

**MISSISSIPPI STATE UNIVERSITY**

**Bagley College of Engineering  
Distance Education Graduate Courses  
Fall 2023**

ASE 6553	Eng Design Optimization	TBA	TBA
ASE 6713	Intro to Unmanned Aircraft	Mon / Wed / Fri	11:00AM - 11:50AM
ASE 8313	Adv Comp Aerodyn I	TBA	TBA
ASE 8343	Incomp Vis Lam Flow	TBA	TBA
ASE 8413	Comput Fluid Dyn I	TBA	TBA
CE 6103	Pavement Mat & Des	Tues / Thurs	08:00AM - 09:15AM
CE 6133	Geom. Design. Hwys	Tues / Thurs	11:00AM - 12:15PM
CE 6173	Travel Behavior Modeling	Tues / Thurs	02:00PM - 03:15PM
CE 6483	Geosynthetics	Tues / Thurs	09:30AM - 10:45AM
CE 6523	Open Chan Hydraul	Mon / Wed / Fri	08:00AM - 08:50AM
CE 6703	Constr Eng Management	TBA	TBA
CE 6753	Construction Cost Estimating	Mon / Wed	03:30PM - 04:45PM
CE 6883	Engrd. Environmental Sys.	Tues / Thurs	09:30AM - 10:45AM
CE 6913	Matrix Struct Analysis	Mon / Wed / Fri	12:00PM - 12:50PM
CE 6963	Steel Structures	Mon / Wed / Fri	11:00AM - 11:50AM
CE 6983	Engr. Wood Structures	Mon / Wed / Fri	09:00AM - 09:50AM
CE 8443	Soil Behavior	Tues / Thurs	03:30PM - 04:45PM
CE 8593	Environmental Hydrology	Tues / Thurs	12:30PM - 01:45PM
CE 8803	Un Pro-Op Env Eng I	Tues / Thurs	02:00PM - 03:15PM
CHE 6113	Chem Reactor Design	Mondays Tues / Thurs	06:00PM - 08:50PM 12:30PM - 01:45PM
CHE 8011	Chem En Seminar	Fridays	02:00PM - 04:50PM
CHE 8113	Adv Che En Thermo	Tues / Thurs	11:00AM - 12:15PM
CHE 8223	Adv Process Comp	Tues / Thurs	09:30AM - 10:45AM
CSE 6233	SW Arch & Design	Tues / Thurs	02:00PM - 03:15PM
CSE 6243	Info & Computer Secur	Mon / Wed / Fri	10:00AM - 10:50AM
CSE 6253	Secure Software Engineering	Mon / Wed	02:00PM - 03:15PM
CSE 6273	Intro to Computer Forensics	Mon / Wed / Fri	09:00AM - 09:50AM
CSE 6633	Artificial Intell	Tues / Thurs	12:30PM - 01:45PM
CSE 6683	Machine Learning and Soft Comp	Tues / Thurs	09:30AM - 10:45AM
CSE 6833	Intro to Algorithms	Mon / Wed	12:30PM - 01:45PM
CSE 8423	Data Science Concepts & Pract	Tues / Thurs	11:00AM - 12:15PM
CSE 8673	Machine Learning	Mon / Wed	02:00PM - 03:15PM
CSE 8753	Wireless Networks	Mon / Wed	12:30PM - 01:45PM
CSE 8833	Algorithms	Mon / Wed	03:30PM - 04:45PM

