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## *BIOMS Program Policy Statement*

### **Interdisciplinary Biomechanics and Movement Science Master's and Doctoral Programs**

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## **Part I. Program History**

### ***A. Purpose***

The human body is comprised of a variety of complex, integrated systems. An understanding of the role of these systems with respect to even a limited set of problems, such as the performance of everyday or highly skilled motor activities or the causes and resolution of bone/joint dysfunction, requires experimental approaches from a number of disciplines. As a result, a group of faculty at the University has assembled with a mission to study the body from an interdisciplinary approach. An understanding of structural integrity along with movement generation is the basis for this program of study. The faculty come from backgrounds in physiology, biomechanics, computer science, engineering, motor control and rehabilitation science. Interests range from robotic interfaces for environmental controls for the disabled, to fracture fixation, to understanding of normal and pathological movement.

A significant percentage of the population has some form of physical disability that limits their functional abilities. The form of these disabilities may be progressive deterioration of tissue, congenital defects or trauma-inflicted damage. The adverse effects of many disabilities could be reduced or alleviated through appropriate research on topics ranging from microscopic bone remodeling to corrective device development.

The program title stems from the fact that although biomechanical methods are important to gain an understanding of human movement, such methods also play an important role in non-movement problems such as bone remodeling after injury or developing better prosthetic devices. Thus, the program attempts to bring together scientists from a number of complementary disciplines to address unresolved problems of human function that are related both directly and indirectly to problems of movement. The interdisciplinary nature of the program encourages collaborative efforts incorporating biomechanics, human physiology, motor neurophysiology, engineering and computational approaches, with the goal of improving human life. Such efforts will, in time, advance and amplify the ability of medical practitioners to respond to maladies and to prescribe appropriate preventative or corrective measures. We believe that this program provides an opportunity for graduate students to study the human body in a way not possible through any of the traditional programs currently offered at this university.

This program was formed by a group of twenty faculty and administrators from four different units. The impetus for a single unified program of study grew out of the realization that each of the four units was seeking a vehicle to create an academic program that dealt with the application of science and engineering toward solving the problems realized by the physically challenged. During the initial phase of planning, the group examined and analyzed models of existing programs in biomedical and rehabilitation engineering from institutions around the country. In addition, advice was sought from administrators of Operations Research, the University's only intercollegiate, interdisciplinary graduate program. Directors of other graduate degree programs on campus were contacted for input on how the creation of this program would impact existing graduate degree programs. The resulting program represents the synthesis of countless communications between group members, and an astounding quantity of consensus decisions reached through in-depth discussions of course requirements, seminar formats, student recruitment and admission policies, administrative structures and responsibilities, and numerous additional details.

### ***B. Date of Permanent Status***

The Interdisciplinary Program in Biomechanics and Movement Science was awarded permanent status in 2000.

### ***C. Degrees Offered***

The degrees awarded to those who complete this program will be either a Master of Science in Biomechanics and Movement Science, or a Doctor of Philosophy in Biomechanics and Movement Science.

## **Part II. Admission**

### ***A. Admission Requirements***

Applicants must submit all materials directly to the University Office of Graduate and Professional Education using the [online admission process](#) before admission can be considered. Admission applications are available at: <https://grad-admissions.udel.edu/apply/>

The BIOMS admission process is completed as follows: First, finished applications consisting of the online application, undergraduate/graduate transcripts, GRE scores, letters of recommendation, and the written statement of goals and objectives are reviewed by BIOMS faculty members seeking new students. Faculty members identify students whose background, goals, and objectives are compatible with their own areas of research and funding. The faculty member then notifies the Program Director that they have agreed to advise the potential student, and the application materials are reviewed by the Biomechanics and Movement Science Executive Committee. The Executive Committee arrives at an admission decision after reviewing the completed application. To be admitted, a student must have an advisor. [International applicants](#) must submit official proof of English proficiency such as TOEFL or IELTS scores. The recommended minimum TOEFL score is 100 and/or IELTS of 6.5. Additional information regarding English proficiency can be found at <http://grad.udel.edu/apply/tofel-ielts/>

### ***B. Prior Degree Requirements***

Baccalaureate degree from an accredited college or university.

### ***C. Application Deadlines***

BIOMS accepts applications throughout the year on a rolling basis. Students can enroll in the Fall or Spring semester, or Winter/Summer Special Sessions.

### ***D. Special Competencies Needed***

Admission decisions are made by the Executive Committee of the Biomechanics and Movement Science Program. Students will be admitted to the program based upon enrollment availability and their ability to meet the following minimum recommended entrance requirements.

- Acceptance by a primary advisor
- A GRE score of 300 on math and verbal sections combined
- A undergraduate GPA of 3.0 or higher
- Pre-requisites
  - Math through calculus (2 semesters)
  - Anatomy/Physiology
  - Physics (2 Semesters)
  - Chemistry (2 Semesters)

### *E. Admission Categories*

Students admitted into the Biomechanics and Movement Science Program may be admitted into one of three categories.

1) **Regular.** Regular status is offered to students who meet all of the established entrance requirements, who have a record of high scholarship in their fields of specialization, and who have the ability, interest, and maturity necessary for successful study at the graduate level in a degree program.

a. **Conditional Admission.** Successful applicants are typically admitted conditionally because information stated on, and documentation uploaded into, the application is self-reported and unofficial. Fulfilling the conditions stated on an offer of conditional admission by the first date of graduate coursework is critical, so the instructions stated on the letter must be followed carefully. Failure to clear all stated conditions by the start of graduate coursework may result in revocation of admission to the graduate program.

