Approved General Technical Electives for Biological Engineering (BIEN), Chemical Engineering (CHEN), and *Chemical and Biological Engineering (CBEN) Degrees

***Continuing CBEN students**

ACCT 3220 Corporate Financial Reporting 1
ACCT 3230 Corporate Financial Reporting 2
ACCT 3320 Cost Management
ACCT 4240 Advanced Financial Accounting
ACCT 4250 Financial Statement Analysis
ACCT 4540 Accounting Information Systems
ACCT 4620 Auditing and Assurance Services

ANTH 2010 Intro to Biological Anthropology 1
ANTH 2020 Intro to Biological Anthropology 2
ANTH 2030 Lab in Physical Anthropology 1
ANTH 2070 Bones, Bodies, and Disease
ANTH 2210 Lab in Archaeological Methods
ANTH 3000 Primate Behavior
ANTH 3010 The Human Animal
ANTH 4000 Quantitative Methods
ANTH 4060 Nutrition and Anthropology
ANTH 4070 Methods in Biological Anthropology
ANTH 4110 Human Evolutionary Biology
ANTH 4120 Advanced Biological Anthropology
ANTH 4130 Advanced Osteology
ANTH 4170 Primate Evolutionary Biology
ANTH 4240 Geoarchaeology
ANTH 4330 Human Ecology: Archaeological Aspects
ANTH 4380 Lithic Analysis and Replication
ANTH 4610 Medical Anthropology

APPM 1650 Python for Math and Stat
APPM 2750 Java: Training, Mathematical Algorithms, and Mobile Apps
APPM 3010 Chaos in Dynamical Systems
APPM 3050 Scientific Computing in MATLAB
APPM 3170 Discrete Applied Mathematics
APPM 3310 Matrix Methods and Applications
APPM 3350 Advanced Engineering Calc
APPM 3570 Applied Probability
APPM 4120 Intro to Operations Research
APPM 4350 Methods in Applied Math: Fourier Series

APPM 4360 Methods in Applied Math: Complex Variables
APPM 4380 Modeling in Applied Mathematics
APPM 4390 Modeling in Mathematical Biology
APPM 4440 Undergraduate Applied Analysis 1
APPM 4450 Undergraduate Applied Analysis 2
APPM 4560 Markov Processes, Queues & Monte Carlo Sim
APPM 4570 Statistical Methods
APPM 4590 Statistical Modeling
APPM 4650 Intermediate Numerical Analysis 1
APPM 4660 Intermediate Numerical Analysis 2
APPM 4720 Open Topics in Applied Mathematics

APRD 4300 Strategic Communication Analytics and Metrics

AREN 1027 Engineering Drawing
AREN 1316 Intro to AREN
AREN 2050 Building Materials and Systems
AREN 3010 Energy Efficient Buildings
AREN 3140 Illumination Laboratory
AREN 3540 Illumination 1
AREN 4010 Energy System Modeling and Control
AREN 4110 HVAC Design 1
AREN 4130 Optical Design for Illumination and Solid-State Lighting
AREN 4315 Design of Masonry Structures
AREN 4530 Advanced Lighting Design
AREN 4540 Exterior Lighting Systems
AREN 4550 Illumination 2
AREN 4560 Luminous Radiative Transfer
AREN 4570 Building Electrical Systems Design 1
AREN 4580 Daylighting
AREN 4590 Computer Graphics in Lighting Engineering
AREN 4830 The Future of Solid-State Lighting
AREN 4890 Sustainable Building Design

ASEN 1000 Intro to ASEN
ASEN 1400 Gateway to Space
ASEN 1969 Pathway to space
ASEN 3112 Structures
ASEN 3128 Aircraft Dynamics
ASEN 3200 Orbital Mechanics/Attitude Dynamics and Control
ASEN 3300 Aerospace Electronics and Communications
ASEN 3519 The Politics of Space
ASEN 4013 Foundations of Propulsion
ASEN 4090 Global Positioning Systems Applications

ASEN 4114 Automatic Control Systems
ASEN 4123 Vibration Analysis
ASEN 4128 Human Factors in Engineering and Design
ASEN 4138 Aircraft Design
ASEN 4218 Large Space Structures Design
ASEN 4338 Computer Analysis of Structures
ASEN 4519 Climate Change and Engineering

