

**Degree Programs, Emphasis Areas, Minors and Certificates**  
**Missouri University of Science and Technology**

(Degree programs are in capitals. Emphasis areas are lower case subheads followed by degree abbreviation if restricted to that degree.)  
as of 06/22/2023

AEROSPACE ENGINEERING (BS, MS, PhD) MI  
APPLIED MATHEMATICS (BS, MS) MI  
    Actuarial Science (BS)  
    Algebra (MS)  
    Algebra/Discrete Mathematics (BS)  
    Applied Analysis  
    Computational Mathematics  
    Data Science and Statistics (BS)  
    Secondary Education (BS)  
    Statistics (MS)  
ARCHITECTURAL ENGINEERING (BS)  
    Construction Eng & Project Mgt  
    Construction Materials  
    Environmental Systems for Buildings  
    Structural Engineering  
BIOLOGICAL SCIENCES (BA, BS, MS) MI  
    Medical Laboratory Scientist (BS)  
    Pre-Medicine (BA)  
    Secondary Education (BA)  
BUSINESS ADMINISTRATION (MBA)  
BUSINESS AND MANAGEMENT SYSTEMS (BS)  
    E-commerce  
    Enterprise Resource Planning  
    Finance  
    Human Computer Interaction  
    Management Information Systems  
    Marketing  
    Secondary Education  
CERAMIC ENGINEERING (BS, MS, PhD)  
    Biomaterials (MS)  
CHEMICAL ENGINEERING (BS, MS, PhD, DE)  
    Biochemical Engineering (BS)  
CHEMISTRY (BA, BS, MS, MST, PhD) MI  
    Biochemistry (BS)  
    Polymer & Coatings Science (BS)  
    Pre-Medicine (BS)  
    Secondary Education (BA)  
CIVIL ENGINEERING (BS, MS, PhD, DE)  
    Construction Engineering  
    Environmental Engineering  
    Geotechnical Engineering  
    Materials Engineering  
    Structural Engineering  
    Transportation Engineering  
    Water Resources Engineering  
COMPUTER ENGINEERING (BS, MS, PhD) MI  
    Computational Intelligence  
    Computer Architecture and Embedded Systems  
    Integrated Circuits and Logic Design  
    Networking, Security, and Dependability  
COMPUTER SCIENCE (BS, MS, PhD) MI  
    Critical Infrastructure Protection (MS)  
    Software Engineering (MS)  
ECONOMICS (BA, BS)  
    Decision Data Analytics  
    Economics/Business (BS)  
    Energy Economics  
    Financial Economics & Tech  
    Secondary Education (BA)  
EDUCATION (BS)  
    Early Childhood Education (pre K-3)  
    Educational Studies  
    Elementary  
    Middle School Language Arts  
    Middle School Math  
    Middle School Science  
    Middle School Social Studies  
ELECTRICAL ENGINEERING (BS, MS, PhD, DE) MI  
    Circuits and Electronics  
    Communications and Signal Processing  
    Computer Engineering  
    Controls and Systems  
