SCHOOL OF ENGINEERING

Courses

SCHOOL OF ENGINEERING

- C OP 201: CO-OP Work Experience
- C OP 202: CO-OP Work Experience
- C OP 300: Cooperative Education
- C OP 301: CO-OP Work Experience
- C OP 302: CO-OP Work Experience
- C OP 401: CO-OP Work Experience
- C OP 402: CO-OP Work Experience
- C OP 501: CO-OP Work Experience
- C OP 502: CO-OP Work Experience
- C OP 503: CO-OP Work Experience
- Engr 100: Introduction to Engineering
- Engr 196: Special Topics in Engineering Science
- Engr 197: Special Topics in Engineering Science
- Engr 207: Graphics I
- Engr 208: Graphics II
- Engr 296: Special Topics in Engineering Science
- Engr 297: Special Topics in Engineering Science
- Engr 301: Environmental Engineering Lab I
- Engr 302: Fluid Mechanics Laboratory
- Engr 307: Technical Communications
- Engr 309: Statics
- Engr 310: Engineering Analysis I
- Engr 311: Intermediate Mechanics
- Engr 312: Mechanics of Materials
- Engr 313: Introduction to Materials Science
- Engr 313: Introduction to Materials Science
- Engr 314: Materials Science Laboratory
- Engr 314: Materials Science Laboratory
- Engr 321: Thermodynamics
- Engr 321: Thermodynamics
- Engr 322: Transport Phenomena
- Engr 322: Transport Phenomena
- Engr 323: Fluid Mechanics
- Engr 330: Engineering Systems Analysis and Design
- Engr 340: Engineering Geology
- Engr 340: Engineering Geology
- Engr 351: Socio-Technology I
- Engr 352: Socio-Technology II
- Engr 360: Electric Circuit Theory
- Engr 360: Electric Circuit Theory
- Engr 361: Electric Circuit Laboratory
- Engr 361: Electric Circuit Laboratory
- Engr 363: Introductory Electric Circuit Laboratory
- Engr 363: Introductory Electric Circuit Laboratory
- Engr 390: Professional Communication for Engineers
- Engr 396: Special Topics in Engineering Science
- Engr 397: Special Topics in Engineering Science
- Engr 400: Leadership & Professionalism in Engineer
- Engr 401: Environmental Engineering Lab II
- Engr 402: Engineering Fundamentals
- Engr 407: Legal and Moral Aspects of Engineering
- Engr 410: Engineering Analysis II
- Engr 410: Engineering Analysis II
- Engr 415: Engineering Acoustics I
- Engr 420: Engineering Analysis III
- Engr 420: Engineering Analysis III
- Engr 453: Prob and Stat Analyses in Engr Design
- Engr 496: Special Topics in Engineering Science
- Engr 497: Special Topics in Engineering Science
- Engr 501: Fundamentals of Computer Science
- Engr 502: Software Systems
- Engr 515: Acoustics
- Engr 537: Environmental Engineering II
- Engr 551: Engineering Thermodynamics
- Engr 553: Heat Transfer
- Engr 555: Field Testing & Insr. in Geotech. Engr.
- Engr 558: Vibration Analysis
- Engr 559: Elements of Robotics
- Engr 571: Service Learning in Water Treatment
- Engr 572: Advanced Sanitary Analysis
- Engr 573: Environmental Remediation
- Engr 577: Geophysics I
- Engr 579: Geophysics II
- Engr 581: Applications in Geophysics
- Engr 582: Interdisciplinary Field Projects
- Engr 585: Mechanics of Composite Materials I
- Engr 590: Finite Element Analysis I
- Engr 591: Engineering Analysis I
- Engr 592: Engineering Analysis II
- Engr 593: Approximate Methods of Engr Analysis I
- Engr 594: Approximate Methods of Engr Analysis II
- Engr 596: Special Projects in Engineering Science
- Engr 597: Special Projects in Engineering Science
- Engr 598: Special Projects in Engineering Science
- Engr 600: Advanced Geochemistry
- Engr 601: Compressible Flow
- Engr 602: Lithostratigraphy
- Engr 603: Fluid Mechanics I
- Engr 604: Fluid Dynamics II
- Engr 605: Convective Heat and Mass Transfer
- Engr 606: Numerical Heat Transfer and Fluid Flow
- Engr 607: Statistical Thermodynamics
- Engr 608: Physical Gas Dynamics
- Engr 609: Time Series Analysis
- Engr 610: Data Communications Protocols
- Engr 611: Aeroacoustics
- Engr 612: Aeroelasticity
- Engr 613: Exp Method in Aerodynamics/Aeroacoustics
- Engr 614: Geometrics
- Engr 615: Analytical Petroleum Geology
- Engr 616: Isotope Hydrogeology
- Engr 617: Continuum Mechanics
- Engr 620: Advanced Remote Sensing
- Engr 622: Advanced Electromagnetic Theory
Engr 624: Active Microwave Circuits
Engr 626: Numerical Methods in Electromagnetics
Engr 627: Ray Methods in Electromagnetics
Engr 629: Televisions Systems II
Engr 630: Unit Process & Oper in Env Eng I
Engr 631: Unit Process & Oper in Env Eng II
Engr 632: Sludge Treatment and Disposal
Engr 633: Process Dynamics and Control I
