WELDING AND METALLURGICAL ENGINEERING TECHNOLOGY (B.S.)

Metallurgy and Welding are two technologies that both have their roots in the Industrial Revolution, where the joining of metals began with the forge welding of pig or wrought iron. Because of their fundamental nature, these technologies are intertwined. The ability to develop and join metals have made immeasurable contribution to the transportation, aerospace, agricultural and defense industries.

The Wayne State University's B.S. in Welding and Metallurgical Engineering Technology (B.S.W.M.E.T.) program will bring together the theoretical and practical aspects of welding and metallurgy to provide industry with engineers proficient in both areas.

Admissions Requirements

The B.S.W.M.E.T. is designed to admit students who satisfy the undergraduate admission (http://bulletins.wayne.edu/undergraduate/general-information/admission/) requirements of the University and have an associate degree or equivalent course work in preparatory programs such as welding technology or closely related disciplines. A minimum g.p.a. of 2.5 is required for admission into the program. Students with a g.p.a. of 2.0 to 2.5 may be admitted as Pre-Engineering Technology students, and may be transferred into the B.S.W.M.E.T. program upon successful completion of pre-calculus (MAT 1800) and physical science courses, with a g.p.a. of 2.5 or above. A Mathematics Placement Examination is required of students who have not already earned advanced credit in pre-calculus.

Program Requirements

Candidates for the B.S.W.M.E.T. degree must earn a minimum of 121 credits, which includes University General Education requirements (http://bulletins.wayne.edu/undergraduate/general-information/general-education/). A minimum of thirty semester credits must be earned from Wayne State, and at least twenty-four must be in the Division of Engineering Technology courses. All coursework must be completed in accordance with the academic procedures of the University (http://bulletins.wayne.edu/undergraduate/general-information/academic-regulations/) and the College (http://bulletins.wayne.edu/undergraduate/college-engineering/academic-regulations/) and must conform to Division (http://bulletins.wayne.edu/undergraduate/college-engineering/engineering-technology-division/#academicregulationstext) academic standards.

In order to graduate, the University requires a minimum 2.0 g.p.a. in total resident credit, and the Division a minimum 2.0 g.p.a. in total coursework in the area of specialization; as well as satisfaction of all University Undergraduate General Education requirements.

The Bachelors of Science in Welding and Metallurgical Engineering Technology requires a minimum of 121 credits as outlined in the following curriculum.

Code	Title	Credits
Science Requirements		**17**
MAT 1800	Elementary Functions (QE)	
ET 3430	Applied Differential and Integral Calculus	
CHM 1020	Survey of General Chemistry (NSI)	
PHY 2130 & PHY 2131	Physics for the Life Sciences I and Physics for the Life Sciences Laboratory (NSI)	
Welding and Metallurgy Upper Division Core Courses		**42**
ET 3030	Statics	
ET 3850	Reliability and Engineering Statistics	
ET 3870	Engineering Economic Analysis	
WMT 3200	Thermodynamics of Welding and Metallurgy	
ET 5870	Engineering Project Management	
MCT 3100	Mechanics of Materials	
WMT 3100	Engineering Alloys	
WMT 3451	Mechanical Metallurgy	
WMT 3452	Physical Metallurgy	
WMT 4453	Advanced Welding Metallurgy	
WMT 4700	Welding Design	
WMT 5800	Welding Automation and Robotics	
WMT 4600	Metallurgy of Welding Processes	
ET 4999	Senior Design Project	
Welding and Metallurgy Upper Division Electives		**7**
WMT 4500	Failure Fracture Analysis	
WMT 3000	Welding Quality and Safety	
ET 4990	Guided Study (1 credit)	
Lower Division Technical Courses		**31**
ET 2200	Engineering Materials	
EET 2000	Electrical Principles	
ET 2140	Computer Graphics	
Hands-on manufacturing course (1 credit)		
Lower Division Technical to be transferred from Community College (21 credits)		
Communication		**9**
Basic Communication (BC)		
Intermediate Communication (IC)		
Oral Communication (OC)		
General Education		**15**
PHI 1120	Professional Ethics (CI)	
Civic Literacy Inquiry (CIV)		
Social Inquiry (SI)		
Diversity, Equity, Inclusion Inquiry (DEI)		
Global Inquiry (GL)		
Total Credits		**121**