

KINESIOLOGY: BIOMECHANICS, PH.D.

This is a named option in the Kinesiology, Ph.D. (<http://guide.wisc.edu/graduate/kinesiology/kinesiology-phd/>) For more information, please see our program website (<https://kinesiology.education.wisc.edu/academics/grad-program/>).

Biomechanics is the application of mechanics to biological systems. Within the broad field of biomechanics, specific areas of study at UW-Madison include: tissue mechanics, neuro-muscular control, human performance, sports performance, injury, rehabilitation, and limb dynamics. The program equips students to apply the tools of engineering analysis to biological systems from the cellular to the whole-body level with career objectives in academia, health care, and sports science.

Elective coursework within the program allows students to pursue individual interests such as physiological adaptations to mechanical stimuli or computer modeling. Students generally have opportunity to teach during their training.

The Ph.D. degree is designed to prepare students for independent research and teaching. Formal training includes course work in some of the following areas: math, statistics, physiology, mechanics, biomechanics, motor control, injury biomechanics, and injury epidemiology. The wide range of courses offered at the UW-Madison allows the student to tailor a curriculum which fits their individual interests. Students conduct independent research throughout their training which will be summarized in their dissertation. Presentations are also expected to be made at national scientific meetings and in peer-reviewed journals. Graduates generally pursue additional training (post-doctoral training) and go on to establish careers in academia or industrial settings.

ADMISSIONS

Please consult the table below for key information about this degree program's admissions requirements. The program may have more detailed admissions requirements, which can be found below the table or on the program's website.

Graduate admissions is a two-step process between academic programs and the Graduate School. **Applicants must meet** the minimum requirements (<https://grad.wisc.edu/apply/requirements/>) **of the Graduate School as well as the program(s)**. Once you have researched the graduate program(s) you are interested in, apply online (<https://grad.wisc.edu/apply/>).

Requirements	Detail
Fall Deadline	February 15
Spring Deadline	December 1
Summer Deadline	This program does not admit in the summer.
GRE (Graduate Record Examinations)	Not required.

English Proficiency Test Every applicant whose native language is not English or whose undergraduate instruction was not in English must provide an English proficiency test score and meet the Graduate School minimum requirements (<https://grad.wisc.edu/apply/requirements/#english-proficiency>).

Other Test(s) (e.g., GMAT, MCAT) n/a

Letters of Recommendation Required 3

The application deadline is February 15, applications may be considered after this date.

For admission, the Graduate School requires, as does the Kinesiology department, a minimum 3.0 GPA (on a 4.0=A scale) on the last 60 semester hours (or equivalent) of undergraduate coursework. An applicant must submit academic transcripts from each institution attended and a statement of reasons for graduate study. The statement should provide specific details on why the applicant names this named option. If a professor in the area of specialization agrees to serve as the prospective student's advisor, then the department's graduate office recommends the applicant for admission to the Graduate School. Please consult the kinesiology website (<https://kinesiology.education.wisc.edu/grad/about/>) for further details of these requirements and procedures.

FUNDING

GRADUATE SCHOOL RESOURCES

Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information (<https://grad.wisc.edu/funding/>) is available from the Graduate School. Be sure to check with your program for individual policies and restrictions related to funding.

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (<http://guide.wisc.edu/graduate/#policiesandrequirementstext>), in addition to the program requirements listed below.

NAMED OPTION REQUIREMENTS

MODE OF INSTRUCTION

Face to Face	Evening/ Weekend	Online	Hybrid	Accelerated
Yes	No	No	No	No

Mode of Instruction Definitions

Accelerated: Accelerated programs are offered at a fast pace that condenses the time to completion. Students are able to complete a program with minimal disruptions to careers and other commitments.

Evening/Weekend: Courses meet on the UW-Madison campus only in evenings and/or on weekends to accommodate typical business

schedules. Students have the advantages of face-to-face courses with the flexibility to keep work and other life commitments.

Face-to-Face: Courses typically meet during weekdays on the UW-Madison Campus.

Hybrid: These programs combine face-to-face and online learning formats. Contact the program for more specific information.

Online: These programs are offered 100% online. Some programs may require an on-campus orientation or residency experience, but the courses will be facilitated in an online format.

