

# Department of Industrial and Management Systems Engineering

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## Degrees Offered

- Masters of Science, Industrial Engineering (M.S.I.E.)
- Masters of Science, Industrial Hygiene (M.S.)
- Masters of Science, Safety Management (M.S.)
- Doctor of Philosophy, Industrial Engineering (Ph.D.)
- Doctor of Philosophy, Occupational Safety and Health (Ph.D.)

One of the defining attributes in the success of the department is the dedication and talent of its fifteen faculty and three staff members. The aggregate careers of our faculty and staff represent over 250 years of service to students at WVU. In these 250 years of service is embodied the wisdom and experience to successfully prepare industrial engineers and occupational health and safety professionals to address ever-changing societal needs. The faculty and staff typically educate nearly 300 undergraduate, 100 to 120 M.S., and fifteen to twenty-five Ph.D. students. The department is in the unique position in the United States of having two complimentary graduate programs in industrial hygiene and safety accredited by the Applied Science Accreditation Commission (ASAC) of ABET. The combined resources and faculty talents of these two programs create synergies that provide our students with outstanding academic and research experiences in the field of occupational safety and health. Excellent academic and research opportunities are also available for students in the areas of healthcare systems, supply chain optimization, energy systems, smart manufacturing, occupational safety/health, and ergonomics.

## Faculty Research

The department has quality research laboratories in smart manufacturing, operations research, production planning and control, data analytics and visualization, ergonomics, industrial hygiene, and safety. Graduate students are encouraged to utilize these resources to explore and develop their capabilities.

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## FACULTY

### CHAIR

- Kenneth R. Currie - Ph.D. P.E., (West Virginia University)  
Manufacturing systems design, Optimization, Automation & Controls, Healthcare Systems Engineering

### PROFESSORS

- Rashpal Ahluwalia - Ph.D., P.E. (Western Ontario University)  
Manufacturing Systems, Quality and Reliability Engineering, Robotics and Automation
- Jack Byrd Jr. - Ph.D., P.E. (West Virginia University)  
Operations Research, Workforce Development, Work Design, Integrated Product Development
- Bhaskaran Gopalakrishnan - Ph.D., P.E., CEM. (Virginia Polytechnic Institute and State University)  
Manufacturing Processes and Production Systems, Artificial Intelligence Applications, Expert Systems Development, Industrial Energy Efficiency, Building's Energy Efficiency, Industrial Energy and Waste Minimization, Productivity Improvement
- Steven Guffey - Ph.D., C.I.H. (North Carolina State University)  
Ventilation Systems Theory and Design, Noise Measurement and Control, Exposure Assessment
- Majid Jaridi - Ph.D. (University of Michigan)  
Statistics, Quality Control, Forecasting and Transportation Research
- Gary Winn - Ph.D. (Ohio State University)  
Construction Safety, Transportation Safety and Program Evaluation, Total Quality Management, Theory of Paradigm Shifts
- David A. Wyrick - Ph.D., P.E., P.E.M. (University of Missouri-Rolla)  
Engineering Management, Engineering Education, Appropriate Management of Technology in SMEs

### ASSOCIATE PROFESSORS

- Elyce Biddle - Ph.D. (West Virginia University)  
Business economics; Behavioral economics; Healthcare safety; Data Surveillance: classification systems, data and system quality
- Alan McKendall, Jr. - Ph.D. (University of Missouri, Columbia)  
Operations Research, Meta-heuristics, Facilities Layout and Materials Handling, Project Scheduling, Integrated Production Systems
- Ashish Nimbarte - Ph.D. (Louisiana State University)  
Work Related Musculoskeletal Disorders, Occupational Biomechanics and Biomechanical Modeling

- Feng Yang - Ph.D. (Northwestern University)  
Simulation, Applied Statistics, Stochastic Processes