    Electromagnetics  
    Optics and Devices  
    Power and Energy  
    Solar Energy (MS)  
ENGINEERING MANAGEMENT (BS, MS, PhD) MI  
    Industrial Engineering (BS)  
    Management of Technology (BS)  
    Manufacturing Engineering (BS)  
    Packaging Engineering (BS)  
    Public Works (MS)  
    Quality Engineering (BS)  
ENGLISH AND TECHNICAL COMMUNICATION (BS)  
    English Education  
ENVIRONMENTAL ENGINEERING (BS, MS)  
ENVIRONMENTAL SCIENCE (BS)  
    Secondary Education  
EXPLOSIVES ENGINEERING (MS, PhD) MI  
EXPLOSIVES TECHNOLOGY (MS)  
GEOLOGICAL ENGINEERING (BS, MS, PhD, DE) MI  
    Engineering Geology and Geotechnics (BS)  
    Environ Protect & Haz Waste Mgt (BS)  
    Groundwater Hydro & Contaminant Transport (BS)  
    Petroleum, Energy and Natural Resources (BS)  
    Quarry Engineering (BS)  
    Hazardous Waste Engineering & Science (MS)  
GEOLOGY AND GEOPHYSICS (BS, MS, PhD)  
    Exploration Geochemistry (MS, PhD)  
    Exploration Geophysics (MS, PhD)  
    Geochemistry (BS)  
    Geology (BS)  
    Geophysics (BS)  
    Groundwater & Environmental Geochemistry (BS)  
    Petroleum Geology (BS)  
GEOTECHNICS (ME)  
HISTORY (BA, BS) MI  
    Secondary Education (BA)  
INDUSTRIAL-ORGANIZATIONAL PSYCHOLOGY (MS)  
INFORMATION SCIENCE & TECHNOLOGY (BS, MS) MI  
    Enterprise Resource Planning  
    Human Computer Interaction (BS)  
MANUFACTURING ENGINEERING (MS, ME)  
MATERIALS SCIENCE AND ENGINEERING (MS, PhD)  
MATHEMATICS (MST, PhD) MI  
    Computational and Applied Mathematics (PhD)  
    Statistics (PhD)  
MECHANICAL ENGINEERING (BS, MS, PhD, DE)  
    Control Systems  
    Energy Conversion  
    Environmental Systems  
    Instrumentation  
    Manufacturing Processes  
    Materials Science  
    Mechanical Design and Analysis  
    Systems Integration  
    Thermal Science  
METALLURGICAL ENGINEERING (BS, MS, PhD)  
    Chemical Metallurgy (BS)  
    Manufacturing Metallurgy (BS)  
    Physical Metallurgy (BS)  
MINING ENGINEERING (BS, MS, ME, PhD, DE) MI  
    Coal (BS)  
    Explosives Engineering (BS)  
    Mining & the Environment (BS)  
    Mining Health and Safety (BS)  
    Quarry Engineering (BS)  
    Sustainable Development (BS)  
MULTIDISCIPLINARY STUDIES (BA)  
    French Language and French Speaking Cultures  
    Global Engineering  
    Spanish Language and Spanish Speaking Cultures  
NUCLEAR ENGINEERING (BS, MS, PhD, DE) MI  
PETROLEUM ENGINEERING (BS, MS, PhD, DE) MI  
PHILOSOPHY (BS) MI  
PHYSICS (BS, MS, MST, PhD) MI  
    Applied Physics (BS)  
    Geophysics (BS)  
    Secondary Education (BS)

