



M.S. in Clinical Exercise Physiology
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Part I. Program History

A. Purpose

According to the Center for Disease Control and Prevention, approximately half of US adults have a least one chronic health condition such as cardiovascular disease, chronic pulmonary disease, arthritis, cancer, or obesity. Additionally, 1 in 5 Americans have more than two of these illnesses, resulting in a condition labeled as Multiple Chronic Conditions (MCC). These chronic diseases make up seven out of the top 10 causes of death among US adults, as well as the number one cause of disability. Furthermore, it is estimated that medical care costs for individuals with at least one chronic illness contributes to 78% of the overall \$1.7 trillion dollars of health care expenditures in the US, while care for individuals with more than one chronic condition makes up 95% of these costs. Sadly, two thirds of the health care expenditure costs are made up by individuals who present with five or more chronic illnesses. In particular, the state of Delaware is challenged with high prevalence of such chronic illnesses, ranking 23rd in the nation for heart disease, 34th in the nation for chronic pulmonary disease, and 27th in the nation for kidney disease.

Recently, there have been great efforts to develop disease management programs in order to help ease the burden of current health care costs. Unfortunately, such efforts have been largely unsuccessful in reducing this burden or providing adequate care management for individuals. Additionally, research suggests that persons with MCC are more vulnerable to care programs of lower quality as coordination of care tends to be more difficult given the increased number of professionals and resources required to meet their medical needs. Thus, in order to enhance patient care, a more comprehensive approach to care coordination must be established, bringing the necessity of effective, multidisciplinary medical care teams to a critical point.

As part of such multidisciplinary teams, a Clinical Exercise Physiologist (CEP) works with patients and clients with chronic illnesses as well as with apparently healthy populations. CEPs are trained to apply efficacy-based exercise/physical activity programs and behavioral interventions to almost every chronic illness to help improve patient outcomes and quality of life. Regular participation in exercise and physical activity has been associated with health outcomes such as reductions in all-cause mortality and morbidity, cardiovascular disease, metabolic diseases (e.g. diabetes, obesity, hypertension) and even some cancers. As exercise specialists, CEPs prescribe the most appropriate dose, type, frequency and intensity of exercise and physical activity in order maximize such benefits while also reducing potential risks. More recently, the role of a CEP has expanded as growing evidence supports the need for professionals to focus on reducing negative psychological experiences during exercise in order to promote adherence to programs, a critical component to achieving the accumulative benefits of exercise. A CEP can work in preventative and rehabilitation settings as they uphold the highest professional guidelines and ethical standards in order to provide exceptional care to individuals and enhance communication between patients and their medical care coordination team.

Given that Clinical Exercise Physiology is a relatively new field (having only been around since the 1960s), there is a need for professional graduate programs that promote the published professional guidelines and ethical standards and prepare students to sit and pass the American College of Sport Medicine's certification examination in order to enter the workforce as the top

qualified professionals. This is the impetus for the creation of the M.S. in Clinical Exercise Physiology program.

Currently, within the Kinesiology and Applied Physiology Department, the M.S. in Exercise Science program has a concentration in Clinical Exercise Physiology. The existing concentration is different from the other concentrations in the M.S. in Exercise Science program in that it is a non-thesis, professional graduate program and students must be full-time, moving through the program in cohorts. Making this a free-standing master's program will also provide greater visibility to the program for purposes of recruiting students. This change is also in line with the missions of the College and University to provide outstanding, targeted professional education to our students so they will be prepared to serve our local Delaware community as well as global society by becoming health care advocates and part of interdisciplinary teams that enhance the health and wellbeing of our society.

This program draws from the existing graduate courses and will provide a fundamental foundation for future accreditation and recruitment efforts which contribute to fulfilling the mission of the University of Delaware by supporting its path to prominence. The plan for administration of the program is further detailed in the Program Policy Statement.

B. Current Status

Clinical Exercise Physiology is a one-year Master's program offered in the Department of Kinesiology and Applied Physiology. To date the program has enrolled 45 students. Our graduates have a 81% passing rate for their national certification exam and 88% of our graduates have obtained jobs within three months of graduation. The M.S. in Clinical Exercise Physiology program is eligible for permanent status in 2023.

C. Degree Offered

The degree awarded to those who complete this program will be a Master of Science in Clinical Exercise Physiology.