## ASSISTANT PROFESSORS

- Leily Farrokhvar - Ph.D. (Virginia Tech)  
Supply Chain Optimization, Large Scale Optimization, Transportation & Logistics
- Xinjian "Kevin" He - Ph.D., (University of Cincinnati)  
Respiratory protection, air purification and filtration, aerosol measurement, characterization of particles in indoor and outdoor air, occupational exposure assessment
- Xiaopeng Ning - Ph.D. (Iowa State University)  
Safety Engineering, Biomechanics, Ergonomics, Human Factors Engineering
- Thorsten Wuest - Ph.D. (University of Bremen)  
Smart Manufacturing, Machine Learning/Artificial Intelligence, Conceptual Design, Process and Information/Data Management

## PROFESSORS EMERITI

- Robert C. Creese - Ph.D., P.E. (Pennsylvania State University)  
Manufacturing processes/systems, Foundry engineering, Cost engineering, Engineering economics
- Daniel E. Della-Giustina - Ph.D. (Michigan State University)  
Playground and recreation safety, Sport safety, Highway and traffic management, Safety, fire, and emergency response
- Wafik H. Iskander - Ph.D., P.E. (Texas Tech University)  
Operations research and optimization, Simulation modeling and analysis, Production planning and control, Applied statistics, Energy efficiency
- Warren Myers - Ph.D. (West Virginia University)  
Exposure Assessment and Modeling, Aerosol Filtration, Occupational Respiratory Protection Design and Testing
- Ralph Plummer - Ph.D., P.E. (West Virginia University)  
Systems Safety Engineering, Energy Conservation, Human Factors, Ergonomics

## ASSOCIATE PROFESSOR EMERITUS

- Andrew J. Sorine - Ed.D. (West Virginia University)  
Benchmarking, Safety and Health Programs, Safety Management Information Systems

## VISITING AND ADJUNCT PROFESSORS

- Christopher Coffey - Ph.D. (West Virginia University)  
Occupational Safety and Health, Assessment, Evaluation of Respiratory Protective Equipment
- John R. Etherton - Ph.D. (West Virginia University)  
Safety Engineering, Human Factors
- Martin Harper - Ph.D. (London School of Hygiene and Tropical Medicine)  
Industrial Hygiene, Exposure Assessment
- James R. Harris - Ph.D., P.E. (West Virginia University)  
Safety Research, Human Factors
- Hongwei Hsiao - Ph.D. (University of Michigan)  
Safety Engineering, Human Factors
- Kevin Michael - Ph.D. (Pennsylvania State University)  
Acoustics, Hearing Protection, Industrial Hygiene
- Christopher Pan - Ph.D. (University of Cincinnati)  
Industrial Hygiene, Exposure Assessment
- Ju-Hyeong Park - Sc.D. M.P.H., C.I.H. (Harvard University)  
Industrial Hygiene, Exposure Assessment
- Ziqing Zhuang - Ph.D. (West Virginia University)  
Exposure Assessment, Assessment and Evaluation of Respiratory Protective Equipment

## LECTURER

- Shanti Hamburg - M.S. (Aerospace Engineering)  
Design/Build/Fly UAV Design and Construction; Prototyping; Digital Manufacturing

## Admission

To qualify as a regular graduate student, applicants must have as a minimum the equivalent of a 3.0 GPA. Applicants with a minimum 2.75 GPA (or the equivalent) may be admitted on a provisional basis. Applicants with GPA below 2.75 would need approval of the dean or his designee. International students must demonstrate proficiency in communicating in English (a minimum TOEFL Score of 550, or IBT Score of 79, or IELTS Score of 6.5).

Students must comply with the rules and regulations as outlined in this catalog for graduate work in the College of Engineering and Mineral Resources and meet individual major and degree admission standards.

Applicants to graduate programs in the IMSE department are required to provide the following.

- A completed application submitted to the WVU Admissions Office
- Official transcripts of all previous college course work
- TOEFL scores for international students as stated above
- GRE General Test scores (not required for the M.S. in Safety Management Program)
- Three letters of recommendation (required for the Ph.D. programs only).