Engr 634: Treatment & Disposal of Industrial Waste
Engr 635: Optimization
Engr 636: Groundwater Mechanics
Engr 637: Groundwater Modeling
Engr 638: Hazardous Waste Management
Engr 639: Environmental Systems Engineering
Engr 640: Stream and Estuarine Analysis
Engr 641: Clay Petrology
Engr 642: X-Ray Diffraction Analysis
Engr 643: Advanced Geomorphology
Engr 644: Carbonate Petrology
Engr 645: Contaminant Transport
Engr 646: Advanced Stratigraphy
Engr 647: Pavement Management Systems
Engr 648: Numerical Modeling in Geoscience & Engr
Engr 649: Advanced Foundation Engineering
Engr 650: Radar Remote Sensing
Engr 652: Advanced Compiler Design
Engr 653: Computer Structures
Engr 654: Information Systems Principles
Engr 655: Information Systems Principles
Engr 656: Operating Systems Design Concepts
Engr 657: Timesharing Computer Systems
Engr 658: Advanced Information Retrieval
Engr 660: Software Engineering II
Engr 661: Computer Networks II
Engr 662: Advanced Artificial Intelligence
Engr 663: Advanced Rate and Equilibrium Processes
Engr 664: Theory of Concurrent Programming
Engr 665: Thermodynamics of Chemical Systems
Engr 666: Fault Tolerant Computing
Engr 667: Mass Transfer I
Engr 669: Chemical Reaction and Reactor Analysis I
Engr 670: Chemical Reaction & Reactor Analysis II
Engr 671: Elasticity
Engr 672: Viscoelasticity
Engr 673: Plasticity
Engr 674: Fracture Mechanics
Engr 677: Plates and Shells
Engr 679: Wave Propagation
Engr 680: Advanced Acoustics
Engr 683: Advanced Physical Metallurgy
Engr 684: Advanced Mechanical Metallurgy
Engr 685: Mechanics of Composite Materials II
Engr 686: Multimedia Technologies II
Engr 687: Special Functions for Applications
Engr 688: Current Issues in Telecommunications
Engr 689: Control of Robotics Manipulators
Engr 690: Finite Element Analysis II
Engr 691: Special Topics in Engineering Science I
Engr 692: Special Topics in Engineering Science II
Engr 693: Research Topics in Engineering Science I
Engr 694: Research Topics in Eng. Science II
Engr 695: Seminar
Engr 696: Seminar in Environmental Engineering
Engr 697: Thesis
Engr 698: Special Topics in Engineering Science
Engr 702: Finite Element Analysis of Fluid Flows
Engr 711: Turbulence
Engr 712: Statistical Theory Turbulent Diffusion
Engr 713: Hydrodynamic Stability
Engr 714: Coastal Hydrodynamics
Engr 715: Applied Hydro- and Aeromechanics I
Engr 716: Applied Hydro- and Aeromechanics II
Engr 717: Special Topics in Thermal Science
Engr 718: Coding for Error Code
Engr 719: Advanced Microwave Measurements
Engr 720: Advanced Turbulence
Engr 721: Advanced Electrodynamics
Engr 723: Passive Microwave Circuits
Engr 725: Antennas
Engr 728: Adv Numerical Methods in Electromagnetic
Engr 729: Special Topics in Electromagnetic Theory
Engr 749: Special Topics in Soil Science
Engr 779: Special Topics in Solid Mechanics
Engr 797: Dissertation
Engs 501: Geospatial Primer
Engs 504: Remote Sensing Fundamentals
Engs 523: Sensors and Platforms
Engs 603: Analysis of Algorithms
Engs 606: Computer Networks
Engs 610: Telecommunication Network Engineering
Engs 611: Geospatial Science Primer
Engs 612: Remote Sensing Fundamentals
Engs 613: Introduction to Remote Sensing Systems
Engs 614: Remote Sensing and Digital Images
Engs 620: Geospatial Information Technology
Engs 621: Orbital Mechanics
Engs 624: Introduction to Digital Image Processing
Engs 626: Community Growth
Engs 627: Applied Probability Modeling
Engs 633: Microwave Filters
Engs 671: Digital Topographic Mapping
Engs 672: Remote Sensing and the Environment
Engs 673: Advanced Digital Image Processing
Engs 674: Geospatial Data Synthesis and Modeling
Engs 675: Microwave Data
Engs 681: Advanced Sensor Systems Data Collection
Engs 682: Remote Sensing to Ecological Modeling
Engs 683: Land Use and Land Cover Applications
Engs 684: Agricultural Applications Remote Sensing
Engs 685: Business Geographics
Manf 150: Intro to Engineering / Manufacturing
Manf 250: Graphics/Solid Modeling
Manf 251: Manufacturing Processes
Manf 252: Product Realization Laboratory
• Manf 253: Strategic Planning
• Manf 254: Continuous Flow/Layout
• Manf 350: Standardized Work/Takt Time
• Manf 351: Manufacturing Product/Process Design
• Manf 353: Accounting & Financial Mgmt for Manf
• Manf 450: Practical Problem Solving in Manf
• Manf 451: Manf Design-Product Realization
• Manf 452: Manf Design-Product Realization, II
• Manf 460: Introduction to Project Management

