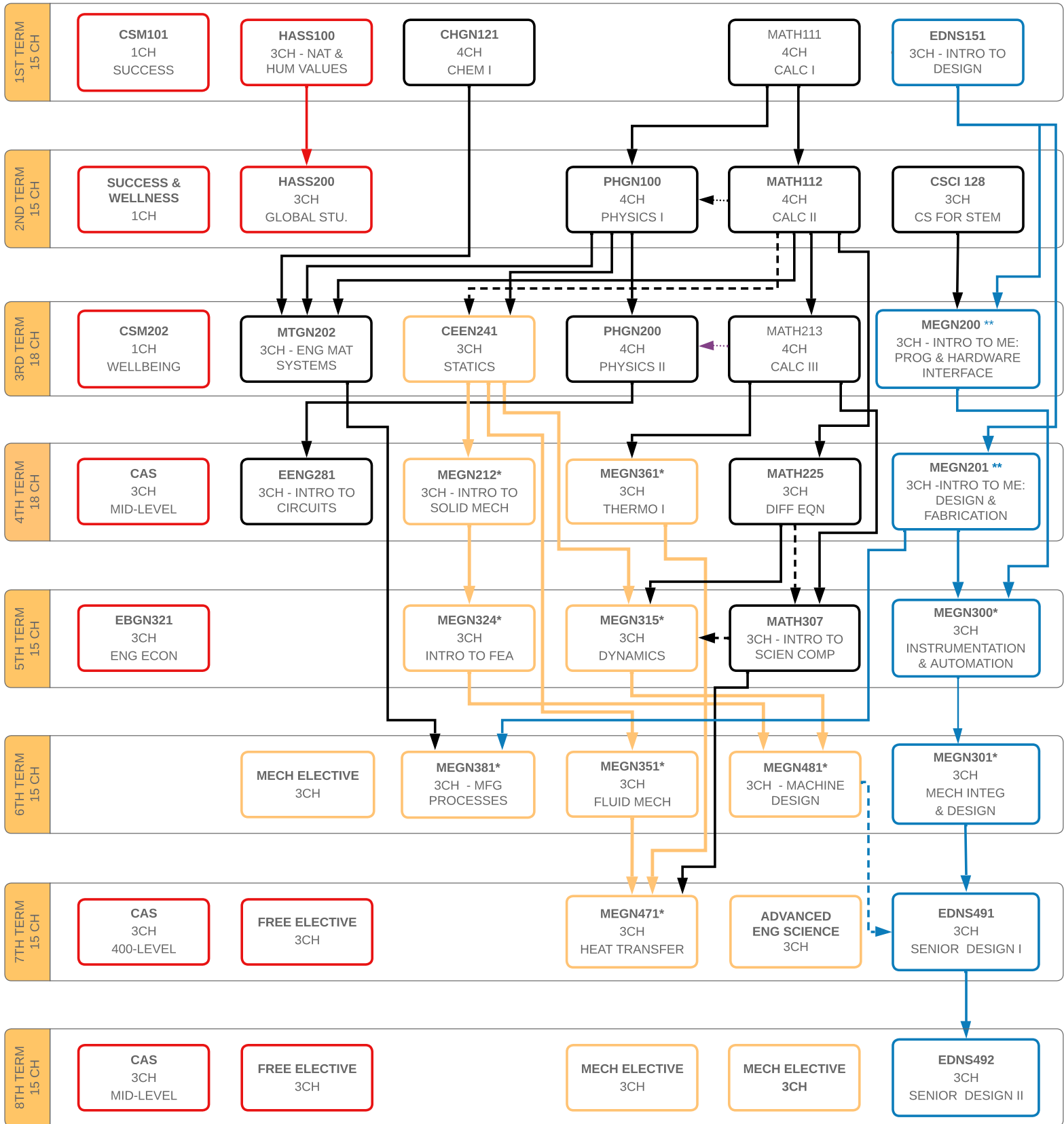


Mechanical Engineering Undergraduate Flow Chart 2023-2024

Culture and society
Required non-MEGN classes
Required MEGN classes
Design sequence



Total Credit Hours = 126

Solid line = prerequisite, dashed line = co-requisite

Mid-level CAS are 201-level or above

* All MEGN courses require a passing grade of C- or better for all pre- or co-requisites with an MEGN prefix (includes CEEN 241)

** MEGN 200 and 201 can be taken in either 3rd or 4th semester (order does not matter), but not concurrently (except upon override approval)

MECHANICAL ENGINEERING ELECTIVES

ME ADVANCED ENGINEERING SCIENCE ELECTIVES

(MUST TAKE ONE COURSE)

MEGN 412	ADVANCED MECHANICS OF MATERIALS
MEGN 416	ENGINEERING VIBRATIONS (F)
MEGN 451	AERODYNAMICS
MEGN 461	THERMODYNAMICS II

MECHANICAL ENGINEERING ELECTIVES

(MUST TAKE 3 COURSES TO FULFILL DEGREE)