D. Commitment to Diversity, Equity, and Inclusion

The College of Health Sciences (CHS) and the Clinical Exercise Physiology program embraces diversity, inclusion, connectedness, and professionalism as core institutional values. We believe that a diverse student, faculty, and staff body are critical to our teaching and scholarship and are a much needed reflection of the diverse patients and caregivers for whom we provide care. Beyond the University's code of conduct for students and employees, which we fully support, we have [additional standards and expectations](#) for members of CHS and the Clinical Exercise Physiology program due to our important roles and influence in health and healthcare.

Part II. Admission

A. Admission Requirements

Applicants must submit all materials directly to the Graduate College using the online admission process before admission can be considered. Admission applications are available at:

<https://grad-admissions.udel.edu/apply/>. A GPA of at least 3.0 is preferred. Applications are evaluated based on a combination of records of academic achievement, recommendations, and the applicant's statement of professional goals and values. Priority will be given to applicants who apply by the December 15th deadline each year, with a secondary, final application deadline of May 1st. The program admission process is completed as follows: Completed applications consisting of the following:

- Online application.
- Undergraduate/graduate transcripts.
- Three letters of recommendation from individuals who have direct knowledge of the candidate's academic and/or professional capabilities.
- A written personal statement describing how their academic, professional, and personal background has prepared them to be successful in the degree program and explaining how completion of the program will contribute to their professional goals.
- 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.

B. Prior Degree Requirements

A baccalaureate degree in a health related field from an accredited college or university is required. Previous course work in Anatomy and Physiology and/or Exercise Physiology is preferred.

C. Application Deadlines

For priority consideration, students should apply for admission to the program for summer enrollment no later than December 15th. These students will be notified of their acceptance or denial into the program in January of each year. Following the December 15th deadline, applications will be assessed on a rolling admissions process. All applications must be submitted by May 1st of the year they wish to be enrolled in the program to be considered. All students begin the program in the summer I semester.

D. Special Competencies Needed

This is a professional master's degree and no special competencies are required.

E. Admission Categories

Students admitted into the Program may be admitted into one of two categories.

- 1) **Regular**: Regular status is offered to students who meet all of the established entrance requirements.
- 2) **Conditional**: Successful applicants are typically admitted conditionally because stated information is self-reported and

uploaded documents are unofficial. Failure to clear all stated conditions by the start of graduate coursework may result in revocation of admission to the graduate program.

F. Other Documents Required

No other additional documents are required for the application progress. Interviews with faculty members are not required but are encouraged.

G. 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) Required Courses and Program of Study

KAAP 665: 12 Lead ECG Interpretation (Fall) 3 Credits
KAAP 675: Clinical Exercise Physiology I (Summer I) 4 Credits
KAAP 676: Clinical Exercise Physiology II (Summer II) 4 Credits
KAAP 677: Administration and Organization of Cardiopulmonary and Wellness Programs (Fall) 3 Credits
KAAP 678: Cardiopulmonary Pathophysiology and Pharmacology (Spring) 3 Credits
KAAP 679: Primary Preventive Medicine Strategies (Winter) 3 Credits
KAAP 680: Clinical Exercise Physiology Comprehensives (Spring) 3 Credits
KAAP 681: Clinical Exercise Physiology Competencies Portfolio (Winter) 1 Credit
KAAP 671: Clinical Exercise Physiology Internship (Summer I & II, Fall, Winter, Spring) 12 Credits

2) Internships

Students will complete 12-credits worth of designated clinical internship experiences as part of the requirements for the degree. The faculty advisors will assign students to these clinical internship assignments throughout their involvement in the program. Internship rotations are scheduled around classes and all internship schedules are provided to students during the first week of the program. Students are volunteers at these internships site and are not monetarily compensated for their time. These internship opportunities provide students with essential hands on opportunities that prepare them for future professions as well as qualify them for the American College of Sports Medicine certification exam. Additionally, students will document and report all efforts within these internships into a professional portfolio which summarizes the student's clinical experiences and contributes to part of their final grade in KAAP 681: Clinical Exercise Physiology Competencies Portfolio. Furthermore, many of these internships support current research and clinical efforts within the College of Health Sciences including Nurse

Managed Primary Care Center's Exercise Counseling Services, Dr. David Edward's Renal Rehabilitation program as well as Dr. Chris Knight's SpeedGeezers Parkinson's Disease Research program. Students are evaluated by designated site supervisors at two points during their clinical rotation, halfway through and upon completion of their rotation. Clinical internship supervisors provide these two evaluations (standardized rubrics) to the student's faculty advisor(s). These evaluations are averaged into the student's grade for KAAP 671.