2) **Provisional.** Provisional status is offered to applicants who are seeking admission to a degree program but lack specific prerequisites needed in the University of Delaware degree requirements. All provisional requirements must be met within the deadline given before regular status can be granted. Failure to meet the provisions by this deadline is grounds for dismissal from the program. Students admitted with provisional status to a degree program are generally not eligible for assistantships nor fellowships.

### *F. University Statement*

Admission to the graduate program is competitive. Those who meet stated requirements are not guaranteed admission, nor are those who fail to meet all of those requirements necessarily precluded from admission if they offer other appropriate strengths.

## **Part III. Academic Degree: Master of Science (MS)**

### *A. Degree Requirements for the Master of Science (MS)*

#### 1) **Program of Study**

All accepted students must submit a [planned program of study](#) by the end of their first semester, created with their primary advisors. An area of concentration must be declared in the program of study document.

#### **Areas of Specialization within BIOMS:**

- Applied Anatomy and Physiology
- Biomechanics
- Cytomechanics
- Motor Control/Behavior
- Clinical and Translational Science

**Required Courses (MS):**

Experimental Design or Statistics	3
Instrumentation	3
Outside Specialization (Breadth)	6
Inside Specialization (Depth)	12
BIOMS Seminar (BMSC 865)	*
<u>Thesis</u>	<u>6</u>
Total	30

\* Students must register for and attend the BIOMS Seminar (BMSC 865) for 2 semesters while they are enrolled.

**2) Independent Study and Transfer Credits**

Students in the Master's degree program are allowed to take a maximum of 6 credits of [independent study](#). Additional independent study credits will not count towards graduation. A maximum of 9 graduate credit hours may be transferred from another institution to the degree. Candidates for the degree must have regular status.

**3) Changes to the Program of Study**

Students may need to alter approved programs of study once they have entered the program due to reasons that can include scheduling conflicts or the creation of new courses directly related to the student's goals. Students who wish to make minor changes to their program of study must obtain permission from their advisor. Major changes to the program of study must be approved by the Executive Committee. Any change of a previously approved program of study must be submitted in writing to the Program Director.

Students may petition in writing for a variance in the degree requirements and must have approval from their faculty advisor and the BIOMS Executive Committee.

**4) GPA Requirements**

A grade below a B- will not be counted toward the course requirements for a degree but is calculated in the student's cumulative grade point average. To be considered in good academic standing, a student must maintain a minimum cumulative graduate grade point average (GPA) of 3.00 on a 4.00 scale each semester. To be eligible for an advanced degree, a student's cumulative grade point average shall be at least a 3.00 and the student's grades in courses counted toward the degree requirements of the program shall equal at least a 3.00.

***B. Committees for Theses*****1) Establishment of Thesis Committee**

The student and his/her advisor will create a thesis committee at the time the student begins to develop the thesis proposal. The thesis committee shall include three University faculty from within the Biomechanics and Movement Science Program, and may have no more than six members. The thesis advisor must be a member of the BIOMS faculty and at least one of the BIOMS committee members must be from an area of focus in biomechanics and movement science different from that of the advisor. With the approval of the BIOMS Executive Committee, a professional staff member who holds a secondary faculty appointment within an academic department may serve as a committee member. Faculty who have retired or resigned from the University may maintain committee membership or

continue to chair committees of students whose work began under their direction prior to their retirement or departure from the University. BIOMS faculty who do not have regular faculty status may co-chair the thesis committee provided that the other co-chair meets the definition for regular faculty status. It is the responsibility of the thesis advisor to replace members who withdraw from the committee during the thesis process.

## 2) **Defense of the Thesis Proposal**

The thesis proposal must be in the format of an [NIH R03 proposal](#). Sections A-E of the Research Plan must be included. The number of pages required will be at the discretion of the advisor. The thesis proposal defense will be scheduled only after a majority of members of the thesis committee have determined that a defense is appropriate. A final copy of the thesis proposal must be delivered to the members of the thesis committee at least two weeks in advance of the proposal defense. A copy of the thesis proposal must be available one week prior to the proposal defense by either submitting an electronic copy to the BIOMS administrative staff for redistribution, or by delivering a hard copy to each site supporting BIOMS faculty. Prior to the presentation, proposals that involve the use of [human](#) or [animal](#) subjects must receive approval from the [University Institutional Review Board \(IRB\)](#). Details for [training](#), creating consent forms and submitting studies for review by the IRB can be obtained from the University of Delaware Research office. (<http://www.udel.edu/research/>)

The thesis proposal defense, will be open to the public, and invitations will be sent to all BIOMS faculty and students at least one week prior to the date of the defense. The candidate will present a summary of the proposed research, and will then field questions from the committee, attending faculty, and invited guests. After all questions have been fielded, the thesis committee will meet to decide whether the thesis proposal outcome was a [pass](#), [conditional pass](#), [re-examination](#), or [failure](#). Results of the meeting will then be presented to the student. The student can not receive more than one dissenting vote from members of the committee to receive a passing grade. Upon completion, the student is responsible for obtaining all the necessary signatures on the [Thesis Proposal Defense Form](#). A signed copy of the form will be forwarded to the Program Director. Students who fail the thesis proposal defense will receive one additional opportunity to repeat the process and defend a new or modified thesis proposal at a time agreed upon by committee members, but within 6 months.

