Department of Exercise Science
Arnold School of Public Health
Graduate Student Handbook
Fall 2016
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Section One: Academic Standards for all Graduate Students in EXSC

1. Graduate Studies Bulletin

   It is the right and responsibility of every graduate student at USC to own and be familiar with a current copy of the Graduate Studies Bulletin. The document contains general information concerning The University of South Carolina, The Graduate School and includes a complete section of information specific to the Arnold School of Public Health; graduate degrees offered by the Department of Exercise Science; and a description of graduate courses.

2. Academic Probation and Suspension Policy ("3.00 Rule")

   Graduate degree-seeking students whose cumulative grade point average drops below 3.00 (B) will be placed on academic probation and allowed one calendar year in which to raise the grade point average to at least 3.00. In the case of conversion of grades of incomplete that cause a cumulative GPA to drop below 3.0, a degree-seeking student will be placed on academic probation at the end of the semester in which the grade is posted. Students whose cumulative GPA falls below the required minimum of 3.0 by receiving a grade for a course in which they received an Incomplete will, instead of a one year probationary period, be granted only one major semester of probation dating from the semester in which the grade is received by the registrar in which to raise their cumulative GPA to 3.0 or above. Students who do not reach a cumulative 3.00 grade point average during the probationary period will not be permitted to enroll for further graduate course work as a degree or non-degree student.

3. Graduation Grade Point Averages

   At the time of graduation, the student's cumulative grade point average must be at least 3.00. Additionally, the student's average on all grades recorded on the Program of Study must be 3.00 and the student's GPA for courses numbered 700 or above, recorded on the Program of Study, must be at least 3.00.

4. “I” (Incomplete) to “F”

   An “I” is a temporary mark that may be assigned at a professor's discretion to allow an additional specified amount of time to finish course requirements following illness, accident or unusual hardship. A grade of “I” is automatically converted to a grade of “F” after one (1) year. In the event of an “Incomplete” grade, the student must make arrangements with the course professor to finalize completion of the course.

5. Program of Study

   The program of study lists all courses that a student must complete as a part of the degree to which he/she has been admitted. The program of study must be endorsed by the student, the student's advisor and the graduate director in accordance with the graduate curriculum for the Department of Exercise Science. The approved program of study must be submitted to the Graduate School for review and approval by the Graduate Dean, timing based on degree requirements. All forms are located here.

   All courses in a program of study leading to the M.S. degree must be completed within a 6 year period from the date of admission to graduation. Courses not completed within this period must be retaken.
All courses in a program of study leading to the Ph.D. degree must be completed within an 8 year period from date of admission to graduation. Courses not completed within this period must be retaken.

6. Transfer Credits

A maximum of 9 credit hours may be approved by the Graduate School and the Department of Exercise Science as Transfer Credits toward earning a graduate degree. Upon the approval of a Program of Study by the advisor and Exercise Science Graduate Director, the student must complete a Request for Transfer of Graduate Credit for each course to be transferred. The following provisions apply:

1. The courses must be documented by an official transcript mailed to the Graduate School by the awarding institution.
2. The transcript must clearly indicate that graduate credit was awarded or specifically verified by the institution's Registrar or Graduate Dean.
3. The courses must be judged appropriate by the student's academic committee and listed on a program of study approved by the Graduate School.
4. Courses with grades lower than “B” are not transferrable.
5. Students who have another graduate degree (e.g. MS, DPT) can transfer their degree (not individual courses) which allows for the first 30 hours of the required 60 hours of their PhD.

7. Facilities and Resources

Students who are involved in research projects associated with degree programs (i.e. master's theses, master's projects and dissertations) are required to be formally enrolled during the period that they are actively engaged in the project. Collection of data, laboratory analysis of data, computer analysis of data, manuscript review (with faculty) and revisions are examples of active engagement. The minimal enrollment is 1 credit. The student would normally be enrolled in either EXSC 798, EXSC 799, or EXSC 899, but enrollment in any course within the EXSC department or another university department will satisfy the requirement. This requirement is not meant to place undue burden upon students, but simply to reflect the involvement of the University's resources in the process. Students who enroll for research hours in a given semester must execute the work in the same semester.

Master's degree students taking the project-based curriculum should be cautioned that this regulation applies to them as well. A project student should not enroll in EXSC 798 until he/she is prepared to execute the work. A preliminary proposal for the project must be approved by the student's advisor prior to the student's enrollment in EXSC 798. Failure to complete the project within the enrolled semester will require the student to register for at least one graduate credit each semester until the project is complete.

8. Application for Graduation

Graduation Applications must be turned into the Student Services Coordinator at the Arnold School of Public Health on the designated date for that semester; this is usually no later than 15 days after the beginning of the semester in which a student plans to graduate.

9. Student Assistance Program for Behavioral for Academic Problems

Faculty, staff and other students may notice behavior that appears unethical or unprofessional in a student enrolled in the program. In addition, a student may experience academic problems with selected course content. Independent observations of isolated events may not be sufficient
to draw attention to a larger potential problem. For this reason, collective observations may assist in the identification of a significant problem and indicate a need for external assistance.

Faculty and staff of the department have established policies and procedures for assisting students who are exhibiting behavioral or academic problems. The objectives of this program are:

- The early identification of students exhibiting behavioral and/or academic problems that will be detrimental to their progression in the academic program or outside work experiences.

- The development of a remedial plan of action designed to assist a student in managing and addressing behavioral or academic problems.

The following procedures should be followed by faculty, staff or students who observe behavioral or academic problems on the part of a student enrolled in a graduated program in exercise science:

- An individual who observes unusual behavior or poor academic performance (physical signs, emotional signs, or social interactions) should complete an incident report related to the issue: [https://www.sc.edu/about/offices_and_divisions/cte/teaching_resources/goodteaching/help_student_issues/](https://www.sc.edu/about/offices_and_divisions/cte/teaching_resources/goodteaching/help_student_issues/).
  - The confidentiality of the respondent will be assured.
  - Upon receipt of a completed form the appropriate University Office will follow-up with the matter promptly.
  - Students may also be referred to additional support agencies on campus including the Counseling and Psychiatry Services (Student Health Services) for professional and personal problems and Student Affairs and Academic Support Services for problems related to academic skills.

10. Counseling and Psychiatry Services

Maintaining your mental health during this vital time of your life is of the utmost importance in sustaining your academic performance and successes here at the University of South Carolina. Counseling & Psychiatry provides students a safe place to speak privately and confidentially with a trained counselor or psychiatrist about a variety of concerns. These may include stress, anxiety, loneliness, depression, relationship difficulties, questions about identity, eating concerns, substance use, sexuality, managing an existing mental health condition or any other issue.

Our multi-disciplinary team of professional mental health providers includes psychiatrists, psychologists, counselors, social workers and supervised trainees in psychology, counseling and social work.

