

# MASTER OF SCIENCE IN KINESIOLOGY (BIOMECHANICS AND MOTOR BEHAVIOR)

**Web Site:** <https://twu.edu/kinesiology/graduate-programs/biomechanics/>

The M.S. in Kinesiology, Biomechanics and Motor Behavior emphasis area provides graduate students with a strong background in research that can be applied in the sports arena or hospital setting, thus bridging the gap between practice and research.

Golf practitioners and sport scientists have recently recognized the Biomechanics and Motor Behavior program as a national and international leader in golf swing biomechanics research and training. Biomechanics, exercise physiology, biochemistry, and motor behavior/pedagogy laboratories have been dedicated specifically to teaching and research.

## Marketable Skills

Defined by the Texas Higher Education Coordinating Board's 60x30 Strategic Plan (<https://reportcenter.highered.texas.gov/agency-publication/miscellaneous/the60x30-strategic-plan/>) as, "Those skills valued by employers that can be applied in a variety of work settings, including interpersonal, cognitive, and applied skills areas. These skills can be either primary or complementary to a major and are acquired by students through education, including curricular, co-curricular, and extracurricular activities."

1. Skillfully handle and set up various biomechanical analysis equipment in different settings.
2. Skillfully operate various biomechanical analysis software.
3. Skillfully conduct motion capture projects and collect biomechanical data.
4. Skillfully write programs using a computer programming language.

## Admissions

All students must meet the University requirements as outlined in the Admission to the TWU Graduate School (<http://catalog.twu.edu/graduate/graduate-school/admission-graduate-school/>) section of the catalog.

This academic program may have additional admission criteria that must also be completed as outlined on the program's website.

## Degree Requirements

### Prerequisites

- Anatomy (Functional Anatomy)
- Kinesiology & Biomechanics
- Motor Learning & Control
- Exercise Physiology

Prerequisite courses may be taken during the program but will not be counted toward the degree.

### Total Semester Credit Hours Required

**Thesis Option:** 30 semester credit hours (SCH)

**Publishable Manuscript Option:** 36 semester credit hours (SCH)

#### Thesis Option (30 SCH)

Code	Title	SCHs
<b>Kinesiology Core</b>		<b>6</b>
KINS 5023	Methods of Research	
KINS 5033	Applied Statistical Principles	
<b>Biomechanics &amp; Motor Behavior Emphasis</b>		<b>12</b>
KINS 5513	Mechanical Analysis of Human Motion	
KINS 6563	Human Motor Control	
KINS 6623	Biomechanical Analysis I: Motion Analysis	
KINS 6643	Biomechanical Analysis II: Data Acquisition and Instrumentation	
<b>Biomechanics &amp; Motor Behavior Electives</b>		<b>6</b>
Select 6 SCH in consultation with advisor		
KINS 5903	Special Topics	
KINS 5813	Research in Kinesiology	
KINS 5913	Independent Study	
KINS 6523	Advanced Biomechanics	
KINS 6573	Motor Learning and Performance	
MATH 5913	Independent Study	
<b>Culminating Experience</b>		
KINS 5983	Thesis	3
KINS 5993	Thesis	3
<b>Total SCHs</b>		<b>30</b>

#### Publishable Manuscript Option (36 SCH)

Code	Title	SCHs
<b>Kinesiology Core</b>		<b>6</b>
KINS 5023	Methods of Research	
KINS 5033	Applied Statistical Principles	
<b>Biomechanics &amp; Motor Behavior Emphasis</b>		<b>15</b>
KINS 5513	Mechanical Analysis of Human Motion	
KINS 6523	Advanced Biomechanics	
KINS 6563	Human Motor Control	
KINS 6623	Biomechanical Analysis I: Motion Analysis	
KINS 6643	Biomechanical Analysis II: Data Acquisition and Instrumentation	
<b>Biomechanics &amp; Motor Behavior Electives</b>		<b>12</b>
Select 12 SCH in consultation with advisor		
KINS 5123	Professional Affiliation	
KINS 5903	Special Topics	
KINS 5913	Independent Study	
KINS 6573	Motor Learning and Performance	
MATH 5913	Independent Study	
<b>Culminating Experience</b>		<b>3</b>
KINS 5973	Professional Paper and Project	
<b>Total SCHs</b>		<b>36</b>

## **Optional Minor (6 SCH)**

Students pursuing M.S. with Biomechanics and Motor Behavior emphasis typically do a minor in Math.

## **SHPK Master's Program Policies**

### **Culminating Experience**

After completing 24 semester credit hours of required coursework (including core courses), School of Health Promotion and Kinesiology students are eligible to complete their culminating experience. Students in the Biomechanics and Motor Behavior emphasis area may choose one of two culminating options: 1) Thesis or 2) Publishable Manuscript. Students are responsible for reviewing their emphasis area degree requirements, consulting with emphasis area faculty, and familiarizing themselves with the available options. Specific steps to complete each culminating experience option are located within the School of Health Promotion and Kinesiology (SHPK) Graduate Student Handbook.

### **Thesis**

All School of Health Promotion and Kinesiology master's students who select the thesis option are required to prepare, present, and orally defend a thesis reflecting substantial and independent research. The Thesis Research Committee must be formed according to Graduate School policies. Committees must include a minimum of three faculty members, with one faculty member being from outside the major/emphasis area. The School of Health Promotion and Kinesiology stipulates that a 10-class day reading period be granted to every research committee member for any thesis-related documents. No thesis research committee meetings may be scheduled or conducted during the last two weeks (last week of classes and finals week) of any semester. Refer to the Graduate School policy for Thesis grading options. Any student in SHPK receiving two consecutive enrolled semesters of LP (Lack of Adequate Progress) and/or NP (No Progress) grades or three cumulative semesters of LP and/or NP grades will be dismissed from the program.

### **Publishable Manuscript**

All School of Health Promotion and Kinesiology master's students who select the manuscript option must independently prepare a publishable manuscript reflecting substantial and original research. Students must consult with the major professor to define and refine the project's scope then form a three-person graduate faculty Manuscript Committee to include the major professor and two additional members. One member must be from outside the major/emphasis area. Students are expected to continue working on the manuscript to prepare and submit it for journal publication within the three months immediately following graduation. Use and adherence to a formal authorship agreement are highly recommended. Three consecutive months of insufficient progress will result in the major professor assuming authorship responsibilities toward publication.