ECE 6423	Intro to Remote Sensing	Tues / Thurs	03:30PM - 04:45PM
ECE 6433	Introduction to Radar	Mon / Wed	03:30PM - 04:45PM
ECE 6613	Pwr Transmission Sys	Tues / Thurs	11:00AM - 12:15PM
ECE 6643	Pwr Sy Relay Control	Mon / Wed	02:00PM - 03:15PM
ECE 6653	Intro to Power Elect.	Tues / Thurs	08:00AM - 09:15AM
ECE 6713	Computer Architecture	Tues / Thurs	09:30AM - 10:45AM
ECE 6743	Digital Sys Design	Mon / Wed TBA	11:00AM - 11:50AM TBA
ECE 6753	Intro to Robotics	Tues / Thurs	02:00PM - 03:15PM
ECE 8683	Power Sys Opt & Control	Tues / Thurs	12:30PM - 01:45PM
ECE 8813	Information Theory	Mon / Wed / Fri	12:00PM - 12:50PM
ECE 8943	Optimal Control Dyna Sys	Mon / Wed / Fri	01:00PM - 01:50PM
ECE 9100	Graduate Seminar	TBA	TBA
EM 6143	Eng Design Optimization	TBA	TBA
EM 8203	Appl Elasticity	Mon / Wed / Fri	01:00PM - 01:50PM
GE 8003	MENG Capstone	TBA	TBA
IE 6333	Prod Control Sys I	TBA	TBA
IE 6513	Engineering Admin	TBA	TBA
IE 6573	Process Imprvmnt Eng	TBA	TBA
IE 6613	Eng Statistics I	TBA	TBA
IE 6623	Eng Statistics II	TBA	TBA
IE 6653	Ind Qual Control I	TBA	TBA
IE 6683	Machine Learning with IE Appli	TBA	TBA
IE 6743	Eng Design Optimization	Tues / Thurs	12:30PM - 01:45PM
IE 6753	Systems Engr & Analysis	TBA	TBA
IE 6773	Sys Simulation I	TBA	TBA
IE 8583	Enterprise Systems Engineering	TBA	TBA
IE 8743	Nonlinear Prog I	TBA	TBA
ME 6123	Failure of Eng. Mat'l	Mon / Wed / Fri	01:00PM - 01:50PM
ME 6133	Mechanical Metallurgy	Tues / Thurs	09:30AM - 10:45AM
ME 6543	Combustion Engines	Tues / Thurs	08:00AM - 09:15AM
ME 8011	Graduate Seminar	Mondays	02:00PM - 03:50PM
ME 8213	Engineering Anal I	Tues / Thurs	02:00PM - 03:15PM
ME 8243	Finite Element In Me	Tues / Thurs	11:00AM - 12:15PM
ME 8333	Convective Heat Tr	Mon / Wed	12:30PM - 01:45PM
ME 8813	Viscous Flow I	Tues / Thurs	12:30PM - 01:45PM

# Course Descriptions

<b>ASE 6553</b>	<b>Eng Design Optimization</b>	<b>TBA</b>	<b>TBA</b>
	Instructor: Chuangchuang Sun		
	(Section 501) (Prerequisite: Consent of Instructor). Three hours lecture. Introduction to optimality criteria and optimization techniques for solving constrained or unconstrained optimization problems. Sensitivity analysis and approximation. Computer application in optimization. Introduction to MDO. (Same as EM 4143/6143 and IE 4743/6743)		
<b>ASE 6713</b>	<b>Intro to Unmanned Aircraft</b>	<b>Mon / Wed / Fri</b>	<b>11:00AM - 11:50AM</b>
	Instructor: Calvin Walker		
	(Section 501) Three-hour lecture. This course provides an introduction to various aspects involved in design and operation of unmanned aircraft systems. With the increasing use of UAS in civilian and military roles, future engineers will benefit from a systems perspective of unmanned aircraft systems.		
<b>ASE 8313</b>	<b>Adv Comp Aerodyn I</b>	<b>TBA</b>	<b>TBA</b>
	Instructor: Davy Belk		
	(Section 501) (Prerequisite: ASE 4343 or equivalent). Three hours lecture. Derivation of complete equations for compressible fluid flow; unsteady one-dimensional flows; method of characteristics; flow about two-dimensional and axis-symmetric shapes; integral methods.		
<b>ASE 8343</b>	<b>Incomp Vis Lam Flow</b>	<b>TBA</b>	<b>TBA</b>
	Instructor: Adrian Sescu		
	(Section 501) (Prerequisite: Consent of instructor). Three hours lecture. Incompressible Navier-Stokes equations; properties and exact solutions; laminar boundary layer equations; two- and three-dimensional solutions; time-dependent solutions; approximate solutions; boundary layer control.		
<b>ASE 8413</b>	<b>Comput Fluid Dyn I</b>	<b>TBA</b>	<b>TBA</b>
	Instructor: Adrian Sescu		
	(Section 501) (Prerequisite: Consent of instructor). Three hours lecture. Review of relevant numerical analysis; one dimensional methods; compressible inviscid methods, Euler Equation methods, inviscid-viscous interaction methods; current literature.		
<b>CE 6103</b>	<b>Pavement Mat &amp; Des</b>	<b>Tues / Thurs</b>	<b>08:00AM - 09:15AM</b>
	Instructor: Carlos Gonzalez Martinez		
	(Section 501) (Prerequisite: Grade of C or better in CE 3313; or consent of major advisor). Three hours lecture. Analysis design of both flexible and rigid pavement structures.		
<b>CE 6133</b>	<b>Geom. Design. Hwys</b>	<b>Tues / Thurs</b>	<b>11:00AM - 12:15PM</b>
	Instructor: Staff		
	(Section 501) (Prerequisite: Grade of C or better in CE 3113; or consent of major advisor). Three hours lecture. Highway finance, organization and planning, economic analysis, elements of highway and street design, computer applications to highway engineering.		
<b>CE 6173</b>	<b>Travel Behavior Modeling</b>	<b>Tues / Thurs</b>	<b>02:00PM - 03:15PM</b>
	Instructor: Staff		
	(Section 501) (Prerequisite: CE 3113 or consent of instructor). Three hours lecture. This course gives an overview of travel behavior and demand analysis and forecasting, with primary attention to the statistical and behavioral choice model research techniques used to study and forecast travel demand.		