PSYCHOLOGY (BA, BS) MI  
 Cognition and Neuroscience  
 Diversity and Inclusion (BA)  
 Health Psychology  
 Human Factors  
 Industrial Organizational Psychology  
 Secondary Education (BA, BS)

SYSTEMS ENGINEERING (MS, PhD)  
 TECHNICAL COMMUNICATION (MS) MI  
 WATER SCIENCE AND ENGINEERING (MS)

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### MINORS

(In addition to those designated MI on previous page)

Adaptive Leadership  
 American Studies  
 Art  
 Artificial Intelligence and Machine Learning in Business  
 Automation Engineering  
 Bioinformatics  
 Biomedical Engineering  
 Business  
 Business Analytics & Data Science  
 Business Applications and Software Development  
 Cognitive Neuroscience  
 Communication Studies  
 Construction Engineering & Management  
 Creative Writing  
 Cybersecurity Management and Information Assurance  
 Digital Supply Chain Management  
 Electronic and Social Commerce  
 Energy Technology  
 Enterprise Resource Planning  
 Entrepreneurship  
 Ethics  
 Explosives Engineering \*  
 Film and Literature

Finance  
 Financial Technology, Analytics and Transformation  
 French  
 Game Studies  
 Geology  
 German  
 Global Studies  
 Global Sustainable Economics  
 Human-Computer Interaction & User Experience  
 Human Factors Psychology  
 Ind-Organizational Psych  
 International Economics  
 Latin American Studies for Technical Applications  
 Leadership Communication  
 Linguistics  
 Literature  
 Literature and Film  
 Management  
 Marketing  
 Military Aerospace Studies  
 Mineral Process Engineering  
 Mobile Business and Technology

Multiculturalism & Diversity  
 Music  
 Philosophy of Technology  
 Political Science  
 Pre-Law  
 Pre-MBA  
 Pre-Medicine  
 Psychology for Health Care  
 Psychology of Leadership  
 Quantitative Economics  
 Russian  
 Science, Technology & Humanity  
 Social Media in Industry  
 Sociology  
 Spanish  
 Studio Art  
 Sustainability  
 Technical Communication\*  
 Theatre  
 Writing

\* Indicates undergraduate & graduate level minor  
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### UNDERGRADUATE CERTIFICATES

#### **Certificate**

Automation Engineering  
 Bioinnovation  
 Decision Data Analytics  
 Education of Young Children  
 Energy Economics  
 Explosives Engineering  
 Explosives Technology  
 Financial Economics and Technology  
 Intercultural Studies  
 Logic and the Philosophical Foundations of STEM  
 Medicinal Chemistry  
 Medieval and Renaissance Studies  
 Military and Security Studies  
 Professional Ethics and Moral Reasoning  
 Science, Technology, and Society  
 Teaching and Learning  
 Technical Writing  
 Technology, Philosophy, and Ethical Futures  
 War and Society

#### **Discipline**

Electrical Engineering  
 Biological Sciences  
 Economics  
 Education  
 Economics  
 Mining Engineering  
 Mining Engineering  
 Economics  
 Multidisciplinary Studies  
 Philosophy  
 Chemistry  
 History  
 History  
 Philosophy  
 History  
 Teacher Education and Certification  
 Technical Communication  
 Philosophy  
 History

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## GRADUATE CERTIFICATES

### **Certificates**

Actuarial Science  
 Advanced Control Systems  
 Advanced Engineering Materials  
 Advanced Materials for Sustainable Infrastructure  
 Aggregates Management  
 AI, Machine Learning and Automation in Business  
 Applied Workplace Psychology  
 Automation Engineering and PLC  
 Big Data Management and Analytics  
 Big Data Management and Security  
 Building Systems Engineering  
 Business Analytics and Data Science  
 Business Essentials  
 Business Intelligence  
 Business Project Management  
 CAD/CAM and Rapid Product Realization  
 Carbon Management Engineering  
 Chemical Process Engineering  
 Composite Materials and Structures  
 Computational Intelligence  
 Contemporary Structural Engineering  
 Control Systems  
 Cyber Physical Systems  
 Cyber Security  
 Cybersecurity and Information Assurance Management  
 Digital Media and Web Design  
 Digital Supply Chain Management  
 Electric Machine and Drives  
 Electrical Power Systems Engineering  
 Electronic and Social Commerce  
 Energy Conversion and Transport  
 Engineering Management  
 Engineering Mechanics  
 Enterprise Resource Planning  
 Entrepreneurship and Technological Innovation  
 Explosives Engineering  
 Explosives Technology  
 Finance  
 Financial Engineering  
 Financial Mathematics  
 Financial Technology  
 Foundations of Supply Chain Integration Systems  
 Geoanalytics and Geointelligence  
 Geoenvironmental Engineering  
 Geoenvironmental Science and Engineering  
 Geologic Hazards  
 Geophysics  
 Geotechnical Earthquake Engineering  
 Geotechnics  
 Human-Computer Interaction and User Experience  
 Human Factors Psychology  
 Human Systems Integration  
 Information Assurance & Security Officer Essentials  
 Information System Project Management  
 Information Systems and Cloud Computing  
 Infrastructure Renewal  
 Iron and Steel Metallurgy  
 Lean Six Sigma  
 Management and Leadership  
 Management for Sustainable Business  
 Manufacturing Automation  
 Manufacturing Systems  
 Materials for Extreme Environments  
 Military Construction Management  
 Military Geological Engineering  
 Mine Reclamation  
 Mining Engineering  
 Mining Project Evaluation  
 Mobile Business and Digital Transformation  
 Model Based Systems Engineering  
 Modeling and Simulation for Decision Systems  
 Nuclear Nonproliferation  
 Petroleum Systems  
 Professional Communication  
 Project Engineering and Construction Management  
 Project Management  
 Safety Engineering

