

Technical Elective Course Options by Interest Area

When selecting technical elective courses, students must confirm the course will satisfy the elective requirements for their curriculum.

See the MNE Advising website for the full description of Technical Elective Requirements specific to your curriculum:

<https://www.mne.k-state.edu/student-success/advising/>

This is not an all-inclusive listing of options. Use your DARS report, Course Schedule, Course Catalog, and consult your Academic Advisor.

Aerospace

ME 312	Advanced Engineering Graphics (3)
ME 563	Machine Design II (3)
ME 610	Finite Element Applications in ME (3)
ME 628	Aerodynamics (3)
ME 631	Aircraft Propulsion (3)
ME 640	Control of Mechanical Systems II (3)
ME 651	Introduction to Composites (3)
ME 720	Intermediate Fluid Mechanics (3)

Agriculture

BAE 345	Properties of Biological Materials (2)
BAE 346	Properties of Biological Materials Lab (1)
BAE 350	Off Road Machinery Systems (2)
BAE 351	Machinery Systems Lab (1)
BAE 450	Off Road Machine Power Components (3)
BAE 750	Analysis and Design of Off Road Vehicles (3)
ME 563	Machine Design II (3)
ME 610	Finite Element Applications in ME (3)
ME 656	Mechanical Vibrations (3)

Automatic Controls

CIS 209	Computer Programming for Engineers (3)
BAE 640	Instrumentation & Control for Biological Systems (3)
ECE 241	Intro to Electrical & Computer Engineering (3)
ECE 431	Microcontrollers (3)
ECE 441	Design of Digital Systems (3)
ECE 631	Microcomputer Systems Design (3)
IMSE 662	Computer Aided Manufacturing (3)
IMSE 664	Additive Manufacturing (3)
MATH 630	Introduction to Complex Analysis (3)
ME 615	Applications in Mechatronics (3)
ME 628	Aerodynamics I (3)
ME 640	Control of Mechanical Systems II (3)
ME 656	Mechanical Vibrations (3)
ME 716	Intermediate Dynamics (3)
ME 728	Computer Control of Electromechanical Systems (3)
ME 730	Control Systems Analysis & Design (3)
ME 760	Engineering Analysis I (3)

Automotive

BAE 450	Off Road Machine Power Components (3)
IMSE 251	Manufacturing Processes Lab (1)
ME 312	Advanced Engineering Graphics (3)
ME 563	Machine Design II (3)
ME 610	Finite Element Applications in ME (3)
ME 615	Applications in Mechatronics (3)
ME 620	Internal Combustion Engines (3)
ME 626	Intro to Micro-Electromechanical Systems (3)
ME 651	Intro to Composites (3)
ME 656	Mechanical Vibrations (3)

Business / Management / Law / Technical Sales

ACCTG 231	Introduction to Managerial Accounting (3)
ACCTG 241	Introduction to Financial Accounting (3)
ENTRP 340	Business Innovation & Entrepreneurial Mindset (3)
ENTRP 350	Technology & Innovation Management (3)
ENTRP 540	Entrepreneurial Consulting (3)
FINAN 450	Principles of Finance (3)
IMSE 501	Introduction to Industrial Management (3)
IMSE 541	Statistical Quality Control (3)
IMSE 605	Advanced Industrial Management (3)
MANGT 220	Principles of Management (3)
MANGT 230	Business Law I (3)
MANGT 221	Intro to Operations & Supply Chain Management (3)
MANGT 520	Organizational Behavior (3)
MANGT 522	Operations Planning & Control (3)
MANGT 530	Labor Relations & Negotiations (3)
MKTG 250	Intro to Marketing (3)
MKTG 547	International Business (3)
MKTG 550	Business to Business Marketing (3)
SALES 542	Fundamentals of Professional Selling (3)
SALES 555	Sales Technology (3)
SALES 560	Sales Force Leadership (3)

Computer Science

CC 210	Fundamental Computer Programing Concepts (4)
CC 310	Data Structures & Algorithms I (3)
CC 315	Data Structures & Algorithms II (3)
CC 410	Advanced Programing (4)
CIS 200	Programing Fundamentals (4)
CIS 209	Computer Programing for Engineers (3)
CIS 300	Data and Program Structures (3)
CIS 301	Logical Foundations of Programing (3)
ECE 241	Intro to Electrical & Computer Engineering (3)

Consumer Products/Industrial Design

ENTRP 350	Technology & Innovation Management (3)
IMSE 251	Manufacturing Processes Lab (1)
IMSE 541	Statistical Quality Control (3)
IMSE 563	Manufacturing Processes Engineering (3)
IMSE 564	Product and Process Engineering (3)
IMSE 610	Occupational Safety Engineering (3)
IMSE 623	Industrial Ergonomics (3)
IMSE 633	Production Planning and Inventory Control (3)
IMSE 641	Quality Engineering (3)
IMSE 643	Industrial Simulation (3)
IMSE 662	Computer Aided Manufacturing (3)
IMSE 685	Principles Manufacturing Information Systems (3)
INDD 325	Human Factors in Industrial Design (3)
INDD 350	Product Semantics (3)
INDD 500	Materials & Manufacturing Processes (3)
IAID 456	Introduction to Industrial Design (2)
ME 312	Advanced Engineering Graphics (3)
ME 563	Machine Design II (3)

