## Program Overview
Welding and fabrication operations require skilled workers who are well-trained in the use of advanced arc welding process, layout fabrication techniques, blueprint reading and measuring devices. Skilled welding fabricators are thoroughly familiar with both welding and shop equipment, understanding the breakdown and setup procedures, test standards, and knowledge of the various types of metals. Physical requirements include good eyesight, good hand and eye coordination and the ability to perform heavy, physical work.

## Career Opportunities
According to the U.S. Department of Labor, it is projected within the next 10 years to see a 15% growth rate, adding 50,000 new jobs. Welders and fabricators work in manufacturing plants both in structural and non-structural settings as production welders, maintenance welders, specialty welders, layout fabricators, press brake operators, CNC plasma/laser cutting operators, and robotic welding operators. Welding fabrication is widely used in the aircraft, automobile, trucking, shipbuilding, pipefitting, plumbing, sheetmetal, ironworking and other trades that use metals. Skilled welders may become layout specialists, engineers, technicians, supervisors, Certified Welding Inspectors or private shop owners.

## Program Outcomes
1. Identify correct welding techniques for multiple processes.
2. Follow safety requirements in the set-up, operation, and break down of metal shop equipment.
4. Analyze the quality of welds to determine if proper techniques/settings are being used.
5. Use blueprints and measuring devices to aid in welding.
6. Distinguish between the characteristics of commonly used metal types.
7. Apply mathematical tools to metalworking techniques.
8. Construct projects using metalworking fabrication techniques.

## Program Faculty
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## Program Requirements

**Course**
- WLDG 1402 Industrial Shop Practices 1 ................. 4
- WLDG 1410 Welding Basics ........................................ 2
- WLDG 1420 SMAW: E6010 ........................................... 2
- WLDG 1431 SMAW: E7018 ........................................... 2
- WLDG 1441 GMAW: Short Arc ................................... 3
- WLDG 1450 Intro to Blueprint/Measuring Devices ............. 3
- WLDG 1502 Industrial Shop Practices ..................... 4
- WLDG 1510 GMWA Spray and Pulse Spray ................ 3
- WLDG 1520 GMWA Core Wires ................................. 3
- WLDG 1530 Intro to GTAW ........................................... 3
- WLDG 1540 Blueprint Welding Symbols/Math/Welder Qualification ......................................................... 3
- WLDG 1502 Industrial Shop Practices ..................... 4
- WLDG 1510 GMWA Spray and Pulse Spray ................ 3
- WLDG 1520 GMWA Core Wires ................................. 3
- WLDG 1530 Intro to GTAW ........................................... 3
- WLDG 1540 Blueprint Welding Symbols/Math/Welder Qualification ......................................................... 3
- WLDG 2402 Industrial Shop Practices ..................... 4
- WLDG 2411 GMMA: Aluminum and Stainless Steel .................. 3
- WLDG 2420 GTAW: Aluminum and Stainless Steel ................ 4
- WLDG 2430 Grinding and Finishing ......................... 2
- WLDG 2442 Intro to Robotics ....................................... 3

**Subtotal ........................................ 48**

**Total Program Credits ........................................ 48**

## Program Start Dates
- Fall, Spring

## Course Sequence
The following sequence is recommended for a full-time student.

**First Semester**
- WLDG 1402 Industrial Shop Practices ................. 4
- WLDG 1410 Welding Basics ........................................ 2
- WLDG 1420 SMAW: E6010 ........................................... 2
- WLDG 1431 SMAW: E7018 ........................................... 2
- WLDG 1441 GMAW: Short Arc ................................... 3
- WLDG 1450 Intro to Blueprint/Measuring Devices ............. 3
- WLDG 1502 Industrial Shop Practices ..................... 4
- WLDG 1510 GMWA Spray and Pulse Spray ................ 3
- WLDG 1520 GMWA Core Wires ................................. 3
- WLDG 1530 Intro to GTAW ........................................... 3
- WLDG 1540 Blueprint Welding Symbols/Math/Welder Qualification ......................................................... 3

**Second Semester**
- WLDG 1402 Industrial Shop Practices ................. 4
- WLDG 2411 GMMA: Aluminum and Stainless Steel .................. 3
- WLDG 2420 GTAW: Aluminum and Stainless Steel ................ 4
- WLDG 2430 Grinding and Finishing ......................... 2
- WLDG 2442 Intro to Robotics ....................................... 3

**Total Program Credits ........................................ 48**

**Third Semester**
- WLDG 2402 Industrial Shop Practices ................. 4
- WLDG 2411 GMMA: Aluminum and Stainless Steel .................. 3
- WLDG 2420 GTAW: Aluminum and Stainless Steel ................ 4
- WLDG 2430 Grinding and Finishing ......................... 2
- WLDG 2442 Intro to Robotics ....................................... 3

**Total Program Credits ........................................ 48**

## Minimum Program Entry Requirements
Students entering this program must meet the following minimum program entry requirements:

- **Reading:** Score of 240+ or grade of “C” or better in READ 0721 or READ 0724 or EAPP 0860
- **Writing:** Score of 225+
- **Arithmetic:** Score of 237+

**Assessment Results and Prerequisites:** Students admitted into Saint Paul College programs may need to complete additional courses based on assessment results and course prerequisite requirements. Certain MATH, READ, and ENGL courses have additional prerequisites.

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Information is subject to change. This Program Requirements Guide is not a contract.