Currently-enrolled USC students who have paid the student health fee are eligible to receive most services for counseling at no additional charge. However, students who request more than 10 individual sessions per academic year may incur additional charges. Visits with a psychiatrist require additional charges. Enrolled students who have NOT paid the student health fee are eligible to receive most services within Counseling & Psychiatry but are charged on a fee-for-service basis.
11. Academic Assistance
Our students are among the best and brightest in the country, but that doesn’t mean they can’t be even better with a little help. The Division of Student Affairs and Academic Support designs and provides comprehensive resources to support students’ academic achievement, and our outreach and intervention efforts strive to ensure that no student falls through the cracks. Services include: individual skills counseling; study skills presentations; computer-assisted instruction; programs focusing on time management, speed reading and comprehension, test-taking skills and test anxiety reduction, note-taking and listening, vocabulary development, memory improvement, and textbook mastery. Academic assessment, learning-style assessment, and preparation for standardized admissions tests for graduate and professional schools are also available.

12. Financial Aid
Information regarding financial aid may be obtained from the Office of Student Financial Aid and Scholarships
Section Two: Health and Safety

1. Policy on Bloodborne Pathogens
   Students enrolled in the program should be particularly aware of the potential contamination from infectious agents in the health care environment. “Standard Precautions” was mandated into standards on December 6, 1991 by the Occupational Safety and Health Administration in response to increasing public concern over possible transmission of the Acquired Immune Deficiency Syndrome (AIDS) virus and Hepatitis B virus. This standard states that any health care worker who might potentially come in contact with bodily fluids should be educated in infection control and should treat all bodily fluids as though they were potentially infected.

   “Standard Precautions” is the international term used by the medical industry to describe the set of measures introduced to allow medical staff to safely handle material that may carry blood or body fluids.

2. Precautions for the Transmission of HIV and HBV
   Basic training for students and faculty in the safe handling of bodily fluids and blood in conjunction with the following blood and bodily fluid precautions can prevent the transmission of blood borne agents.

   1. All patients/participants, their blood and other bodily fluids will be considered to be infectious at all times.

   2. Whether or not the patient/participant is known to be infected with HIV, HBV, the student/faculty will:
      a) Wash hands thoroughly with soap and water before and immediately after contact with patients, their blood, urine, or other bodily fluid.
      b) Wear gloves when handling patient’s or participant’s blood, bodily fluids, and/or items soiled with these fluids.
      c) Wear gown, mask and eye coverings when performing procedures where aerosolization or splattering is likely to occur.
      d) Consider sharp items (needles, pipette tips, scalpel blades etc.) as being potentially infective and handle with extreme care to prevent accidental injury.
      e) Dispose of sharp items in puncture-resistant containers immediately after use.
      f) Do not recap, purposefully bend, or otherwise manipulate by hand needles that are to be disposed.
      g) Minimize the need for emergency mouth to mouth resuscitation by using pocket masks, bag valve masks or other ventilation devices.
      h) Clean up spills of blood or bodily fluids immediately with a disinfectant, and clean work areas with a disinfectant after work is completed.
      i) If a cut or abrasion is present, cover these with a waterproof dressing.

3. If an incident occurs, please follow the following instructions:
   a) Wash the exposed or injured area with soap and warm water for 10-15 minutes
b) Inform the lab manager or supervisor, if present

c) Incident occurs during normal hours (8AM to 4PM), report to the Richland Family Practice located on the first floor at 3209 Colonial Drive, Palmetto Richland Memorial Hospital Campus. Call 434-2479 or 434-6116

d) If incident occurs after normal working hours or on weekends and holidays, report to Emergency Department at Palmetto Richland Memorial Hospital

e) Those working in satellite clinics and hospitals out of town should seek treatment at the nearest hospital’s emergency department

f) A USC incident report will need to be completed once treatment is initiated

g) If you need immediate assistance, call Campus Police at 7-9111 (24 hours a day, 7 days per week)

3. Graduate Student Requirements for Health and Safety

1. **Hepatitis B Vaccination Series:** All students (Graduate Assistant, Graduate Students, DPT students) must complete the Hepatitis B vaccination series, show medical documentation of immunity or have a physician’s letter showing inability to take the vaccination before beginning any lab, clinic, thesis, project, or course work. This is a firm requirement since many of our students are potentially exposed to blood and/or blood products, even during classroom activities. The vaccination series is available through private physicians, the health department or the Thomson Student Health Center at USC for a fee. No student will be allowed to begin working with biohazardous material until documentation of vaccination is provided to the Department. If a routine booster dose of Hepatitis B vaccine is recommended at a future date, such booster doses shall be required at the student’s expense. Those students that choose to decline the Hepatitis B vaccination must sign a waiver form to be kept on file in place of the immunization record. Any student employed by the Department of Exercise Science is eligible to receive the vaccination free of charge and should contact the Department Safety Manager for further information.

2. **TB Skin Test:** All students (Graduate assistants, graduate students and DPT students) must have on record the results of an annual TB skin test. The DPT student may be required to have a 2-step Mantoux TB test for some clinical affiliations. Any student who knows or feels that they may have been exposed to TB during the year is required to report this exposure to the Director of the Academic Program or Department Safety Manager and have an additional TB skin test performed. Any student employed by the Department of Exercise Science is eligible to receive the vaccination free of charge and should contact the Department Safety Manager for further information.

   **It is the responsibility of the student to have this test completed prior to enrollment and annually thereafter.** Written verification must be in the student's file for the student to remain enrolled in the program. The student health services provide skin tests for a fee in the Student Health Center. Any student employed by the Department of Exercise Science is eligible to receive the TB test at no charge and should contact the Department Safety Manager for more information.

3. **CPR:** All Graduate Students are required to be certified in adult cardiopulmonary resuscitation (CPR) and must present their CPR card to the Department Safety Manager, where a photocopy will be kept on file. Online CPR certifications are NOT accepted.

4. **Bloodborne Pathogens Training:** ALL students enrolled in the Exercise Science or DPT graduate program will be considered “at risk” of encountering biohazards and will be **required** to attend a seminar presented by the University's Occupational Health and Safety unit (Thomson Student Health Center).
Health Center), or complete a computer-based training course covering the safe handling of human bodily fluids and bloodborne pathogens. This training, entitled Bloodborne Pathogens, will be completed at the beginning of each academic year and it is the responsibility of the student to update the training annually. All students are expected to understand standard precautions and to practice these precautions in all health care and relevant educational and research settings as the minimum standard for prevention of transmission of bloodborne pathogens. In addition, each student will review the policy of his/her clinical affiliation prior to treating patients.

5. **Laboratory Safety Training:** All students (Graduate Assistants, Graduate Students, and DPT Students) must complete a laboratory safety course, offered by USC Environmental Health and Safety Unit. The computer-based course, designed to cover safe practices in a laboratory setting, is offered on the EHS website and is accessible via any home computer with Internet access.

   **It is the responsibility of the student to complete this course prior to enrollment and annually thereafter.** Students' registration is subject to cancellation until this requirement is completed, since Exercise Science coursework involves laboratory activities. For the DPT student, this requirement begins in the second year and is required annually thereafter.

6. **Additional DPT Requirements:** The DPT requirements are described in full detail on the DPT Policies and Procedures
Section Three: Requirements of Graduate Assistants

1. Professionalism/Standards
Graduate assistants are fully admitted graduate students who are paid employees of the University of South Carolina. As such, they are expected to perform their assigned duties in a timely, effective, and responsible manner. Graduate assistants play key roles in the Department of Exercise Science, and the manner in which they perform their duties reflects importantly on the Department's reputation with students, clients, research subjects, and other members of the University community.

