

Department of Mechanical, Materials & Aerospace Engineering

Degrees Offered

- Bachelor of Science in Aerospace Engineering (B.S.A.E.)
- Bachelor of Science in Mechanical Engineering (B.S.M.E.)
- Dual Degree in Aerospace and Mechanical Engineering
- Bachelor of Science in Robotics Engineering (B.S.)
- Accelerated Bachelor's/Master's Program in Aerospace Engineering
- Accelerated Bachelor's/Master's Program in Mechanical Engineering

Nature of the Programs

The Mechanical, Materials and Aerospace Department (MMAE) offers undergraduate degrees in aerospace engineering, mechanical engineering and robotics engineering. Our degree programs provide a strong theoretical background as well as practical experience gained through projects and hands-on research. Our undergraduate programs provide students with the skills required for a broad range of jobs in industry, government, academia, business, and research. We begin with a strong foundation in mathematics and add a wide spectrum of courses on the fundamentals of engineering mechanics, thermodynamics, fluid mechanics, and engineering design. Each of the degree programs provides a broad spectrum of knowledge in the field and allows for specialization through electives, independent research projects, and learning abroad opportunities. Both undergraduate degrees include several options for capstone design experience in the final year of study. The program also provides a broad general education necessary to put technical knowledge into perspective.

FACULTY

CHAIR

- Jason N. Gross - Ph.D. (West Virginia University)
Unmanned Aerial Vehicles, Avionic Systems, Flight Testing

PROFESSORS

- V'yacheslav Akkerman - Ph.D. (Umeå University, Sweden)
Turbulent Combustion, Flame Turbulization
- Ever J. Barbero - Ph.D. (Virginia Polytechnic Institute & State University)
Materials, Experimental and Computational Mechanics
- Wade W. Huebsch - Ph.D. (Iowa State University)
Fluid Mechanics, CFD, Numerical Methods
- Bruce S. Kang - Ph.D. (University of Washington)
Experimental Mechanics, Advanced Materials
- Hailin Li - Ph.D. (University of Calgary, Canada)
Combustion, Emissions, Fuel Efficiency of Vehicles and IC Engines
- Xingbo Liu - Ph.D. (University of Science and Technology of China, Beijing)
Materials Science
- Pedro J. Mago - Ph.D. (University of Florida)
Heat and power systems, building energy simulation, and waste heat recovery technologies
- Victor H. Mucino - Dr.Eng., P.E. (University of Wisconsin-Milwaukee)
Mechanical Engineering Design, CAD, Finite Element Analysis
- Marcello R. Napolitano - Ph.D. (Oklahoma State University)
Aircraft Stability and Control, Feedback Control, Unmanned Airborne Vehicles (UAVs)
- Mario Perhinschi - Ph. D. (University of Bucharest, Romania)
Flight Modeling and Simulation
- Songgang Qiu - Ph. D.(University of Minnesota)
Thermodynamics, Heat Transfer
- Edward M. Sabolsky - Ph.D. (The Pennsylvania State University)
Materials, Ceramic Science
- Nithi T. Sivaneri - Ph.D. (Stanford University)
Structural Mechanics, Composite Materials, FEM, Numerical Methods

- Xueyan Song - Ph.D. (Zhejiang University, China)
Materials Science, Electron Microscopy

ASSOCIATE PROFESSORS

- Omid Askari - Ph.D. (Northeastern University)
Engines, GasTurbines, Alternate Fuels
- Cosmin E. Dumitrescu - Ph.D. (University of Alabama)
Combustion, Alternate Fuels, IC Engines
- Jason N. Gross - Ph.D. (West Virginia University)
Unmanned Aerial Vehicles, Avionic Systems, Flight Testing
- Yu Gu - Ph.D. (West Virginia University)
Robotic Systems, Sensor Fusion
- Derek Johnson - Ph.D. P. E. (West Virginia University)
Alternative Fuels, Engines and Emissions
- David S. Mebane - Ph.D. (Georgia Institute of Technology)
Fuel Cells, Mutli Scale Simulation of Chemical and Electrochemical Systems
- Osama Mukdadi - Ph.D. (University of Colorado)
Bioengineering, Acoustics, Solid Mecanics and Materials
- Terence D. Musho - Ph.D. P.E. (Vanderbilt University)
Nanoscale Thermal and Electrical Transport, Direct Energy Conversion
- Andrew C. Nix - Ph.D. (Virginia Polytechnic Institute and State University)
Turbines, Engines and Emissions
- Guilherme Augusto Silva Pereira - Ph.D. (Federal University of Minas Gerais)
Field Robotics, Autonomous Vehicles
- Loren Rieth - Ph.D. (University of Florida)
Microelectrode Implants, Electrical & Neural Prosthesis
- Konstantinos Sierros - Ph.D. (University of Birmingham, U. K.)
Flexible Optoelectronic Devices, Tribology, Materials for Renewable Energy
- Arvind Thiruvengadam - Ph.D. (West Virginia University)
Emissions of Heavy-Duty Internal Combustion Engines
- Gregory J. Thompson - Ph.D. (West Virginia University)
Thermodynamics, Machine Design
- W. Scott Wayne - Ph.D. (West Virginia University)
Machine Design, Alternative Fuels

ASSISTANT PROFESSORS

- Piyush M. Mehta - Ph.D. (University of Kansas)
Astrodynamics, Space Situational Awareness
- Nicholas Szczecinski - Ph.D. (Case Western Reserve University)
Robotics
- Xi Yu - Ph.D. (Boston University)
Robotics