ASTR 1000 The Solar System
ASTR 1010 Intro to Astronomy 1
ASTR 1020 Intro to Astronomy 2
ASTR 1030 Accelerated Intro Astronomy 1
ASTR 1040 Accelerated Intro Astronomy 2
ASTR 1200 Stars and Galaxies
ASTR 2010 Modern Cosmology
ASTR 2020 Space Astronomy and Exploration
ASTR 2030 Black Holes
ASTR 2040 Search for Life in the Universe
ASTR 2600 Intro to Scientific Programming
ASTR 3300 Extraterrestrial Life
ASTR 3510 Observations and Instrumentation 1
ASTR 3520 Observations and Instrumentation 2
ASTR 3560 Astronomical Instrumentation Lab
ASTR 3710 Formation and Dynamics of Planetary Systems
ASTR 3720 Plants and Their Atmospheres
ASTR 3730 Astrophysics 1 - Stellar and Interstellar
ASTR 3740 Cosmology and Relativity
ASTR 3750 Planets, Moons, and Rings
ASTR 3760 Solar and space Physics
ASTR 3800 Intro to Scientific Data Analysis and Computing
ASTR 3830 Astrophysics 2 - Galactic and Extragalactic
ASTR 4330 Cosmochemistry
ASTR 4800 Space Science: Practice and Policy

ATOC 1050 Weather and the Atmosphere
ATOC 1060 Our Changing Environment: El Nino, Ozone, and Climate
ATOC 3050 Principles of Weather
ATOC 3070 Intro to Oceanography
ATOC 3180 Aviation Metrology
ATOC 3300 Analysis of Climate and Weather Observation
ATOC 3500 Air Chemistry and Pollution
ATOC 3600 Principles of Climate
ATOC 3720 Planets and Their Atmospheres ATOC 4200 Biogeochemical Oceanography

ATOC 4500 Special Topics in Atmospheric and Oceanic Sciences
ATOC 4550 Mountain Meteorology
ATOC 4720 Atmospheric Dynamics
ATOC 4750 Desert Meteorology and Climate
ATOC 4770 Renewable Energy Meteorology

BCHM 1041 Biotechnology and Society
BCHM 1701 Biochemistry Program for Research Exploration and Planning
BCHM 2700 Foundations of Biochemistry
BCHM 3341 Chemical Biology and Molecular Therapeutics
BCHM 3400 Mechanisms of Cancer
BCHM 3450 Princ of Pharmacology and Toxicology
BCHM 4312 Quantitative Optical Imaging
BCHM 4400 Core Concepts in Physical Chemistry for Biochemists
BCHM 4491 Modern Biophysical Methods
BCHM 4611 Principles of Biochemistry
BCHM 4621 Genome Databases: Mining and Management
BCHM 4631 Statistical and Computational Analysis of the Human Genome
BCHM 4720 Metabolic Pathways and Human Disease
BCHM 4740 Biochemistry of Gene Transmission, Expression and Regulation

BCOR 2203 Principles of Accounting 1
BCOR 2204 Principles of Financial Management

BMEN 1025 CAD
BMEN 2000 Intro to Biomedical Engineering
BMEN 2100 Biomedical Engineering Principles and Methods

BSLW 4120 Advanced Business Law

BUSM 2010 Principles of Marketing
BUSM 2011 Principles of Management
BUSM 2020 Principles of Accounting
BUSM 2021 Principles of Finance
BUSM 3010 Managing Innovation 1
BUSM 3011 Managing Innovation 2
BUSM 3020 Business & Financial Analytics 1
BUSM 3021 Business & Financial Analytics 2
BUSM 3030 Intro to Entrepreneurship
BUSM 4010 Professional Business Plan Development

CHEM 4011 Modern Inorganic Chemistry
CHEM 4021 Inorganic Laboratory
CHEM 4141 Environmental Water and Soil Chemistry

CHEM 4251 Materials Chemistry and Properties
CHEM 4261 Organic Materials: Structures and Functions
CHEM 4271 Chemistry of Solar Energy
CHEM 4511 Physical Chemistry 1
CHEM 4531 Physical Chemistry 2
CHEM 4581 Physical Chemistry Lab 1
CHEM 4591 Physical Chemistry Lab 2

CHEN 1000 Creative Technologies
CHEN 1100 Gourmet Science: Exploring Chem, Bio, and Tech through Food
CHEN 1300 Intro to Chemical Engineering
CHEN 1400 Drugs, Driving, Dynamic Processes
CHEN 2840 Independent Study

COEN 1400 Project Design
COEN 1500 Intro to Engineering
COEN 3210 Climate Change and Engineering