CHEMICAL ENGINEERING
• Ch E 101: Introduction to Chemical Engineering
• Ch E 103: Introduction to Chemical Engineering I
• Ch E 104: Introduction to Chemical Engineering II
• Ch E 207: Chemical Engineering Projects I
• Ch E 208: Chemical Engineering Projects II
• Ch E 311: Chemical Engineering Seminar
• Ch E 312: Process Control and Safety
• Ch E 313: Chemical Engineering Thermodynamics
• Ch E 314: Chemical Reactor Analysis and Design
• Ch E 315: Chemical Engineering Lab I
• Ch E 316: Chemical Engineering Lab II
• Ch E 401: Plant Design I
• Ch E 402: Plant Design II
• Ch E 403: Product Design I-Development, Evaluation
• Ch E 404: Product Design II-Product Realization
• Ch E 411: Process Dynamics and Control
• Ch E 412: Special Topics in Chemical Engineering
• Ch E 413: Research Seminar
• Ch E 421: Biochemical Engineering
• Ch E 422: Coal Utilization and Pollutants Control
• Ch E 423: Environmental Organic Transport Phenomen

CIVIL ENGINEERING
• C E 101: Introduction to Civil Engineering I
• C E 102: Introduction to Civil Engineering II
• C E 205: Civil Engineering Laboratory I
• C E 207: Surveying
• C E 208: Civil Engineering Graphics I
• C E 305: Civil Engineering Laboratory II
• C E 311: Structural Analysis
• C E 315: Civil Engineering Materials
C E 325: Intermediate Mechanics
C E 401: Civil Engineering Fundamentals
C E 405: Civil Engineering Laboratory III
C E 412: Design of Concrete Structures
C E 413: Steel Design
C E 414: Advanced Concrete Design
C E 417: Construction Engineering and Management
C E 421: Matrix Analysis of Structures
C E 431: Soil Mechanics I
C E 433: Foundation Engineering
C E 435: Advanced Geotechnical Engineering
C E 452: Civil Engineering Analysis
C E 455: Civil Engineering Design I
C E 456: Civil Engineering Design II
C E 471: Environmental Engineering I
C E 472: Water Resources Engineering
C E 481: Transportation Engineering I
C E 495: Geospatial Analysis for Engr & Vis Apps
C E 497: Civil Engineering Projects
C E 511: Structural Dynamics
C E 514: Pre-Stressed Concrete Design
C E 521: Advanced Mechanics of Materials
C E 531: Soil Mechanics II
C E 541: Flow in Open Channels
C E 542: Flow in Porous Media
C E 543: Sediment Transport
C E 561: Civil Engineering Systems
C E 570: Infrastructure Management
C E 572: Stormwater Engineering and Management
C E 581: Transportation Engineering II
C E 585: Highway Pavements
C E 590: Airport Planning and Design