CURRICULAR REQUIREMENTS

Requirements	Detail
Minimum Credit Requirement	51 credits
Minimum Residence Credit Requirement	32 credits
Minimum Graduate Coursework Requirement	26 credits must be graduate-level coursework. Details can be found in the Graduate School's Minimum Graduate Coursework (50%) policy (https://policy.wisc.edu/library/UW-1244 (https://policy.wisc.edu/library/UW-1244/)).
Overall Graduate GPA Requirement	3.00 GPA required. This program follows the Graduate School's policy: https://policy.wisc.edu/library/UW-1203 (https://policy.wisc.edu/library/UW-1203/)
Other Grade Requirements	n/a
Assessments and Examinations	Ph.D. students must: <ol style="list-style-type: none"> 1. pass preliminary exams (http://grad.wisc.edu/acadpolicy/#preliminaryexaminations) administered by a three member faculty committee; and 2. successfully propose and defend a dissertation before a five-member committee.
Language Requirements	No language requirements.
Breadth Requirement	A doctoral minor or graduate/professional certificate is not required due to the broad areas of inquiry within Kinesiology. To ensure the breadth of study requirement is achieved, students are required to complete a minimum of 2 graduate level courses (at least 2 credits each) in Kinesiology, outside of their named option coursework.

REQUIRED COURSES

Code	Title	Credits
KINES 618	Biomechanics	2
KINES 951	Seminar-Biomechanics	2
KINES 900	Seminar in Kinesiology ¹	4
KINES 990	Research or Thesis	4+
Statistics		3-4 minimum

Examples provided, but courses are chosen in consultation with advisor

STAT/F&W ECOL/ Statistical Methods for Bioscience I
HORT 571

STAT 575	Statistical Methods for Spatial Data
ED PSYCH 760	Statistical Methods Applied to Education I
ED PSYCH 761	Statistical Methods Applied to Education II

General Field Requirement 4-6

At least 2 graduate level courses of at least 2 credits each in Kinesiology, outside the Biomechanics area. ²

Suggested Electives (chosen in consultation with advisor)

Students take as many electives as needed to reach the total credit minimum.

KINES 614	Biological Factors Influencing Exercise Performance
KINES 721	Neural Basis for Movement
KINES 861	Principles of Motor Control and Learning
KINES 961	Seminar in Motor Control and Learning

Total Credits 51

¹

All Kinesiology M.S. and Ph.D. students are required to register for KINES 900 Seminar in Kinesiology for 1 credit each semester they are enrolled in the program, for a minimum of 4 credits.

²

Courses within the biomechanics area include KINES 618 Biomechanics and KINES 951 Seminar-Biomechanics

POLICIES

GRADUATE SCHOOL POLICIES

The Graduate School's Academic Policies and Procedures (<https://grad.wisc.edu/acadpolicy/>) provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

NAMED OPTION-SPECIFIC POLICIES

PRIOR COURSEWORK

Graduate Work from Other Institutions

With program approval, students are allowed to count no more than 18 credits of graduate coursework from other institutions. Coursework earned ten years or more prior to admission to a doctoral degree is not allowed to satisfy requirements.

UW-Madison Undergraduate

No credits from a UW-Madison undergraduate degree are allowed to count toward the degree.

UW-Madison University Special

This program follows the Graduate School's policy for Transfer from UW-Madison University Special Student Career at UW-Madison. (<https://policy.wisc.edu/library/UW-1216/>)

PROBATION

This program follows the Graduate School's Probation policy. (<https://policy.wisc.edu/library/UW-1217/>)

ADVISOR / COMMITTEE

This program follows the Graduate School's Advisor policy (<https://policy.wisc.edu/library/UW-1232/>) and the Graduate School's Committees policy (<https://policy.wisc.edu/library/UW-1201/>), except the dissertation committee must have a minimum of 5 members. .

Ph.D. students work with two committees during their studies.

1. Preliminary exams Committee (three graduate faculty members)
2. Dissertation committee (five members)
 - a. Proposal committee
 - b. Defense committee

Ordinarily the proposal and defense committees have the same membership. Committee members are selected by the student in consultation with the faculty advisor.

CREDITS PER TERM ALLOWED

15 credits

TIME LIMITS

This program follows the Graduate School's Time Limits policy. (<https://policy.wisc.edu/library/UW-1221/>)

Within the Department, completion of required courses and passing preliminary exams within three years of starting the Ph.D. program is considered satisfactory progress. See the Graduate Program Handbook link in Contact Information for more information.