<b>CE 6483</b>	<b>Geosynthetics</b>	<b>Tues / Thurs</b>	<b>09:30AM - 10:45AM</b>
	Instructor: Staff		
	(Section 501) (Prerequisite: Grade of C or better in CE 3413 or equivalent). Three hour lecture. Understand the behavior of the different types of geosynthetic materials, proper design-by-function and selection of the right material for its intended applications.		
<b>CE 6523</b>	<b>Open Chan Hydraul</b>	<b>Mon / Wed / Fri</b>	<b>08:00AM - 08:50AM</b>
	Instructor: Thomas Lynn		
	(Section 501) (Prerequisite: Grade of C or better in CE 3503; or consent of major advisor). Three hours lecture. Continuity, energy and momentum principles in open channel flow, flow resistance, uniform and non-uniform flow, channel controls and transitions, unsteady flow routing.		
<b>CE 6703</b>	<b>Constr Eng Management</b>	<b>TBA</b>	<b>TBA</b>
	Instructor: Jun Wang		
	(Section 501) (Prerequisite: Grade of C or better in IE 3913, Senior standing or consent of instructor; or consent of major advisor). Three hours lecture. Construction contracts and law, cost estimating, and project scheduling.		
<b>CE 6753</b>	<b>Construction Cost Estimating</b>	<b>Mon / Wed</b>	<b>03:30PM - 04:45PM</b>
	Instructor: Jun Wang		
	(Section 501) (Prerequisite: Senior Standing). Three hour lecture. Overview of cost estimates, total cost of a project, direct and indirect costs, labor and equipment cost analysis, materials management, overhead; contingency; and profit, bonds and insurance in construction engineering projects.		
<b>CE 6883</b>	<b>Engrd. Environmental Sys.</b>	<b>Tues / Thurs</b>	<b>09:30AM - 10:45AM</b>
	Instructor: Benjamin Magbanua , Jr.		
	(Section 501) (Prerequisite: CE 3503 & CE 3823 with grade of C or better; or consent of major advisor). Three hour lecture. Evaluation and characterization of storm water quality; selection, design and application of various treatment technologies; surface water quality management and modeling; and sustainable engineering.		
<b>CE 6913</b>	<b>Matrix Struct Analysis</b>	<b>Mon / Wed / Fri</b>	<b>12:00PM - 12:50PM</b>
	Instructor: Philip Gullett		
	(Section 501) (Prerequisite: Grade of C or better in CE 3603, or consent of instructor; or consent of major advisor). Matrix formulation and computer analysis of structures. Linear stiffness analysis of truss and frames structures.		
<b>CE 6963</b>	<b>Steel Structures</b>	<b>Mon / Wed / Fri</b>	<b>11:00AM - 11:50AM</b>
	Instructor: Seamus Freyne		
	(Section 501) (Prerequisite: Grade of C or better in CE 4953). Three hours lecture. Loads on structures. Analysis and design of steel structures using the AISC specifications. Focus on beams and columns.		
<b>CE 6983</b>	<b>Engr. Wood Structures</b>	<b>Mon / Wed / Fri</b>	<b>09:00AM - 09:50AM</b>
	Instructor: Staff		
	(Section 501) (Prerequisite: Grade of C or better in CE 3603; or consent of major advisor). Three hours lecture. Loads on structures. Analysis and design of wood structures using the appropriate specifications. Focus on beams and columns.		