3) Changes to the Program of Study

Internship assignments are scheduled in order to not interfere with student's required courses. Students will follow the program of study as a cohort and courses will be taken in the designated semesters listed above. Students who wish to make minor changes to their program of study must obtain permission from their faculty advisor. Major changes to the program of study, such as the substitution of one or more core courses, must be approved by the Program Committee. All changes in a previously approved program of study must be approved by the Program Director.

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. Should a student receive below at B in a single course, the student will be required to either repeat the course or take an independent study with their faculty advisor within one academic semester. If an independent study is recommended for the student, the scope of the independent study will be selected by their faculty advisor to best demonstrate the student's competencies in course related materials as well as course objectives.

5) Independent Study and Transfer Credits

Independent study credits will be allowed only under special circumstances and require the approval of the Program Committee. With the approval of the Program Committee, a maximum of 9 graduate credits may be transferred from another institution to the degree as electives. Course substitution must be approved by the Program Committee and Program Director.

6) Expectations of Facility of Expression in English

Due to the high degree of clinical patient contact hours, all students enrolled in the M.S. in Clinical Exercise Physiology program must demonstrate advanced/fluent levels of proficiency in the English language. Advanced/fluent proficiencies include but are not limited to students being able to communicate and write with native-like proficiency, read/listen and comprehend at a level that approximates native English-speaking graduate students who are meeting required standards. Minimum standard scores for TOEFL and/or IELTS scores are 100 and/or 6.5. To ensure the highest levels of safety for our students and patients, as well as emergency situation preparedness, the program committee will have the final say in whether a student's English language proficiency is adequate enough for enrollment into the program.

B. Degree and Advisement

Students accepted into the program will be assigned to a faculty advisor(s) by the Program Committee. Faculty advisors will help oversee students during their enrollment in the program, in particular during the 12 credits worth of clinical internship experiences (KAAP671: Clinical Exercise Physiology Internship). Daily involvement at these clinical sites are under the supervision of a designated site supervisor as well as faculty sponsors, who may or may not be the student's faculty advisor. Site supervisors and faculty sponsors provide critical feedback on the student's progress at each site half way through each rotation as well as a final assessment at the completion of the rotation. A standardized rubric is utilized by all sites to assess the student's performance. Students are provided a copy of this rubric during the first week of the program to ensure they are well informed about their expectations at each clinical site. Both midpoint and final assessments contribute to the students' overall grade in KAAP671: Clinical Exercise Physiology Internship. Clinical rotations are organized by the faculty members in the Clinical Exercise Physiology program. The schedule for each clinical rotation is strategically planned as to not interfere with program courses. Students are notified of their clinical rotation schedule for the entire year during their first week of the program. Students do not receive monetary compensation for their involvements at these clinical internship sites. The efforts of these internships culminates in experiences that prepare students to enter a variety of work environments, the American College of Sports Medicine's Certification exam, as well as a professional portfolio which summarizes the student's clinical experiences and contributes to part of their final grade in KAAP 681: Clinical Exercise Physiology Competencies Portfolio.

Part IV. University of Delaware Graduate College Policies

A. Advanced Degree Application

To initiate the process for degree conferral, candidates must submit an Advanced Degree Application to the Graduate College prior to the published deadline for the desired degree conferral term. No coursework to earn a prior degree may be used for the advanced degree application.

B. Academic Good Standing

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' 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.

C. Academic Probation

The Graduate College monitors the academic progress of all graduate students and notifies students in writing of all academic deficiencies. The cumulative GPA after each 9-hour increment determines academic standing. In addition to the University policy regarding minimum grade point average, some departments require graduate students to maintain certain performance minima in their program of study in all or in particular courses. Failure to meet the

standard minima may lead to academic dismissal from the program.

D. Satisfactory Progress toward a Graduate Degree

If a graduate student fails to make satisfactory progress toward all degree requirements, permission may be denied to continue in the degree program. At the close of each semester, winter session, or summer session, in those circumstances deemed appropriate by the Graduate Director exercising their professional judgment, they may evaluate the progress of a graduate student toward meeting the academic standards of the program in which the student is enrolled. In addition to graded course work, academic standards include, but are not limited to, professional, ethical, clinical, and other standards required of graduate students.

