

## **Biomechanics Track for MS in Mechanical Engineering**

### **Course Requirements**

To complete the Biomechanics track, students will be required to complete 15 credits of Required Core Courses (five 3-credit courses), 12 credits of Biomechanics Elective Courses (including a MS Project, Thesis, or Internship), and a 3-credit General Elective Course.

### **Required Core Courses**

<u>Course No.</u>	<u>Course Title</u>	<u>Credit Hours</u>	<u>Campus</u>
MECH 5020	Biomechanics	3	Downtown
MECH 5025	Advanced Biomechanics	3	Downtown
MECH 5120	Methods of Engineering Analysis	3	Downtown

### ***Pick One***

MECH 5175	Finite Element Analysis	3	Downtown
MECH 5110	Numerical Methods for Engineers	3	Downtown

### ***Pick One***

MECH 5143	Elasticity	3	Downtown
MECH 5163	Dynamics	3	Downtown

### **Biomechanics Elective Courses**

MECH 5024	Mechanical Behavior of Materials	3	Downtown
MECH 5030	Human Movement	3	Downtown
MECH 5115	Applied Plasticity and Creep	3	Downtown
MECH 5141	Viscous Flow	3	Downtown
MECH 5144	Plasticity and Creep	3	Downtown
MECH 5208	Image-Based Biomechanical Analysis	3	Downtown
MECH 5238	Polymers	3	Downtown
MECH 5238	Introduction to Sports Engineering	3	Downtown
MECH 5840	Independent Study*	3	Downtown
MECH 5960	MS Report	3	Downtown
MECH 5950	MS Thesis	6	Downtown
MECH 5939	Internship	3	Off Campus
MCEN 5228	Biomechanics of Solids	3	Boulder
MCEN 5228	Medical Device Design	3	Boulder
MCEN 5228	Nano Bio Mechanics	3	Boulder
MCEN 5117	Anatomy and Physiology for Engineers	3	Boulder/AMC
BIOE 5063	3-D Modeling for Bioengineers	3	Downtown
BIOE 5073	Neural Interfaces and Bionic Limbs	3	AMC
BIOE 5083	Polymers in Biomedical Applications	3	AMC
DPTR 5001	Clinical Anatomy 1	5	AMC
DPTR 5011	Neuroscience	3	AMC
DPTR 5101	Movement Science 1	3	AMC
DPTR 5111	Exercise Science	2	AMC

## **General Elective Course**

Students are allowed to take 1 graduate level course in any discipline or area and count it towards the completion of the *Biomechanics* track.

Students can petition the graduate coordinator for additional courses, not listed within this document, to count towards a Biomechanics Elective Course.

## **Graduation Requirements**

To complete the graduation requirements for the *Biomechanics* track, students must complete one of the following:

- Internship (with a biomedical-related company)
- MS Project\*\*
- MS Thesis\*\*

Courses other than those listed as Biomechanical Electives may fulfill graduation requirements with the approval of the graduate coordinator.

*\*Must be approved by graduate coordinator*

*\*\*Both project and thesis must be related to biomechanics and be approved by the graduate coordinator and research committee before research begins*