## 3) **Defense of the Thesis**

The format of the thesis must adhere to the University's [Thesis and Dissertation Manual](#) and [style guidelines](#). These documents are available on the University's website. The thesis defense will be scheduled only after the chair of the thesis committee has determined that a defense is appropriate. A copy of the thesis proposal must be available one week prior to the proposal defense by either submitting an electronic copy to the BIOMS administrative staff for redistribution, or by delivering a hard copy to each site supporting BIOMS faculty.

The thesis defense will be open to the public, and invitations will be sent to all BIOMS faculty and students at least one week prior to the defense. The candidate will present a summary of the completed research, and will then field questions from the committee, attending faculty, and invited guests. After all questions have been fielded, the thesis committee will meet privately to decide whether the thesis is accepted, rejected, or accepted pending revisions. Results of the meeting will then be presented to the student. The student may not receive more than one dissenting vote from members of the committee to receive a passing grade.

\*Master's theses are due in the Office of Graduate and Professional Education six weeks prior to the date of degree conferral

#### 4) [Processing the Final Document](#)

Students must follow the university approved step-by-step [guidelines for graduation](#). The thesis must be approved by the Chair of the student's thesis committee, the Director of the Biomechanics and Movement Science program, and the Senior Vice Provost for Graduate and Professional education. Three original abstracts (on bond paper) must be submitted with the thesis. The thesis must be submitted to the Office of Graduate and Professional Education for approval not later than six weeks prior to the degree conferral date.

The University reserves the right to duplicate a thesis for distribution to other libraries or for the use of individual scholars. However, the University will not publish a thesis for general distribution without the written consent of the author. Copyrighting of a master's thesis can be accomplished by submitting a copy and \$55 fee to the Office of Graduate and Professional Education, which is processed through [ProQuest](#) and the [Copyright Office in Washington, D.C.](#) Published works are eligible for copyright protection in the United States if the work is first published in the United States.

#### 5) [Satisfactory Progress toward a Graduate Degree and Time Limits](#)

The BIOMS program will follow the University of Delaware, Office of Graduate and Professional Education recommended policy for determining students' failure to make Satisfactory Progress towards degree requirements and time limits for completion. Students enrolled in at least 9 credit hours or in sustaining credit are considered full-time students, although students holding assistantships are considered full-time with 6 credits.

#### 6) [Grievance Procedures](#)

Students concerned that they have received an unfair evaluation or have been graded inappropriately may file grievances in accordance with student guide to [University of Delaware policies](#). Students are encouraged to contact the BIOMS Graduate Program Director prior to filing a formal grievance in an effort to resolve the situation informally.

### *C. Articulation Between Master's and Doctoral Degrees*

The master's degree is considered terminal unless the student plans to continue in a doctoral program. Students receiving their master's degree at the University of Delaware are not eligible to remain classified as graduate students and are automatically reclassified [CEND \(Continuing Education Non-degree\)](#) in any subsequent semester that they register following degree clearance unless the department, with the approval of the Office of Graduate and Professional Education, has already admitted them into a doctoral program. The procedures for changing status after earning a master's degree are as follows:

If a master's degree candidate is continuing toward a doctoral degree in the same major as the master's degree, the student must request that the department submit a [Change of Classification Form](#) at the same time or before the student submits an application for the master's degree. If the department is unable to determine the student's eligibility to pursue a doctoral degree until after the master's degree is awarded, the department will notify the Office of Graduate and Professional Education by writing such a statement on the student's master's degree application. A student's classification changes from regular status in a master's degree program, to pre-candidacy when admitted to a doctoral program. If a master's degree candidate desires to continue toward a doctoral degree in a different major than the master's degree, the student must submit a completed [admission application form](#) to the Office of Graduate and Professional Education and follow the same procedure for admission as any other applicant.



## **Part IV. Academic Degree: Doctor of Philosophy (PhD)**

### **A. Degree Requirements for a PhD in Biomechanics and Movement Science**

#### **1) Program of Study:**

All accepted students are expected to submit a [planned program of study](#) by the end of their first semester, created with their primary advisors. An area of specialization must be declared in the program of study document.

#### **Areas of Specialization within BIOMS:**

Applied Anatomy and Physiology  
Biomechanics  
Cytomechanics  
Motor Control/Behavior  
Clinical and Translational Science

#### **Required Courses (PhD):**

Experimental Design or Statistics	3
Instrumentation	3
Outside Specialization (Breadth)	6
Inside Specialization (Depth)	21
BIOMS Seminar (BMSC 865)	*
<u>Dissertation</u>	<u>9</u>
Total	42

\* Students must register for and attend 3 semesters of the BIOMS Seminar (BMSC 865) while they are enrolled.

#### **2) Independent Study, Research and Transfer Credits**

Students in the Doctoral degree program are allowed to apply a maximum of 12 credits of [independent study](#) and a maximum of 6 credits of research (BMSC 868). However, no more than 12 combined credits from research and independent study courses may be used to meet the 33 credit requirement (before dissertation credits). Additional independent study credits will not count towards graduation. A maximum of 9 graduate credit hours may be transferred from another institution to the degree. Candidates for the degree must have regular status.

#### **3) Changes to the Program of Study**

Students may need to alter approved programs of study once they have entered the program due to reasons that can include scheduling conflicts or the creation of new courses directly related to the student's goals. Students who wish to make minor changes to their program of study must obtain permission from their advisor. Major changes to the program of study must be approved by the Executive Committee. Any change of a previously approved program of study must be submitted in writing to the Program Director. Students may petition in writing for a variance in the degree requirements and must have approval from their faculty advisor and the BIOMS Executive Committee.