<b>CE 8443</b>	<b>Soil Behavior</b>	<b>Tues / Thurs</b>	<b>03:30PM - 04:45PM</b>
	Instructor: Jeremiah Stache		
	(Section 501) (Prerequisite: Consent of Major Advisor). Three hours lecture. Review of methods of testing to define response; rationale for choosing shear strength and deformation parameters for soils for design applications.		
<b>CE 8593</b>	<b>Environmental Hydrology</b>	<b>Tues / Thurs</b>	<b>12:30PM - 01:45PM</b>
	Instructor: Staff		
	(Section 501) (Prerequisite: Consent of Major Advisor). Three hours lecture. Discuss hydrologic cycle and its effects on water quality; principles and models for pollutant transport and transformations in surface runoff, in-stream, unsaturated soil, and groundwater.		
<b>CE 8803</b>	<b>Un Pro-Op Env Eng I</b>	<b>Tues / Thurs</b>	<b>02:00PM - 03:15PM</b>
	Instructor: Staff		
	(Section 501) (Prerequisite: Consent of Major Advisor). Three hours lecture. Theory and application of physical and chemical unit processes and operations available for the treatment of water and wastewater.		
<b>CHE 6113</b>	<b>Chem Reactor Design</b>	<b>Mondays Tues / Thurs</b>	<b>06:00PM - 08:50PM 12:30PM - 01:45PM</b>
	Instructor: Hossein Toghiani		
	(Section 501) (Prerequisites: Grade of C or better in CHE 3123 and MA 3253). Three hours lecture. The fundamentals of chemical reaction kinetics with applications.		
<b>CHE 8011</b>	<b>Chem En Seminar</b>	<b>Fridays</b>	<b>02:00PM - 04:50PM</b>
	Instructor: Billy Elmore		
	(Section 501) (Prerequisite: Graduate standing). Library assignments and reports on the current chemical engineering literature.		
<b>CHE 8113</b>	<b>Adv Che En Thermo</b>	<b>Tues / Thurs</b>	<b>11:00AM - 12:15PM</b>
	Instructor: Neeraj Rai		
	(Section 501) (Prerequisites: CHE 3123 and CHE 4113 or equivalent). Three hours lecture. Advanced study of fundamental laws of thermodynamics as applied to unit operations, nonideal fluids and solutions, chemical equilibria, electrochemistry and similar topics.		
<b>CHE 8223</b>	<b>Adv Process Comp</b>	<b>Tues / Thurs</b>	<b>09:30AM - 10:45AM</b>
	Instructor: Dong Meng		
	(Section 501) (Prerequisite: CHE 3223). Three hours lecture. Numerical methods. Numerical solution of ordinary and partial differential equations for process applications. Use of algebraic and matrix methods. Digital computer applications.		
<b>CSE 6233</b>	<b>SW Arch &amp; Design</b>	<b>Tues / Thurs</b>	<b>02:00PM - 03:15PM</b>
	Instructor: Tanmay Bhowmik		
	(Section 501) (Prerequisite: Grade of C or better in CSE 4214/6214). Three hours lecture. Topics include software architectures, methodologies, model representations, component-based design, patterns, frameworks, CASE-based designs, and case studies.		
<b>CSE 6243</b>	<b>Info &amp; Computer Secur</b>	<b>Mon / Wed / Fri</b>	<b>10:00AM - 10:50AM</b>
	Instructor: George Trawick		
	(Section 501) (Prerequisite: Credit in CSE 3183). Three hours lecture. Topics include encryption systems, network security, electronic commerce, systems threats, and risk avoidance procedures.		

<b>CSE 6253</b>	<b>Secure Software Engineering</b>	<b>Mon / Wed</b>	<b>02:00PM - 03:15PM</b>
	Instructor: Stephen Torri		
	(Section 501) (Prerequisite: CSE 2213 and CSE 2383 both with a grade of C or better). Three hours lecture Principles, techniques, and practices involved in building security into software systems including security requirements analysis, secure design, secure coding and security testing, verification and risk.		
<b>CSE 6273</b>	<b>Intro to Computer Forensics</b>	<b>Mon / Wed / Fri</b>	<b>09:00AM - 09:50AM</b>
	Instructor: George Trawick		
	(Section 501) (Prerequisite: Senior standing in CSE/SE/CPE/MIS/CJ) Three hours lecture. Introduction to computer crime and the study of evidence for solving computer-based crimes. Topics: computer crime, computer forensics and methods for handling evidence.		
<b>CSE 6633</b>	<b>Artificial Intell</b>	<b>Tues / Thurs</b>	<b>12:30PM - 01:45PM</b>
	Instructor: Eric Hansen		
	(Section 501) (Prerequisite: Grade of C or better in CSE 2383 and CSE 2813) Three hours lecture. Study of the computer in context with human thought processes. Heuristic programming; search programming; search strategies; knowledge representation; natural language understanding; perception; learning.		
<b>CSE 6683</b>	<b>Machine Learning and Soft Comp</b>	<b>Tues / Thurs</b>	<b>09:30AM - 10:45AM</b>
	Instructor: Shahram Rahimi		
	(Section 501) (Prerequisite: IE 4613 Engineering Statistics I or MA 4543 Intro Math Stat I or MA 4523 Intro to Probability or equivalent). An introduction to the field of machine learning and soft computing. Covers rule based expert systems, fuzzy expert systems, artificial neural networks, evolutionary computation, and hybrid systems.		
<b>CSE 6833</b>	<b>Intro to Algorithms</b>	<b>Mon / Wed</b>	<b>12:30PM - 01:45PM</b>
	Instructor: Maxwell Young		
	(Section 501) (Prerequisites: CSE 2383 and CSE 2813 with a grade of C or better). Three hours lecture. Study of complexity of algorithms and algorithm design. Tools for analyzing efficiency; design of algorithms, including recurrence, divide-and-conquer, dynamic programming and greedy algorithms.		
<b>CSE 8423</b>	<b>Data Science Concepts &amp; Pract</b>	<b>Tues / Thurs</b>	<b>11:00AM - 12:15PM</b>
	Instructor: John Swan , II		
	(Section 501) Three hours lecture. This course introduces the fundamental concepts of data science, covering data representation and transformation, visual data analysis, statistical modeling, tidy and relational data, functional data-flow programming, and communicating results. The course introduces the practice of data science, using standard data science tools and languages.		
<b>CSE 8673</b>	<b>Machine Learning</b>	<b>Mon / Wed</b>	<b>02:00PM - 03:15PM</b>
	Instructor: Zhiqian Chen		
	(Section 501) (Prerequisite: CSE 4633/6633). Three hours lecture. Introduction to machine learning, including computational learning theory, major approaches to machine learning, evaluation of models, and current research.		
<b>CSE 8753</b>	<b>Wireless Networks</b>	<b>Mon / Wed</b>	<b>12:30PM - 01:45PM</b>
	Instructor: Andy Perkins		
	(Section 501) Three hours lecture. Wireless network protocol design, theoretical analysis, and security and privacy. (Same as ECE 8823).		