Health Sciences / Biomedical

BME 200	Intro to Biomedical Engineering (3)
BME 430	Biomaterials (3)
BME 451	Biomechanical Engineering (3)
BIOL 198	Principles of Biology (4)
CHM 230	Chemistry II (4)
ME 626	Intro to Micro-Electromechanical Systems (3)
ME 627	Intro Biomedical Micro-Electromech Systems (3)
NE 690	Radiation Protection and Shielding (3)
NE 691	Principles of Radiation and Human Health (3)

Heating, Ventilating, Air Conditioning, Refrigeration

ME 523	Thermodynamics II (3)
ME 610	Finite Element Applications in ME (3)
ME 622	Indoor Environmental Engineering (3)
ME 721	Thermal Systems Design (3)
ME 722	Human Thermal Engineering (3)
ME 773	Intermediate Heat Transfer (3)

Manufacturing / Machine Tools

ECE 241	Intro to Electrical & Computer Engineering (3)
ECE 431	Microcontrollers (3)
ECE 441	Design of Digital Systems (3)
IMSE 251	Manufacturing Processes Lab (1)
IMSE 252	Welding Laboratory (1)
IMSE 255	Computer Numerical Control Lab (1)
IMSE 541	Statistical Quality Control (3)
IMSE 563	Manufacturing Processes Engineering (3)
IMSE 564	Product & Process Engineering (3)
IMSE 610	Occupational Safety Engineering (3)
IMSE 623	Industrial Ergonomics (3)
IMSE 662	Computer Aided Manufacturing (3)
IMSE 664	Additive Manufacturing (3)
ME 312	Advanced Engineering Graphics (3)
ME 610	Finite Element Applications in ME (3)
ME 730	Control Systems Analysis & Design (3)

Nuclear

BIOCH 521	General Biochemistry (3)
BIOL 198	Principles of Biology (4)
BIOL 450	Modern Genetics (4)
CHM 230	Chemistry II (4)
CHM 350	General Organic Chemistry (3)
ECE 525	Electronics I (3)
ECE 581	Energy Conversion (3)
ME 760	Engineering Analysis I (3)
ME 777	Monte Carlo Methods (3)
NE 350	Reactor Operations Laboratory (3)
NE 612	Principles of Radiation Detection (3)
NE 620	Problems in Nuclear Engineering
NE 630	Nuclear Reactor Theory (3)
NE 640	Nuclear Reactor Thermal Hydraulics (3)
NE 648	Nuclear Reactor Laboratory (3)
NE 690	Radiation Protection & Shielding (3)
NE 691	Principles of Radiation & Human Health (3)
NE 737	Intermed. Radiation Measurement Applications (3)
NE 761	Radiation Measurement Systems (3)
NE 799	Special Topics in Nuclear Engineering
PHYS 325	Physics III, Relativity & Quantum Physics (4)

Energy Systems

BAE 651	Air Pollution Engineering (3)
ME 523	Thermodynamics II (3)
ME 563	Machine Design II (3)
ME 620	Internal Combustion Engines (3)
ME 631	Aircraft Propulsion (3)
ME 633	Thermodynamics of Modern Power Production (3)
ME 720	Intermediate Fluid Mechanics (3)
ME 721	Thermal Systems Design (3)
ME 773	Intermediate Heat Transfer (3)
NE 630	Nuclear Reactor Theory (3)

Solid Mechanics / Machine Design

BAE 345	Properties of Biological Materials (2)
BAE 350	Off Road Machinery Systems (2)
BAE 351	Machinery Systems Lab (1)
BAE 450	Off Road Machine Power Components (3)
BAE 750	Analysis and Design of Off Road Vehicles (3)
CE 534	Mechanics & Materials Laboratory (1)
CE 537	Introduction to Structural Analysis (3)
CHE 356	Fundamentals of Electrical Properties (1)
CHE 661	Processing of Materials For Solid State Devices (3)
CHE 681	Engineering Materials II (3)
IMSE 251	Manufacturing Processes Lab (1)
IMSE 252	Welding Laboratory (1)
IMSE 255	Computer Numerical Control Lab (1)
IMSE 563	Manufacturing Processes Engineering (3)
IMSE 564	Product & Process Engineering (3)
IMSE 610	Occupational Safety Engineering (3)
IMSE 623	Industrial Ergonomics (3)
IMSE 662	Computer Aided Manufacturing (3)
ME 312	Advanced Engineering Graphics (3)
ME 532	Experimental Strength of Materials (3)
ME 543	Intermediate Mechanics of Materials (3)
ME 563	Machine Design II (3)
ME 610	Finite Element Applications in ME (3)
ME 651	Intro to Composites (3)
ME 656	Mechanical Vibrations (3)
ME 716	Intermediate Dynamics (3)
ME 738	Experimental Stress Analysis (3)
ME 760	Engineering Analysis I (3)

Thermal Science / Fluid Mechanics

BAE 651	Air Pollution Engineering (3)
CHM 230	Chemistry II (4)
ME 523	Thermodynamics II (3)
ME 610	Finite Element Applications in ME (3)
ME 620	Internal Combustion Engines (3)
ME 622	Indoor Environmental Engineering I (3)
ME 626	Intro to Micro-Electromechanical Systems (3)
ME 628	Aerodynamics I (3)
ME 631	Aircraft Propulsion (3)
ME 633	Thermo of Modern Power Production (3)
ME 720	Intermediate Fluid Mechanics (3)
ME 721	Thermal Systems Design (3)
ME 722	Human Thermal Engineering (3)
ME 773	Intermediate Heat Transfer (3)
ME 760	Engineering Analysis I (3)
NE 640	Nuclear Reactor Thermal Hydraulics (3)