Request for Provisional Approval of a New Degree Offering Within an Existing Program

The Department of Physical Therapy, positioned within the College of Health Sciences, respectfully requests permission to provide a Master of Science (MS) in Anatomy and Clinical Health Science to qualifying students within the Doctor of Physical Therapy (DPT) program.

1. Description

The Master of Science in Anatomy and Clinical Health Science provides students with advanced knowledge and understanding of human anatomy, physiology, and pathology and the ability to apply that information to normal and pathological movements. Proficient identification and analysis of health outcomes research, combined with intricate knowledge of system structure and function, will enable graduates to maximize patient / client wellness through education, advocacy, and research coordination.

Degree objectives: Upon obtainment of the MS in Anatomy and Clinical Health Science, the graduate will:

1. Demonstrate a firm understanding of human anatomy, physiology, and pathology.
2. Apply sound principles related to human anatomy, physiology, and pathology to the evaluation of the structure and function of the human body.
3. Understand and apply sound principles of research design, measurement, and statistical approaches to the evaluation of the literature supporting current and newly developing methods used to evaluate the structure and function of the human body.
4. Obtain pathways for lifelong professional and personal development, and
5. Demonstrate civic leadership that promotes attainment of resources to address community health needs.

Achieving the minimum score in a select number of doctoral level courses provides evidence of content mastery in support of the MS degree.

1. Rationale and Demand
2. Institutional Factors

Provide intermediate degree to matriculated DPT students in recognition of focused academic studies in anatomy and clinical health science. This degree offering will:

* + 1. Distinguish UD DPT Program from other highly ranked programs by establishing a pathway for students to graduate with both MS and DPT, and
    2. Enhance the applicant pool by offering an option for MS and DPT (attracting a larger number of highly qualified applicants will be most important given expansion of DPT class size; planned increase from 36 to 60 students per cohort beginning in the 2014-2015 academic year).

This Master’s degree is designed in accordance with the guidelines established by the University of Delaware.

1. Student Demand

Support students who have a change of professional goals mid-way through their studies and opt to withdraw from the DPT program. The MS degree will allow those students who decide not to continue DPT studies to:

1. Receive an academic degree to recognize upper-level coursework taken,
2. Gain employment as a clinical research coordinator or lab manager in a human performance research laboratory, and
3. Gain a degree supportive of student matriculation into a different health professional program or PhD program in a complementary discipline.
4. Transferability

Students may not apply directly into the MS degree program, nor will students be permitted to transfer into this program from another major. Enrollment is restricted to students admitted into the DPT program. Students will be eligible to apply for the MS in Anatomy and Clinical Health Science upon successful completion of all degree-required coursework. Algorithms have been created to guide matriculation of students.

1. Access to Graduate and Professional Programs

The MS in Anatomy and Clinical Health Science will prepare graduates to meet curricular expectations of professional degree programs in related health disciplines, such as physician assistant or occupational therapy. It will also prepare graduates for a PhD program in Neuroscience, Biomechanics, Movement Science, Rehabilitation Science, Kinesiology, or Applied Physiology. Top-ranked PhD programs (University of Delaware, University of Southern California, University of North Carolina Chapel Hill, Washington University, and The Ohio State University) look favorably upon applicants who possess a Master’s degree in a science discipline upon admission, thus providing graduates of this MS program a competitive advantage and a stronger foundation upon which to start PhD studies.

1. Demand and Employment Factors

Graduates with an MS in Anatomy and Clinical Health Science who do not pursue further coursework toward a DPT would have appropriate academic credentials to pursue employment as a research lab manager in a clinical biomechanics or movement science laboratory. Annual salaries for such positions typically fall in the mid-50K range.

1. Regional, State, and National Factors

The MS in Anatomy and Clinical Health Science will be offered only to students admitted into the UD DPT Program. As such, this degree program will not be competing for applicants with other existing Masters programs. While it is anticipated that the vast majority of students earning an MS in Anatomy and Clinical Health Science will continue with DPT studies, the MS provides a transitional option for students into other fields of study by formally recognizing content expertise obtained.