<b>CSE 8833</b>	<b>Algorithms</b>	<b>Mon / Wed</b>	<b>03:30PM - 04:45PM</b>
	Instructor: Ioana Banicescu		
	(Section 501) (Prerequisites: CSE 4833/6833). Three hours lecture. Advanced techniques for designing and analyzing algorithms, advanced data structures, case studies, NP-completeness including reductions, approximation algorithms.		
<b>ECE 6423</b>	<b>Intro to Remote Sensing</b>	<b>Tues / Thurs</b>	<b>03:30PM - 04:45PM</b>
	Instructor: Qian Du		
	(Section 501) (Prerequisite: senior or graduate standing, or consent of instructor.) Three hours lecture. Electromagnetic interaction passive sensors, multispectral and hyperspectral optical sensors, active sensors, imaging radar, SAR, Lidar, digital image processing, natural resource applications. (Same as PSS 4483/6483 and ABE 4483/6483)		
<b>ECE 6433</b>	<b>Introduction to Radar</b>	<b>Mon / Wed</b>	<b>03:30PM - 04:45PM</b>
	Instructor: John Ball		
	(Section 501) (Prerequisite: ECE 3443 or permission of instructor). Three hours lecture. An overview of the basic concepts of radar including transmitters, receivers, target detection, antennas, signal processing, and tracking.		
<b>ECE 6613</b>	<b>Pwr Transmission Sys</b>	<b>Tues / Thurs</b>	<b>11:00AM - 12:15PM</b>
	Instructor: Yong Fu		
	(Section 501) (Prerequisite: Grade of C or better in ECE 3614). Three hours lecture. Transmission of power from generator to distribution system; transmission line design; load flow; symmetrical components; balanced/unbalanced faults; stability.		
<b>ECE 6643</b>	<b>Pwr Sy Relay Control</b>	<b>Mon / Wed</b>	<b>02:00PM - 03:15PM</b>
	Instructor: David Wallace		
	(Section 501) (Prerequisite: Grade of C of better in ECE 4613). Three hours lecture. Protection objectives and fundamentals; inputs; protection of generators, transformers, busses and lines; stability and control.		
<b>ECE 6653</b>	<b>Intro to Power Elect.</b>	<b>Tues / Thurs</b>	<b>08:00AM - 09:15AM</b>
	Instructor: Seungdeog Choi		
	(Section 501) (Prerequisite: Grade of C or better in both ECE 3614 and ECE 3424 or equivalent). Three hours lecture. Introduction to power electronic circuits, with emphasis on design and analysis of power semiconductor converters including DC-DC converters, PWM inverters, and DC power supplies.		
<b>ECE 6713</b>	<b>Computer Architecture</b>	<b>Tues / Thurs</b>	<b>09:30AM - 10:45AM</b>
	Instructor: Chaomin Luo		
	(Section 501) (Prerequisites: Grade of C or better in ECE 3724). Three hours lecture. Detailed design and implementation of a stored-program digital computer system. Designs for the CPU, I/O subsystems, and memory organizations. ALU design and computer arithmetic.		
<b>ECE 6743</b>	<b>Digital Sys Design</b>	<b>Mon / Wed</b> <b>TBA</b>	<b>11:00AM - 11:50AM</b> <b>TBA</b>
	Instructor: Bryan Jones		
	(Section 501) (Prerequisites: Grade of C or better in ECE 3724. Credit or registration in ECE 3424 or ECE 3244). Two hours lecture. Three hours laboratory. Hierarchical digital design using available design software. Computer aided design workstations will be used to give students access to state-of-the-art design techniques.		