CSCI 1200 Intro to Computational Thinking (LING 1200 or INFO 1701)
CSCI 1300 Computer Science 1: Starting Computing (CSCI 1310, CSCI 1320, ECEN 1310, or CSPB 1300)
CSCI 2270 Computer Science 2: Data Structures (CSCI 2275 or CSPB 2270)
CSCI 2400 Computer Systems
CSCI 2824 Discrete Structures
CSCI 3002 Fundamentals of Human Computer Interaction
CSCI 3090 Intro to Quantum Computing
CSCI 3104 Algorithms
CSCI 3155 Principles of Programming Languages
CSCI 3202 Intro to Artificial Intelligence
CSCI 3287 Design and Analysis of Database Systems
CSCI 3302 Intro to Robotics
CSCI 3308 Software Development Methods and Tools
CSCI 3352 Biological Networks
CSCI 3434 Theory of Computation
CSCI 3656 Numerical Computation
CSCI 3702 Cognitive Science
CSCI 3753 Design and Analysis of Operating Systems
CSCI 4113 UNIX System Administration
CSCI 4229 Computer Graphics
CSCI 4239 Advanced Computer Graphics
CSCI 4273 Network Systems
CSCI 4302 Advanced Robotics
CSCI 4308 Software Engineering Project 1
CSCI 4314 Dynamic Models in Biology

CSCI 4318 Software Engineering Project 2
CSCI 4446 Chaotic Dynamics
CSCI 4448 Object-Oriented Analysis and Design
CSCI 4555 Compiler Construction
CSCI 4576 High-Performance Scientific Computing
CSCI 4809 Computer Animation
CSCI 4830 Sustainable Computing

CVEN 1317 Intro to CVEN
CVEN 2012 Intro to Geomatics
CVEN 2121 Analytical Mechanics 1
CVEN 3022 Construction Surveying
CVEN 3032 Photogrammetry
CVEN 3111 Analytical Mechanics 2
CVEN 3246 Intro to Construction
CVEN 3256 Construction Equipment and Methods
CVEN 3323 Hydraulic Engineering
CVEN 3414 Fundamentals of Environmental Engineering
CVEN 3424 Water and Waste-Water Treatment
CVEN 3434 Intro to Applied Ecology
CVEN 3525 Structural Analysis
CVEN 3602 Transportation Systems
CVEN 3698 Engineering Geology
CVEN 3708 Geotechnical Engineering 1
CVEN 3718 Geotechnical Engineering 2
CVEN 4147 Civil Engineering Systems
CVEN 4323 Water Resource Engineering Design
CVEN 4333 Engineering Hydrology
CVEN 4353 Groundwater Engineering
CVEN 4383 Applied Groundwater Modeling
CVEN 4404 Water Chemistry
CVEN 4414 Water Chemistry Lab
CVEN 4424 Environmental Organic Chemistry
CVEN 4434 Environmental Engineering Design
CVEN 4474 Hazardous and Industrial Waste Management
CVEN 4484 Intro to Environmental Microbiology
CVEN 4511 Intro to Finite Element Analysis
CVEN 4525 Matrix Structural Analysis
CVEN 4535 Construction Materials
CVEN 4537 Numerical Methods in Civil Engineering
CVEN 4545 Steel Design
CVEN 4554 Fund of Air Quality Management
CVEN 4555 Reinforced Concrete Design
CVEN 4565 Design of Wood Structures

CVEN 4594 Water Reuse and Reclamation
CVEN 4718 Mechanics and Dynamics of Glaciers
CVEN 4728 Foundation Engineering
CVEN 5834 International Environmental Impact Assessment

EBIO 1230 Lab 1
EBIO 1240 Lab 2
EBIO 2040 Principles of Ecology
EBIO 2070 Genetics: Molecules to Populations
EBIO 2090 Tropical Island and Marine Ecology
EBIO 3040 Conservation Biology
EBIO 3080 Evolutionary Biology
EBIO 3170 Mountain Ecology and Conservation
EBIO 3190 Tropical Marine Ecology
EBIO 3240 Animal behavior
EBIO 3400 Microbiology
EBIO 3630 Parasitology
EBIO 3850 Animal Diversity — Invertebrates
EBIO 4030 Limnology
EBIO 4060 Landscape Ecology
EBIO 4080 Freshwater Phycology
EBIO 4090 Coral Reef Ecology
EBIO 4100 Advanced Ecology
EBIO 4140 Plant Ecology
EBIO 4160 Intro to Biogeochemistry
EBIO 4290 Phylogenetics and Comparative Biology
EBIO 4370 Genetically Engineered Organisms
EBIO 4410 Biological Statistics
EBIO 4440 Animal Developmental Diversity
EBIO 4500 Plant Diversity and Evolution
EBIO 4510 Plant Anatomy and Development
EBIO 4520 Plant Systematics
EBIO 4530 Functional Plant Biology
EBIO 4550 Plant Eco-Evo Devo
EBIO 4660 Insect Biology
EBIO 4740 Bio of Amphibians and Reptiles
EBIO 4750 Ornithology
EBIO 4760 Mammalogy