Graduate assistants are typically appointed to 0.5 full time equivalent (FTE) positions and, accordingly, are assigned to work 20 hours per week throughout the semester. However, in some cases, appointments are made at lower fractions of an FTE. Starting and finishing dates for work assignments are designated on a semester-to-semester basis and may vary with the nature of the specific assignment.

2. Lab Safety Training Course
The Department of Exercise Science requires all graduate students who are teaching or conducting research in the performance or biochemistry labs to attend a laboratory safety training course. An instructor-led class provides the safety information and is required by OSHA for all personnel who will work in a laboratory setting. Training of personnel and proper handling of lab hazards can prevent accidents in the lab environment. This one-hour, in-class course is offered at various times throughout the semester. Students should contact the safety manager to schedule training course. See course dates on the EHS website.

3. Hazardous Waste Training Course
The Department of Exercise Science requires all Applied Physiology track graduate students to take an annual course on hazardous waste. This course reviews the definition of hazardous waste and also, the safe handling, labeling, storage, and removal of items deemed hazardous. This one-hour, in-class course is offered at various times throughout the semester and annual refresher training is offered online. See course dates on the EHS website.

4. Biosafety Training Course
The Department of Exercise Science requires all Applied Physiology track graduate students to take an annual course on biosafety. The biosafety training course will 1) define the responsibilities of all parties involved in obtaining and using biohazards at the University of South Carolina, 2) advise all individuals working with biohazards of their rights and responsibilities under Federal and State laws, 3) provide the worker with a reference so as to assist in the safe handling of pathogenic agents, 4) provide information on the proper treatment and disposal of wastes and 5) state the steps to be taken in the case of spills or other emergencies. This one-hour, in-class course is offered at various times throughout the semester and will be renewed annually. See course dates on the EHS website.

5. Radiation Safety Training Course
Optional: A radiation safety training lesson has been developed for USC employees, students
and/or visitors who are not actually working with radiation buy have a need to visit research laboratories or medical offices where radioactive materials or radiation emitting devices may be present. (Online training) If you are going to use radioactive materials, x-ray machines or lasers in your research, you will be required to take one of our formal courses as soon as possible after you begin your work. Contact the departmental safety officer if you are in need of the radiation safety formal training course.

6. Animal Handling Course
Optional: The Animal Handling Course is required for all personnel that may work with animals. The intent of this 3-hour course is to familiarize students with appropriate precautions when working with animals, as well as how to handle animals safely to prevent injury to you and the animals. Additional tutorial sessions can be arranged to learn advanced techniques that may be necessary to fulfill either assistantship or thesis/dissertation responsibilities.

7. Placement/Assignment
Graduate assistantship work assignments are made on a semester-to-semester basis. These assignments are made by the Department Chair with input from the faculty. In making the assignments the following issues are considered:

(1) The needs of the Department
(2) Interests of the graduate assistant
(3) Competencies and background of the graduate assistant.

While consideration is always given to the graduate assistant's preferences, the needs of the Department must take precedence.

8. University Workshop for Teaching Assistants
Graduate assistants who are assigned to serve as instructors in laboratory sections or other courses are required by the University to complete a workshop for teaching assistants. This workshop is typically held prior to the start of the fall semester. Those graduate assistants who are required to complete this workshop one time as part of GRAD 701 unless otherwise notified.

9. Office Hours
It is both a University and Department requirement that graduate assistants with teaching responsibilities post and adhere to regular office hours. This should be a minimum of three hours per week. The purpose is to facilitate communication between students and their teaching assistant.

10. Enrollment Requirement
Graduate assistants are required to be registered as full time students during any semester in which they are appointed to an assistantship. Therefore, the minimum amount of credits a student must take is six credits in the fall and six credits in the spring. During summer sessions there is no required registration. Students who are in the dissertation phase can apply to be on special enrollment status (z-status).
11. Appointment Dates; University Holidays vs. Assistantship Responsibilities

In general, graduate assistantship duties start on the date designated by the Department Chair at the beginning of each semester and extend through the end of the final exam period for the semester. Typically graduate assistants are not required to work during University holiday periods. However, in some special cases graduate assistants may be required to work during holiday periods. University Holidays are different from class holidays (i.e., Fall/Spring Break, Election Day). Graduate assistants will be notified of any special requirements at the time of assignment. In some cases additional compensation will be awarded to graduate assistants for work during holiday periods. Communicate with your faculty supervisor to determine dates you are expected to work in fulfillment of your responsibility as an employee.

12. Outside Employment

Graduate assistants who are appointed at the 0.5 FTE level (20 hours per week) are not permitted to be employed outside of the Department. This guideline applies to any activity that involves a continuing commitment to an outside employer for which compensation is made. This guideline does not apply to occasional, isolated activities (e.g., presentations, consultations, etc.).

13. Seminar Attendance

Speakers are Departmental Students and Faculty who present current research data, as well as visitors who are nationally and internationally recognized researchers. The date, time, location, speaker, and topic of these seminars will be posted. Graduate Assistants are required to attend these seminars, it can be taken for course credit.

14. Problems &/or Concerns in the Program

Graduate assistants experiencing difficulties with an assigned work responsibility should bring such difficulties to the attention of the faculty supervisor as soon as possible. If the faculty supervisor is unable to resolve the difficulty, the graduate assistant should bring the problem to the attention of the Department Chair. Such difficulties should not be allowed to continue for a prolonged period before bringing them to the attention of the faculty supervisor and/or Department Chair.
Section Four: Programs of Study

1. Master of Science Degree Program

A. Master Progress to Degree

Below is a General Progression to Degree that can be found on the Graduate School Website.

1. SUBMIT PROGRAM OF STUDY
   a. Every degree student must file a Master's program of study (M-POS) in the Graduate School for approval by the dean of the Graduate School. If needed, you may file a program adjustment form to request changes to your original POS.
      i. Master's Program of Study Form (MPOS)
      ii. Program of Study Adjustment Form (POSA)

2. APPLY FOR GRADUATION
   a. In your final term of study, submit your application for graduation to the Graduate School.
      i. Application for Graduation (AS-126)

3. TAKE COMPREHENSIVE EXAM/ PASS LANGUAGE REQUIREMENTS
   a. All candidates for a Master's degree must complete a comprehensive assessment in the major field of study that is distinct from program course requirements. Language and research methods requirements for the Master's degree vary from program to program.

4. SUBMIT THESIS DRAFT
   a. Submit your thesis draft to your advisor and to your thesis committee.

5. CHECK THESIS FORMAT/DEFEND THESIS
   a. Submit a draft of your thesis via the ETD process for a preliminary format check. In order to submit your draft, you will create an account within the UMI/ProQuest site. (This is the site you will use to submit your final approved thesis.) Defend your thesis (if applicable), and make any final revisions required by your Committee and the Graduate School. Visit the Thesis & Dissertation portal to view the format guide, ETD samples, templates, and instructions on how to submit your document.
      i. Thesis & Dissertation Portal

6. SUBMIT SIGNATURE & APPROVAL FORM
   a. Submit your Thesis Signature and Approval form to the Graduate School in hard copy.
      i. Thesis Signature & Approval Form

7. SUBMIT THESIS
   a. Submit your final approved thesis via the ETD process.

8. GRADUATE
   a. Congratulations, you made it!

B. MS Assignment of Academic Advisor

Students entering the graduate program in Exercise Science will be advised by the MS degree coordinator/ advisor.