### **Discipline**

Mathematics  
 Electrical Engineering  
 Materials Science and Engineering  
 Civil Engineering  
 Mining Engineering  
 Information Science & Technology  
 Psychology  
 Electrical Engineering  
 Computer Science  
 Computer Science  
 Civil Engineering  
 Information Science & Technology  
 Business Administration  
 Information Science & Technology  
 Business Administration  
 Manufacturing Engineering  
 Chemical Engineering  
 Chemical Engineering  
 Aerospace Engineering/Mechanical Engineering  
 Systems Engineering/Computer Engineering/Computer Science  
 Civil Engineering  
 Mechanical Engineering  
 Computer Engineering/Systems Engineering  
 Computer Science  
 Information Science and Technology  
 Information Science & Technology  
 Information Science & Technology  
 Electrical Engineering  
 Electrical Engineering  
 Information Science & Technology  
 Aerospace Engineering/Mechanical Engineering  
 Engineering Management  
 Aerospace Engineering/Mechanical Engineering  
 Information Science & Technology  
 Business Administration  
 Explosives Engineering  
 Explosives Engineering  
 Business Administration  
 Engineering Management/Systems Engineering  
 Mathematics  
 Business Administration  
 Engineering Management  
 Geological Engineering  
 Civil Engineering  
 Geological Engineering and Geology and Geophysics  
 Geological Engineering  
 Geology and Geophysics  
 Civil Engineering  
 Geotechnics  
 Information Science & Technology  
 Psychology  
 Engineering Management/Information Science & Technology  
 Computer Engineering/Computer Science  
 Information Science & Technology  
 Computer Science  
 Civil Engineering  
 Metallurgical Engineering  
 Engineering Management  
 Business Administration  
 Economics  
 Mechanical Engineering  
 Manufacturing Engineering  
 Materials Science and Engineering  
 Engineering Management  
 Geological Engineering  
 Mining Engineering  
 Mining Engineering  
 Mining Engineering  
 Information Science & Technology  
 Systems Engineering  
 Engineering Management  
 Nuclear Engineering  
 Geology and Geophysics  
 Technical Communication  
 Civil Engineering/Engineering Management  
 Engineering Management  
 Chemical and Biochemical Engineering/Engineering Management

Software Design and Development  
Space Resources  
Statistics  
Subsurface Water Resources  
Surface Water Resources  
Sustainability in Mining  
Systems Engineering  
Systems and Software Architecture  
Systems of Human Capital Management  
Wireless Networks and Mobile Systems

Computer Science  
Geological Engineering  
Mathematics and Statistics  
Geological Engineering  
Civil Engineering  
Mining Engineering  
Systems Engineering  
Computer Science  
Engineering Management  
Computer Science

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## **TEACHER CERTIFICATION PROGRAMS**

Elementary Education Certification  
- Education (BS)  
-Early Childhood Education (pre K-3)  
-Elementary

Middle School Education Certification  
- Education (BS)  
-Middle School Language Arts  
-Middle School Math  
-Middle School Science  
-Middle School Social Studies

Secondary Education Certification  
-Applied Mathematics BS  
-Biological Sciences BA  
-Business and Management Systems BS  
-Chemistry BA  
-Economics BA  
-English BS  
-Environmental Science BS  
-History BA  
-Physics BS  
-Psychology BA, BS

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