MASTER OF ENGINEERING, PLAN C, MECHANICAL ENGINEERING SPECIALIZATION

Requirements
Effective Summer 2023

General Program Requirements:

- Minimum 30 total credits of regular coursework (i.e. courses that are not numbered -8* or -9*)
- Minimum 21 credits, taken at CSU, that are 500-level or above
- Minimum 24 credits of MECH subject code coursework
- Minimum 21 credits taken after program admission

Students can take any courses as long as they meet the broad program requirements, above. Students who are specifically interested in the disciplines of materials engineering or biomedical engineering may find the elective guides, below, helpful in identifying coursework.

Suggestions for Students Interested in Energy Engineering Coursework

Code	Title	Credits
Foundational Technical Electives in Energy Engineering		
MECH 538	Mechanical Engineering Thermodynamics	3
MECH 544	Advanced Heat Transfer	3
Focus Area Technical Electives in Energy Engineering		
MECH 505	Steam Power Plants	3
MECH 516	Life Cycle and Techno-Economic Assessment	3
MECH 527	Hybrid Electric Vehicle Powertrains	3
MECH 534	Energy & Env. Impacts of Transportation	3
MECH 557	Turbomachinery	3
MECH 558	Combustion	3
MECH 575	Solar and Alternative Energies	3
MECH 658	Advanced Combustion Theory and Modeling	3
MECH 661	Theory/Control of Internal Combustion Engines	3

Suggestions for Students Interested in Materials Engineering Coursework

Code	Title	Credits
Foundational Technical Electives in Materials Engineering		
MECH 531/BIOM 531	Materials Engineering	3
MECH 532/BIOM 532	Materials Issues in Mechanical Design	3
Focus Area Technical Electives related to Materials Engineering		
MECH 411	Manufacturing Engineering	3
MECH 431	Metals and Alloys	3
MECH 432	Engineering of Nanomaterials	3
MECH 434	Materials Selection for Mechanical Design	3
MECH 530	Advanced Composite Materials	3
MECH 532/BIOM 532	Materials Issues in Mechanical Design	3
MECH 533	Composites Product Development	3
MECH 537	Processing of Polymer Composites	3
Broad Electives related to Materials Engineering		
MECH 407	Laser Applications in Mechanical Engineering	3
MECH 408	Applied Engineering Economy	3
MECH 502	Advanced/Additive Manufacturing Engineering	3
MECH 509	Design and Analysis in Engineering Research	3
MECH 520	Finite Element Analysis in Mechanical Engr	3
MECH 538	Mechanical Engineering Thermodynamics	3
MECH 564	Fundamentals of Robot Mechanics and Controls	3
MECH 569/ECE 569	Micro-Electro-Mechanical Devices	3
MECH 573/BIOM 573	Structure and Function of Biomaterials	3
MECH 574/BIOM 574	Bio-Inspired Surfaces	3
MECH 575	Solar and Alternative Energies	3

Suggestions for Students Interested in Biomedical Engineering Coursework

Code	Title	Credits
Foundational Technical Electives in Biomedical Engineering		
MECH 570/BIOM 570	Bioengineering	3
Focus Area Technical Electives in Biomedical Engineering		
BIOM 441	Biomechanics and Biomaterials	3
MECH 525/BIOM 525	Cell and Tissue Engineering	3
MECH 543	Biofluid Mechanics	3
MECH 573/BIOM 573	Structure and Function of Biomaterials	3
MECH 574/BIOM 574	Bio-Inspired Surfaces	3
MECH 576/BIOM 576	Quantitative Systems Physiology	4
MECH 578/BIOM 578	Musculoskeletal Biosolid Mechanics	3
MECH 579/BIOM 579	Cardiovascular Biomechanics	3
Broad Electives related to Biomedical Engineering		
MECH 502	Advanced/Additive Manufacturing Engineering	3
MECH 509	Design and Analysis in Engineering Research	3
MECH 530	Advanced Composite Materials	3
MECH 531/BIOM 531	Materials Engineering	3
MECH 532/BIOM 532	Materials Issues in Mechanical Design	3
MECH 533	Composites Product Development	3
MECH 564	Fundamentals of Robot Mechanics and Controls	3
MECH 569/ECE 569	Micro-Electro-Mechanical Devices	3