The student is to meet with their advisor prior to the start of each semester. The academic advisor and
student are responsible for completing a program of study by the end of the second semester. The advisor and the student should review the student's academic performance and ensure that appropriate progress is being made to completion of the program of study. If academic problems arise the advisor will be directly involved in the resolution of the problem. Students may use the academic advisor to express concerns over the program or their future.

C. MS Program of Study
The program of study lists all courses that a student must complete as part of his/her degree program. The Program of Study form must be signed by the student, advisor, graduate director, and the Graduate Dean.

Composition: The Program of Study must include the following:
- The correct number of hours for the degree. No more than 6 hours may be in thesis preparation (EXSC 799).
- A maximum of three 500 level courses may be included on the Program of Study.
- No more than 6 hours of independent study.
- Only courses with dates of completion no more than 6 years prior to the satisfaction of all degree requirements.
- The Program of Study form must be forwarded to the Graduate School no later than the student's second semester of academic work.

Adjustments to the Program of Study: The student must complete the form entitled Request for Adjustment in Graduate Program, available on the Graduate School website. This form must be approved by the student’s advisor, Graduate Director and the Dean of the Graduate School.
Circumstances that may require an adjustment to an approved Program of Study include:
1. Substitution of one course for another on an approved Program of Study
2. Deletion of a course from an approved Program of Study
3. Addition of an additional course to an approved Program of Study

D. MS Comprehensive Exam
1. A comprehensive examination is administered by the Department of Exercise Science near the completion of the student's program of study. The comprehensive examination may be taken when the student has completed all but 2 major courses. The exam must be completed at least 15 days and not more than 2 years prior to the date at which all degree requirements are met.

2. Comprehensive exams are offered three times a year. Generally the exams are given in mid-February, mid-June, and mid-October. Students will be required to sign-up for the exam in the Department office approximately one month in advance of the test date.

3. Preparation of the comprehensive exam will be completed by the graduate faculty. The exam will consist of essay questions designed to test the student’s mastery of the subject matter. Project students will take the exam on two consecutive days (3 hours each day). Thesis students will take only the first day of exams. Thesis students will be tested orally at their thesis defense in place of the second day of written exams. The exam typically will include 3 questions for each day.
4. The Comprehensive Examination categories each division are listed below

5. **Applied Physiology** are as follows:
   - **Day One** Topical Areas (Project and Thesis Students): Skeletal Muscle Exercise; Cardiorespiratory Exercise Physiology; Exercise and Health; Other Exercise Physiology (Environment, Ergogenic Aids . . .)
   - **Day Two** Topical Areas (Project Students): Clinical Exercise Physiology: Physical Activity Program Evaluation; Physical Activity Program Applications of Clinical Exercise; Physiology (Work Site, Health Outcomes, Disease . . .)

6. **Rehabilitation Sciences** are as follows:
   - Motor Behavior and Rehabilitation; Research Design: Specialty areas designated by the student’s Program of Study, as determined by the core faculty of the division

7. **Health Aspects of Physical Activity** are as follows:
   - **Day One Topical Areas (Project and Thesis Students):** Physical Activity Intervention; Study Design and Data Interpretation; Ecological Approach for Physical Activity Promotion
   - **Day Two Topical Areas (Project Students):** Physical Activity Guidelines; Physical Activity and Health (EXSC 700); Epidemiology (EPI 700)

8. Comprehensive exams will be graded by at least 2 members of the graduate faculty. Grading scale breakdown: 4 = Excellent; 3 = Pass; 2 = Marginal; 1 = Fail. In order to pass, you have to score at least a 5 on each question (sum of scores from 2 evaluators). Students failing in their initial examination will be required to repeat all or part of the exam. A second failure of the comprehensive exam will result in the student's release from the graduate program.

**E. MS Thesis**

By the end of their second semester, students following the thesis program must identify a Thesis Program Advisor. The Advisor will be assigned based upon time availability of the professors actively pursuing research in the area and interests of the student.

Thesis Committee: by the end of their first year, each student will identify an Advisory Committee with the aid of the Thesis Program Advisor. The Advisory Committee will act as critical reviewers of the thesis proposal and all activities associated with the thesis. The Advisory Committee is responsible for giving final approval to the thesis proposal, the thesis proposal presentation, the final written form of the thesis and the oral defense of the thesis. The Advisory Committee shall consist of a minimum of three and a maximum of five members, all of whom must have graduate faculty status. At least two must be members of the Department of Exercise Science. The names of the committee members must be filed with the
Department Chair. Advisory Committee forms can be obtained in the departmental office.

**Thesis Proposal:**
1. The student in the thesis program will develop a thesis proposal in conjunction with the Advisory Committee.
2. After the graduate student and advisor have discussed a proposed thesis topic, the student will prepare a brief preliminary proposal that includes a brief rationale for the study, a clear statement of the proposed topic, and reasonable detailed methodology to be used. This document must be approved by the advisor before proceeding any further.
3. The student and advisor may wish to schedule a pre-proposal committee meeting. The purpose of this meeting is to get committee input and consensus before beginning work on the thesis prospectus.
4. Once approval is given, the student will develop a thesis proposal. This proposal will be distributed to the thesis committee only when the Thesis Program Advisor judges it to be ready to be read by the committee.
5. A thesis proposal generally should provide pilot data and/or other evidence that the procedures to be used are appropriate.
6. After a draft of the thesis proposal is approved by the advisor, it is distributed to the thesis committee and a thesis proposal defense is scheduled.
7. The thesis proposal abstract and notification of the proposal meeting will be circulated to all Faculty and students of the Department of Exercise Science at least 5 working days before the proposal meeting. The student is responsible for this notification.
8. After the thesis proposal presentation has been concluded, the Advisory Committee will either approve the proposal or make appropriate revisions. Primary data collection must not occur before final approval by the Advisory Committee.
9. For all theses which use human subjects, approval must be obtained from the appropriate institutional review board(s) before data collection can begin.

**Thesis Defense:**
1. The format of the written thesis must be consistent with Graduate School requirements/guidelines.
2. The body or text of the thesis must be in the form of a journal-style article and should be written in the style appropriate for the intended journal of publication.
3. Upon completion of the thesis, the student must notify the graduate faculty in writing at least 10 days in advance of the scheduled date of the thesis defense. A brief abstract of the thesis should accompany this notification.
4. It is appropriate to provide the advisor and other committee members with a bound copy of the thesis.

**Graduate School Guidelines and Deadlines**
1. Thesis Signature and Approval Form must be completed
2. Guidelines concerning regulations for Master's theses are available from the Graduate School. It is the student's responsibility to obtain current guidelines concerning application for graduation and acceptable Master's thesis format.
3. As with guidelines, deadlines for submitting theses and applications for graduation are subject to change. While these deadlines are posted in the Departmental Office, it is the
student’s responsibility to be aware of these deadlines. In general, the following date is important: Deadline for Submission of Thesis/Dissertation is 20 days prior to graduation.