ECEN 1100 Exploring ECEN
ECEN 1400 Intro to Digital and Analog Electronics
ECEN 1500 Sustainable Energy
ECEN 2250 Intro to Circuits and Electronics
ECEN 2260 Circuits as Systems

ECEN 2270 Electronics Design Lab
ECEN 2350 Digital Logic
ECEN 2410 Renewable Sources and Efficient Electrical Energy Systems
ECEN 2420 Electronics for Wireless Systems
ECEN 2703 Discrete Mathematics for Computer Engineers
ECEN 3170 Electromagnetic Energy Conversion 1
ECEN 3250 Microelectronics
ECEN 3300 Linear Systems
ECEN 3303 Intro to Robotics
ECEN 3320 Semiconductor Devices
ECEN 3350 Programming Digital Systems
ECEN 3360 Digital Design Lab
ECEN 3400 Electromagnetic Fields and Waves
ECEN 3410 Electromagnetic Waves and Transmission
ECEN 3810 Intro to Probability Theory
ECEN 4138 Control Systems Analysis
ECEN 4167 Electromagnetic Energy Conservation 2
ECEN 4224 High speed Digital Design
ECEN 4242 Communication Theory
ECEN 4341 Bioelectromagnetics
ECEN 4423 Chaotic Dynamics
ECEN 4517 Power Electronics and Photovoltaic Power Systems Lab
ECEN 4532 Digital Signal Processing Laboratory
ECEN 4553 Complier Construction
ECEN 4555 Principles of Energy Systems and Devices
ECEN 4583 Software System Development
ECEN 4606 Undergraduate Optics Laboratory
ECEN 4616 Optoelectronic System Design
ECEN 4632 Intro to Digital Filtering
ECEN 4634 Microwave and RF Lab
ECEN 4638 Control Systems Lab
ECEN 4652 Communication Laboratory
ECEN 4753 Computer Performance Modeling
ECEN 4797 Intro to Power Electronics
ECEN 4827 Analog IC Design
ECEN 5107 Electric Power Grid

ECON 3818 Intro to Statistics with Computer Applications
ECON 4231 Applied Economic Analysis and Public Policy
ECON 4697 Industrial Organization and Regulation
ECON 4808 Intro to Mathematical Economics
ECON 4818 Intro to Econometrics
ECON 4838 Microcomputer Applications in Economics
ECON 4848 Applied Econometrics

ECON 4858 Financial Econometrics
ECON 4868 Simulation Modeling in Microeconomics

EMEN 4030 Project Management Systems
EMEN 3100 Intro to Engineering Mgmt
EMEN 4050 Leadership and professional Skills
EMEN 4100 Engineering Economics
EMEN 4110 Supply Chain Management
EMEN 4120 Managing Business Processes
EMEN 4200 Engineering and Entrepreneurship for the Developing World
EMEN 4400 Quality Management
EMEN 4405 Systems Engineering
EMEN 4800 Technology Ventures and Marketing
ENEM 4801 Introduction to Entrepreneurship
EMEN 4802 Innovation Idea Discovery
ENEM 4803 Innovation Communication
EMEN 4804 Innovation Financial
EMEN 4805 Innovation Strategic Planning
EMEN 4806 Innovation Prototyping
EMEN 4087 Innovation Team Dynamics
EMEN 4808 Innovation Customer Insights
EMEN 4809 Innovation Marketing
EMEN 4810 Innovation Workplace Dynamics
EMEN 4811 Innovation Legal and Funding
EMEN 4812 Innovation Launch
EMEN 4820 Entrepreneurial Product Development
EMEN 4825 New Venture Creation
EMEN 4830 Ventures for Civic Innovation

ENEN 4321 Oil and Gas Processing
ENEN 4600 Interdisciplinary Energy Engineering Projects

ENGL 3106 Introduction to Literary Study with Data Science

ENLP 3060 Our Sustainable Future (CERS 3060)

ENVD 1004 Intro to Environmental Design
ENVD 1052 Design and Communication 1
ENVD 4365 Intro to the Adobe Creative Suite

ENVS 3001 Sustainable Solutions Consulting
ENVS 3040 Conservation Biology
ENVS 3070 Energy and the Environment
ENVS 3434 Intro to Applied Ecology