COMPUTER & INFORMATION SCIENCE
Csci 103: Survey of Computing
Csci 111: Computer Science I
Csci 112: Computer Science II
Csci 191: Office Applications
Csci 192: Computing Applications
Csci 193: Personal Computer Systems
Csci 203: Computer and Information Processing
Csci 211: Computer Science III
Csci 223: Computer Org. & Assembly Language
Csci 251: Programming for Engineering and Sciences
Csci 259: Programming in C++
Csci 300: Social Responsibility in Comp. Science
Csci 305: Software for Global Use
Csci 311: Models of Computation
Csci 323: Systems of Programming
Csci 333: Digital Design and 3-D Printing
Csci 343: Fundamentals of Data Science
Csci 345: Information Storage and Retrieval
Csci 353: Introduction to Numerical Methods
Csci 354: Web Programming
Csci 361: Introduction to Computer Networks
Csci 387: Software Design and Development
Csci 390: Special Topics in Programming
Csci 391: Computer Graphics
Csci 405: Computer Simulation
Csci 423: Introduction to Operating Systems
Csci 425: Code Generation and Optimization
Csci 431: Robotics Programming
Csci 433: Algorithm and Data Structure Analysis
Csci 443: Advanced Data Science
Csci 444: Multimedia Design and Development
Csci 447: Immersive Media
Csci 450: Organization of Programming Languages
Csci 458: Mobile Application Development
Csci 475: Introduction to Database Systems
Csci 487: Senior Project
Csci 490: Special Topics
Csci 495: Undergrad Computer Science Internship
Csci 500: Fundamental Concepts in Computing
Csci 501: Fundamental Concepts in Systems
Csci 502: Fundamental Concepts in Algorithms
Csci 503: Fundamental Concepts in Languages
Csci 517: Natural Language Processing
Csci 520: Formal Theory of Computer Languages
Csci 521: Computer Systems Engineering
Csci 523: Operating Systems
Csci 524: Distributed Operating System Design
Csci 525: Compiler Construction
Csci 526: Parallel Computing
Csci 530: Computer Architecture and Design
Csci 531: Artificial Intelligence
Csci 533: Analysis of Algorithms
Csci 541: Expert Systems and Logic Programming
Csci 543: Data Mining
Csci 547: Digital Image Processing
Csci 550: Program Semantics and Derivation
Csci 551: Computer System Performance Analysis
Csci 554: Web Architecture and Programming
Csci 555: Functional Programming
Csci 556: Multinaradigm Programming
Csci 561: Computer Networks
Csci 562: Software Engineering I
Csci 575: Database Systems
Csci 581: Special Topics in Computer Science I
Csci 582: Special Topics in Computer Science II
Csci 595: Graduate Computer Science Internship
Csci 632: Machine Learning
Csci 658: Software Language Engineering
Csci 663: Software Families

