Welding (WEL)

Prerequisites for courses in this department are not automatically waived for College Guest students and students with a bachelor's degree or higher from a U.S. institution.

WEL 1111 Welding for the Non-Career Welder .. 3 Credit Hours
ESL Placement Level: For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.
This course is designed for those students who come from various backgrounds that seek a basic foundation in welding to be applied to specific applications. Backgrounds include those from, but not limited to: machining, automotive, engineering, and hobbyist. Individual and group work will be encouraged, and appropriate reading material will be discussed. Safety will be followed and practiced daily. BILLABLE CONTACT HOURS: 4

WEL 1300 Welding Shop Basics ..... 1 Credit Hour
ESL Placement Level: For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.
Note: Prerequisites for courses in this department are not automatically waived for College Guest students and students with a bachelor's degree or higher from a U.S. institution.
Students will be introduced to the common welding shop basics found in industry. This includes, but is not limited to: proper welding terminology, measuring, hand tool usage, and safety. BILLABLE CONTACT HOURS: 1

WEL 1310 Gas Metal Arc Welding (MIG) .....2 Credit Hours
Equivalent: ATW 8310
ESL Placement Level: Placement into ENG 1060 or higher (or placement into ESL 2510 or higher for students taking the ESL sequence of courses).
Students will perform welds using the GMAW process on all joints and positions. Modes of transfer will be covered, along with an introduction to FCAW. Safety will be practiced daily. BILLABLE CONTACT HOURS: 2

WEL 1320 Gas Tungsten Arc Welding (GTAW) ..3 Credit Hours
Equivalent: ATW 8320
ESL Placement Level: Placement into ENG 1060 or higher (or placement into ESL 2510 or higher for students taking the ESL sequence of courses).
Students will perform welds using the GTAW process on mild steel, on all joints and positions. An introduction to PAC (plasma arc cutting) will be covered. Safety will be practiced daily. BILLABLE CONTACT HOURS: 3

WEL 1330 Shielded Metal Arc Welding (SMAW) 3 Credit Hours
Equivalent: ATW 8120 | APW 8120
ESL Placement Level: Placement into ENG 1060 or higher (or placement into ESL 2510 or higher for students taking the ESL sequence of courses).
Students will perform welds using the SMAW process on mild steel in all positions, and on all joints. An introduction to oxygen/acetylene torch usage will be covered. Safety will be practiced daily. BILLABLE CONTACT HOURS: 3

WEL 1400 Fabrication Machine Basics .....3 Credit Hours
ESL Placement Level: For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.
Note: Prerequisites for courses in this department are not automatically waived for College Guest students and students with a bachelor's degree or higher from a U.S. institution.
This course will introduce students to various machines and fabrication techniques found in the metal working industry. Proper usage demonstrations and terminology will be covered, with relevant projects to reinforce concepts. Appropriate reading and text will be covered. Safety will be greatly emphasized and followed on a daily basis. BILLABLE CONTACT HOURS: 3

WEL 1500 Welding Fundamentals .....3 Credit Hours
ESL Placement Level: For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.
Corequisite: WEL 1600
Note: Prerequisites for courses in this department are not automatically waived for College Guest students and students with a bachelor's degree or higher from a U.S. institution.
Students will be introduced to the basic concepts found in the welding industry. This includes, but is not limited to: welding and cutting theory, proper machine setup, welding terminology, defects and discontinuities, weld/welding symbols, and shop safety. Lectures will be reinforced with practical lab demonstrations. BILLABLE CONTACT HOURS: 4

WEL 1600 Basic Welding ..... 4 Credit Hours
ESL Placement Level: For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.
Corequisite: WEL 1500
Note: Prerequisites for courses in this department are not automatically waived for College Guest students and students with a bachelor's degree or higher from a U.S. institution.
This course introduces students to the practical aspect of welding. Welds will be performed using GMAW, GTAW, SMAW, and FCAW on mild steel and in all positions. Safety is emphasized, and will be followed on a daily basis.BILLABLE CONTACT HOURS: 5

