indoor gardens and planting in commercial and public facilities. Nursery and greenhouse workers help cultivate plants. Managers make decisions about type and quantity of plants to be grown; purchase seed, fertilizers, and chemicals; hire employees; manage record keeping and marketing, and oversee operations. Landscape contractors usually follow designs of a landscape architect to install trees, shrubs, sod, and ornamental features. Groundskeepers maintain a variety of facilities including athletic fields, golf courses, cemeteries, college campuses, and parks.

**Degree Requirements**

AGRI 101	Ag Leadership and Issues I	2
ENGL 101	English Composition I (or)	
ENGL 112	Technical Writing	3
AGRI 118	Plant Science	3
AGRI 131	Introduction to Agribusiness Systems	3
<b>AGRI 129</b>	<b>General Horticulture</b>	<b>3</b>
AGRI 102	Ag Leadership and Issues II	1
AGRI 127	Farm Chemicals	3

AGRI 137	Farm Management, Recordkeeping	1
AGRI 175	Occupational Internship	4
BADM 107	Personal Finance	3
AGRI 103	Ag Leadership and Issues III	2
<i>Wellness**</i>		1
AGRI 126	Ornamental Woody Plants	3
AGRI 128	Ornamental Herbaceous Plants	3
AGRI 138	Ag Business Management	3
AGRI 119	Soils I with Lab	4
HIST 101	U.S. History Before 1877 (or)	
HIST 102	U.S. History Since 1877 (or)	
POLS 101	American/National Government	3
AGRI 104	Ag Leadership and Issues IV	1
AGRI 151	Landscape Design and Maintenance	3
AGRI 121	Soils II	3
AGRI 168	Commercial Applicator Licensing	2
<i>Mathematics*</i>		3
AGRI 154	Greenhouse Management with Lab	4
AGRI 179	Innovative Horticulture	1

**Degree Total 62**

*Mathematics\** - Select 3 hours from MATH 101, MATH 110, MATH 112, (or) MATH 114

*Wellness\*\** - Select 1 hour from EDUC 110, HLTH 101, WELL 116, WELL 117, WELL 118, WELL 119, WELL 121, (or) WELL 122

Note: Some programs require essential qualifications to be admitted and retained. Visit [www.sfcmo.edu/essentialqualifications](http://www.sfcmo.edu/essentialqualifications) to view these requirements. Not all courses are offered every semester. Check with your advisor or the program coordinator. Refer to the course descriptions for prerequisites.



## Marshall High School and Saline County Career Center

### Program of Study for the Career Path: Natural Resources and Agriculture Career Cluster: Agriculture, Food and Natural Resources Career Pathway: Power Structural and Technical Systems

*This Career Pathway Plan of Study can serve as a guide, along with other career planning materials, as you continue your career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. All plans should meet high school graduation requirements as well as college entrance requirements.*

Education Levels	Grade	English 4 credits	Math 3 credits	Science 3 credits	Social Studies 3 credits	Other Required Courses 4 credits <small>PE 1 credit Fine Art 1 credit Pract Art 1 credit Health 1/2 credit Pers Fin 1/2 credit</small>	Electives 8 Credits <small>Career &amp; Technical Courses and/or Degree Major Courses</small>	Credit Totals each year <small>(25 credits required for graduation)</small>	SAMPLE Occupations Relating to this Pathway
<b>Secondary</b>	<b>9</b>	Eng I (1)	Algebra I (1)	IPC (1)	American History (1)	PE (1) Fine Art (any) (1) KB/Office Tech (1)	Ag Science I (1) Exploration in Technology (1) Woods (1)		Occupations Requiring Postsecondary Education • Automotive welding • Aircraft and Aerospace • Electronics Maintenance • GPS Technician • Equipment and Parts Management • Light Industrial • Heavy Industrial • Construction Repair • Ag Engineer • Diesel Tech • Welder • Land Surveyor • Machinist
	<b>10</b>	Eng II (1)	Geometry (1)	Biology (1)	<u>Choose 2</u> Sociology ( 1/2) Mod Am Hist. ( 1/2) World Civ. ( 1/2) Honors W. Civ. ( 1/2) Contemp. Iss. ( 1/2 or 1) Sociology II ( 1/2)	Health( 1/2) Personal Finance ( 1/2)	Ag Science II (1) (Shop) Intro to Business (1) Woods II (1)		
	<b>11</b>	<u>Choose one</u> English III (1) English III Wt. (1) Pre-AP (1)	Algebra II (1)	Chemistry (1)	Government (1)		Ag Structures I (1) Ag Const. I (2) Drafting (1) ACT Prep ( 1/2)		
	<b>12</b>	<u>Choose one</u> English IV (1) EN 130/160 (1) AP English (1) Tech Writing (1) Myth to Modern (1) Shakespeare/ Modern Novels (1)	<u>Math Elective</u> College Algebra (1) Honors Adv Math (1) AP Stats (1) Calculus (1)	<u>Science Elective</u> Physics (1)		Ag Structures 2 (1) Ag Const. 2 (2)			
Credit Totals in each area								(25 or more)	

\*See back for college information.