1. Other Strengths

To the best of our knowledge, obtainment of an MS as an intermediate step toward a DPT will be unique to the University of Delaware and will affirm the advanced didactic instruction offered in our Department.

1. Enrollment, Admissions, and Financial Aid
2. Enrollment

Eligibility for the MS in Anatomy and Clinical Health Science is restricted to students admitted into the DPT Program. Upon approval of the MS degree, all student cohorts currently enrolled will become eligible.

It is anticipated that the vast majority of matriculated students will opt to earn the MS as an intermediate degree to the DPT. To qualify for the MS, students will be required to successfully pass the Advanced Regional Anatomy course, currently an elective course offering for DPT students.

1. Admission Requirements

No students will be admitted directly into the MS program in Anatomy and Clinical Health Science. Satisfaction of all admissions requirements for the DPT Program is required. The MS degree is intended: 1) for students wishing to supplement their DPT degree through advanced anatomy coursework and 2) to provide an appropriate exit degree for students unable to complete the DPT degree for personal or academic reasons.

1. Student Expenses and Financial Aid

DPT students will qualify for the MS in Anatomy and Clinical Health Science by taking one additional 3-credit course, PHYT 626: Advanced Regional Anatomy. There will be no changes to the Financial Aid structure as currently existent for DPT students who take this course.

1. Curriculum Specifics
2. Institutional Factors

Students admitted into the DPT Program may ultimately follow one of three pathways:

1. Graduate with DPT degree alone.
   1. Student met matriculation and graduation requirements specific to the DPT degree.
2. Graduate with both DPT and MS degrees.
   1. Student met matriculation and graduation requirements specific to the DPT and MS degrees.
      1. Student successfully passed PHYT 626: Advanced Regional Anatomy as required for the MS degree.
3. Graduate with MS degree alone.
   1. Student discontinued participation in the DPT Program but has met graduation requirements specific to the MS degree.
4. Curriculum

Academic requirements:

1. 31-credit hours of degree-required coursework, including 3-credits from PHYT 626: Advanced Regional Anatomy.
2. Successful completion of all degree-required courses with the established grade minimum.
3. Cumulative GPA of 3.00 in degree-required courses necessary for conferring of degree.

See chart of required coursework. All coursework will be administered via the Physical Therapy Department.

Descriptions for required MS degree courses are as follows:

* PHYT 622: Clinical Gross Anatomy (6 credits, letter-graded)

Structural and functional aspects of regions of body under study are emphasized by means of human cadaver, lectures, and demonstrations. Clinical significance of anatomical structure is stressed.

* PHYT 604: Functional Anatomy and Biomechanics (4 credits, letter-graded)   
  Gives a description of normal and abnormal human movement. Emphasis on joint structure and function and gait using arthrokinematic and osteokinematic analysis. Evaluation procedures such as EMG, cinematography and computer simulations utilized.
* PHYT 801: Medical Science I - General Medicine (3 credits, letter-graded)Lectures in pathology, clinical medicine, cardiology and pharmacology across the lifespan. Implications for physical therapy are emphasized.
* PHYT 620: Educational Process in Community Health (1 credit, letter-graded)  
  The learning / teaching process as defined in the Guide to Physical Therapy Practice, is the focus of this course. This course will be divided over three years. During the first winter session students will be presented with the didactic portion of the course. The second winter session (after the students have had a clinical experience) they will make a required presentation to the class. Additionally, students will develop education programming based on the outcomes of their service learning projects in summer of year 3.
* PHYT 632: Applied Physiology I (3 credits, letter-graded)In-depth analysis of the physiological mechanisms of the cardio-pulmonary system. Lectures in normal and abnormal function of this system. Emphasis on cardiopulmonary testing and rehabilitation techniques including stress tests and pulmonary function tests.
* PHYT 626: Advanced Regional Anatomy (3 credits, letter-graded)

Structural and functional aspects of regions of the body under study are emphasized by means of a dissection of a specific region of the human body.