ENVS 3600 Principles of Climate
ENVS 4160 Intro to Biogeochemistry
ENVS 4135 Dogs, Wolves, and Humans
ENVS 4201 Biometeorology

ESBM 3700 Entrepreneurial Environnements
ESBM 4570 Entrepreneurial Finance
ESBM 4820 Engineering Entrepreneurship
ESBM 4826 Exp. Sem-social Entrepreneurship: Designing a Better World

EVEN 1000 Intro to EVEN
EVEN 4100 Environmental Sampling and Analysis
EVEN 4404 Water Chemistry
EVEN 4414 Water Chemistry Lab
EVEN 4434 Environmental Engineering Design
EVEN 4464 Environmental Engineering Process
EVEN 4484 Intro to Environmental Microbiology

FNCE 3010 Corporate Finance
FNCE 4000 Financial Institutions Management
FNCE 4040 Derivative Securities
FNCE 4050 Capital Investment Analysis
FNCE 4832 Microfinance

GEEN 1017 CAD
GEEN 1400 Engineering Projects
GEEN 2010 Engineering Mathematics (Formerly GEEN 3830)
GEEN 2400 Engineering Projects for the Community
GEEN 2851 Statics for Engineers
GEEN 3830 Integrated CFD & FEA for Engineering Design

GEOG 1101 Our Changing Planet: Climate and Vegetation
  GEOG 1106 Required Lab for GEOG 1101
GEOG 1111 Our Changing Planet: Landscapes and Water
  GEOG 1116 Required Lab for GEOG 1111
GEOG 2053 Mapping a Changing World
GEOG 3023 Statistics and Geographic Data
GEOG 3153 Geographic Information Science: Mapping
  GEOG 3156 Required Lab for GEOG 3153
GEOG 3251 Mountain Geography
GEOG 3301 Analysis of Climate and Weather Observations
GEOG 3351 Biogeography
GEOG 3611 The Water Cycle
  GEOG 3616 Required Lab for GEOG 3611

GEOG 3601 Principles of Climate
GEOG 3692 Intro to Global Public Health
GEOG 4023 Advanced Quantitative Methods for Spatial Data
GEOG 4043 Advanced Geovisualization and Web Mapping
GEOG 4093 Remote Sensing of the Environment
GEOG 4123 Geographic Information Science: Spatial Analytics
GEOG 4126 Required Lab for GEOG 4123
GEOG 4201 Biometeorology
GEOG 4203 Geographic Information Science: Spatial Modeling
GEOG 4241 Principles of Geomorphology
GEOG 4251 Fluvial Geomorphology
GEOG 4261 Glaciers and Permafrost
GEOG 4271 The Arctic Climate System
GEOG 4303 Geographic Information Sciences: Spatial Programming
GEOG 4311 Watershed Biogeochemistry
GEOG 4321 Snow Hydrology
GEOG 4331 Mountain Climatology
GEOG 4371 Forest Geography: Principles and Dynamics
GEOG 4401 Soils Geography
GEOG 4403 Geographic Information Science: Space Time Analytics
GEOG 4501 Water Resources and Water Management of Western United States

GEOL 1010 Exploring Earth
GEOL 1012 Exploring Earth for Scientists
GEOL 1020 Dodos, Dinos, and Deinococcus: The History of a Habitable Planet
GEOL 1030 Intro to Geology Laboratory 1
GEOL 1040 Geology of Colorado
GEOL 1060 Global Change: An Earth Science Perspective
GEOL 1150 Water, Energy, and Environment: An Intro to Earth Resources
GEOL 1170 Our Deadly Planet
GEOL 1180 Our Microbial Planet
GEOL 2001 Planet Earth
GEOL 2005 Intro to Earth Materials
GEOL 2040 Search for Live in the Universe
GEOL 2100 Environmental Geology
GEOL 2700 Intro to Field Geography
GEOL 3010 Intro to Mineralogy
GEOL 3020 Petrology
GEOL 3023 Statistics for Geographic Data
GEOL 3030 Intro to Hydrogeology
GEOL 3040 Global Change: The Recent Geological Record
GEOL 3050 GIS for Geologists
GEOL 3070 Intro to Oceanography
GEOL 3120 Structural Geology