<b>ECE 6753</b>	<b>Intro to Robotics</b>	<b>Tues / Thurs</b>	<b>02:00PM - 03:15PM</b>
	Instructor: Chaomin Luo		
	(Section 501) (Prerequisite: Grade of C or better in ECE 3443). Three hours lecture. This course covers mathematical foundations (kinematics and dynamics), manipulation, modeling, motion planning, robot control, and hardware implementations of actuators and sensors for modern robots.		
<b>ECE 8683</b>	<b>Power Sys Opt &amp; Control</b>	<b>Tues / Thurs</b>	<b>12:30PM - 01:45PM</b>
	Instructor: Yong Fu		
	(Section 501) (Prerequisite: Grade of C or better in ECE 4613 or ECE 6613). Three hours lecture. Power generation characteristics; network modeling; economic dispatch; unit commitment; security constrained unit commitment; hydrothermal coordination.		
<b>ECE 8813</b>	<b>Information Theory</b>	<b>Mon / Wed / Fri</b>	<b>12:00PM - 12:50PM</b>
	Instructor: Chun-Hung Liu		
	(Section 501) (Prerequisite: ECE 8803 or consent of instructor). Three hours lecture. Entropy, the asymptotic equipartition property, entropy rate, data compression, channel capacity, differential entropy, the Gaussian channels, rate-distortion theory.		
<b>ECE 8943</b>	<b>Optimal Control Dyna Sys</b>	<b>Mon / Wed / Fri</b>	<b>01:00PM - 01:50PM</b>
	Instructor: Masoud Karimi-Ghartemani		
	(Section 501) (Prerequisite: ASE 4123 or ECE 4913/6913 or equivalent). Three hours lecture. State variable description of systems; maximum principle of Pontryagin, dynamic programming, optimization of linear systems with quadratic performance measures; time optimal and fuel optimal systems. (Same as ASE 8863).		
<b>ECE 9100</b>	<b>Graduate Seminar</b>	<b>TBA</b>	<b>TBA</b>
	Instructor: Qian Du		
	(Section 501) Presentations and discussions by faculty, guest speakers, and graduate students on current topics in the areas of electrical and computer engineering. Must be taken three times before graduation for doctoral degree. Repeatable up to three times.		
<b>EM 6143</b>	<b>Eng Design Optimization</b>	<b>TBA</b>	<b>TBA</b>
	Instructor: Chuangchuang Sun		
	(Section 501) (Prerequisite: Consent of instructor) Three hours lecture. Introduction to optimality criteria and optimization techniques for solving constrained or unconstrained optimization problems. Sensitivity analysis and approximation. Computer application in optimization. Introduction to MDO. (Same as ASE 4553/6553 and IE 4743/6743).		
<b>EM 8203</b>	<b>Appl Elasticity</b>	<b>Mon / Wed / Fri</b>	<b>01:00PM - 01:50PM</b>
	Instructor: Douglas Bammann		
	(Section 501) Three hours lecture. Analysis of stress and strain; stress-strain relations; bending and torsion of beams; stress functions; strain energy.		
<b>GE 8003</b>	<b>MENG Capstone</b>	<b>TBA</b>	<b>TBA</b>
	Instructor: Kari Reeves (P) / Tamra Swann		
	(Section 501) Three hours lecture. An individualized professional project course open only to candidates for the Master of Engineering. Formal written paper and presentation are required.		