MEGN 330	INTRO. TO BIOMECH. ENG. (F)
MEGN 391	AUTOMOTIVE DESIGN (Sp)
MEGN 414	MECHANICS OF COMPOSITE MATLS (F)
MEGN 417	VEHICLE DYN & POWERTRAIN SYS. (F)
MEGN 430	MUSCULOSKELETAL BIOMECHANICS (Sp)
MEGN 435	MOD. & SIM. OF HUMAN MOVEMENT (Sp)
MEGN 436	COMPUTATIONAL BIOMECHANICS (Sp)
MEGN 441	INTRO. TO ROBOTICS
MEGN 453	AEROSPACE STRUCTURES (Sp)
MEGN 455	AEROSPACE SYSTEMS ENGINEERING (F)
MEGN 456	SPACE OPERATIONS (SP)
MEGN 466	INTRO. TO INTERNAL COMB. ENGINES (Sp)
MEGN 467	PRINCIPLES OF BUILDING SCIENCE (F)
MEGN 469	FUEL CELL SCIENCE & TECHNOLOGY (F)
MEGN 475	INTRO. TO NUCLEAR ENGINEERING (F)
MEGN 485	MAN. OPT. w/NETWORK MOD. (F)
MEGN 486	LINEAR OPTIMIZATION (Sp)
MEGN 487	NONLINEAR OPTIMIZATION (F)
MEGN 488	INTEGER OPTIMIZATION (F)
MEGN 498	SPECIAL TOPICS IN MECH. ENGR
MEGN 4XX.	ANY ME ELEC. NOT LISTED (EXCEPT 499 & REQ' 400-LEV COURSES)
MEGN 5XX	500-LEVEL MEGN COURSES (NON-RESEARCH CREDIT)

ADDITIVE MANUFACTURING

AMFG 4XX	ANY 400-LEVEL AMFG COURSE
AMFG 5XX	ANY 500-LEVEL AMFG COURSE (NON-RESEARCH CR)

CHEMICAL & BIOLOGICAL ENGINEERING

CBEN 472	INTRO. TO ENERGY TECHNOLOGIES
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CIVIL ENGINEERING

CEEN 405	NUMERICAL METHODS FOR ENGINEERS
CEEN 406	FINITE ELEMENT METHODS FOR ENGRS
CEEN 433	MATRIX STRUCTURAL ANALYSIS

COMPUTER SCIENCE

CSCI 261	PROGRAMMING CONCEPTS
CSCI 306	SOFTWARE ENGINEERING
CSCI 341	COMPUTER ORGANIZATION
CSCI 404	ARTIFICIAL INTELLIGENCE
CSCI 442	OPERATING SYSTEMS
CSCI 437	INTRO. TO COMPUTER VISION
CSCI 470	INTRO. TO MACHINE LEARNING
CSCI 473	HUMAN-CENTERED ROBOTICS
CSCI 5XX	NON-PROJECT AND NON-RESEARCH CR

ECONOMICS

EBCN 321	ENGINEERING ECONOMICS
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ELECTRICAL ENGINEERING

EENG 307	FEEDBACK CONTROLS
EENG 310	INFORMATION SYSTEMS SCIENCE
EENG 385	ELECTRONIC DEVICES AND CIRCUITS
EENG 386	FUND. OF ENG. ELECTROMAGNETICS
EENG 389	FUND. OF ELECTRIC MACHINERY
EENG 390	ENGY, ELEC., RENEW. ENG. & ELE. PWR
EENG 417	MODERN CONTROL DESIGN
EENG 421	SEMICON. DEVICE PHYS. & DESIGN
EENG 5XX	NON-SEMINAR AND NON-RESEARCH

ENGINEERING DESIGN & SOCIETY

EDNS 401	PROJECTS FOR PEOPLE
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FINITE ELEMENT ANALYSIS

FEGN5XX	NON-PROJECT & NON-RESEARCH CR.
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MATHEMATICS

MATH 332	LINEAR ALGEBRA
MATH 334	INTRO. TO PROBABILITY
MATH 335	INTRO. TO MATHEMATICAL STATISTICS
MATH 424	INTRO. TO APPLIED STATISTICS
MATH 432	SPATIAL STATISTICS
MATH454	COMPLEX ANALYSIS
MATH455	PARTIAL DIFFERENTIAL EQNS
MATH 5XX	NON-SEMINAR & NON-RESEARCH CR

METALLURGICAL AND MATERIALS ENGINEERING

MTGN 211	STRUCTURE OF MATERIALS
MTGN 442	ENGINEERING ALLOYS
MTGN 445	MECHANICAL PROPERTIES OF MATL
MTGN 450	STAT. PROCESS CTRL & DESIGN OF EXP.
MTGN 463	POLYMER ENGINEERING
MTGN 464	FORGING AND FORMING
MTGN 472	BIOMATERIALS
MTGN 475	METALLURGY OF WELDING
MTGN 593	NUCLEAR MATERIALS SCIENCE & ENG.
MTGN 598	NUCLEAR MATLS POLITICS & POLICY

NUCLEAR SCIENCE & ENGINEERING

NUGN 475	INTRO. TO NUCLEAR ENGINEERING
NUGN 506	NUCLEAR FUEL CYCLE
NUGN 510	INTRO. TO NUCLEAR REACTOR PHYSICS
NUGN 520	NUCLEAR REACTOR THERMAL-HYD.
NUGN 598	MACHINE LEARNING IN NUCLEAR

PHYSICS

PHGN 300	PHYSICS III-MODERN PHYSICS
PHGN 350	INTERMEDIATE MECHANICS
PHGN 419	PRINCIPLES OF SOLAR ENERGY SYS
PHGN 466	MODERN OPTICAL ENGINEERING

SPACE RESOURCES

SPRS 498	INTRO. TO SPACE EXPLORATION & RES.
SPRS 598A	SPACE NUCLEAR POWER SYSTEMS

Required in ME Curriculum: 3CH ME Advanced Engineering Science & 9 CH Mech Electives from list above. * If not stated, MEGN courses offered both F & Sp semesters. Non-MEGN courses will need to be confirmed with the programs/catalog.