GEOL 3181 Microbial Planet Lab (MCDB 3181)
GEOL 3300 Extraterrestrial Life
GEOL 3320 Intro to Geochemistry
GEOL 3410 Paleobiology
GEOL 3430 Sedimentology and Stratigraphy
GEOL 3540 Intro to Petroleum Geology
GEOL 3600 Intro to Python Programming for Earth Scientists
GEOL 3720 Evolution of Life: The Geological Record
GEOL 3820 The Fluid Earth
GEOL 3950 Natural Catastrophes and Geologic Hazards
GEOL 4060 Oceanography
GEOL 4070 Paleoclimatology
GEOL 4093 Remote Sensing of the Environment
GEOL 4160 Intro to Biogeochemistry
GEOL 4215 Geochronology and Thermochronology
GEOL 4241 Principles of Geomorphology
GEOL 4270 Marine Chemistry and Geochemistry
GEOL 4330 Cosmochemistry
GEOL 4474 Vertebrate Paleontology
GEOL 4670 Isotope Geology
GEOL 4711 Igneous and Metamorphic Field Geology
GEOL 4712 Structural Field Geology
GEOL 4714 Field Geophysics
GEOL 4715 Field Techniques in Hydrogeology
GEOL 4716 Environmental Field Geochemistry
GEOL 4717 Field Seminar in Geology and Tectonics
GEOL 4721 Field Methods in Active Tectonics

INBU 4200 International Financial management

INFO 1201 Computational Reasoning 1
INFO 1301 Statistics for Information Science
INFO 1701 Programming for Information Science 1
INFO 2201 Computational Reasoning 2: Representation of Data
INFO 2301 Quantitative Reasoning for Information Science
INFO 3401 Information Exploration
INFO 3402 Information Exposition
INFO 3507 Data and the Humanities
INFO 4602 Information Visualization
INFO 4603 Survey Research Design
INFO 4604 Applied Machine Learning
INFO 4607 Software Engineering for Data-Centered Systems

IPHY 2420 Intro to Nutrition

IPHY 3410 Human Anatomy
IPHY 3415 Human Anatomy Laboratory
IPHY 3417 Virtual Human Anatomy Laboratory
IPHY 3430 Human Physiology
IPHY 3435 Physiology Laboratory
IPHY 3440 Clinical Nutrition
IPHY 3450 Comparative Animal Physiology
IPHY 3460 Comparative Vertebrate Anatomy
IPHY 3470 Human Physiology 1
IPHY 3480 Human Physiology 2
IPHY 3490 Intro to Epidemiology
IPHY 3660 Dynamics of Motor Learning
IPHY 3800 Forensic Biology
IPHY 3810 Forensic Biology Laboratory
IPHY 4200 Physiological Genetics and Genomics
IPHY 4440 Endocrinology
IPHY 4470 Biology of Human Reproduction
IPHY 4480 Comparative Reproduction
IPHY 4540 Biomechanics
IPHY 4580 Sleep Physiology
IPHY 4600 Immunology
IPHY 4650 Exercise Physiology
IPHY 4720 Neurophysiology
IPHY 4730 Integrative Motor Control

JRNL 4521 Data Journalism

LAND 3103 Ecological Planting Design

LING 3100 Language Sound Structures
LING 4420 Morphology and Syntax
LING 4632 Machine Learning and Linguistics

MATH 3001 Analysis I
MATH 3110 Intro to Theory of Numbers
MATH 3120 Functions and Modeling
MATH 3140 Abstract Algebra 1
MATH 3170 Combinatorics 1
MATH 3210 Euclidean and Non-Euclidean Geometries
MATH 4000 Foundations of Mathematics
MATH 4001 Analysis 2
MATH 4120 Intro to Operations Research
MATH 4140 Abstract Algebra 2
MATH 4200 Intro to Topology

MATH 4230 Differential Geometry of Curves and Surfaces
MATH 4330 Fourier Analysis
MATH 4440 Mathematics and Coding and Cryptography
MATH 4470 Partial Differential Equations 1
MATH 4510 Intro to Probability Theory
MATH 4540 Intro to Time Series
MATH 4650 Intermediate Numerical Analysis 1
MATH 4660 Intermediate Numerical Analysis 2
MATH 4730 Set Theory