Students are entitled to know the procedures and standards by which their academic performance is assessed. If, in the professional judgement of the Program Director, a student has failed to make satisfactory progress toward meeting the academic standards of the program in which that student is enrolled, they may approve to dismiss that student from the program.

In the case of dismissal, the Program Director is required to send a report to the Graduate College that states the faculty vote on the decision causing dismissal and the justification for this action. The Graduate College will notify a student in writing when the student is being dismissed for failure to make satisfactory progress in the program. The student may appeal the termination by writing to the Graduate College. This appeal must be made within 10 class days from the date on which the student has been notified of academic dismissal. The Graduate College will review the appeal and may either uphold the dismissal, grant reinstatement, or refer the case to the Graduate Hearing Board for resolution. If the Graduate College grants reinstatement, the student must meet the conditions of the reinstatement. Failure to meet these conditions will result in dismissal from the program. A graduate student may be reinstated only once to a given major. The student's academic transcript will reflect the reinstatement with the appropriate academic probation status.

E. Extension of the Time Limit

Requests for time extensions must be made in writing and approved by the Program Director. The department will forward the request to the Graduate College. The Graduate College 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. Transfer of Graduate Credit

Graduate credit earned at another institution will be evaluated at the written request of the student. Such a request must be submitted to the Program Director 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:

- Were earned with a grade of no less than "B",
- Are approved by the Program Director
- Are in accord with the student's approved plan of study,
- Are not older than five years, and

- 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.

G. Expiration of Credit

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

Part V. Assessment Plan

The 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, and alumni. Annual meetings will be held to discuss curricular changes, review analyzed data, identify action items, and establish timelines and assignments for responsibilities. The 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

This is a 12-month professional master's program and students are expected to pay graduate tuition, however, this program receives a reduced tuition rate of \$1,000 per credit instead of the traditional \$1,898 per credit.

Part VII. Program Organization and Administration

A. Affiliated Program Faculty

The inaugural group of affiliated program faculty who have been involved in program planning and development include:

Brittany Overstreet
Guy Scotolati
Michelle Provost-Craig
Nancy Getchell
Dave Edwards
Chris Knight
Megan Wenner
William Farquhar
John Jeka

Administrators also involved or consulted include:

Shelley Rust
Megan Murphy

Additional faculty with interest in the program may become affiliated by submitting a CV to the Program Director and receiving the positive majority vote of program faculty.

The affiliated program faculty agree to fulfill the following responsibilities:

- 1) Accepting a reasonable number of student advisees.
- 2) Participating in program faculty meetings.
- 3) Provide supervision of a reasonable number of clinical rotations.

B. Program Director

The Program Director shall be a faculty member affiliated with the program who is appointed by mutual agreement of the Deans of the Colleges overseeing the program (currently the Colleges of Health Sciences) for a term of two years. The Program Director serves at the pleasure of the overseeing deans.

The responsibilities of the Program Director include:

- 1) Providing leadership and oversight for the program.
- 2) Organizing and leading meetings of affiliated faculty and the Program Committee.
- 3) Communicating as necessary with the University Graduate College.
- 4) Serving as the first point of contact for issues arising with program students and faculty.
- 5) Approving all changes to programs of study.
- 6) Approving all changes in faculty advisors.

C. Program Committee

The Program Committee shall consist of two members of the affiliated faculty elected by the faculty from each unit not represented by the Program Director, one faculty member or professional from the Clinical Exercise Physiology program, and the Program Director. The two-year terms of these Program Committee members shall be staggered, such that each year at least one member is replaced. A Program Committee member may serve two consecutive terms with an affirmative vote of the affiliated faculty.

The responsibilities of the Program Committee include:

- 1) Making annual admission decisions on student applicants.
- 2) Matching students to faculty advisors.
- 3) Approving all new programs of study and major changes to existing programs of study, including any transfer credits or independent study credits.

D. Program Resources

The following terms are agreed upon for managing resources related to this interdisciplinary professional master's program:

- 1) Tuition income for students in this program will flow to the college of the instructor of record for each course.

- 2) Since this is a professional master's program, the participating units are not expected to provide graduate assistantships for the enrolled students.
- 3) With the approval of the Program Committee, the administrator overseeing the department/school home of the Program Director will determine the appropriate workload allocated to the responsibilities of the program, with the general expectation that this will be .25FTE of the Program Director's workload.
- 4) The home department/school/college of the Program Director is expected to make appropriate secretarial or other staff assistance available to the Program Director for conducting necessary program business.