Suggested Technical Electives by Subject Area
Mechanical & Nuclear Engineering

Solid Mechanics / Machine Design

ME 563	Machine Design II. (3) I, II. Pr.: ME 533.
ME 610	Finite Element Appl in ME. (3) I. Pr.: CE 533. Co-req: ME 573.
ME 651	Introduction to Composites. (3) I. Pr.: CE 533 and senior standing in engineering.
ME 656	Machine Vibrations I. (3) II. Pr.: ME 512 and MATH 240.
ME 716	Intermediate Dynamics. (3) II. Pr.: ME 512 and MATH 240.
ME 738	Experimental Stress Analysis. (3) I, in even years. Pr. or conc.: CE 533.
ME 760	Engineering Analysis I. (3) I. Pr.: MATH 240 and senior standing.
CIS 209	C Programming for Engineers. (3) I, II, S. Pr .: MATH 220.
BAE 350	Agricultural Machinery Systems. (2) I. Pr.: ATM 160 or PHYS 113 or one year of high school physics.
BAE 500	Properties of Biological Materials. (2) II. Pr.: PHYS 213.
BAE 750	Analysis and Design of Off-Highway Vehicles. (3) II, on sufficient demand. Pr.: BAE 536 or ME 574.
CHE 356	Corrosion. (1) I, II. Pr.: CHE 350 or 352.
CHE 648	Processing of Composite Materials. (3) I, II. Pr.: CHE 350 or 352.
CHE 650	Hazardous Waste Engineering Seminar. (1) I, II, S. Pr.: CHM 230.
CHE 653	Ceramic Materials. (3) I, II. Pr.: CHE 350 or 352.
CHE 661	Processing of Materials for Solid State Devices. (3) I, II. Pr.: CHE 350 or 352.
CHE 681	Engineering Materials II. (3) I, II, S. Pr.: CHE 350 or 352.
CE 534	Mechanics of Materials Laboratory. (1) I, II. Pr. or conc.: CE 533.
IMSE 251	Manufacturing Processes Laboratory. (1), I, II. Pr. or conc.: IMSE 250.
IMSE 252	Welding Laboratory. (1) I.
IMSE 253	Net Shape Manufacturing Laboratory. (1) I. Pr. or conc.: IMSE 250, ME 212.
IMSE 254	Machining Laboratory. (1) I, II. Pr. or conc.: IMSE 250, ME 212.
IMSE 255	Computer Numerical Control Laboratory. (1) II. Pr.: IMSE 253 or 254.
IMSE 563	Manufacturing Processes Engineering. (4) II. Pr.: IMSE 250 and IMSE 251, CHE 352, CE 530 or statics equiv.
IMSE 564	Product and Process Engineering. (3) I. Pr.: IMSE 250 and IMSE 530.
IMSE 610	Occupational Safety Engineering. (3) II. Pr.: IMSE 250 and IMSE 251.
IMSE 623	Industrial Ergonomics. (3) I, II. Pr. or conc.: STAT 510.
IMSE 662	Computer Aided Manufacturing. (3) I. Pr.: IMSE 250 and IMSE 251 and CIS 209 or equiv.
STAT 490	Statistics for Engineers. (1) I, II.
STAT 491	Statistics for Engineers II. (1) I, II. Pr.: STAT 490.
STAT 510	Introductory Probability and Statistics I. (3) I, II. Pr.: MATH 221.
STAT 511	Introductory Probability and Statistics II. (3) II. Pr.: STAT 510.