WEL 1700 Fabrication Basics .....4 Credit Hours
Equivalent: WEL 2100 | WEL 2100
ESL Placement Level: For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.
This course will introduce students to various machines and fabrication techniques found in the metal working industry. Proper usage demonstrations and terminology will be covered, along with individual and group projects. Topics to include, but not limited to: sheet metal layout for bending/braking, rolling, and shrinking/stretching; tube and structural steel layout for notching/mitering; plate layout for holes and rolling; blueprints; shop mathematics. Appropriate reading and text will be covered. Safety will be greatly emphasized and followed on a daily basis. BILLABLE CONTACT HOURS: 5

WEL 2320 Advanced Gas Tungsten Arc Welding (GTAW) .....3 Credit Hours
ESL Placement Level: For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.
Prerequisite: WEL 1300 and WEL 1320 or consent of instructor.
Note: Prerequisites for courses in this department are not automatically waived for College Guest students and students with a bachelor's degree or higher from a U.S. institution.
This course will introduce students to the welding of more advanced metals, with a primary focus on aluminum and stainless steel, using the GTAW process. Other metals such as titanium, copper, and cast iron will be introduced. Safety will be greatly emphasized and followed on a daily basis. BILLABLE CONTACT HOURS: 4

WEL 2340 Structural Welding and Fabrication .. 3 Credit Hours
ESL Placement Level: For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.
Prerequisite: IST 1300 WEL 1310 WEL 1320 WEL 1330 and WEL 1400 or consent of instructor.
Note: Prerequisites for courses in this department are not automatically waived for College Guest students and students with a bachelor's degree or higher from a U.S. institution.
Students will utilize the knowledge acquired from the prerequisite courses and apply it to complete weldments made from structural shapes. Blueprints will be given, and each weldment will be completed by a related welding process. Structural shapes include, but are not limited to: beams, channels, tube, and angle. Safety will be greatly emphasized and followed on a daily basis. BILLABLE CONTACT HOURS: 4

WEL 2500 Advanced Welding .....5 Credit Hours
ESL Placement Level: For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.
Prerequisite: WEL 1500 and WEL 1600 or consent of instructor.
Note: Prerequisites for courses in this department are not automatically waived for College Guest students and students with a bachelor's degree or higher from a U.S. institution.
This course is a continuation of WEL 1600. Students will perform more advanced weldments on mild steel using the GMAW, FCAW, GTAW, and SMAW processes per the guidelines of the NC3 certifications. Safety will be greatly emphasized and followed on a daily basis. BILLABLE CONTACT HOURS: 6

WEL 2600 Welding of Advanced Materials .....5 Credit Hours
ESL Placement Level: For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.
Prerequisite: WEL 1500 and WEL 1600 or consent of instructor.
Note: Prerequisites for courses in this department are not automatically waived for College Guest students and students with a bachelor's degree or higher from a U.S. institution.
This course will introduce students to the welding of more advanced metals such as, but not limited to: aluminum, stainless steel, copper, and cast iron. An introduction to pipe-fitting/welding will be covered, along with various thermal cutting exercises. Safety will be greatly emphasized and followed on a daily basis. BILLABLE CONTACT HOURS: 6

WEL 2700 Welding and Fabrication Capstone ... 5 Credit Hours
ESL Placement Level: For English-as-a-Second-Language (ESL) students, placement into ESL 2510 or higher.
Prerequisite: IST 1300 WEL 1500 WEL 1600 WEL 1700 WEL 2500 and WEL 2600 or consent of instructor.
Note: Prerequisites for courses in this department are not automatically waived for College Guest students and students with a bachelor's degree or higher from a U.S. institution.
Students will utilize the knowledge acquired from the prerequisite classes to build a project from their own design. Students will draft a blue print, develop a bill-of-materials and cut list, and write a procedure and tool list to accommodate the project being built. Projects can be of individual or group design, and will be held to the common standards found in industry. Safety will be greatly emphasized and followed on a daily basis. BILLABLE CONTACT HOURS: 6