TEACHING ASSOCIATE PROFESSOR

- Patrick H. Browning - Ph.D. (West Virginia University)
Aerodynamics, Aircraft Design

TEACHING ASSISTANT PROFESSORS

- Christopher Griffin - Ph.D. (West Virginia University)
Aerodynamics, Fluid Mechanics
- Andrew P. Rhodes - Ph.D. (West Virginia University)
Aerospace Dynamics and Propulsion
- Emily Spayde - Ph.D. (Mississippi State University)
Engineering education, energy sustainability and organic Rankine cycles

RESEARCH ASSOCIATE PROFESSOR

- Yun Chen - Ph.D. (Universidade Tecnica de Lisboa)
Material Science, Metal Hydrides, Cathode Material Development
- Eduardo Sosa - Ph. D. (University of Puerto Rico)
Thin Wall Structures

RESEARCH ASSISTANT PROFESSORS

- Ali Baheri - Ph.D. (University of North Carolina at Charlotte)
Machine Learning, Autonomous Driving
- Shanshan Hu - Ph.D. (West Virginia University)
high temperature corrosion, molten salt, anti-corrosion coating and electrophoretic deposition
- Wei Li - Ph.D. (Graduate University of Chinese Academy of Sciences)

VISITING PROFESSORS AND ADJUNCT PROFESSORS

- Alberto Ayala - Ph.D. (University of California, Davis)
Engine Emissions
- David Booker - Ph. D. (University of Exeter)
Exhaust Flow
- Darran R. Cairns - Ph.D. (University of Birmingham, U.K.)
Materials Science
- John A. Christian - Ph.D. (University of Texas)
Spacecraft Design, Navigation, Estimation Theory
- Weigiang Ding - Ph.D. (Northwestern University)
Nanostructures
- Donald H. Ferguson - Ph.D. (West Virginia University)
Thermal Sciences
- Mridul Gautam - Ph.D. (West Virginia University)
Alternate Fuels, Engine and Emissions, VP for Research UNR
- Luis A. Godoy - Ph.D. (University of London, U.K.)
Structural Stability
- Frank E. Goodwin - Sc.D. (Massachusetts Institute of Technology)
Materials Engineering, ILZRO
- Valeriya Gritsenko - Ph.D. (University of Alberta, Canada)
Neuroscience
- Yiqun Huang - Ph.D. (University of Texas, Austin)
Engine and Emissions Control
- Stephen Kukureka - Ph.D. (University of Birmingham, U.K.)
Materials Science
- Andrew D. Lowery - Ph.D. (West Virginia University)
Control Systems
- Alejandro Lozano-Guzman - Ph.D. (University of New Castle Upon Tyne, U.K.)
Structural Analysis, Power and Control Systems (CICATA-IPN)
- Eugene A. McKenzie - Ph.D. (West Virginia University)
Mechanical Engineering Design, NIOSH
- Chris Menchini - Ph.D. (West Virginia University)
Computational Fluid Dynamics, Fire Modeling
- Vincenzo Mulone - Ph.D. (University of Rome Tor Vergata)
Internal Combustion Engines, Emissions
- John Nuzkowski - Ph.D. (West Virginia University)
Alternative Fuels and Engine Emissions, UNF
- Dale Olson - MBA (Western Governors University)
Strategic Leadership
- Ming Pei - M.D., Ph.D. (Beijing Medical University, China)
Tissue Engineering HSC-WVU
- Matthew Robinson - Ph. D. (West Virginia University)
Analysis and Optimization of Engines
- Brad Seanor - Ph.D. (West Virginia University)

Controls Systems

- Benjamin Shade - Ph.D. (West Virginia University)
Engine Emissions, IAV Automotive
- Matthew S. Smith - M.D. (West Virginia University)
- Alberto Traverso - Ph.D. (University of Genoa, Italy)
Energy Systems and Control, DIMSET - Italy
- Nathan Weiland - Ph.D. (Georgia Institute of Technology)
Energy Systems, Experimental, Computational, Theoretical Methods
- Jay Wilhelm - Ph.D. (West Virginia University)
Unmanned Aerial Systems, Wind Turbine Modeling and Design
- Gergis William - Ph.D. (West Virginia University)
Structural Engineering
- David A. Wyrick - Ph.D (University of Missouri-Rolla)
Engineering Management, Engineering Education
- Sergiy Yakovenko - Ph.D. (University of Alberta, Canada)
Neuroscience

PROFESSORS EMERITI

- Richard A. Bajura - Ph.D. (University of Notre Dame)
- Larry Banta - Ph.D. (Georgia Institute of Technology)
- Ismail Celik - Ph.D. (University of Iowa)
- Nigel N. Clark - Ph.D. (University of Natal, South Africa)
- John M. Kuhlman - Ph.D. (Case Western Reserve University)
- John Loth - Ph.D. (University of Toronto, Canada)
- Ken Means - Ph.D (West Virginia University)
- Gary Morris - Ph.D. (West Virginia University)
- Michael G. Palmer - Ph.D. (West Virginia University)
- Samir N. Shoukry - Ph.D. (Aston University, Birmingham, U.K.)
- John E. Sneckenberger - Ph.D. (West Virginia University)
- Wallace S. Venable - Ed.D. (West Virginia University)
- Richard E. Walters - Ph.D. (West Virginia University)