#### 4) **GPA Requirements**

A grade below a B- will not be counted toward the course requirements for a degree but is calculated in the student's cumulative grade point average. To be considered in good academic standing, a student must maintain a minimum cumulative graduate grade point average (GPA) of 3.00 on a 4.00 scale each semester. To be eligible for an advanced degree, a student's cumulative grade point average shall be at least a 3.00 and the student's grades in courses counted toward the degree requirements of the program shall equal at least a 3.00.

#### 5) **Residency Requirements**

At least 4 academic years of graduate work are normally required for the Ph.D. degree. At least one continuous academic year must be devoted exclusively to full-time study (9 credit hours per semester) in the major field in residence at the University of Delaware. Students holding assistantships are considered full-time with 6 credits. This residency requirement may be fulfilled using a fall and spring semester combination or a spring and fall semester combination, but summer or winter sessions do not meet the qualification. Course credit earned in a master's program at the University of Delaware may be applied toward the doctoral degree residency requirement if the candidate is receiving both degrees from the University in the same major field.

#### 6) **Registration Requirements Prior to Doctoral Candidacy**

Course registration requirements are determined by the student's approved program of study. Once the student has registered for all course requirements in a program of study but has not yet met all of the stipulations for passing into candidacy, the student must maintain registration during the fall and spring semesters in course(s) or in three to twelve credits of Pre-Candidacy Study (964). Pre-Candidacy Study (964) is graded pass/fail. If the student registered in Pre-Candidacy Study is admitted to candidacy before the end of the free drop/add period of the next semester, the registration in Pre-Candidacy Study (964) for the preceding semester may be changed to the course, Doctoral Dissertation (969). Full time, regular status students who are holding a graduate assistantship or tuition scholarship must be registered for a minimum of 6 graduate credits, and those holding a fellowship must be registered for a minimum of 9 graduate credits.)

### ***B. Qualifying and Candidacy Exams for the BIOMS PhD Program***

Students will be required to successfully complete a 2 hour oral Qualifying Exam near the end of the second semester (Fall/Spring) in the program, and a written Individual Development Plan (IDP) for their Candidacy Exam by the end of the 4<sup>th</sup> semester. The exams will be evaluated by a committee of 3 faculty members and graded as [Pass](#), [Conditional Pass](#), [Re-Examination](#), or [Fail](#).

#### 1) **Eligibility**

##### ***a. Qualifying Exam***

During the semester when a student will complete at least 12 graduate credits of their required coursework, they will be eligible to proceed with their oral Qualifying Exam. The Qualifying Exam will be completed at the end of the student's second semester (Fall or Spring) and must be completed by the end of the 3<sup>rd</sup> academic semester (not including Winter or Summer). In order to take the examination, each student must be in good academic standing and have approval by the faculty advisor.

***b. Candidacy Exam***

During the semester when a student will complete at least 24 credits of their required coursework, they will be eligible to proceed with their written Candidacy Exam, which follows the format of an [Individual Development Plan \(IDP\)](#). The Candidacy Exam will be submitted no later than 6 months after the completion of the 24 credits, and must be completed by the end of the student's 5<sup>th</sup> academic semester (not including Winter or Summer). In order to submit the examination, each student must be in good academic standing and have approval by the faculty advisor.

**2) Qualifying & Candidacy Exams Committees**

The student's exam committees will be made up of 3 members, selected by the student's advisor and approved by the Executive Committee.

- a.** The student's advisor
- b.** One BIOMS faculty member who has similar content expertise in the student's proposed research area
- c.** One additional committee member(s), who may be internal or external to the BIOMS program and/or the University of Delaware, but who would be considered outside the student's primary research area/expertise, and is informed by the student's advisor on the review and grading procedures of this examination.

\* Members of the Qualifying and Candidacy Exam committees may be different, and may also be part of the student's dissertation committee, but this is not required.

**3) Scheduling of the Oral Qualifying Exams**

Once the committee has been formed, the student will meet with each of their committee members to obtain guidance regarding preparation for the exams. The student is responsible for providing each committee member with a copy of their program of study and syllabi from the courses completed. When the student feels ready, and with the advisors consent, the oral exam will be scheduled.

**4) Oral Qualifying Exam Components**

The oral comprehensive exam will include three areas designed to test the student's general knowledge base in biomechanics and movement science, the area of study that is consistent with the student's planned dissertation work, research methodology, and their ability to critically evaluate scientific literature. The examination is organized and administered by the advisor in consultation with the student's committee.

Each member of the committee will be responsible for providing 2 scholarly articles to the student in preparation for the exam, at least 2 weeks in advance of the oral qualifying exam. Committee members may ask questions of the student to orally critique/interpret these articles, but may also broaden the scope of their questions to BIOMS content from the courses, or the student's area of study. Any committee member may ask questions regarding research specific methodology, data analysis and interpretation. This questioning will be confined within the expected depth and breadth of the student's knowledge, based upon the program of study that they have completed. The oral exam will have a 2-hour time limit. Students must pass the oral exam to progress in the doctoral program.

***a. Research Specific & Current Literature Questions***

The student's advisor will offer questions regarding the existing literature that requires the student to demonstrate their grasp of research methodology, experimental design, data analysis and interpretation in their chosen area of study.