GRIEVANCES AND APPEALS

These resources may be helpful in addressing your concerns:

- Bias or Hate Reporting (<https://doso.students.wisc.edu/bias-or-hate-reporting/>)
- Graduate Assistantship Policies and Procedures (<https://hr.wisc.edu/policies/gapp/#grievance-procedure>)
- Hostile and Intimidating Behavior Policies and Procedures (<https://hr.wisc.edu/hib/>)
 - Office of the Provost for Faculty and Staff Affairs (<https://facstaff.provost.wisc.edu/>)
- Dean of Students Office (<https://doso.students.wisc.edu/>) (for all students to seek grievance assistance and support)
- Employee Assistance (<http://www.eao.wisc.edu/>) (for personal counseling and workplace consultation around communication and conflict involving graduate assistants and other employees, post-doctoral students, faculty and staff)
- Employee Disability Resource Office (<https://employeedisabilities.wisc.edu/>) (for qualified employees or applicants with disabilities to have equal employment opportunities)
- Graduate School (<https://grad.wisc.edu/>) (for informal advice at any level of review and for official appeals of program/departmental or school/college grievance decisions)
- Office of Compliance (<https://compliance.wisc.edu/>) (for class harassment and discrimination, including sexual harassment and sexual violence)

- Office of Student Conduct and Community Standards (<https://conduct.students.wisc.edu/>) (for conflicts involving students)
- Ombuds Office for Faculty and Staff (<http://www.ombuds.wisc.edu/>) (for employed graduate students and post-docs, as well as faculty and staff)
- Title IX (<https://compliance.wisc.edu/titleix/>) (for concerns about discrimination)

Any student who feels that they have been treated unfairly by a faculty or staff member has the right to complain about the treatment and to receive a prompt hearing of the grievance, following these grievance procedures. The complaint may concern course grades, classroom treatment, program admission, or other issues. To insure a prompt and fair hearing of any complaint, and to protect both the rights of the student and the person at whom the complaint is addressed, the procedures below are used in the School of Education.

The person whom the complaint is directed against must be an employee of the School of Education. Any student or potential student may use these procedures unless the complaint is covered by other campus rules or contracts. The following steps are available within the School of Education when a student has a grievance:

1. The student should first talk with the person against whom the grievance is directed. Most issues can be settled at this level. If the complaint is directed against a teaching assistant, and the student is not satisfied, the next step would be to talk to the TA's supervisor, who is usually the course professor. If the complaint is not resolved satisfactorily, the student may continue to step 2.
2. If the complaint does not involve an academic department, the procedure outlined in Step 4 below should be followed. If the complaint involves an academic department, the student should contact the chair of the department. The chair will attempt to resolve the problem informally. If this cannot be done to the student's satisfaction, the student may submit the grievance to the chair in writing. This must be done within 60 calendar days of the alleged unfair treatment.
3. On receipt of a written complaint, the chair will refer the matter to a departmental committee, which will obtain a written response from the person at whom the complaint is directed. This response shall be shared with the person filing the grievance. The chair will provide a timely written decision to the student on the action taken by the committee.
4. If either party is not satisfied with the decision of the department, they have five working days from receipt of the decision to contact the dean's office (at the number below), indicating the intention to appeal. If the complaint does not involve an academic department in the school, the student must contact the dean's office within 60 calendar days of the alleged unfair treatment.
5. In either case, there will be an attempt to resolve the issue informally by the associate dean. If this cannot be done, the complaint can be filed in writing with the dean's office. This must be done within 10 working days of the time the appealing party was notified that informal resolution was unsuccessful.
6. On receipt of such a written complaint, the associate dean will convene a subcommittee of the school's Equity & Diversity Committee. This subcommittee may ask for additional information from the parties involved and may hold a hearing at which both parties will be asked to speak separately. The subcommittee will then make a written recommendation to the dean of the School of Education who will render a decision. Unless a longer time is

negotiated, this written decision shall be made within 20 working days from the date when the grievance was filed with the dean's office.

Questions about these procedures can be directed to the School of Education Dean's Office, 377 Education Building, 1000 Bascom Mall, 608-262-1763.

State law contains additional provisions regarding discrimination and harassment. Wisconsin Statutes 36.12 reads, in part: "No student may be denied admission to, participation in or the benefits of, or be discriminated against in any service, program, course or facility of the system or its institutions or center because of the student's race, color, creed, religion, sex, national origin, disability, ancestry, age, sexual orientation, pregnancy, marital status or parental status." In addition, UW–System prohibits discrimination based on gender identity or gender expression. Students have the right to file discrimination and harassment complaints with the Office of Compliance (<https://compliance.wisc.edu/>), 361 Bascom Hall, 608-265-6018, uwcomplianceoffice@wisc.edu.

OTHER

n/a

PROFESSIONAL DEVELOPMENT

GRADUATE SCHOOL RESOURCES

Take advantage of the Graduate School's professional development resources (<https://grad.wisc.edu/pd/>) to build skills, thrive academically, and launch your career.

PEOPLE

Faculty mentors in Biomechanics include:

David Bell
Scott Crawford
Kreg Gruben
Kristen Pickett

Contact information (<https://kinesiology.education.wisc.edu/people/>) for faculty and lab information (<https://kinesiology.education.wisc.edu/research/>) can be found on the Kinesiology website.