MCDB 1161 From Dirt to DNA: Phage Genomics Laboratory 1
MCDB 1171 Antibiotics Discovery Through Hands-on Screens 1
MCDB 2150 Principles of Genetics
MCDB 2161 From DNA to Genes, Phage Genomics Laboratory 2
MCDB 3001 Synthetic Biology: Engineering Biomolecular Systems in the Lab
MCDB 3135 Molecular Biology
MCDB 3140 Cell Biology Laboratory
MCDB 3145 Cell Biology
MCDB 3150 Biology of the Cancer Cell
MCDB 3160 Infectious Disease
MCDB 3181 Microbial Planet Lab (GEOL 3181)
MCDB 3333 Biomedical Innovations and Discoveries
MCDB 3350 Fertility, Sterility, and Early Mammalian Development
MCDB 3501 Structural Methods for Biological Macromolecules
MCDB 3650 The Brain - From Molecules to Behavior
MCDB 3651 The Brain: Dysfunction to Disease
MCDB 3700 Poisons in Cell Biology and Society
MCDB 4101 Manipulating Genomes-Discovering Gene Functions
MCDB 4202 The Python Project
MCDB 4300 Immunology
MCDB 4310 Microbial Genetics and Physiology
MCDB 4350 Microbial Diversity and the Biosphere
MCDB 4361 Evolution and Development
MCDB 4410 Human Molecular Genetics
MCDB 4422 Molecular Biology of Free Radicals: Role(s) in Oxidative Stress, Signaling, Disease, Aging
MCDB 4425 Cellular Stress Responses: Molecular Mechanisms, Physiology, and Human Diseases
MCDB 4426 Cell Signaling and Developmental Regulation
MCDB 4427 Biology of the Visual System
MCDB 4444 Animal Developmental Diversity
MCDB 4471 Mechanisms of Gene Regulation in Eukaryotes
MCDB 4520 Bioinformatics and Genomics
MCDB 4550 Cells, Molecules and Tissues, A Biophysical Approach

MCDB 4615 Biology of Stem Cells
MCDB 4621 Genome Databases: Mining and Management
MCDB 4650 Developmental Biology
MCDB 4680 Mechanisms of Aging
MCDB 4750 Animal Virology
MCDB 4777 Molecular Neurobiology
MCDB 4790 Oocytes, Stem Cells, Organisms: Experiments to Discoveries
MCDB 4810 Insane in the Membrane: The Biology and Biophysics of the Membrane

MCEN 1025 CAD
MCEN 2023 Statics and Structures
MCEN 2063 Mechanics 0f Solids
MCEN 3017 Circuits and Electronics
MCEN 3023 Component Design
MCEN 3030 Computational Methods
MCEN 3032 Thermodynamics 2
MCEN 4026 Manufacturing Processes and Systems
MCEN 4032 Sustainable Energy
MCEN 4043 System Dynamics
MCEN 4115 Mechatronics and Robotics 1
MCEN 4117 Anatomy and Physiology for Engineers
MCEN 4123 Vibration Analysis
MCEN 4124 Mechanical Behavior of Materials
MCEN 4127 Biomedical Ultrasound
MCEN 4131 Air Pollution Control Engineering
MCEN 4135 Wind Energy and Wind Turbine Design
MCEN 4137 Anatomy and Physiology 2
MCEN 4141 Indoor Air Pollution
MCEN 4151 Flow Visualization
MCEN 4152 Intro to Combustion
MCEN 4154 Biocolloids and Biomembranes
MCEN 4173 Finite Element Analysis
MCEN 4194 Electrochemical Energy Conversion and Storage
MCEN 4228 Special Topics: Design of Coffee
MCEN 4228 Special Topics: Intro of Microfluidics
MGMT 4110 Supply Chain Management
MGMT 4120 Managing Business Processes

MKTG 3150 Sales Management, Leadership and Organization Development
MKTG 3250 Buyer Behavior
MKTG 3350 Marketing Research and Analytics
MKTG 4250 Product Strategy
MKTG 4350 Services Marketing Strategy
MKTG 4500 Advertising Management

MKTG 4550 Advertising and Promotion Management
MKTG 4650 Institutional Relationships and Strategy

MSEN 2000 Materials in Technology

NAVR 3030 Naval Engineering Systems I
NAVR 3040 Weapons and Systems Analysis
NAVR 4030 Navigation

NRSC 4015 Affective Neuroscience
NRSC 4032 Neurobiology of Learning and Memory
NRSC 4042 Systems of Neuroscience
NRSC 4062 The Neurobiology of Stress
NRSC 4072 Clinical Neuroscience: A Clinical and Pathological Perspective
NRSC 4082 Neural Circuits of Learning and Decision Making
NRSC 4092 Behavioral Neuroendocrinology
NRSC 4132 Neuropharmacology
NRSC 4155 Cognitive Neuroscience/Neuropsychology
NRSC 4542 The Neurobiology of Mental Illness
NRSC 4545 Neurobiology of Addiction