**b. Content Area Questions**

The committee member/s from within the student's area of concentration will focus on providing the student with questions from within their content area. A particular emphasis will be placed on an understanding of the background literature within the student's area of research interest. The committee will be encouraged to ask questions relating to the history, importance, and current evidence surrounding their proposed research area. Students are expected to have an understanding of the papers provided. The committee is encouraged to ask questions pertaining to foundational works within the student's field.

**c. Breadth Questions**

The committee member from outside the student's area of concentration will focus on providing the student with questions from outside the student's content area. Students are expected to be knowledgeable in all areas pertaining to course content they have taken since enrolling in the program. Students who have transferred credits from another institution will also be accountable for material from those courses.

**5) Written Candidacy Exam Components**

The purpose of the written candidacy examination is to give the student the opportunity to demonstrate:

- a.** An understanding of the research area and the analytical techniques in which the student is interested.
- b.** Comprehension of didactic material learned in the curriculum.
- c.** The ability to plan and develop an experimental approach to solve problems within the student's area of research. The student will write a document in the format of a [National Institutes of Health \(NIH\) Individual Development Plan \(IDP\)](#). The student's plan will be individually tailored and well integrated with his/her research area. This document will serve as a written plan for evaluating the student's progress in research. It must be created by the student and approved by the advisor, prior to submission to the Written Candidacy Exam Committee for final approval by consensus of the committee.

**d. Format for the Individual Development Plan**

- 1.** Student's Background (Maximum 1 page)
  - i.** Describe the student's commitment to a BIOMS-related research career. Describe the student's current and previous professional and academic responsibilities in the laboratory and elsewhere. Describe the relationship between current activities and the proposed graduate work.
  - ii.** Describe prior training and how it relates to the objectives and long-term career plans of the student.
  - iii.** Describe the student's research efforts to this point in his/her research career, including any publications, prior research interests and experience.
  - iv.** Provide evidence of the student's potential to develop into an independent investigator.

2. Research Plan (Maximum 2 pages)
  - i. The student must prepare a succinct review of the current state of the literature related to the overall aims of the laboratory. The student will describe his or her anticipated research contribution to the field. Detailed research design, preliminary data, and specific methods are not required within this document, but a rationale and general research plan must be discussed.
3. Candidate's Plan for Career Development/Training Activities During their Doctoral Studies Period (Maximum 2 pages)
  - i. The student must prepare this section to include goals, a training plan, a mentorship plan, and a timeline.
  - ii. The student must describe his/her overall career goals, and explain how the proposed research training will enable the attainment of these goals. The didactic (if any) and the research aspects of the plan must be designed to develop the necessary knowledge and research skills in scientific areas relevant to the candidate's career goals. Identify the skills, theories, conceptual approaches, etc. to be learned or enhanced during this program.
  - iii. Describe the professional responsibilities/activities (if any) that will occur during the phases of training. Explain how these responsibilities/activities will help ensure career progression.
  - iv. A well described mentorship plan must be included. This mentorship plan must include a list of the student's dissertation committee and the roles that each committee member will serve in enhancing the student's research goals.
  - v. A timeline for completing the proposed training, dissertation proposal, and research must be included.

The document must be completed, approved by the advisor, and circulated to the Candidacy Exam committee. The document will be in Arial 11 font, single spaced and 1 inch margins.

## 6) **Qualifying & Candidacy Exams Results**

The results of these examinations will be by committee consensus:

- a. Pass: The student may proceed to the proposal defense stage of his/her degree training.
- b. Conditional pass: In the event that the examination committee feels the student's performance was generally acceptable but with a specific deficiency, the committee will then deliberate to determine condition(s) that will be specified for the student to satisfy in order to achieve a Pass and a time limit agreed upon by a consensus. Examples of these conditions may include suggested readings, additional courses, and a written and/or oral re-examination on one or more question areas.
- c. Re-examination: This result is appropriate for a student whose performance was unsatisfactory, but displayed evidence of the potential to complete graduate degree training. Re-examination must be completed within one semester. The possible outcomes of the re-examination are pass or failure. The student may not take the exam a third time.

d. *Failure:* This outcome would indicate that examination committee considers the student incapable of completing degree training and the student would be recommended for dismissal from the program.

\* A student with the results of a conditional pass or re-examination is entitled to only one re-examination. The second outcome of a “conditional pass” or “re-examination” is pass or fail.

\* A student who fails the Qualifying or Candidacy exam may petition the BIOMS Executive Committee for admission into the Master’s degree program.

e. *Grievance Procedures:* Students concerned that they have received an unfair evaluation or have been graded inappropriately may file grievances in accordance with the student guide to University of Delaware policies. Students are encouraged to contact the BIOMS Graduate Program Director prior to filing a formal grievance in an effort to resolve the situation informally.

### ***C. University Requirements and Deadlines for Admission to Doctoral Candidacy***

Upon the recommendation of the doctoral student's candidacy exam committee and director of BIOMS program, students may be admitted to candidacy for the Ph.D. degree. Students are responsible for obtaining all the necessary signatures on the [Doctoral Degree Candidacy Recommendation form](#). The stipulations for admission to doctoral candidacy are that the student has (1) had a program of study approved, (2) completed one academic year of full-time graduate study in residence at the University, and (3) successfully passed their candidacy exam.