<b>IE 6333</b>	<b>Prod Control Sys I</b>	<b>TBA</b>	<b>TBA</b>
	Instructor: Wenmeng Tian		
	(Section 501) (Prerequisite: Grade of C or better in IE 4613). Three hours lecture. Principles, analysis, and design of production and inventory planning and control. Demand for forecasting, aggregated planning, inventory management, production scheduling and control systems.		
<b>IE 6513</b>	<b>Engineering Admin</b>	<b>TBA</b>	<b>TBA</b>
	Instructor: Lesley Strawderman		
	(Section 501) (Prerequisite: Junior or graduate standing in engineering). Three hours lecture. Study of problems confronting the engineering manager. Includes: Organization and communication theory, internal and external relationships and responsibilities, and designing and implementing managerial systems.		
<b>IE 6573</b>	<b>Process Imprvmnt Eng</b>	<b>TBA</b>	<b>TBA</b>
	Instructor: Junfeng Ma		
	(Section 501) Three hours lecture. Introduction to quality and productivity improvement methodologies and tools. The design and implementation of continuous improvement systems in organizations.		
<b>IE 6613</b>	<b>Eng Statistics I</b>	<b>TBA</b>	<b>TBA</b>
	Instructor: Nazanin Morshedlou		
	(Section 501) (Prerequisite: MA 1723). Three hours lecture. Introduction to statistical analysis. Topics include: probability, probability distributions, data analysis, parameter estimation, statistical intervals, and statistical inferences.		
<b>IE 6623</b>	<b>Eng Statistics II</b>	<b>TBA</b>	<b>TBA</b>
	Instructor: Nazanin Morshedlou		
	(Section 501) (Prerequisite: Grade of C or better in IE 4613). Three hours lecture. Continuation of IE 4613/6613. Introduction to engineering applications of regression, experimental design and analysis, and nonparametric methods.		
<b>IE 6653</b>	<b>Ind Qual Control I</b>	<b>TBA</b>	<b>TBA</b>
	Instructor: Staff		
	(Section 501) (Prerequisite: IE 4613). Three hours lecture. The theory and application of statistical quality control; statistical process control; and statistical acceptance sampling.		
<b>IE 6683</b>	<b>Machine Learning with IE Appli</b>	<b>TBA</b>	<b>TBA</b>
	Instructor: Wenmeng Tian		
	(Section 501) (Prerequisite: IE 4613/6613: Engineering Statistics I or equivalent; an approved computer programming elective course). Three hours lecture. An introduction to machine learning model design and development for use in IE applications. The topics will include the foundation of Python computational tools, regression, classification, and unsupervised learning.		
<b>IE 6743</b>	<b>Eng Design Optimization</b>	<b>Tues / Thurs</b>	<b>12:30PM - 01:45PM</b>
	Instructor: Chuangchuang Sun		
	(Section 501) (Prerequisite: Consent of instructor). Three hours lecture. Introduction to optimality criteria and optimization techniques for solving constrained or unconstrained optimization problems. Sensitivity analysis and approximation. Computer application in optimization. Introduction to MDO. (Same as ASE 4553/6553 and EM 4143/6143).		

<b>IE 6753</b>	<b>Systems Engr &amp; Analysis</b>	<b>TBA</b>	<b>TBA</b>
	Instructor: Vidanelage Dayarathna		
	(Section 501) (Prerequisite: Grade of C or better in IE 3913 and IE 4613). Three hours lecture. Systems concepts, methodologies, models and tools for analyzing, designing, and improving new and existing human-made systems.		
<b>IE 6773</b>	<b>Sys Simulation I</b>	<b>TBA</b>	<b>TBA</b>
	Instructor: Seunghan Lee		
	(Section 501) (Prerequisite: Grade of C or better in IE 4934, IE 4933 or equivalent programming course, Co-requisite: IE 4623). Three hours lecture. The principles of simulating stochastic systems with an emphasis on the statistics of simulation and the use of discrete-event simulation languages.		
<b>IE 8583</b>	<b>Enterprise Systems Engineering</b>	<b>TBA</b>	<b>TBA</b>
	Instructor: Brian Smith		
	(Section 501) (Prerequisite: Consent of instructor). Three hours lecture. Focuses on the design and improvement of an enterprise through the use of engineering tools and methods, based on the systems perspective of industrial engineering.		
<b>IE 8743</b>	<b>Nonlinear Prog I</b>	<b>TBA</b>	<b>TBA</b>
	Instructor: Haifeng Wang		
	(Section 501) (Prerequisite: IE 4733 or MA 4733). Three hours lecture. Optimization of nonlinear functions; quadratic programming, gradient methods, integer programming; Lagrange multipliers and Kuhn-Tucker theory.		
<b>ME 6123</b>	<b>Failure of Eng. Mat'l</b>	<b>Mon / Wed / Fri</b>	<b>01:00PM - 01:50PM</b>
	Instructor: Tonya Stone		
	(Section 501) (Prerequisite: EM 3213) Three hours lecture. The failure of constituent materials using real-world case studies is the focus. Experimental and analytical techniques for failure analysis and prevention are covered. (Same as CE 4323/6323).		
<b>ME 6133</b>	<b>Mechanical Metallurgy</b>	<b>Tues / Thurs</b>	<b>09:30AM - 10:45AM</b>
	Instructor: Matthew Priddy		
	(Section 501) (Prerequisite: ME 3403 or equivalent). Three hours lecture. The mechanical and metallurgical fundamentals of metals are discussed. Mechanical fundamentals cover the stress and strain relationships and metallurgical fundamentals cover the microstructure.		
<b>ME 6543</b>	<b>Combustion Engines</b>	<b>Tues / Thurs</b>	<b>08:00AM - 09:15AM</b>
	Instructor: Joonsik Hwang		
	(Section 501) (Prerequisites: ME 3523 and ME 3313). Three hours lecture. Application of thermodynamics, heat transfer, and combustion in the determination of performance characteristics of various engines, e.g., internal combustion, jet, and rocket engines		
<b>ME 8011</b>	<b>Graduate Seminar</b>	<b>Mondays</b>	<b>02:00PM - 03:50PM</b>
	Instructor: Tonya Stone		
	(Section 501) Presentation and discussion of research and current mechanical engineering literature by students, faculty, and visiting lecturers. Attendance required for students in Mechanical Engineering Graduate Program.		