Thermal Science / Fluid Mechanics

ME 523	Thermodynamics II. (3) I, II. Pr.: ME 513.
ME 610	Finite Element Appl in ME. (3) I. Pr.: CE 533. Co-req: ME 573.
ME 620	Internal Combustion Engines. (3) I, in even years. Pr.: ME 523.
ME 622	Indoor Environmental Engineering. (3) II, in even years. Pr. or conc.: ME 573.
ME 628	Aerodynamics. (3) I. Pr.: ME 571 and MATH 240.
ME 631	Aircraft and Missile Propulsion. (3) II, in odd years. Pr.: ME 523, 571, and MATH 240.
ME 633	Thermodynamics of Modern Power Cycles. (3) I, in odd years. Pr.: ME 513.
ME 720	Intermediate Fluid Mechanics. (3) I. Pr.: ME 571, MATH 240.
ME 721	Thermal Systems Design. (3) II, in odd years. Pr.: ME 573.
ME 722	Human Thermal Engineering. (3) I, in odd years. Pr.: ME 573.
ME 760	Engineering Analysis I. (3) I Pr.: MATH 240 and senior standing.
ME 773	Intermediate Heat Transfer. (3) II. Pr.: ME 573.
CIS 209	C Programming for Engineers. (3) I, II, S. Pr .: MATH 220.
BAE 651	Air Pollution Engineering. (3) II. Pr.: ME 513, 571.
CHM 230	Chemistry II. (4) I, II, S. Pr.: CHM 210.
STAT 490	Statistics for Engineers. (1) I, II.
STAT 491	Statistics for Engineers II. (1) I, II. Pr.: STAT 490.
STAT 510	Introductory Probability and Statistics I. (3) I, II. Pr.: MATH 221.
STAT 511	Introductory Probability and Statistics II. (3) II. Pr.: STAT 510.
IMSE 610	Occupational Safety Engineering. (3) II. Pr.: IMSE 250 and IMSE 251.

Automatic Controls

ME 635	Dynamics of Flight—Stability and Control. (3) II, in odd years. Pr. or conc.: ME 570.
ME 640	Control of Mechanical Systems II. (3) I. Pr.: ME 570, MATH 551.
ME 656	Machine Vibrations I. (3) II. Pr.: ME 512 and MATH 240.
ME 716	Intermediate Dynamics. (3) II. Pr.: ME 512 and MATH 240.
ME 730	Control Systems Analysis and Design. (3) II. Pr.: EECE 530 or ME 640. Same as EECE 730.
ME 760	Engineering Analysis I. (3) I, in even years. Pr.: MATH 240 and senior standing.
CIS 209	C Programming for Engineers. (3) I, II, S. Pr.: MATH 220.
EECE 241	Introduction to Computer Engineering. (3) I, II.
EECE 431	Microcontrollers. (3) I, II. Pr.: EECE 241 and CIS 200 or 209.
EECE 541	Design of Digital Systems. (3) I, II. Pr.: EECE 431, 510 or PHYS 214.
EECE 631	Microcomputer Systems Design. (3) II. Pr.: CIS 308 or 209, EECE 431, 525 or ME 535.
CHM 230	Chemistry II. (4) I, II, S. Pr.: CHM 210.
STAT 490	Statistics for Engineers. (1) I, II.
STAT 491	Statistics for Engineers II. (1) I, II. Pr.: STAT 490.
STAT 510	Introductory Probability and Statistics I. (3) I, II. Pr.: MATH 221.
STAT 511	Introductory Probability and Statistics II. (3) II. Pr.: STAT 510.
MATH 630	Introduction to Complex Analysis. (3) I. Pr.: MATH 240.

Nuclear

NE 250	Reactor Operations Laboratory. (3) I, II, S. Pr: PHYS 213.
NE 612	Principles of Radiation Detection. (3) I. Pr.: NE 495.
NE 630	Nuclear Reactor Theory. (3) I. Pr.: MATH 240, NE 495.
NE 648	Nuclear Reactor Laboratory. (3) II Pr.: NE 612, NE 630.
NE 690	Radiation Protection and Shielding. (3) II. Pr.: NE 495.
NE 761	Radiation Measurement Systems. (3) II. Pr.: NE 612.
ME 760	Engineering Analysis I. (3) I Pr.: MATH 240 and senior standing.
CIS 209	C Programming for Engineers. (3) I, II, S. Pr .: MATH 220.
BIOL 198	Principles of Biology. (4) I, II, S.
CHM 230	Chemistry II. (4) I, II, S. Pr.: CHM 210.
CHM 350	General Organic Chemistry. (3) I, II, S. Conc. enrollment in CHM 351 is urged. Pr.: CHM 230 or 250.
PHYS 472	Mathematical Physics. (3) Pr.: PHYS 224, MATH 222 or conc. enrollment.
BIOL 450	Modern Genetics. (4) I, II. Pr: BIOL 198, CHM 230, MATH 100.
BIOCH 521	General Biochemistry. (3) I, II, S. Pr.: CHM 350.
EECE 525	Electronics I. (3) I, II. Pr.: STAT 510, EECE 510 or 519.
EECE 581	Energy Conversion. (3) I, II. Pr.: EECE 510 or EECE 519.
STAT 490	Statistics for Engineers. (1) I, II.
STAT 491	Statistics for Engineers II. (1) I, II. Pr.: STAT 490.
STAT 510	Introductory Probability and Statistics I. (3) I, II. Pr.: MATH 221.
STAT 511	Introductory Probability and Statistics II. (3) II. Pr.: STAT 510.