The deadline for admission to candidacy for the fall semester is August 31. The deadline for admission to candidacy for the spring semester is January 31. The deadline for admission to candidacy for the summer is April 30. Responsibility for seeing that admission to candidacy is secured at the proper time rests with the student.

### ***D. Registration Requirements after Admission to Candidacy***

Once a student has met all of the stipulations for candidacy, the student is required to register in 9 credits of Doctoral Dissertation (969). Students may not register for Doctoral Dissertation (969) until admitted to candidacy. Registration in Doctoral Dissertation (969) and Doctoral Sustaining (999) is restricted to students with candidacy status. Once the student has registered in 9 credits of Doctoral Dissertation, the student is required to maintain matriculation in the doctoral program by registering in Doctoral Sustaining (999) in subsequent semesters until the degree is awarded. All students must be registered in the term in which the degree is officially awarded. Sustaining registration is required in summer session if the degree is awarded at the conclusion of the summer session.

### ***E. Continuous Progress towards Degree Completion***

The student’s progress towards the goals listed on the written Candidacy Exam IDP must be reviewed with the advisor on an annual basis, starting 1 calendar year after completing the Written Candidacy Exam. The student is responsible for completing an [annual report](#), which will be evaluated and maintained by their advisor. Students must develop goals with their faculty advisor on an annual basis to ensure they are progressing throughout the program and must also satisfy all the requirements for academic progress as specified in the academic progress policy guidelines found at <http://www.udel.edu/gradoffice/polproc/policies.html>. Failure to make satisfactory progress towards degree requirements and time limits for completion could result in dismissal from the program.

Students concerned that they have received an unfair evaluation or have been graded inappropriately may file grievances in accordance with student guide to [University of Delaware policies](#). Students are encouraged to contact the BIOMS Graduate Program Director prior to filing a formal grievance in an effort to resolve the situation informally.

## *F. Regulations Governing Dissertations*

### 1) **Establishment of Dissertation Committee**

The student and his/her advisor will create a dissertation committee at the time the student begins to develop the dissertation proposal. The dissertation committee shall include at least three University faculty from within the Biomechanics and Movement Science Program, and at least one member from outside of the program. The dissertation advisor must be a member of the BIOMS faculty, and at least one of the BIOMS committee members must be from an area of focus in biomechanics and movement science different than that of the advisor. With the approval of the BIOMS Executive Committee, one professional staff member who holds a secondary faculty appointment within an academic department may serve as a committee member. However, all three within-program committee members must hold the doctoral degree. Faculty who have retired or resigned from the University may maintain committee membership or continue to chair committees of students whose work began under their direction prior to their retirement or departure from the University. BIOMS faculty who do not have regular faculty status may co-chair the dissertation committee provided that the other co-chair meets the definition for regular faculty status. Outside committee members must hold a doctoral degree, and shall include individuals not affiliated with the Biomechanics and Movement Science Program. These may be individuals from outside of the University who are nationally recognized for their expertise in the area of study specified by the dissertation. The BIOMS Director must approve committee members from outside of the University. It is the responsibility of the dissertation advisor to replace members who withdraw from the committee during the dissertation process.

### 2) **Defense of the Dissertation Proposal**

The dissertation proposal must be in the format of an [NIH R01 proposal](#). Sections A-E of the Research Plan must be included. The dissertation proposal defense will be scheduled only after a majority of members of the dissertation committee have determined that a defense is appropriate. A final copy of the dissertation proposal must be delivered to the members of the dissertation committee at least two weeks in advance of the proposal defense. A copy of the dissertation proposal must be available one week prior to the proposal defense by either submitting an electronic copy to the BIOMS administrative staff for redistribution, or by delivering a hard copy to each site supporting BIOMS faculty. Prior to the presentation, proposals that involve the use of [human](#) or [animal](#) subjects must receive approval from the [University Institutional Review Board \(IRB\)](#). Details for creating consent forms and submitting studies for review by the IRB can be obtained from the [University of Delaware Research Office](#).

The Dissertation proposal defense will be open to the public, and invitations will be sent to all BIOMS faculty and students at least one week prior to the defense date. The candidate will present a summary of the proposed research, and will then field questions from the committee, attending faculty, and invited guests. After all questions have been fielded, the dissertation committee will meet to decide whether

the proposal is accepted, rejected, or accepted with conditions. Results of the meeting will then be presented to the student. The student may not receive more than one dissenting vote from members of the committee to receive a passing grade.

Dissertation committee members will sign the final copy of the approved proposal and the candidacy form. A signed copy of the approved dissertation proposal will be forwarded to the Program Director. Students who fail the dissertation proposal defense will receive one additional opportunity to repeat the process and defend a new or modified dissertation proposal.

### 3) **Defense of the Dissertation**

The format of the dissertation must adhere to the University's [Thesis and Dissertation Manual](#) and [style guidelines](#). The manual is available electronically on the Web at <http://www.udel.edu/gradoffice/forms/thesismanual.pdf>. A copy of the dissertation must be available one week prior to the dissertation defense by either submitting an electronic copy to the BIOMS administrative staff for redistribution, or by delivering a hard copy to each site supporting BIOMS faculty. The dissertation defense will be scheduled only after the advisor of the dissertation committee has determined that a defense is appropriate.

The dissertation defense will be open to the public, and invitations will be sent to all BIOMS faculty and students at least one week prior to the defense date. The candidate will present a summary of the completed research, and will then field questions from the committee, attending faculty, and invited guests. After all questions have been fielded, the dissertation committee will meet to decide whether the dissertation is accepted, rejected, or accepted pending revisions. Results of the meeting will then be presented to the student. The student may not receive more than one dissenting vote from members of the committee to receive a passing grade.