F. MS Project

Prior to the start of their second year, student following the project option in Exercise Science will identify a Project Advisor based on the interests of the student and upon time availability of professors actively pursuing research in that area. The advisor will be an active member of the Graduate Faculty of the Department of Exercise Science. The advisor has responsibility for:

1. Developing the specific course of study to be followed in the project; and
2. Final approval of the written project proposal and end project.
3. Each student in cooperation with the program advisor may form an advisory committee to aid in development of their program and project.

Department Project Guidelines: The primary purpose of the project is application, analysis, evaluation or creation of knowledge.

G. MS Course Requirements

General Course Requirements - Master of Science (MS) (39 hours)
- Public Health (3 hours)
- Epidemiology (3 hours)
- Exercise Science (15 hours)
- Research/Statistical Methods (3 hours)
- Electives (12 hours)
- Project (3 hours) or Thesis (6 hours)

Required Courses for All Exercise Science MS Students (9 hours) that meet General Course Requirements above
- PUBH 700 Perspectives in Public Health or equivalent (3h)*
- EPID 700/701 Introduction to Epidemiology or equivalent (3h)*
- BIOS 700 Introduction to Biostatistics or equivalent (3h)

a. Applied Physiology

Additional Required Courses for Applied Physiology Track (11 hours)
- EXSC 742 - Clinical Exercise Testing (1h)
- EXSC 743 - Laboratory Measurements for Exercise Testing (1h)
- EXSC 780 - Physiology of Exercise (3h)
- EXSC 781 - Physiology, Exercise, and Disease (3h)
- EXSC 783 - Seminar in Exercise Science (1h, 3h required)

Advisor Approved Exercise Science Courses for Applied Physiology
- EXSC 620 – Nutrition and Immunology (3h)
• EXSC 666 – Cardiorespiratory Exercise Physiology (3h)
• EXSC 669 - Skeletal Muscle Physiology: Form & Function (3h)
• EXSC 700 - Exercise and Public Health (3h)
• EXSC 755 - Selected Topics in Exercise Science (3h)
• EXSC 784 - Cardiovascular Testing & Programming (3h)
• EXSC 785 - Advanced Exercise Physiology Laboratory (3h)
• EXSC 790 - Independent Study (1-3h, repeatable up to 6h)
• EXSC 880 - Myology (3h)
• EXSC 881 - Advanced Cardiorespiratory Exercise Physiology (3h)
• EXSC 883 - Physical Activity, Chronic Diseases & Disabilities (3h)
• Electives (6-15h)
• Thesis or Project EXSC 798 (3h) or EXSC 799 (6h)
Total: 39 Credits

b. Health Aspects of Physical Activity
Additional Required Courses for Health Aspects of Physical Activity (21 credits)
• BIOS 700/701 - Introduction to biostatistics or equivalent (3h)
• BIOS 757 - Intermediate biostatistics (3h)
• EXSC 700 - Physical activity and health (3h)
• EXSC 710 - Behavioral aspects of physical activity (3h)
• EXSC 787 - Research design and methods in exercise science (3h)
• EXSC 754 - Community-based interventions for physical activity (3h)
• HPEB 700 OR HPEB 702 - Concepts and methods in health promotion OR Planning health promotion programs (3h)

Advisor Approved Elective Courses for Health Aspects of Physical Activity
• EXSC 780 - Physiology of Exercise (3h)
• EXSC 781 - Physiology, Exercise, & Disease (3h)
• EXSC 784 - Cardiovascular/Pulmonary Testing and Programming (3h)
• EXSC 863 - Physical activity and the aging process (3h)
• HPEB 701 - Theoretical foundations of health promotion (3h)
• HPEB 710 - Evaluation of health promotion programs (3h)
• Electives (6-9h)
• Thesis or Project EXSC 799 (6h) OR EXSC 798 (3h)
Total: 39 Credits

c. Rehabilitation Sciences
Additional Required Courses for Rehabilitation Sciences (9 hours)
• EXSC 535 - Biomechanics of Human Movement (3h)
• EXSC 731 - Mechanisms of Motor Skill Performance (3h)
• PHYT 808 - Neural Repair and Rehabilitation (3h)

Advisor Approved Courses for Rehabilitation Sciences (9-12 hours)
• EXSC 563 - Physical Activity and the Dimensions of Aging (3h)
• EXSC 585 - Women’s Health and Physical Activity (3h)
• EXSC 666 - Cardiorespiratory Exercise Physiology (3h)
- EXSC 669 - Skeletal Muscle Physiology: Form and Function (3h)
- EXSC 700 - Physical Activity and Health: Epidemiology, Research and Practice (3h)
- EXSC 710 - Behavioral Aspects of Physical Activity (3h)
- EXSC 755 - Neural Basis of Skilled Motor Behavior (3h)
- EXSC 777 - Endocrinology in Exercise and Health (3h)
- EXSC 780 - Physiology of Exercise (3h)
- EXSC 781 - Physiology, Exercise and Disease (3h)
- PHYT 788 - Evidence Based Practice in Physical Therapy (3h)
- RHAB 540 – Assistive and Adaptive Technology (3h)
- RHAB 710 - Medical Aspects of Rehabilitation (3h)
- PHPH 750 - Fundamental Neuroscience (4h)
- BIOS 757 - Intermediate Biostatistics (3h)
- Free Electives (6-9 hours) Research (3 or 6 hours)
- EXSC 799 - Thesis (6hr)
- EXSC 798 - Project (3h)

Total: 39 Credits
2. Doctor of Philosophy Degree Program

The PhD program in Exercise Science is designed to prepare students for research careers in the exercise sciences; graduates are trained for entry into positions in universities, colleges, research institutes and research-oriented clinical settings. Areas of research emphasis correspond to those of the departmental faculty.

A. Doctoral Progress to Degree:

Below is a General Progression to Degree that can be found on the Graduate School Website

1. CHOOSE YOUR COMMITTEE
   a. Your Advisory, Comprehensive Examination and Dissertation Committees may be appointed at the same time.
   b. Doctoral Committee Appointment Request (DCA)

2. COMPLETE ADMISSION TO CANDIDACY PROCEDURES
   a. Take the Qualifying Exam and submit your approved Program of Study (POS) to the Graduate School. If needed, you may file a program adjustment form to request changes to your original POS.
      i. Doctoral Program of Study (DPOS)
      ii. Program of Study Adjustment Form (POSA)

3. PASS COMP EXAM/ FULFILL LANGUAGE REQUIREMENTS
   a. You must pass a written and oral comprehensive examination conducted by your academic program under the direction of your Written and Oral Comprehensive Examination Committee. Language and research methods requirements for the doctoral degree vary from program to program.