<b>ME 8213</b>	<b>Engineering Anal I</b>	<b>Tues / Thurs</b>	<b>02:00PM - 03:15PM</b>
	Instructor: Doyl Dickel		
	(Section 501) Three hours lecture. The formulation of mathematical methods of advanced engineering problems and the use of mathematical techniques for their solution: equilibrium, eigenvalue, and propagation problems.		
<b>ME 8243</b>	<b>Finite Element In Me</b>	<b>Tues / Thurs</b>	<b>11:00AM - 12:15PM</b>
	Instructor: Youssef Hammi		
	(Section 501) (Prerequisites: ME 4403 and EM 3213). Three hours lecture. Concepts and applications of finite element analysis in mechanical engineering problems		
<b>ME 8333</b>	<b>Convective Heat Tr</b>	<b>Mon / Wed</b>	<b>12:30PM - 01:45PM</b>
	Instructor: Like Li		
	(Section 501) Three hours lecture. Analytical and empirical methods of solution of problems in laminar and turbulent, natural and forced convective heat transfer. Stability; thermal boundary layer techniques; multiphase systems.		
<b>ME 8813</b>	<b>Viscous Flow I</b>	<b>Tues / Thurs</b>	<b>12:30PM - 01:45PM</b>
	Instructor: Shanti Bhushan		
	(Section 501) Three hours lecture. Fundamental laws of motion for a viscous fluid; classical solutions of the Navier-Stokes equations; inviscid flow solutions; laminar boundary layers; stability criteria.		

# MISSISSIPPI STATE UNIVERSITY

## Registration Information

### Admissions

All students participating in the off-campus program should contact Tamra Swann to get information on the Admissions and Registration process. Tamra Swann (662-325-3786) is the Bagley Distance Education Coordinator and will assist students in pursuing their master's degree. Please note that if you are unable to meet established admissions deadlines, you may apply for admission as an Unclassified student. Up to 9 hours of graduate credit taken as an Unclassified student may be earned for use toward a graduate degree. For more information, please see <https://www.bagley.msstate.edu/distance/deadlines/>.

### Registration

Registration for Fall 2023 is ongoing through August 1st for applicants applying for online degree programs. For unclassified students, the registration deadline for Fall 2023 is 11:59 PM (CST) before the first day of class. Applications can be started at <https://apply.grad.msstate.edu/>.

### Tuition for Fall 2023

To view the graduate tuition fees for MSU's distance education program courses, please check the 'Online Education' tab at <https://www.controller.msstate.edu/accountservices/tuition/>.

### Textbooks

Students wishing to order textbooks can do so by visiting the MSU Bookstore website at <https://msstate.bncollege.com/shop/msu/home> or calling at (662) 325-8361. Students can also visit the Campus Book Mart website at <https://www.campusbookmart.net/cbm/> or call them at (662) 323-7660.

### Important Dates

August 16 <sup>th</sup>	Classes begin
August 22 <sup>nd</sup>	Last day to drop a course without a grade (5th class day) 11:59 p.m.
August 23 <sup>rd</sup>	Last day to register or add a course (6th class day) 5:00 p.m.
November 29 <sup>th</sup>	Classes end
December 1 <sup>st</sup>	Final exams begin

For questions about registration and schedule changes, contact Tamra Swann at 662.325.3786 or [tswann@bagley.msstate.edu](mailto:tswann@bagley.msstate.edu).

*For more information about the Bagley College of Engineering and the degree programs they offer, please see <https://www.bagley.msstate.edu/>.*