### 4) **Processing the Final Document**

Students must follow the university approved step-by-step [guidelines for graduation](#). The University reserves the right to duplicate a dissertation for distribution to other libraries or for the use of individual scholars. However, the University will not publish a dissertation for general distribution without the written consent of the author. If copyrighting of a dissertation is desired, it may be arranged when the dissertation is submitted to the Office of Graduate and Professional Educations. Published works are eligible for copyright protection in the United States if the work is first published in the United States.

## **Part V. Assessment Plan**

The BIOMS program will follow the Academic Program Review (APR) schedule, policies and procedures, established by the Provosts office and faculty senate. Data will be provided by the Office of [Institutional Research and Effectiveness](#), in conjunction with faculty/student interviews, measures of scholarly productivity, alumni surveys and national rankings when available. Annual meetings will be held to discuss curricular changes, course learning objectives, review analyzed data, identify action items, and establish timelines and assignments for responsibilities. The BIOMS program will continue consultation with the [Center for Teaching and Assessment of Learning](#) to periodically reexamine appropriate learning outcomes, assessment criteria, and benchmarks for success.



## **Part VI. Financial Aid**

### ***A. Financial Assistance***

Financial assistance for students in the BIOMS program is obtained from a variety of sources and will therefore vary in form and availability. Assistance will be awarded on a competitive basis to applicants' best fitting the needs of the granting agencies and sponsoring faculty. Students receiving full stipends will be expected to work up to 20 hours per week on faculty projects and students are expected to maintain full-time student status.

### ***B. Tuition Semesters (Blocks)***

When available, requests for tuition semesters (blocks, waivers) must be submitted by the faculty advisors to the BIOMS Executive Committee for approval. The requests must include the following information.

Faculty Advisor:

Student Name:

Current GPA:

Number of credits completed/remaining:

Degree (MS or PhD):

Number of semesters enrolled:

Number of semesters previously funded and source of funding (grant, TA, etc.):

Estimated number of semesters until completion of degree:

Number of tuition semesters requested:

Rationale for requesting block tuition line:

Plan to secure funding for future semesters, if applicable:

### ***C. University of Delaware Dissertation and Graduate Fellows Awards***

Applications for the University of Delaware Dissertations and Graduate Fellows Awards must follow the Office of Graduate and Professional Education (OGPE) guidelines, and be submitted for approval to the BIOMS Executive Committee at least 2 weeks prior to the announced OGPE deadlines. These are competitive and merit based awards with limited submissions permitted from each program.

## **PART VII. General Information Relevant to Both Master's and Doctoral Degree Candidates**

### ***A. Graduate Course Numbering System***

Graduate credit may be earned for courses numbered 600 to 699, 800 to 898, and 900 to 998. (Courses numbered 600 to 699 are graduate-level courses open to qualified, advanced undergraduates by permission of the instructor.) Courses numbered 500 to 599 are graduate courses for the nonspecialist and may not be counted for graduate credit in the student's major. With the approval of Biomechanics and Movement Science Executive Committee, 500-level courses taken outside the student's major department may be applied toward a graduate degree.

### ***B. Application for Advanced Degree***

To initiate the process for degree conferral, candidates must submit an "[Application for Advanced Degree](#)" to the Office of Graduate and Professional Education. The deadline for degree application is September 15 for December degree conferral, December 15 for Winter degree conferral, February 15 for May degree conferral, and May 15 for August degree conferral. The completed and signed degree application form is sent to the Office of Graduate and Professional Education with payment (personal check made payable to the University of Delaware or pay at the Cashier's Office.) The Master's fee is \$50; Ph.D. fee is \$95.

### ***C. Graduate Grade Point Average***

Students must have a minimum overall cumulative grade point average of 3.0 to be eligible for the degree. In addition, the grades in courses applied toward the degree program must equal at least 3.0. All graduate-numbered courses taken with graduate student classification at the University of Delaware are applied to the cumulative index. Credit hours and courses for which the grade is below "B-" do not count toward the degree even though the grade is applied to the overall index. Candidates must see that all final grades have been submitted by their instructors. Temporary grades of "S" (Satisfactory) are assigned for 868 (Research) and 869 (Master's Thesis) and 969 (Doctoral Dissertation) until a final letter grade is submitted upon the completion of the thesis or dissertation.

### ***D. Time Limits for the Completion of Degree Requirements***

Time limits for the completion of degree requirements begin with the date of matriculation and are specifically expressed in the student's letter of admission. The [University policy](#) for students entering a master's degree program is 10 consecutive semesters to complete the degree requirements. Students completing the requirements for the master's degree who are subsequently granted permission to continue toward the doctoral degree are given an additional 10 consecutive semesters. Students entering a doctoral program with a master's degree are given 10 consecutive semesters to complete the requirements. Students entering a doctoral program without a master's degree are given 14 consecutive semesters to complete the requirements. Students who change their degree plan and have transferred from one degree program to another degree program are given 10 consecutive semesters from the beginning of the first year in the latest program.

### ***E. Extension of the Time Limit***

An extension of time limit may be granted for circumstances beyond the student's control. Requests for time extensions must be made in writing and approved by the student's thesis/dissertation committee and the Director of Biomechanics and Movement Science program. The Director will forward the request to the Office of Graduate and Professional Education. The Office of Graduate and Professional Education will determine the student's eligibility for a time extension and will notify the student in writing of its decision to grant an extension of time.

