Materials Science and NanoEngineering Department

Approved Electives for the BSMSNE program

All these electives are 200 level or higher.

Courses not listed are not approved.

Engineering Selected Electives (no MSNE)	
BIOE 370	BIOMATERIALS
CEVE 310	PRINCIPLES OF ENVI ENGINEERING
CEVE/MECH 311	MECHANICS OF SOLIDS
CEVE 427	COMPUTATIONAL STR MECH & FEM
CEVE 434	FATE/TRANSPORT OF CONTAMINANTS
CHBE 390	KINETICS & REACTOR DESIGN
CHBE 401	TRANSPORT PHENOMENA I
ELEC 241	FUND ELECTRICAL ENGINEERING I
ELEC 243	ELECTRONIC MEASUREMENT SYSTEMS
ELEC 261	ELECTRONIC MATERIALS & QUANTUM DEVICES
ELEC 361	QUANTUM MECHANICS FOR ENGINEER
ELEC 462	OPTOELECTRONIC DEVICES
ENGI/CEVE 302	SUSTAINABLE DESIGN
ENGI 303	ENGINEERING ECONOMICS
MECH 403	COMPUTER AIDED DESIGN
MECH 417	FINITE ELEMENT ANALYSIS
MECH 481	HEAT TRANSFER

Technical Selected Electives (MSNE or engineering selected electives)	
MSNE 365	NANOMATERIALS FOR ENERGY
MSNE 409	PHYSICAL METALLURGY
MSNE 416	PROPERTIES OF SOFT MATERIALS
MSNE 417	POLYMER ELECTRONICS
MSNE 433	COMPUTATIONAL MATERIALS MODELING
MSNE 505	MSNE 505 MICRO/NANO-STRUCTURE EVOLUTION
MSNE 523	DESIGN OF COMPOSITE MATERIALS
MSNE 538	COMPUTATIONAL NANOSCIENCE
MSNE 555	BIO-MIMETIC STRATEGIES
MSNE 560	COLLOIDAL & INTERFACIAL PHENOM
MSNE 569	CORROSION SCIENCE & ENGINEERING
MSNE 580	MICROSCOPY METHODS
MSNE 581	MICRO & NANO HEAT TRANSPORT
MSNE 593	POLYMER PHYSICS
MSNE 594	PROPERTIES OF POLYMERS
MSNE 650	NANOMATERIALS & NANOMECHANICS

← **Technical Selected Electives also includes the engineering selected electives**

Math & Science Selected Electives (no MSNE or engineering selected electives)	
ASTR 201	STARS GALAXIES & THE UNIVERSE
ASTR 202	EXPLORATN OF THE SOLAR SYSTEM
BIOC 201	INTRODUCTORY BIOLOGY
BIOC 301	BIOCHEMISTRY I
BIOC 385	FUNDAMENTALS OF NEUROSCIENCE
CAAM 336	DIFF EQUATIONS SCI & ENG
CAAM 378	INTRO TO O.R. AND OPTIMIZATION
CAAM 415	THEORETICAL NEUROSCIENCE I: BIOPHYSICAL MODELING
CAAM/MATH 435	DYNAMICAL SYSTEMS
CAAM 453	NUMERICAL ANALYSIS I
CAAM 501	ANALYSIS I
CAAM 519	COMPUTATIONAL SCIENCE I
CHEM 211/213	ORGANIC CHEMISTRY I/ORGANIC CHEM DISCUSSION
CHEM 212 /214	ORGANIC CHEMISTRY II/ORGANIC CHEM DISCUSSION II
CHEM 311	PHYSICAL CHEMISTRY I
CHEM 312	PHYSICAL CHEMISTRY II
CHEM 330	ANALYTICAL CHEMISTRY
CHEM 360	INORGANIC CHEMISTRY
ESCI 307	ENERGY AND THE ENVIRONMENT
ESCI 321	EARTH SYSTEM EVOLUTION/CYCLES
MATH 302	ELEMENTS OF ANALYSIS
MATH 354	HONORS LINEAR ALGEBRA
MATH 355	LINEAR ALGEBRA
PHYS 201	WAVES, LIGHT, AND HEAT
PHYS 202	MODERN PHYSICS
PHYS 301	INTERMEDIATE MECHANICS
PHYS 302	INTERMEDIATE ELECTRODYNAMICS
PHYS 355	INTRO TO BIOLOGICAL PHYSICS
STAT 280	ELEMENTARY APPLIED STATISTICS
STAT 305	INTRO TO STAT FOR BIOSCIENCES

Note: Several of these courses have prerequisites which will need to be satisfied.
Several of these courses require permission of Instructor, in which case students should discuss appropriate pre-requisites with the instructor and make sure those are satisfied.
No AP credits are allowed for selected electives.

8/9/19 kh