Business / Management / Law

DEN 550	Engineering Law. (3) II. Pr.: Junior standing.
ACCTG 231	Accounting for Business Operations. (3) I, II. Pr.: Sophomore standing and MATH 100.
FINAN 450	Principles of Finance. (3) I, II, S. Pr.: ECON 120, STAT 350, and ACCTG 231.
MANGT 390	Business Law I. (3) I, II. Pr.: Junior standing.
MANGT 420	Management Concepts. (3) I, II, S. Pr.: Junior standing.
MANGT 421	Introduction to Operations Management. (3) I, II, S. Pr.: MATH 205 and STAT 350.
MANGT 440	Entrepreneurship. (3) On sufficient demand. Pr.: FINAN 450, MANGT 420, MKTG 400.
MANGT 520	Organizational Behavior. (3) I, II. Pr.: MANGT 420.
MANGT 522	Operations Planning and Control. (3) II, On sufficient demand. Pr.: MANGT 421.
MANGT 530	Industrial and Labor Relations. (3) I. Pr.: Junior standing.
MANGT 653	Business Project Management. (3) I. Pr.: MANGT 420 and 421.
MKTG 400	Marketing. (3) I, II, S. Pr.: ECON 110 and 120, junior standing.
MKTG 547	International Business. (3) On sufficient demand. Pr.: MKTG 400, ACCTG 241, MANGT 420, FINAN 450.
MKTG 550	Business Marketing. (3) I. Pr.: MKTG 400.
IMSE 501	Industrial Management. (3) I, II.
IMSE 541	Statistical Quality Control. (3) I, II. Pr.: STAT 511.
IMSE 605	Advanced Industrial Management. (3) I. Pr.: IMSE 501.

Suggested Technical Electives by Industry
Mechanical & Nuclear Engineering

Automotive

IMSE 251	Manufacturing Processes Laboratory. (1), I, II. Pr. or conc.: IMSE 250, ME 212.
ME 563	Machine Design II. (3) I, II. Pr.: ME 533.
ME 610	Finite Element Appl in ME. (3) I. Pr.: CE 533. Co-req: ME 573.
ME 620	Internal Combustion Engines. (3) I, in even years. Pr.: ME 523.
ME 651	Introduction to Composites. (3) I. Pr.: CE 533 and senior standing in engineering.
ME 656	Machine Vibrations I. (3) II. Pr.: ME 512 and MATH 240.

Aerospace

ME 563	Machine Design II. (3) I, II. Pr.: ME 533.
ME 610	Finite Element Appl in ME. (3) I. Pr.: CE 533. Co-req: ME 573.
ME 628	Aerodynamics. (3) I. Pr.: ME 571 and MATH 240.
ME 631	Aircraft and Missile Propulsion. (3) II. Pr.: ME 523, 571, and MATH 240.
ME 635	Dynamics of Flight—Stability and Control. (3) II, in odd years. Pr. or conc.: ME 640.
ME 640	Control of Mechanical Systems II. (3) I. Pr.: ME 570 and MATH 551.
ME 651	Introduction to Composites. (3) I. Pr.: CE 533 and senior standing in engineering.
ME 720	Intermediate Fluid Mechanics. (3) I. Pr.: ME 571, MATH 240.