### ***F. Sustaining Status for Candidates Pursuing Thesis/Dissertation Degree Option***

Once a graduate student who is completing a thesis/dissertation option has completed all required course credits needed for the degree (including 6 credits of Master's thesis [869] or 9-12 credits of dissertation [969]) and all other degree requirements except the submission of thesis or dissertation, the student is required to maintain his/her matriculation in the degree program during the fall and spring semesters by registering for either Master's Sustaining: Thesis (UNIV 899) or Doctoral Sustaining (UNIV 999). All students, including sustaining students, are required to be registered in the semester in which the degree is officially awarded. Sustaining registration is required for summer session if the student complete the degree in summer session. (Sustaining registration is never required for winter session as graduate degrees are not awarded at the conclusion of winter session.)

**G. *Transfer of Credit Earned as a Continuing Education Student at the University of Delaware.***

Students who complete graduate credits with the classification of CEND (Continuing Education Non-degree) at the University of Delaware may use a maximum of 9 graduate credits earned with this classification toward their graduate degree. The CEND credits, grades, and quality points become a part of the student's academic record and grade point average. CEND credit can be transferred provided that:

- (a) The course was at the 600-800 level,
- (b) The course was taken within the time limit appropriate for the degree,
- (c) The course was approved by the student's adviser and BIOMS Director
- (d) The course was in accord with the student's approved plan of study.

**H. *Transfer of Credit from another Institution.***

Graduate credit earned at another institution will be evaluated at the written request of the student. Such a request must be submitted to the director of the BIOMS program using a [Request for Transfer of Graduate Credit form](#). A maximum of 9 credits required for the degree will be accepted provided that such credits:

- (a) Were earned with a grade of no less than B,
- (b) Are approved by the student's adviser and the BIOMS Director
- (c) Are in accord with the student's approved plan of study,
- (d) Are not older than five years, and
- (e) Were completed at an accredited college or university.

The credits, but not the grades or quality points, are transferable to University of Delaware graduate records. Graduate courses counted toward a degree received elsewhere may not be used. Credits earned at another institution while the student was classified as a continuing education student at that institution are not eligible to be transferred to one's graduate degree at the University of Delaware. Credits from institutions outside of the United States are generally not transferable to the University of Delaware.

***I. Transfer of Credit from the Undergraduate Division at the University of Delaware***

Students who wish to transfer credits from their undergraduate record to their graduate record may transfer a limited number by arranging with the department to have these courses approved by their instructors before the courses are taken. These courses must be at the 600-level, and the student must perform at the graduate level. They must be in excess of the total required for the baccalaureate degree, must have grades of no less than B-, and must not be older than 5 years. The credits, grades, and quality points will transfer.

***J. Credit for "Special Problem" Course Taken as a Graduate Student***

Some 400-level courses may be completed for graduate credit if the graduate student does additional work. Students must register for the course at the graduate level using the departmental number of 666. The student may process a titling form for the 666 numbered course.

***K. Expiration of Credit***

Course credits expire 5 years after the course has been completed.

**Appendix J. Graduate Student Annual Report****Biomechanics and Movement Science Interdisciplinary Program  
Graduate Student Annual Report**

Degree program: \_\_\_\_\_MS      \_\_\_\_\_PhD

Date submitted:

Name:

Advisor/Mentor:

Semester date of enrollment:

Total graduate credits completed to date:

Graduate GPA:

- 1. Academic Timeline** (within each semester since enrollment, list completed courses and grades, courses to be taken, formation of committees)

Spring 2015

Fall 2015

- 2. Teaching** (list courses taught, guest lectures, etc.)

- 3. Research**

Statement of Research Focus:

Publications and Presentations (accepted and submitted/under review)

Grant Activity (accepted and under review, indicate role on project)

Other Research Activities (projects not directly related to dissertation focus)

Other Scholarly Activities (i.e., service in professional organizations, manuscript review, etc)

- 4. Goals**

Immediate

Short Term

Long Term

**Appendix II. Graduate Student Annual Report**

**Thesis Proposal Defense Form**  
***Biomechanics & Movement Science Program***

*Submit this signed form to the BIOMS Director, within one week of the Thesis proposal defense.*

Student Name \_\_\_\_\_ Student ID \_\_\_\_\_

Student Email \_\_\_\_\_

\_\_\_\_\_ **Pass.**

\_\_\_\_\_ **Conditional pass.** The conditions must be clearly stated, i.e., the exact nature of the deficiency must be described along with a mechanism(s) to repair this deficiency. The Chair of the Thesis Committee must provide the BIOMS Director with written notification when the student has resolved the conditional pass.

\_\_\_\_\_ **Re-examination.** Student will be re-examined within one semester before the Thesis Committee will render a decision. Please summarize briefly the criticisms that led to this decision and give an estimate of the date of re-examination.

\_\_\_\_\_ **Failure.** The Thesis Committee has decided that the student does not have the potential to complete the MS program. Please indicate why the student failed the examination.

Comments:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Signatures (*please type each committee member's name under signature line*):

\_\_\_\_\_ Chair, Thesis Committee (Print)                      \_\_\_\_\_ Signature

\_\_\_\_\_ Committee member    \_\_\_\_\_ Signature

\_\_\_\_\_ Committee member    \_\_\_\_\_ Signature

*Last updated January 29, 2016*