ELECTRICAL ENGINEERING
BME 200: Introduction to Biomedical Engineering
BME 322: Biomaterials
BME 333: Biological Transport
BME 444: Biomedical Controls
BME 461: Biomedical Engineering Senior Design I
BME 462: Biomedical Engineering Senior Design II
EI E 100: Introduction to Electrical Engineering
EI E 101: Survey of the Electrotechnology
EI E 235: Principles of Digital Systems
EI E 236: Digital Systems Laboratory I
EI E 301: Applied Electronics
EI E 302: Applied Communication Systems
EI E 313: Physiology for Biomedical Engineering
EI E 314: Biomedical Measurement
EI E 331: Linear Systems
El E 337: Digital Systems Laboratory II
El E 340: Electrical Engineering Analysis I
El E 341: Theory of Fields
El E 351: Electronics Circuits I
El E 352: Electronics Circuits II
El E 353: Electronics Laboratory
El E 354: PC-Based Instrumentation Laboratory
El E 357: Electrical Engineering Problems I
El E 358: Electrical Engineering Problems II
El E 367: Computer-Aided Design in Electrical Engr
El E 385: Advanced Digital Systems
El E 386: Advanced Digital Systems Laboratory
El E 391: Random Signals
El E 413: Biomedical Signal Processing
El E 414: Biomedical Electronics
El E 415: Telecommunications Laboratory
El E 425: Local Area Networks
El E 431: Theory of Control Systems
El E 432: Robotics Laboratory
El E 433: High Frequency and Microwave Laboratory
El E 434: Fiber Optics Laboratory
El E 436: Systems Laboratory
El E 441: Electromagnetic Theory I
El E 442: Electromagnetic Theory II
El E 443: Network Analysis and Synthesis
El E 447: Modulation, Noise, and Communications
El E 449: Analog Communications Laboratory
El E 450: Digital Communications Laboratory
El E 451: Electrical Energy Conversion
El E 452: Electric Power Transformer Laboratory
El E 453: Solid State Devices
El E 461: Sr. Design in Electrical Engineering I
El E 462: Sr. Design in Electrical Engineering II
El E 481: Fund. Low Power Dig. VLSI Design
El E 482: Digital CMOS VLSI Design
El E 485: Microprocessor Systems Engineering
El E 486: Microprocessor Systems Engr Lab
El E 487: Digital Signal Processing Laboratory
El E 521: Electrical Engineering Projects I
El E 522: Electrical Engineering Projects II
El E 523: Microwave Engineering
El E 525: Introduction to Antennas
El E 533: Electronic Properties of Materials
El E 534: Wireless Mobile Communications
El E 535: Digital Communications
El E 561: Microwave Circuit Design
El E 586: Digital Signal Processing

GEOLOGY & GEOLOGICAL ENGINEERING
G E 234: Intro. to Geol. Engr. Field Methods
G E 301: Geological Eng. Design Field Camp 1
G E 305: Geomechanics
G E 401: Geological Eng. Design Field Camp 2
G E 405: Engineering Geophysics
G E 415: Petroleum Geology
G E 420: Subsurface Site Characterization
G E 421: Geological Engineering Design
G E 430: Geological Field Studies I
- GE 431: Geological Field Studies II
- GE 436: Field Camp GE Design
- GE 437: Geological Engineering Design Field Camp
- GE 450: Hydrogeology
- GE 460: Fundamentals of Waste Management
- GE 470: Intro. to Geographic Information System
- GE 490: Directed Studies and Projects
- GE 500: Introduction to Geochemistry I
- GE 502: Construction Geological Engineering
- GE 503: Environmental Geochemistry
- GE 504: Envi. Geochemistry Lab & Field Methods
- GE 506: Geomechanics for Geologists
- GE 507: Regional Geological Engineering
- GE 510: Remote Sensing
- GE 511: Spatial Analysis
- GE 513: Economic Geology
- GE 520: Geol. & G.E. Computer Applications
- GE 525: Engineering Seismology
- GE 530: Advanced Geomechanics
- GE 535: Advanced Rock Mechanics
- GE 540: Rock Mechanics
- GE 560: Waste Disposal I
- GE 561: Design of Waste Repositories
- GE 577: Geophysics I
- GE 591: Special Topics
- Geol 101: Physical Geology
- Geol 102: Historical Geology
- Geol 103: Earth Dynamics
- Geol 104: Environmental Geology - Hazards
- Geol 105: Environmental Geology - Resources
- Geol 106: Earth History
- Geol 107: Introduction to Oceanography
- Geol 111: Physical Geology Laboratory
- Geol 112: Historical Geology Laboratory
- Geol 114: Environmental Geology - Hazards Laboratory
- Geol 115: Environmental Geology - Resources Lab
- Geol 120: Dinosaurs
- Geol 203: Earth Dynamics Laboratory Content
- Geol 221: Mineralogy
- Geol 222: Elementary Petrology
- Geol 225: Mineralogy & Elementary Petrology
- Geol 303: Structural and Tectonic Geology
- Geol 305: Geomorphology
- Geol 309: Invertebrate Paleontology
- Geol 314: Sedimentology and Stratigraphy
- Geol 406: Petrology
- Geol 410: Coastal and Reef Dynamics
- Geol 420: Optical Mineralogy
- Geol 500: Intro. to Geographic Information Systems
- Geol 505: Hydrogeology
- Geol 506: Advanced Petrology
- Geol 515: Directed Studies
- Geol 518: Quantitative Methods in Geo. & Geo Eng
- Geol 520: Advanced Igneous and Metamorphic Petrolo
- Geol 530: Geology Field Studies
- Geol 535: Geochemistry
- Geol 550: Oceanography and Marine Geology
- Geol 555: Geology and Geol. Engineering Seminar
- Geol 603: Earth Sciences I
- Geol 604: Earth Sciences II
- Geol 609: Earth Science Projects
- Geol 610: Earth Science Projects
- Geol 611: Advanced Studies in Geology
- Geol 613: Instrumental and Analytical Procedure
- Geol 614: Advanced Geographic Information Systems
- Geol 615: Geostatistics
- Geol 630: Coastal Plain Geology
- Geol 641: Clay Petrology
- Geol 642: X-Ray Diff Analysis Inorg Crys Materials
- Geol 643: Advanced Geomorphology
- Geol 644: Advanced Paleontology
- Geol 645: Advanced Sedimentation
- Geol 646: Advanced Stratigraphy
- Geol 647: Sedimentary Petrology
- Geol 648: Metamorphic Petrology
- Geol 680: Scientific Writing Seminar
- Geol 687: Thesis