4. APPLY FOR GRADUATION
   a. In your final term of study, submit your application for graduation to the Graduate School.
      i. Application for Graduation (AS-126)

5. SUBMIT DRAFT/SCHEDULE DEFENSE
   a. Submit a draft of your dissertation to your advisor and committee members and schedule dissertation defense. Submit your Dissertation Defense Announcement at least 14 days prior to defense, using the Graduate Management System (GMS).
      b. Submit Defense Announcement through GMS
      c. View Submitted Announcements

6. CHECK FORMAT/DEFEND DISSERTATION
   a. Submit your dissertation draft to the Graduate School for a preliminary format check. In order to submit your draft, you will create an account with the UMI/ProQuest site. (This is the site you will use to submit your final approved dissertation.) Complete your dissertation defense, and make any final revisions required by your Committee and the Graduate School. Visit the Thesis & Dissertation portal to view the format guide, ETD samples, templates, and instructions on how to submit your document.
      i. Thesis & Dissertation Portal

7. SUBMIT APPROVAL FORM/COMPLETE SURVEY/DOCTORAL HOODING INFORMATION
i. **Dissertation Signature & Approval Form**

ii. **Survey of Earned Doctorates**

iii. **Submit Doctoral Hooding information through GMS** (To appear in the Doctoral Hooding program)

8. **SUBMIT DISSERTATION**
   a. Submit your final approved dissertation via the ETD process.

9. **GRADUATE**
   a. Congratulations, you made it!

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**B. PhD Assignment of an Academic Advisor**

The Coordinator of the Ph.D. Program for each area (Applied Physiology, Health Aspects of Physical Activity or Motor Behavior & Rehabilitation) will make the initial assignments of academic advisors for entering doctoral students or will confirm student/faculty established assignments. This assignment will be made on the basis of the student's indicated area of specialization and his/her specific interests within that area of specialization. Within the first semester of enrollment in the program, the student, with the advice and counsel of the initial faculty advisor will identify and finalize the permanent program advisor.

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**C. PhD Committee**

The Graduate Dean must approve an advisory committee for the candidate before a Program of Study can be recommended for the PhD student. The student must submit **Doctoral Committee Appointment Request** (G-DCA) which names the members for the 4 committees listed. In addition to securing the permission of Graduate Faculty members to be named to these committees, the composition of these committees must receive approval of both the Exercise Science Graduate Director and the Graduate Dean. The committee for the Comprehensive Exam and Dissertation can be the same or different.

The Committee includes 3 members in the Department of Exercise Science and one outside member (outside the Department of EXSC, see Graduate School requirements for outside member). This committee provides curriculum advisement and designates specific course requirements on the student's Program of Study. This committee must be appointed prior to the student's admission to candidacy.

All committees requiring the Graduate Dean’s approval must receive that approval before functioning as committees. Where alteration of committee membership is necessary, the change must be requested in writing with appropriate justification, and receive approval before a new member can serve.

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**D. Admission to Candidacy- PhD**

Candidacy is achieved when the students passes the Qualifying Exam and submits the verification form along with the **Plan of Study**. Qualifying Examination is administered by the department. The examination may be written, or oral and written.
A student can seek admission to candidacy before completing 12 credit hours of graduate work. Qualification exam must be completed 6 months prior to the Comprehensive Exams. The student must be in good standing with the Graduate School to complete either exam.

The scope of the examination should be such that the program faculty can determine:
1. Potential for ongoing intellectual development
2. Capacity for critical analysis and synthesis of ideas
3. Ability to grasp major theoretical concepts
4. Knowledge in proposed field of study

After successful completion of the Qualifying Exam, the Graduate School will be notified by the Graduate Director. The Dean of the Graduate School will notify the applicant of his/her admission to candidacy. It is advisable that doctoral students complete the examination for admission to candidacy without undue delay. Students should understand that they proceed on their own responsibility until admission to candidacy is officially conferred. Admission to candidacy is a prerequisite for approval of the Program of Study.

E. PhD Qualifying Examination Procedures

- The advisor, in conjunction with other members of the candidate's program committee, will develop questions for the examination.

- At a designated time period of 3 hours over the course of one day, the candidate will write the examination. The student may use a computer.

- The examination must be typed either during or after the examination period. It is the responsibility of the student to have the examination typed.

- The student must indicate his/her intention to take the exam during the previous semester.

- The examination results will be given within 3 weeks after it is completed.

- The program committee members will evaluate the student's performance as either PASS or FAIL, with two of the three readers voting PASS for successful completion.

- If the written examination is failed, the student must participate in a follow-up oral exam.* The oral examination must be conducted within 3 weeks after notification of failure of the written examination. Two additional readings will be assigned to the student one week prior to the oral exam. For remedial oral exams, all graduate faculty within the area of concentration will participate in the oral examination. The purpose of the oral exam is to determine the ability of the candidate to synthesize written material. A simple YES majority is required for admission to the doctoral program.

- If the candidate fails the written but passes the oral exam, the student will be required to complete specified remedial work in writing during the next full year of study.

- If the candidate fails both the written and oral examinations, admission to the doctoral program will be denied.
*The oral exam is required for all students in the HAPA division regardless of passing or failing the written examination.

**The Qualifying Exam procedures for all Divisions are currently under review (Fall 2016). Until the review is complete, the current procedures are still applicable**

F. PhD Program of Study

Candidacy is achieved when the students passes the Qualifying Exam and submits the Plan of Study.

Students enrolled in the doctoral program have ten years from the first term of enrollment in which to complete the degree.

Students must be enrolled for at least 1 credit during the term of graduation.

Residency Requirement - Doctoral students in the Department of Exercise Science must enroll in an approved program of study for at least 3 academic years. One calendar year (August - May) must be spent on the Columbia Campus as a full time student.

Adjustments to the Program of Study - The Program of Study represents a contract between the University, the Department and the student and once approved, it is binding unless all parties agree to its adjustment. Any adjustments to the program of study must be completed in writing and approved by all parties concerned.

The comprehensive exam cannot be scheduled until all of the courses listed on the Program of Study are completed or are in progress.

G. PhD Comprehensive Examination

The candidate must satisfactorily pass a comprehensive exam in his/her field(s) of study. The comprehensive exam must include both written and oral components. The comprehensive exam content should reflect the student's curriculum as represented by the Program of Study. The degree must be completed within five years of the comprehensive exam.

The Committee administers the oral part of the comprehensive examination. The Doctoral Comprehensive Exam Verification Form must be completed and submitted to the Graduate School (no less than 60 days prior to Graduation)

Procedures

A. Health Aspects of Physical Activity

The successful passing of the dissertation proposal defense will constitute the completion of comprehensive exam. Please see Ph.D Dissertation section below.
B. **Applied Physiology:**

**Process Overview**
The comprehensive exam process for PhD students in the Applied Physiology Division of the Department of Exercise Science should be initiated during the immediate semester following the successful completion of the coursework included in the student's plan of study. This process is generally expected to occur immediately following the second year in the Doctoral program. The process, outlined below, will involve faculty committee approval of a grant proposal research topic. The student will then proceed to write and orally defending the grant proposal on the approved topic.

**Grant Guidelines**
*Format:* The grant is to follow the standard PHS 398 proposal format with a 25 page limitation for the research plan. The submitted grant should include an abstract, budget, budget justification, and research plan. The student will have no budget restrictions, and it is realized preliminary data will be rare. Administrative pages will not be required.