PHYS 2130 General Physics 3
PHYS 2150 Experimental Physics 2
PHYS 2170 Foundations of Modern Physics
PHYS 2210 Classical Mechanics and Math Methods 1
PHYS 2600 Intro to Programming and Scientific Computing
PHYS 3070 Energy and the Environment
PHYS 3210 Classical Mechanics and Math Methods 2
PHYS 3220 Quantum Mechanics 1
PHYS 3310 Principles of Electricity and Magnetism 1
PHYS 3320 Principles of Electricity and Magnetism 2
PHYS 3330 Electronics for the Physical Sciences
PHYS 4130 Biol Electron Microscopy: Principles and Recent Advances
PHYS 4150 Plasma Physics
PHYS 4230 Thermodynamics and Statistical Mechanics
PHYS 4340 Intro to Solid State Physics
PHYS 4410 Quantum Mechanics 2
PHYS 4420 Nuclear and Particle Physics
PHYS 4510 Optics

PSYC 2012 Biological Psychology
PSYC 2111 Psychological Science 1: Statistics
PSYC 3005 Cognitive Science
PSYC 3102 Behavioral Genetics

PSYC 3112 Behavioral Genetics 2
PSYC 3303 Abnormal Psychology
PSYC 4021 Psychology and Neuroscience of Exercise
PSYC 4052 Behavioral Neuroscience
PSYC 4142 Brain Injury, Plasticity and Recovery: From Neuron to Behavior
PSYC 4145 Advanced Cognitive Psychology
PSYC 4155 Cognitive Neuroscience/Neuropsychology
PSYC 4175 Computational Cognitive Neuroscience
PSYC 4332 Found in Translation: TBI from Bench to Bedside to Community
PSYC 4543 Clinical Neuropsychological Disorders

STAT 2600 Intro to Data Science
STAT 3100 Applied Probability
STAT 3400 Applied Regression
STAT 4100 Markov Processes, Ques, and Monte Carlo Simulations
STAT 4400 Advanced Statistical Modeling
STAT 4430 spatial Statistics
STAT 4520 Intro to Mathematical Statistics
STAT 4540 Intro to Time Series
STAT 4610 Statistical Learning
STAT 4630 Computational Bayesian Statistics
STAT 4680 Statistical Collaboration
STAT 4690 Advanced Statistical Collaboration
STAT 4700 Philosophical and Ethical Issues in Statistics

APPROVED BIEN/CHEN 3000+ Technical Electives

BIEN 3800 Fundamental of Biotech (BIEN/CHEN 3000+ TE for CHEN only)
BIEN 4801 Pharmaceutical Biotechnology (Focus TE for BIEN; CHEN 3000+ TE for CHEN)
BIEN 4802 Tissue Engineering (Focus TE for BIEN; CHEN 3000+ TE for CHEN)
BIEN 4805 Biomaterials (CHEN only)
BIEN 4820 Biochemical Separations (CHEN only)
BIEN 4831 Biokinetics and Bioreactors Module

CHEN 3220 Separations (BIEN only)
CHEN 3660 Energy Fundamentals
CHEN 3670 Sustainable Design of Chemical and Material Systems (CHEN 3000+ TE for CHEN; Gen TE for BIEN)
CHEN 3838 Special Topics
CHEN 3840 Independent Study
CHEN 4440 Materials (BIEN only)
CHEN 4450 Polymer Chemistry
CHEN 4460 Polymer Engineering

CHEN 4480 Solar Cells
CHEN 4490 Electrochemical Engineering
CHEN 4570 Process Controls (BIEN only)
CHEN 4630 Intellectual Property Law
CHEN 4650 Particle Technology
CHEN 4800 Bioprocess Engineering (Focus TE for BIEN; CHEN 3000+ TE for CHEN)
CHEN 4803 Metabolic Engineering (Focus TE for BIEN; CHEN 3000+ TE for CHEN)
CHEN 4804 Protein and Enzyme Engineering (Focus TE for BIEN; CHEN 3000+ TE for CHEN)
CHEN 4806 Immunoengineering (Focus TE for BIEN; CHEN 3000+ TE for CHEN)
CHEN 4836 Nanomaterials
CHEN 4838 Special Topics: Biomolecular Simulations (Focus TE for BIEN; CHEN 3000+ TE for CHEN)
CHEN 4838 Special Topics: Data Projects (Focus TE for BIEN; CHEN 3000+ TE for CHEN)
CHEN 4838 Special Topics: Drug Delivery (Focus TE for BIEN; CHEN 3000+ TE for CHEN)
CHEN 4838 Special Topics: Intro to Research (CHEN 3000+ TE for BIEN and CHEN)
CHEN 4838 Special Topics: Synthetic and Sys Bio (Focus TE for BIEN; CHEN 3000+ TE for BIEN and CHEN)
CHEN 4840 Independent Study (CHEN 3000+ TE for BIEN and CHEN)