Area Career Centers	2-Year Community Colleges	4-Year Colleges	High School Activities
Saline County Career Center <a href="http://www.marshallschools.com/sccc/index.html">http://www.marshallschools.com/sccc/index.html</a> Missouri Welding Institute, Inc.	Linn State Technical College <a href="http://www.linnstate.edu">www.linnstate.edu</a>		FFA TSA
	Metropolitan Community Colleges <a href="http://www.mccc.edu">www.mccc.edu</a>		
	Moberly Area Community College <a href="http://www.macc.edu">www.macc.edu</a>		
	Ozarks Technical Community College <a href="http://www.otc.edu">www.otc.edu</a>		
	State Fair Community College <a href="http://www.sfccmo.edu">www.sfccmo.edu</a>		
	East Central College		
	Jefferson College		
	Vatterott College - St. Ann		

Postsecondary

## ARTICULATION/DUAL CREDIT AGREEMENT

### STATE FAIR COMMUNITY COLLEGE

College Program: Welding Technology  
Area Technical School: Saline County Career Center, Marshall

#### *Courses available for articulation:*

NCC Course	SFCC CRN	SFCC Course Title	Credit Hours
Ag construction	WELD 101	Intro to Welding	4
Ag Construction	WELD 114	Structural Layout and Fabrication	3

#### *Criteria for Articulation:*

*Articulation under this agreement will be on course by course basis as determined by State Fair Community College, and supported by mutually agreed upon competencies*

*Students who have fulfilled the learning outcome objectives within the colleges identified specialty area, based on the course(s) listed on this agreement, and who are recommended as being competent as attested to by the required signatures, will be recognized for articulation credits at State Fair Community College*

*Students receiving credit under this agreement that fail to make satisfactory progress in their next higher level courses, the competencies of which this agreement is based, will be subject to review by State Fair community College*



- a. Student meets the basic standards for credit as defined in the General Articulation Agreement including earning a "B" (3.0) or better in the above courses.
- b. Student contacts the SFCC Admissions Office to verify that admissions file is complete. Be sure to identify themselves as a student enrolling with articulated credit.
- c. School (or student) submits a completed Recommendation for Articulated College Credit form to the Office of Admissions and Outreach.
- d. Students must perform a satisfactory skill demonstration for an SFCC instructor to receive credit in a Skills class.

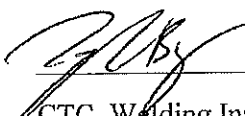
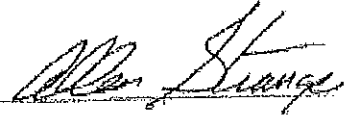
- e. Completion of the 2 year (1044) AWS-SENSE approved welding program or Equivalent as approved by SFCC
- f. Student should provide a copy of their Training Achievement record (TAR) from an AWS-SENSE accredited facility if applicable.

*Criteria for Dual Credit:*

- a. The course and instructor must be set up and approved through the Admissions and Outreach office prior to any student receiving dual credit.
- b. Student has to complete a dual credit application at the beginning of the course in order to be eligible to receive the college credit.
- c. Student must have a 3.0 program GPA and a 2.5 overall GPA to apply for dual credit.
- d. Student must be a junior or senior in high school to receive dual credit.

\*This agreement will expire 3 years from the date of SFCC Instructor signature.

	9-19-16		9-22-16
CTC Director	Date	SFCC Dean of Academic Affairs	Date

	9/19/16		9/19/16
CTC Welding Instructor	Date	SFCC Welding Program Coordinator/instructor	Date

## [ SECTION 2 ]

### PROGRAM REQUIREMENTS | MANUFACTURING TECHNOLOGY



### Professional Certificate in Welding Technology

The Professional Certificate in Welding Technology is a one-year certificate program and is based on four semesters of instruction and hands-on experience. Students will study oxy/acetylene welding and cutting; shielded metal arc welding (stick); gas metal arc welding (mig); gas tungsten arc welding (tig), and plasma arc cutting.

All welding procedures follow American Welding Society (AWS) guidelines. Welder qualifications are available for the successful student in AWS D 1.1 Structural Welding Code and ASME Section 9 (pipe).

In the classroom, students will learn the technological information associated with welding processes and how to apply that information to practical use on the job. This program meets the needs of both beginning and experienced welders who are seeking certification.

Welders need good eyesight, hand-eye coordination and manual dexterity. Students should be able to concentrate on detailed work for long periods and must be able to lift up to 45 pounds, bend, stoop, crawl, kneel, climb ladders, and work in awkward and cramped positions.

All students should be aware welding fumes produce a chemical known to the state of California to cause cancer and birth defects (or other reproductive harm). Students should review the Material Data Safety Sheets (MSDS) available in the welding department located in the Fielding Technical Center, Room 270, to be aware of the hazards of welding fumes.