*Topic:* The proposal must be original work formulated by the student that is not directly related to any ongoing or planned research projects or grants by their advisor, or other committee members. Additionally, this grant cannot serve as a dissertation proposal by the student, and should be a distinct project from their future dissertation. The grant proposal must include an exercise component either as a treatment or outcome variable. The advisor or other committee members should only supply general guidance in conversations, and no formal editorial input. This is meant to be an original student composition.

C. **Rehabilitation Sciences:**

Rehabilitation Sciences Doctoral students will demonstrate the content knowledge necessary to perform research and teach in their area of expertise. To achieve this learning outcome, Students will write and successfully defend a series of questions in their field of interest. Passing all questions is required to pass the comprehensive exam.

The Chair of the Committee will generate the questions with input from the remainder of the committee. The Committee must approve the design of the comprehensive exam questions, including type and number of questions. The following is the recommended template for questions, but can vary at the discretion of the committee. Students are given two ‘at-home’ questions. The student has 7 days to respond to the first question. When the first question is completed and submitted, the student receives the second question. Students may use any resources available to respond to the ‘at-home’ questions; the exception is that they cannot use any other person as a resource. Questions may include, but are not limited to: 1) writing a small grant (e.g., R03 or R21 format), 2) writing a review/perspective article, 3) or writing a research article in a journal format. The third question can be either an ‘at home’ or ‘in house’ question. If ‘in house’, students will have no access to other information while answering the question. Optional: the chair of the committee can decide if a general topic is given prior to the ‘in-house’ question to direct the student towards a general body of literature. Completion of the third question is followed by an oral defense of the total examination, which should be scheduled within two weeks from the completion of the third question.
A student’s successful completion of the comprehensive exam is determined by agreement amongst the four members of the Committee. The exam may be remediated in part or full based on the committee’s decision. Successful completion of the comprehensive examination allows the PhD student to advance to the dissertation phase of the doctoral program.

H. Ph.D. Dissertation

A. Dissertation Committees
If there are updates to the committee, these need to be submitted using the Doctoral Committee Appointment Request (G-DCA)

B. Dissertation Proposal Procedures
Based on extensive review of the literature and pilot work, the student must propose and defend before the Dissertation Committee a research project that addresses a deficiency or weakness in the literature.

The Ph.D. candidate will develop a dissertation proposal using Departmental guidelines. Generally, the proposal document will include the following:

- **Introduction** in which the rationale for testing the hypothesis(es) is clearly stated, including limitations, delimitations and scope of the proposed investigation.

- **Comprehensive Review of the Literature** pertaining to the research question.

- **DETAILED Methodology**, including pilot data which corroborates the need for the research, provides data for power calculations and documents the validity and reliability of the selected methodologies.

The proposal is prepared by the candidate in conjunction with the chairperson of the committee. Once approved by the chairperson, it is then distributed to the other members of the dissertation committee and a proposal defense is scheduled.

An announcement of the day, time and location of the proposal defense must be circulated to the graduate students and faculty of the Department at least 10 days prior to the proposal defense. The student is responsible for circulating this announcement.
An abstract of the proposal must be circulated along with a re-notification of the proposal meeting to all members of the faculty five days before the date of the proposal meeting.

At the conclusion of the proposal presentation, the Dissertation Committee will either approve the proposal or make appropriate revisions. *Except under unusual circumstances, only pilot data collection can occur before final approval by the Dissertation Committee.*

Approval from the appropriate Institutional Review Board(s) MUST be received prior to data collection for all dissertations that use human subjects.

Candidates using animal models MUST participate in a short course on handling laboratory animals.

**C. Dissertation Defense Procedures**

The student must publicly defend the results of his/her research before the Dissertation Committee and any other interested parties.

During ALL phases of the completion of the dissertation, any candidate who uses University resources or facilities or confers with a Faculty member on dissertation work MUST be officially enrolled for dissertation credit.

The body or text of the completed dissertation must be in the format of XX journal style articles and should be written in the style appropriate for the intended journal(s) of publication.

The candidate works under the guidance of the Chairperson of the Dissertation Committee and other committee members in preparing the manuscript for dispersal to the full Dissertation Committee.

Upon completion of the dissertation research, the candidate must notify the Graduate Faculty in writing at least 10 days prior to the scheduled defense. This written notification should include a brief abstract of the results, along with the date, time and location of the defense.

The general format of a dissertation defense is as follows:

- **30 minutes**: Presentation of Dissertation Research by the Candidate to include: Introduction, Rationale, Hypothesis(es), Methodology, Results, Interpretation/Discussion, Summary and Conclusions.
• **15 -20 minutes:** Question/Answer Period by the Full Audience, after which all but the candidate and Committee Members are excused.

• **15 + minutes:** Continued Questioning of the Candidate by the Committee

Final official approval of the dissertation is by majority vote of the Dissertation Committee. Signatures of Committee members on the title page constitute approval.

**D. Submission of the Dissertation to the Graduate School**

The successfully defended dissertation is submitted to the Graduate School in the accepted format specified according to Graduate School regulations. The dissertation must be turned into the Graduate School approximately 20 days before the end of the semester in which the student plans to graduate, but students are responsible for verifying deadlines. A bound copy of the dissertation should be provided to the candidate’s Advisor/Chairperson of the Dissertation Committee.

**I. PhD Curriculum**

Students will complete an approved plan of study of up to 60 hours beyond the baccalaureate level or 30 hours beyond the master’s level or clinical doctorate level. Included in the plan of study are any approved transfer credits.

**General Course Requirements – PhD**

- Public Health (> 3 hours)- course defined below
- Epidemiology (> 3 hours)- course defined below
- Exercise Science (≥6 hours)
- Research/Statistical Methods (≥6 hours) – one course defined below
- Dissertation (≥12 hours)

**Required Courses for All Exercise Science PhD Students (9 hours) that meet General Course Requirements above**

- PUBH 700 Perspectives in Public Health or equivalent (3h)*
- EPID 700/701 Introduction to Epidemiology or equivalent (3h)*
- BIOS 700 Introduction to Biostatistics or equivalent (3h)

All PhD students in are required to fulfill the equivalent of the existing MS program in their emphasis or a closely related field. These are listed by section. If students do not wish to take any of the required courses, they must provide evidence of successful completion of equivalent courses prior to matriculation into the doctoral program.

*Students with a MPH degree from a CEPH-accredited school of public health will have had these courses and can be released from this requirement; students who previously have taken a graduate level course equivalent to EPID 700/701 are exempted from the requirement to take EPID700/701.
A. Doctoral Specialization in Applied Physiology (AP)

All PhD students are required to fulfill the equivalent of the existing MS program in Exercise Science or a closely-related field. All AP students are required to complete course hours as follows listed here (Additional Required Courses for Applied Physiology Track).

It is also highly recommended that students applying for AP have successfully completed coursework in organic and biochemistry. Additionally, undergraduate biology (I & II) and anatomy and physiology (I & II) are required.

In consultation with their advisor, each student is to develop a cognate of emphasis, and electives should be related to this area of specialization. Students can develop a specialization in many areas including but not limited to immunology, cell biology, cancer, endocrinology, neuroscience, cardiovascular physiology, nutrition, and skeletal muscle physiology.