* PHYT 606: Research (3 credits, letter-graded) An overview of methodological issues in the conduct of physical therapy research. Topics include scientific method, experimental design, statistical procedures and technical writing. Student expected to critically analyze current physical therapy literature.
* PHYT 623: Clinical Neuroscience (4 credits, letter-graded)   
  A study of the structure and function of the human nervous system with major emphasis on the cause-effect relationships between lesions and their symptoms. Emphasis on the neural mechanisms controlling movement.
* PHYT 633: Applied Physiology II (3 credits**,** letter-graded)   
  Discusses the research on the effects of exercise on various patient populations (not including cardiopulmonary). Emphasis placed on the musculoskeletal system and on exercise prescription and progression.
* PHYT 866: Special Problem - Radiology and Imaging (1 credit, letter-graded)

A study of appropriate uses and indications of various imaging techniques. Includes basic interpretation as related to normal and pathologic structure and function. Greatest emphasis on musculoskeletal system.

OR

PHYT 802: Medical Sciences II – Orthopedics & Musculoskeletal Imaging (4 credits, letter-graded)Orthopedic pathology, medical and surgical management of musculoskeletal conditions across the lifespan with implications for physical therapy intervention. Includes radiology.

Matriculation algorithms have been established for students wishing to discontinue DPT studies and singularly pursue the MS degree. See attached flow sheets. Students desiring both the DPT and MS degree are bound to the matriculation criteria as specified in the DPT Program Policy Document.

Students will be deemed ineligible to continue studies toward an MS in Anatomy and Clinical Health Science and will be recommended for dismissal if any of the following are encountered:

* + - 1. Unsuccessful completion of any DPT or MS course in summer, fall, or winter of the first academic year at the time of first administration. The exception is PHYT 626: Advanced Regional Anatomy if taken in winter of year 1.
      2. Inability to successfully pass 2 degree-required courses in the MS curriculum, pending none of the course failures occurred during summer, fall, or winter of year 1 (with the exception of PHYT 626 if taken in winter of year 1).
      3. Inability to successfully pass the repeat (second attempt) of an already failed MS degree-required course.
      4. Inability to successfully achieve a cumulative GPA > 3.00 in MS degree-required courses after repeating up to 2 courses for a higher grade.
      5. Demonstration of non-academic factors not commensurate with the moral or ethical standards of a healthcare champion (e.g. – professional, ethical, egregious legal breaches).

1. Resources Available
   * + 1. Learning Resources

As per those available to DPT students given the MS cohort is derived from this population.

* + - 1. Faculty / Administrative Resources

Offering the MS will pose no strain to Departmental resources allocated to the admissions process.

The DPT Program Director will also serve as the MS Program Director.

DPT Program faculty to coordinate and direct courses are already established.

1. Resources Required
2. Learning Resources

Beyond additional cadavers and dissection supplies for the Advanced Regional Anatomy course, no additional learning resources are required.

1. Personnel Resources

One additional teaching assistant will be required for every 20 students enrolled in PHYT 626: Advanced Regional Anatomy above the first 20.

1. Budgetary Needs

There are no budgetary implications except for those associated with PHYT 626: Advanced Regional Anatomy. It is expected that tuition dollars will be used to cover those costs.

For every 20 students enrolled in PHYT 626, the following expenses are incurred:

* + - 1. Three cadavers - $3500 per cadaver
      2. Dissection supplies - $300
      3. One teaching assistant or faculty member

The aforementioned ratios will be used for predicting course costs should enrollment exceed 20 students per course.

1. Implementation and Evaluation
   * + - 1. Implementation Plan

All MS-required courses are already established. DPT students will matriculate through the program in its established lock-step fashion and will add PHYT 626: Advanced Regional Anatomy in a winter session if the MS is desired.

* + - * 1. Assessment Plan

Assessment could occur in the following ways:

1. Tracking employment or alternative / advanced degree opportunities for students electing to exit the program with an MS. It is expected that such MS graduates will likely explore options in complementary health disciplines / fields.
2. Determination of student satisfaction with MS degree via exist survey.
3. Determination of changes to applicant pool given potential for earning an MS in addition to DPT if accepted into DPT program.