#### Certificate Requirements

CNST 162	Construction Safety	3
<b>WELD 114</b>	<b>Structural Layout and Fabrication</b>	<b>3</b>
WELD 116	Print Reading for Welders	3
<b>WELD 101</b>	<b>Introduction to Welding</b>	<b>4</b>
WELD 102	Structural Welding	4
WELD 103	Pipe Welding	4
WELD 104	TIG Welding	4
MACH 115	Heat Treating and Metallurgy	3
WELD 105	Advanced Pipe Welding	4
WELD 160	Welding Fabrication	4
<i>Mathematics*</i>		3

**Certificate Total 39**

*Mathematics\** - Select 3 hours from MATH 107, MATH 108, MATH 110, MATH 112, (or) MATH 114

For more information about our graduation rates, the median debt of students who completed these certificates, and other important information, please visit [www.sfccmo.edu/welding](http://www.sfccmo.edu/welding).

Note: Some programs require essential qualifications to be admitted and retained. Visit [www.sfccmo.edu/essentialqualifications](http://www.sfccmo.edu/essentialqualifications) to view these requirements. Not all courses are offered every semester. Check with your advisor or the program coordinator. Refer to the course descriptions for prerequisites.



## [ SECTION 2 ]

### PROGRAM REQUIREMENTS | MANUFACTURING TECHNOLOGY

#### Skills Certificate in Structural Welding

The Skills Certificate in Structural Welding is designed for the student who wants to get into the workforce as soon as possible. The welding courses follow American Welding Society (AWS) guidelines, and the successful student will be eligible for up to six AWS welder qualifications, according to the AWS D 1.1 Structural Welding Code. In the classroom, students will learn the technological information associated with the welding processes and how to apply that information to practical use on the job. This program meets the needs of both beginning and experienced welders who are seeking certification.

Welders need good eyesight, hand-eye coordination and manual dexterity. Students should be able to concentrate on detailed work for long periods and must be able to lift up to 45 pounds, bend, stoop, crawl, kneel, climb ladders, and work in awkward and cramped positions.

All students should be aware welding fumes produce a chemical known to the state of California to cause cancer and birth defects (or other reproductive harm). Students should review the Material Data Safety Sheets (MSDS) available in the welding department located in the Fielding Technical Center, Room 270, to be aware of the hazards of welding fumes.

##### Certificate Requirements

WELD 101	Introduction to Welding	4
WELD 102	Structural Welding	4
WELD 116	Print Reading for Welders	3
CNST 162	Construction Safety	3
WELD 114	Structural Layout and Fabrication	3
Mathematics*		3

##### Certificate Total 20

Mathematics\* - Select 3 hours from MATH 107, MATH 108, MATH 110, MATH 112, (or) MATH 114

#### Professional Certificate in Pipe Welding

The Professional Certificate in Pipe Welding is for students who want to learn the skills of pipe welding. The course follows the American Society of Mechanical Engineers (ASME) section 9 codes. The course involves Shielded Metal Arc Welding (SMAW) and Gas Tungsten Arc Welding (GTAW) of pipe in the 2G, 5G, and 6G positions. The successful student will be eligible for up to six ASME section 9 qualifications in pipe. In the classroom the student will learn the technological information associated with the pipe welding process and how to apply that information to practical use on the job. This program meets the needs of both the beginning and experienced welders who are seeking certification/qualifications in pipe welding.

Welders need good eyesight, hand-eye coordination and manual dexterity. Students should be able to concentrate on detailed work for long periods and must be able to lift up to 45 pounds, bend, stoop, crawl, kneel, climb ladders, and work in awkward and cramped positions.

All students should be aware welding fumes produce a chemical known to the state of California to cause cancer and birth defects (or other reproductive harm). Students should review the Material Data Safety Sheets (MSDS) available in the welding department located in the Fielding Technical Center, Room 270, to be aware of the hazards of welding fumes.

##### Certificate Requirements

WELD 101	Introduction to Welding	4
WELD 102	Structural Welding	4
WELD 103	Pipe Welding	4
WELD 104	TIG Welding	4
WELD 116	Print Reading for Welders	3
CNST 162	Construction Safety	3
WELD 114	Structural Layout and Fabrication	3
WELD 105	Advanced Pipe Welding	4
Mathematics*		3

##### Certificate Total 32

Mathematics\* - Select 3 hours from MATH 107, MATH 108, MATH 110, MATH 112, (or) MATH 114

For more information about our graduation rates, the median debt of students who completed these certificates, and other important information, please visit [www.sfccmo.edu/welding](http://www.sfccmo.edu/welding).

Note: Some programs require essential qualifications to be admitted and retained. Visit [www.sfccmo.edu/essentialqualifications](http://www.sfccmo.edu/essentialqualifications) to view these requirements. Not all courses are offered every semester. Check with your advisor or the program coordinator. Refer to the course descriptions for prerequisites.