Department\* 

Degree Type:\* 

Program Name:\* Exercise Science - Biomechanics Concentration (MS)

**Provide a brief summary of the proposed program changes and describe the rationale for the change(s):**

The main revision is to add a non-thesis option to the MS in Exercise Science Program.  The rationale for the modification is the changing profile of the enrolled students in the program.  Historically, the M.S. in Exercise Science students transitioned to academic doctoral programs. However, recently many of the students in the M.S. in Exercise Science program transition to clinical doctoral programs (e.g., Physical Therapy, Physician Assistant, and Medical School) which do not require a thesis for admission.  Therefore, the non-thesis option provides additional flexibility for program faculty in developing a graduate experience consistent with the student’s professional goals.  In the process of this revision, we are also updating details in the program policy statement to match the current university requirements for admission (e.g. test scores).

There are no new courses.

Concentration: Biomechanics

Biomechanics is an interdisciplinary science that objectively interprets movement in living organisms. Emphasis is placed on techniques of measuring kinematic and kinetic characteristics of living organisms and on mathematical methods of analysis. Students in the MS program in biomechanics are required to conduct research and complete a thesis or faculty approved research project.

Description

Credits within Exercise Science: 15-18 credits

Credits in Cognate Areas: 6-9 credits

Research: 3-6 credits

Total number of required credits: 30 credits

A. Courses Required Within Exercise Science

Courses

KAAP 601 Research Methods (3cr.)

KAAP 602 Data Analysis and Interpretation in Health Sciences (3cr.)

KAAP 617 Introduction to Laboratory Instruments (3cr.)

KAAP 627 Biomechanical Methods (3cr.)

At least one of the following courses:

KAAP 687 Seminar in Biomechanics (3cr.)

KAAP 688 Electromyographic Kinesiology (3cr.)

Total Credits from Area A: 15-18 credits

B. A minimum of 2 courses from the following list:

Courses

BMSC 686 Mathematics for Biomechanics (3cr.)

KAAP 650 Life Span Motor Development (3cr.)

KAAP 655 Advanced Physiology of Exercise (3cr.)

KAAP 607 Motor Learning and Control (3cr.)

KAAP 666 Special Problem (1 to 12cr.)

MEEG 612 Biomechanics of Human Movement (3cr.)

MEEG 682 Clinical Biomechanics (3cr.)

MEEG 683 Orthopedic Biomechanics (3cr.)

STAT 615 Design and Analysis of Experiments (3cr.)

STAT 617 Multivariate Methods (3cr.)

EDUC 862 Design and Analysis of Experiments (3cr.)

PHYT 604 Functional Anatomy and Biomechanics (4cr.)

Total Credits from Area B: 6-9 credits

C. A Minimum of 3 Credits from the following list:

Courses

KAAP 869 Master's Thesis (1 to 6cr.)

KAAP 868 Research (1 to 12cr.)

Total Credits from Area C: 3 - 6 credits

Students completing a Thesis will register for 6 credits of KAAP 869.  Students not completing a Thesis will register for 3 - 6 credits of KAAP 868.

BMSC - 686 - Mathematics for Biomechanics (3cr.)

EDUC - 862 - Design and Analysis of Experiments (3cr.)

KAAP - 601 - Research Methods (3cr.)

KAAP - 602 - Data Analysis and Interpretation in Health Sciences (3cr.)

KAAP - 607 - Motor Learning and Control (3cr.)

KAAP - 617 - Introduction to Laboratory Instruments (3cr.)

KAAP - 627 - Biomechanical Methods (3cr.)

KAAP - 650 - Life Span Motor Development (3cr.)

KAAP - 655 - Advanced Physiology of Exercise (3cr.)

KAAP - 666 - Special Problem (1 to 12cr.)

KAAP - 687 - Seminar in Biomechanics (3cr.)

KAAP - 688 - Electromyographic Kinesiology (3cr.)

KAAP - 868 - Research (1 to 12cr.)

KAAP - 869 - Master's Thesis (1 to 6cr.)

MEEG - 612 - Biomechanics of Human Movement (3cr.)

MEEG - 682 - Clinical Biomechanics (3cr.)

MEEG - 683 - Orthopedic Biomechanics (3cr.)

PHYT - 604 - Functional Anatomy and Biomechanics (4cr.)

STAT - 615 - Design and Analysis of Experiments (3cr.)

STAT - 617 - Multivariate Methods (3cr.)