Master's Degree
Biomechanics Curriculum

Prerequisites

- Undergraduate class in biomechanics which included kinematic and kinetic calculations (grade of B or higher),
- Undergraduate class in human functional anatomy/kinesiology
- Undergraduate class in general physics (may not be necessary if an undergraduate class in biomechanics has been completed)
- Undergraduate class in exercise physiology (grade of B or higher)

The classes listed above are meant to be used as a guide, not as absolute requirements. Students may be required to take some of the classes prior to being accepted. If you lack one or two of the recommendations, you may be accepted into the program with the condition that you complete any deficiencies while in the program. If you have specific questions about your requirements, you should contact the program faculty listed on the Biodynamics page.

Suggested Courses

The coursework in this specialization is divided up according to the general Master's guidelines. The hours are typically distributed as follows:

a) research tools (6-7 hours)
 b) area of concentration (12-15 hours)
 c) disciplinary support (6 hours)
 d) thesis (6 hours) or independent research/study (3 hours)

A typical distribution of courses would be as shown below. For course descriptions, follow this link: [https://education.uky.edu/courses-and-syllabi/?dept=KHP](https://education.uky.edu/courses-and-syllabi/?dept=KHP)

Research Tools

1. KHP 644 - Research Techniques Applied to KHP (3 credits)
2. STA 570 or STA/CPH 580 or EPE/EDP 558 - Basic Statistical Analysis or equivalent (3 or 4 credits)

Typical Sequence in Biomechanics

Fall of First Year

KHP 615 - Biomechanics of Fundamental Movements (3 credits)
KHP 640 - Lab Methods in Exercise Science (3 credits)
STA 570 or STA/CPH 580 or EPE/EDP 558 - Basic Statistical Analysis or equivalent (3 or 4 credits)
Spring of First Year

**KHP 616** - Sports Biomechanics  
or **KHP 715** - 3D Biomechanics - (3 credits)  
**KHP 644** - Research Techniques Applied to KHP - (3 credits)  
AT 680 - Principles and Applications of Kinesiological EMG  
or AT 700 - Muscle Mechanics (3 credits)

Fall of Second Year

Thesis or **KHP 782** - Independent Research or **KHP 695** - Independent Study (3 credits)  
Electives 3-6 credits

Spring of Second Year

**KHP 616** - Sports Biomechanics  
or **KHP 715** - 3D Biomechanics - (3 credits)  
AT 680 - Principles and Applications of Kinesiological EMG  
or AT 700 - Muscle Mechanics (3 credits)  
Thesis or **KHP 782** Independent Research or **KHP 695** - Independent Study or elective (3 credits)

**Total 30 credits**

All of the courses listed above are required for biomechanics majors. Research Methods Applied to KHP and Statistics are required for all Kinesiology and Health Promotion majors while the remainder of the courses are specific to biomechanics majors. Courses listed below are samples of elective courses available on campus.

Examples of Elective Courses Available in Department and University

**KHP 617** - Gait Analysis (3 credits)  
**KHP 620** - Advanced Exercise Physiology (3 credits)  
**KHP 674** - Foundations of Health Promotion (3 credits)  
**KHP 781** - Pro Seminar in KHP: Muscle Physiology (3 credits)  
**KHP 781** - Pro Seminar in KHP: Physiological Foundations of Performance (3 credits)  
CNU 605 - Wellness and Sports Nutrition (3 credits)  
RHB 744 - Advanced Topics in Motor Development  
STA 580 - Biostatistics I  
STA 671 - Regression and Correlation  
STA 672 - Design and Analysis of Experiments  
STA 677 - Applied Multivariate Methods  
STA 679 - Design and Analysis of Experiments II