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| Year / Term / Course | Credits | Required for MS in Anatomy and Clinical Health Science | Required for DPT |
| Yr 1 / Summer / PHYT 600 (PT as a Profession) | 1 | ---- | X |
| Yr 1 / Summer / PHYT 622 (Clinical Gross Anatomy) | 6 | X | X |
| Yr 1 / Fall / PHYT 641 (Rounds 1) | 1 | ---- | X |
| Yr 1 / Fall / PHYT 604 (Functional Anatomy and Biomechanics) | 4 | X | X |
| Yr 1 / Fall / PHYT 624 (Basic Evaluation Techniques) | 2 | ---- | X |
| Yr 1 / Fall / PHYT 631 (PT in the Acute Care Environment) | 4 | ---- | X |
| Yr 1 / Fall / PHYT 635 (Thermal Agents and Soft Tissue Techniques) | 2 | ---- | X |
| Yr 1 / Fall / PHYT 801 (Medical Science I – General Medicine) | 3 | X | X |
| Yr 1 / Winter / PHYT 620 (Educational Process in Community Health) | 1 | X | X |
| Yr 1 / Winter / PHYT 632 (Applied Physiology I) | 3 | X | X |
| Yr 1 / Winter / PHYT 830 (Intro to Clinical Education) | 2 | ---- | X |
| Yr 1 or Yr 2 / Winter / PHYT 626 (Advanced Regional Anatomy) | 3 | X | ---- |
| Yr 1 / Spring / PHYT 642 (Rounds II) | 1 | ---- | X |
| Yr 1 / Spring / PHYT 606 (Research) | 3 | X | X |
| Yr 1 / Spring / PHYT 623 (Clinical Neuroscience) | 4 | X | X |
| Yr 1 / Spring / PHYT 633 (Applied Physiology II) | 3 | X | X |
| Yr 1 / Spring / PHYT 634 (Electrotherapy) | 4 | ---- | X |
| Yr 2 / Summer 1 / PHYT 608 (Musculoskeletal Evaluation and Treatment) | 4 | ----- | X |
| Yr 2 / Summer 1 (or beyond) / PHYT 866 (Special Problem - Radiology and Imaging) | 1 | X | ---- |
| Yr 2 / Summer 1 / PHYT 802 (Medical Science II – Orthopaedics and Musculoskeletal Imaging) | 4 | ---- | X  *\*\*Will satisfy PHYT 866 course criteria for MS degree* |
| Yr 2 / Summer 2 / PHYT 807 (Emergency Responder and Advanced Seminar) | 5 | ---- | X |
| Yr 2 / Fall / PHYT 643 (Rounds III) | 1 | ---- | X |
| Yr 2 / Fall / PHYT 803 (Medical Science III - Neurology) | 3 | ---- | X |
| Yr 2 / Fall / PHYT 804 (Neurophysiologic Evaluation and Treatment) | 4 | ---- | X |
| Yr 2 / Fall / PHYT 805 (Rehabilitation) | 4 | ---- | X |
| Yr 2 / Fall / PHYT 806 (Geriatrics) | 3 | ---- | X |
| Yr 2 / Winter / PHYT 809 (Psychosocial Aspects of Health and Disease) | 3 | ---- | X |
| Yr 2 / Winter / PHYT 810 (Clinical Management and Administration) | 2 | ---- | X |
| Yr 2 / Spring / PHYT 614 (Sports and Orthopaedics) |  | ---- | ---- |
| Yr 2 / Spring / PHYT 808 (Spine Management) | 4 | ---- | X |
| Yr 3 / Spring / PHYT 811 (Pediatrics) | 4 | ---- | X |
| Yr 3 / Spring / PHYT 644 (Rounds IV) | 1 | ---- | X |
| PHYT 812 (Pediatrics Integrated Clinical Experience) | 1 | ---- | X |
| PHYT 821 (Orthopedics Integrated Clinical Experience) | 3 | ---- | X |
| PHYT 822 (Neurologic / Older Adult Clinical Experience) | 3 | ---- | X |
| PHYT 831 (Full-time Clinical Experience: Medically Complex) | 4 | ---- | X |
| PHYT 833 (Full-time Clinical Experience: Rehabilitation) | 4 | ---- | X |
| PHYT 834 (Full-time Clinical Experience: Elective) | 4 | ---- | X |