Agricultural / Construction Machinery

ME 563	Machine Design II. (3) I, II. Pr.: ME 533.
ME 610	Finite Element Appl in ME. (3) I. Pr.: CE 533. Co-req: ME 573.
ME 656	Machine Vibrations I. (3) II. Pr.: ME 512 and MATH 240.
BAE 350	Agricultural Machinery Systems. (2) I. Pr.: ATM 160 or PHYS 113 or one year of high school physics.
BAE 500	Properties of Biological Materials. (2) II. Pr.: PHYS 213.
BAE 750	Analysis and Design of Off-Highway Vehicles. (3) II, on sufficient demand. Pr.: BAE 536 or ME 574.

Consulting

ME/NE xxx	Upper level Technical Electives in your Subject Area

Consumer Products

ME 563	Machine Design II. (3) I, II. Pr.: ME 533.
IMSE 541	Statistical Quality Control. (3) I, II. Pr.: STAT 511.
IMSE 610	Occupational Safety Engineering. (3) II. Pr.: IMSE 250 and IMSE 251.
IMSE 623	Industrial Ergonomics. (3) I, II. Pr. or conc.: STAT 510
MANGT 440	Entrepreneurship. (3) On sufficient demand. Pr.: FINAN 450, MANGT 420, MKTG 400.
MKTG 400	Marketing. (3) I, II, S. Pr.: ECON 110 and 120, junior standing.

Heating, Ventilating, Air Conditioning, Refrigeration

ME 523	Thermodynamics II. (3) I, II. Pr.: ME 513.
ME 610	Finite Element Appl in ME. (3) I. Pr.: CE 533. Co-req: ME 573.
ME 622	Indoor Environmental Engineering. (3) II, in even years. Pr. or conc.: ME 573.
ME 720	Intermediate Fluid Mechanics. (3) I. Pr.: ME 571, MATH 240.
ME 721	Thermal Systems Design. (3) II, in odd years. Pr.: ME 573.
ME 722	Human Thermal Engineering. (3) I, in odd years. Pr.: ME 573.
ME 773	Intermediate Heat Transfer. (3) II. Pr.: ME 573.

Machine Tools

ME 610	Finite Element Appl in ME. (3) I. Pr.: CE 533. Co-req: ME 573.
ME 640	Control of Mechanical Systems II. (3) I. Pr.: ME 570 and MATH 551.
ME 730	Control Systems Analysis and Design. (3) II. Pr.: EECE 530 or ME 640.
EECE 241	Introduction to Computer Engineering. (3) I, II.
EECE 431	Microcontrollers. (3) I, II. Pr.: EECE 241 and CIS 200 or 209.
EECE 541	Design of Digital Systems. (3) I, II. Pr.: EECE 431, 510 or PHYS 214.
IMSE 610	Occupational Safety Engineering. (3) II. Pr.: IMSE 250 and IMSE 251.

Manufacturing

ME 563	Machine Design II. (3) I, II. Pr.: ME 533.
ME 610	Finite Element Appl in ME. (3) I. Pr.: CE 533. Co-req: ME 573.
ME 656	Machine Vibrations I. (3) II. Pr.: ME 512 and MATH 240.
IMSE 541	Statistical Quality Control. (3) I, II. Pr.: CIS 209, Pr. or conc.: STAT 511.
IMSE 563	Manufacturing Processes Engineering. (4) II. Pr.: IMSE 250 and IMSE 251, CHE 352, CE 530 or statics equiv.
IMSE 623	Industrial Ergonomics. (3) I, II. Pr. or conc.: STAT 510
MANGT 420	Management Concepts. (3) I, II, S. Pr.: Junior standing.
MANGT 421	Introduction to Operations Management. (3) I, II, S. Pr.: MATH 205 and STAT 350.

Military

AERO 211	Aerospace Studies 2B. (1) II.
AERO 311	Officer Leadership Studies 3B. (3) II.

Oil & Gas Engineering

ME 720	Intermediate Fluid Mechanics. (3) I. Pr.: ME 571, MATH 240
ME 773	Intermediate Heat Transfer. (3) II. Pr.: ME 573.

Nuclear

NE 612	Principles of Radiation Detection. (3) I. Pr.: NE 495.
NE 690	Radiation Protection and Shielding. (3) II. Pr.: NE 495.
NE 630	Nuclear Reactor Theory. (3) I. Pr.: MATH 240, NE 495.
NE 648	Nuclear Reactor Laboratory. (3) II Pr.: NE 512, NE 630.
NE 761	Radiation Measurement Systems. (3) II. Pr.: NE 512.