In addition to coursework, all AP doctoral students are expected to be heavily involved in ongoing research in the Division of AP during their time in the academic program.

Sample Applied Physiology: Course Options

Exercise Science

- EXSC 700 – Exercise and Public Health (3)
- EXSC 755 – Selected Topics in Exercise Science (3)
- EXSC 777 – Endocrinology in Exercise and Health (3)
- EXSC 783 – Seminar in Exercise Science (1hr, repeatable up to 5 hr*; required)
- EXSC 785 – Advanced Exercise Physiology Laboratory (3)
- EXSC 790 – Independent Study in Exercise Science (6 - 12hr total)
- EXSC 880 - Myology and Exercise Science (3)
- EXSC 881 - Advanced Cardiorespiratory Exercise Physiology (3)
- EXSC 883 - Physical Activity, Chronic Disease, and Disabilities (3)

Immunology/Microbiology

- BMSC 702 - Medical Cell Biology (4)

Chemistry

- CHEM 751 - Biosynthesis of Macromolecules (3)
- CHEM 752 - Regulation & Integration of Metabolism (3)
- CHEM 753 - Enzymology and Protein Chemistry (3)

Pharmacology

- PHPH 705 - Biomedical Pharmacology (6)
Neuroscience/Psychology
  - PHPH 750 – Fundamental Neuroscience I (4)

Physiology
  - PHPH 701 - Physiology for Health Sciences (6)

B. Doctoral Specialization in the Health Aspects of Physical Activity (HAPA)

All PhD students are required to fulfill the equivalent of the existing MS program in Exercise Science or a closely-related field. Courses that fulfill this equivalent could include: Additional Required Courses for Health Aspects of Physical Activity.

In addition to required credit hours, electives should be completed in the student’s specific area of emphasis and are expected to be in addition to the minimum credit requirement. Students may elect to take their statistics and research design courses in biostatistics, epidemiology, or psychology, depending on their interests. Similarly, students can design a curriculum that emphasizes coursework in physical activity and epidemiology, physical activity and health promotion, physical activity and behavioral science, or physical activity and exercise physiology.

Examples of Course Options

Examples of suggested courses for a specialization in Health Aspects of Physical Activity are listed below. These courses are by no means exhaustive and can be supplemented with other courses approved by the student’s advisor, another division faculty, the graduate director.

Exercise Science
  - EXSC 710 - Behavioral Aspects of Physical Activity (3)
  - EXSC 754 - Community-Based Physical Activity Interventions (3)
  - EXSC 863 - Physical Activity and the Aging Process (3)
  - EXSC 881 - Advanced Cardiorespiratory Exercise Physiology (3)
  - EXSC 882 - Physical Activity and Health (3)
  - EXSC 883 - Physical Activity, Chronic Disease, and Disabilities (3)

Epidemiology
  - EPID 741 - Advanced Methods in Epidemiology (3)
  - EPID 744 - Investigative Epidemiology: Cardiovascular Disease (3)
  - EPID 820 - Seminar in the Epidemiology of Health Effects of Physical Activity (3)

Psychology
  - PSYC 727 - Foundations in Community Psychology (3)
  - PSYC 783 - Health Psychology/Behavioral Medicine (3)

Health Promotion Education and Behavior
  - HPEB 701 - Theoretical Foundation of Health Education (3)
  - HPEB 710 - Evaluation for Public Health Education Programs (3)
  - HPEB 731 - Health Promotion for Older Adults (3)
  - HPEB 748 - Community Health Development (3)
- **HPEB 752 - Nutrition and Public Health (3)**

### C. Doctoral Specialization in Rehabilitation Sciences (RSD)

All PhD students in Rehabilitation Sciences are required to fulfill the equivalent of the existing Exercise Science MS program in Rehabilitation Sciences or in a closely-related field. These courses are listed here ([Additional Required Courses for Rehabilitation Sciences](#)).

Electives are to be completed in the student’s specific area or emphasis. Students may fulfill the statistics and research design requirements through any of the following: biostatistics, epidemiology, psychology, statistics or education. The choice is contingent upon student interests and emphases and should be approved by the advisor. For students with a previous graduate degree, courses in Public Health, Epidemiology, and Statistics can be waived with proof of completion of an equivalent graduate level course.

Students can develop a program of study that emphasizes rehabilitation sciences such as (but not limited to) basic and clinical aspects of lifespan, neuroscience, physical activity in chronic disability, motor learning and rehabilitation.

#### Sample Rehabilitation Sciences Course Options

The courses listed below are by no means exhaustive and can be supplemented with other courses approved by the faculty advisory committee.

**Exercise Science**
- **EXSC 710 - Behavioral Aspects of Physical Activity (3)**
- **EXSC 731 - Mechanisms of Motor Skill Performance I (3)**
- **EXSC 755 - Neural Control of Movement (3)**
- **EXSC 777 - Endocrinology in Exercise and Health (3)**
- **EXSC 780 - Physiology of Exercise (3)**
- **EXSC 781 - Physiology, Exercise and Disease (3)**
- **EXSC 787 - Research Methods and Design for Exercise Science (3)**
- **EXSC 882 - Physical Activity and Health: Epidemiology and Research (3)**

**Physical Therapy (considered as EXSC hours)**
- **PHYT 788 - Evidence Based Practice in Physical Therapy (3)**
- **PHYT 808 - Neural Repair and Rehabilitation (3)**

**Psychology**
- **PSYC 700 – Psychosocial Approaches to Gerontology (3)**
- **PSYC 702A - Basics of Neuroscience (3)**
- **PSYC 702B - Basics of Cognitive Psychology (3)**
- **PSYC 702C - Basics of Developmental Psychology (3)**
- **PSYC 703A - Integration across Cognitive Psychology and Neuroscience (3)**
- **PSYC 703B - Integration across Dev Psych, Cogn Psychology and Neuroscience (3)**
- **PSYC 709 - Basic Quantitative Methods in the Analysis of Behavioral Data I (3)**
- **PSYC 710 - Basic Quantitative Methods in the Analysis of Behavioral Data II (3)**
- **PSYC 714 - Psychoeducational Assessment of Children I (3)**
- **PSYC 715 - Psychoeducational Assessment of Children II (3)**
- **PSYC 801 - Cognitive Neuroscience I (3)**
- **PSYC 823 - Multivariate Analysis of Behavioral Data (3)**
- PSYC 823 - Special Topics in Quantitative Psychology (3)
- PSYC 888 - Special Topics in Psychology (1-6)

**Physiology, Pharmacology, Neuroscience**
- PHPH 741 - Special Topics in Neuroscience (3)
- PHPH 745 - Neurophysiology (3)
- PHPH 750 - Fundamental Neuroscience (4)
- PHPH 751 - Fundamentals of Neuroscience II (4)

**Medicine**
- MEDI D700 – Health Aspects of Aging (3)
- RHAB 710 - Medical Aspects of Rehabilitation (3)
- RHAB 750 - Assistance in Adaptive Technology (3)

3. **Doctor of Physical Therapy**
   Please refer to the [DPT Policy and Procedure](#) manual for DPT program criteria

4. **Masters in Public Health**
   Please refer to the [MPH manual](#) for program criteria.