**MECHANICAL ENGINEERING**

- ME 101: Introduction to Mechanical Engineering
- ME 201: Engineering Graphics Fundamentals
- ME 324: Introduction to Mechanical Design
- ME 325: Intermediate Dynamics
- ME 399: Thermodynamics II
- ME 401: Thermo-fluid Dynamics
- ME 402: Elements of Propulsion
- ME 404: Applied Fluid Mechanics
- ME 405: Modern Energy Conversion
- ME 406: Alternative Energy Systems
- ME 416: Structures and Dynamics Laboratory
- ME 417: Projects
- ME 418: Projects
- ME 419: Energy and Fluids Laboratory
- ME 420: Experimental Mechanical Engineering II
- ME 421: Structural Analysis
- ME 422: Structural Design I
- ME 426: Kinematics: Analysis and Synthesis
- ME 427: Kinematic Analysis and Synthesis
- ME 428: Dynamics of Machinery
- ME 438: Mechanical Engineering Design
- ME 521: Projects
- ME 522: Projects
- ME 523: Special Topics in Mechanical Engineering
- ME 524: Special Topics in Mechanical Engineering
- ME 525: Advanced Dynamics
- ME 526: Experimental Methods
- ME 527: Materials Processing
- ME 528: Polymer Processing
- ME 529: Aerodynamics
- ME 530: Physical Metallurgy
- ME 531: Mechanical Behavior of Engr Materials
- ME 532: Glass and Ceramics
- ME 533: Electronic Properties of Materials
- ME 534: Properties and Selection of Materials
- ME 535: Experimental Stress Analysis
- ME 537: Mechatronic Systems Engineering
- ME 538: Exprl Character of Polymer Composites
- ME 540: Failure Analysis
- ME 541: Theory and Use of CAD and Solid Modeling
• M E 543: Linear Systems and Controls
• M E 555: Heating Ventilation and Air-Conditioning

TELECOMMUNICATIONS
• TC 201: Introduction to Telecommunications
• TC 210: Voice Telecommunications
• TC 220: Wireless Communications
• TC 330: Internship in Telecommunications
• TC 403: Telecommunications Networks
• TC 405: Telecommunications Management
• TC 409: Current Issues in Telecommunications
• TC 431: Satellite Telecommunications
• TC 433: Optical Fiber Telecommunications
• TC 491: Special Topics in Telecommunications
• TC 501: Foundations of Communications
• TC 529: Televisions Systems I
• TC 531: Advanced Satellite Communications
• TC 533: Advanced Optical Communications Systems
• TC 585: Multimedia Technologies I