Power Generation

ME 523	Thermodynamics II. (3) I, II. Pr.: ME 513.
ME 563	Machine Design II. (3) I, II. Pr.: ME 533.
ME 620	Internal Combustion Engines. (3) I, in even years. Pr.: ME 523.
ME 631	Aircraft and Missile Propulsion. (3) II, in odd years. Pr.: ME 523, 571, and MATH 240.
ME 633	Thermodynamics of Modern Power Cycles. (3) I, in odd years. Pr.: ME 513.
ME 720	Intermediate Fluid Mechanics. (3) I. Pr.: ME 571, MATH 240.
ME 721	Thermal Systems Design. (3) II, in odd years. Pr.: ME 573.
ME 773	Intermediate Heat Transfer. (3) II. Pr.: ME 573.
NE 630	Nuclear Reactor Theory. (3) I. Pr.: MATH 240, NE 495.
BAE 651	Air Pollution Engineering. (3) II. Pr.: ME 513, 571.

Processing

ME 523	Thermodynamics II. (3) I, II. Pr.: ME 513.
ME 720	Intermediate Fluid Mechanics. (3) I. Pr.: ME 571, MATH 240.
ME 773	Intermediate Heat Transfer. (3) II. Pr.: ME 573.

Project Management & Construction

ME/NE xxx	Upper level Technical Electives in your Subject Area
DEN 550	Engineering Law. (3) II. Pr.: Junior standing.
ACCTG 231	Accounting for Business Operations. (3) I, II. Pr.: Sophomore standing and MATH 100.
FINAN 450	Principles of Finance. (3) I, II, S. Pr.: ECON 120, STAT 350, and ACCTG 231.
MANGT 420	Management Concepts. (3) I, II, S. Pr.: Junior standing.
MANGT 421	Introduction to Operations Management. (3) I, II, S. Pr.: MATH 205 and STAT 350.
MANGT 520	Organizational Behavior. (3) I, II. Pr.: MANGT 420.
MANGT 522	Operations Planning and Control. (3) II, On sufficient demand. Pr.: MANGT 421.
MANGT 530	Industrial and Labor Relations. (3) I. Pr.: Junior standing.
MANGT 653	Business Project Management. (3) I. Pr.: MANGT 420 and 421.
MKTG 400	Marketing. (3) I, II, S. Pr.: ECON 110 and 120, junior standing.
IMSE 541	Statistical Quality Control. (3) I, II. Pr.: STAT 511.
IMSE 501	Industrial Management. (3) I, II.
IMSE 605	Advanced Industrial Management. (3) I. Pr.: IMSE 501.

Research & Development

ME/NE xxx	Upper level Technical Electives in your Subject Area
ME 760	Engineering Analysis I. (3) I Pr.: MATH 240 and senior standing.

Technical Sales

DEN 550	Engineering Law. (3) II. Pr.: Junior standing.
MKTG 400	Marketing. (3) I, II, S. Pr.: ECON 110 and 120, junior standing.
MANGT 421	Introduction to Operations Management. (3) I, II, S. Pr.: MATH 205 and STAT 350
MKTG 547	International Business. (3) On sufficient demand. Pr.: MKTG 400, ACCTG 241, MANGT 420, FINAN 450.
MKTG 550	Business Marketing. (3) I. Pr.: MKTG 400.

Suggested Technical Electives for Graduate School

ME/NE xxx	Upper level Technical Electives in your Subject Area
ME 760	Engineering Analysis I. (3) I Pr.: MATH 240 and senior standing.
MATH 630	Introduction to Complex Analysis. (3) I. Pr.: MATH 240.
MATH 632	Elementary Partial Differential Equations. (3) II. Pr.: MATH 240.
MATH 713	Advanced Applied Matrix Theory. (3) Pr.: MATH 551 or MATH 630.
MATH 740	Calculus of Variations. (3) On sufficient demand. Pr.: MATH 722 or equiv.
MATH 745	Ordinary Differential Equations. (3) I. Pr.: MATH 240.