

Section I: The Request

University of Utah requests approval to offer a Doctoral Program in Rehabilitation Science effective Fall 2008. This program has been approved by the institutional Board of Trustees on Month 2008.

Section II: Program Description

Complete Program Description

The mission of the doctoral program in Rehabilitation Science is to advance the scientific knowledge underlying the clinical practice of rehabilitation through the development of expertise in research, teaching, and professional service. Students will be given opportunities to acquire and develop skills in scholarship, teaching, and professional leadership. The Department of Physical Therapy recently began offering the Doctor of Physical Therapy (DPT) degree for students interested in the clinical practice of Physical Therapy. The DPT degree is a clinical degree that is intended for individuals interested in engaging in clinical practice. The doctoral program in Rehabilitation Science will award a PhD degree and will focus on the development of individuals with the expertise needed to conduct independent research and obtain positions as faculty members. The proposed PhD program in rehabilitation science would be complementary to the existing DPT program. Enrollment in the DPT program would not be affected by a PhD program because these programs have different missions. The presence of graduate students enrolled in the PhD program will enhance the academic experience of the DPT students by increasing scholarly activity and providing enhanced opportunities for involvement of Teaching Assistants in instruction.

Purpose of Degree

The rehabilitation of individuals with injury or disease is an important aspect of quality health care. There is a corresponding need to prepare scholars committed to advance the scientific basis of rehabilitation and examine the clinical outcomes of evidence-based rehabilitation activities. The University of Utah does not currently offer a doctoral program devoted to the preparation of scholars in rehabilitation science. The Department of Physical Therapy at the University of Utah has a rich history and strong national reputation for excellence in the clinical training of rehabilitation professionals and innovation in rehabilitation research. The Department does not currently offer a doctoral program to train interested individuals for careers as researchers, scholars, and leaders in the demanding field of rehabilitation science. The Department of Physical Therapy, in collaboration with other Departments and Centers within the University, is therefore proposing the formation of a doctoral program in Rehabilitation Science.

Institutional Readiness

The Department of Physical Therapy conducted its most recent strategic planning session in the spring of 2006. The faculty considered creation of a PhD program as one of its primary objectives for the next two years, noting that this degree offering will be an integral part of the Department's expanding research agenda and commitment to the advancement of the science of rehabilitation and related studies. The most recent Graduate Council review conducted in the Fall of 2006 noted that the Division has substantially increased its scholarly activity in the time since the previous review (2000), and commended the research accomplishments of the faculty. Both the external and internal review teams encouraged the Department to work towards the development of a PhD program to further enhance faculty progress in scholarly activity. The results of these recent reviews indicate a readiness, recognized both within and outside the Department, to develop a PhD program.

Because the Department of Physical Therapy already administrates a Doctor of Physical Therapy program, the essential resources for establishing a PhD program already exist including administrative support and classroom facilities. The Department also has existing space dedicated to research including the Skeletal Muscle Exercise Research Facility (SMERF) and Motion Capture Core Facility. There would therefore be no new administrative or space resources required.

The size of the faculty is a consideration in determining the readiness of the Department of Physical Therapy to offer a doctoral degree. The Department currently has a total of 8 faculty member (6 tenure-track faculty members and 2 full-time clinical-track faculty members) who are actively engaged in an ongoing research agenda. These faculty members also have established collaborative relationships with faculty members and research facilities in other Departments, providing an enhanced diversity of opportunities for mentoring and access to research facilities. Faculty within the Department of Physical Therapy are in active collaboration with faculty from the Departments of Orthopedics, Internal Medicine, Neurology, and Physical Medicine & Rehabilitation from the School of Medicine, as well as faculty from the School of Nursing and Center on Aging (see letters of support). In order to provide an appropriate amount of mentoring without overburdening faculty members, we will limit enrollment in the doctoral program to no more than 3 new students per year until additional faculty members can be added to the Department of Physical Therapy. We anticipate a minimal increase in budgetary expenditures resulting from costs associated with teaching additional courses and time for student mentoring. These expenses can be absorbed into existing faculty FTE and/or Department discretionary revenue.

Faculty

The Department of Physical Therapy has 6 tenure-track faculty (1 Full Professor, 3 Associate, 2 Assistant), 7 clinical-track faculty (2 Associate, 3 Assistant, 2 Instructors), and 35 adjunct faculty. The faculty within the Department has a strong record of scholarship that has been steadily increasing over the past few years. In 2006 the Department's research was supported by 13 grants providing direct costs of just over \$200,000. Several members of the faculty have received Institutional, Regional, and National awards for their research efforts. The number of peer-reviewed publications from the faculty has also been steadily increasing. The demonstrated excellence in scholarship of the Department of Physical Therapy insures that potential PhD students will be immersed in a productive scholarly environment. The following full-time faculty in the Division of Physical Therapy will support the doctoral program in Rehabilitation Science:

Department of Physical Therapy Faculty

Lee Dibble, PhD, PT, ATC

K. Bo Foreman, PhD, PT

Julie M. Fritz, PhD, PT, ATC

Ed Gappmaier, PhD, PT

Paul LaStayo, PhD, PT, CHT

Robin L. Marcus, PhD, PT, OCS

Gina Maria Musolino, EdD, PT, MSED

Diane E. Nicholson, PhD, PT, NCS

R. Scott Ward, PhD, PT

Adjunct Faculty and Collaborators

Department of Orthopedics

Robert Burks, MD, Assoc. Professor

Patrick Greis, MD, Asst. Professor

Christopher Peters, MD, Assoc. Professor

Charles Saltzman, MD, Professor and Chair
Division of Physical Medicine and Rehabilitation
Pamela Hansen, MD, Asst. Professor
Richard Kendall, DO, Asst. Professor
Stuart Willick, MD, Asst. Professor
Department of Neurology
John Rose, MD, Asst. Professor
John Steffens, MD, Asst. Professor
Department of Internal Medicine
Don McLain, MD, PhD, Professor and Chief, Division of Endocrinology and Metabolism
Mark Supiano, MD, Professor, Executive Director, University of Utah Center on Aging
School of Nursing
Susan Beck, PhD, RN, Assoc. Professor
Kathi Mooney, PhD, RN, Professor
Ginny Pepper, PhD, RN, Professor
Department of Mechanical Engineering
Staci Bamberg, PhD, Asst. Professor

Adjunct faculty and affiliated collaborators in the Department of Physical Therapy also contribute to the research environment for potential PhD students. Established collaborative relationships between faculty of the Department of Physical Therapy and adjunct faculty in other Departments add depth, diversity and additional mentorship opportunities for PhD students. (see Appendix for supporting letters).

Staff

No additional professional staff would be needed to support the doctoral program in Rehabilitation Science. Because of the limited number of students to be admitted to the program, the existing staff in the Department of Physical Therapy will be able to provide support to the program.

Library and Information Resources

Library resources required for a doctoral program in Rehabilitation Science include access to biomedical journals and other textbooks and reference material related to biomedical sciences and Physical Therapy. The existing resources of the Eccles Health Sciences Library are adequate for support of this doctoral program.

Admission Requirements

Applicants for admission to the doctoral program in Rehabilitation Science must be admitted by the Graduate School and the Department of Physical Therapy at the University of Utah. Applicants should have a strong interest in research, teaching, and service in a rehabilitation-related field. Applicants must have an earned bachelor's degree. A master's or clinical doctoral degree in an area related to the health sciences (e.g., MPT, DPT, MOT, OTD, AudD, MD, etc.) is desirable. Certainly, the exceptional student with a bachelor's degree and compelling clinical/research experience in health sciences will be considered. The following information must be submitted to the Graduate School:

1. Graduate Admissions Application
2. Official transcripts of undergraduate and graduate course work
3. For international students, a Test of English as a Foreign Language (TOEFL) score

The following information must be submitted to the Department of Physical Therapy:

1. A current curriculum vitae

2. Report of the Graduate Record Exam (verbal, quantitative, and analytical) taken within the past five years
3. A written statement (less than 1000 words) of research experience and interest, and long-term career goals
4. 3-5 letters of recommendation from individuals with knowledge of the applicant's potential for success in a doctoral program

Admission to the Doctoral Program in Rehabilitation Science will require:

1. Acceptance to the Graduate School at the University of Utah
2. A minimum grade point average of 3.0 in all college work
3. Availability of faculty mentor resources that match the student's research interests
4. TOEFL score of at least 550, if applicable

Student Advisement

Upon admission into the doctoral program, each student will be matched with a faculty advisor. This faculty advisor will assist the student in developing a plan of study and will oversee the composition of a supervisory committee that will be identified after the student's first year. The supervisory committee must be approved by the faculty advisor, and will be responsible for providing additional advisement to the student throughout his or her course of study.

Justification for Gradation Standards and Number of Credits

The total number of credit hours required by the doctoral program in Rehabilitation Science (minimum 66 credits) is consistent with other PhD programs at the University of Utah, and in comparable programs in Rehabilitation Science offered at other institutions.

External Review and Accreditation

The professional doctorate program in Physical Therapy is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE), however CAPTE does not accredit PhD programs. The program proposal for the doctorate in Rehabilitation Science has been reviewed by the Dean of the College of Health and contributing faculty from other programs at the University of Utah (see Appendix C for letters of support).

Projected Enrollment

Year	Student Headcount	# of Faculty	Student-to-Faculty Ratio	Accreditation Req'd Ratio
1	3	15	1:5	N/A
2	6	15	2:5	N/A
3	9	15	3:5	N/A
4	10	15	about 3:5	N/A
5	12	15	4:5	N/A

Expansion of Existing Program

INot applicable.

Section III: Need

Program Need

The Department of Physical Therapy at the University of Utah is located in the College of Health, which consists of seven departments and divisions. Currently, PhD degree programs are available within the Departments of Parks Recreation and Tourism, Health Promotion and Education, Communication Sciences and Disorders, and Exercise and Sports Science within the College of Health. These programs serve students within these Departments well. Students within the Department of Physical Therapy, or those interested in developing scholarly expertise in area of rehabilitation science do not presently have an option for PhD training in a program specifically designated to address the unique research perspective of a clinically-oriented discipline. The diverse expertise of faculty mentors within the Department of Physical Therapy in collaboration with supporting Departments and Divisions create an enriching environment for graduate studies to advance the frontiers of knowledge underlying the science of rehabilitation. To address the educational needs of these individuals, we are proposing the creation of a doctoral program in Rehabilitation Science.

The need for a doctoral program in Rehabilitation Science also fills a need specific to the Department of Physical Therapy and the College of Health at the University of Utah. The Department of Physical Therapy has been hindered in the recruitment of highly qualified faculty members by the lack of a doctoral program specific to the needs of graduate students interested in research in the science and application of rehabilitation. The creation of a doctoral program in Rehabilitation Science will help the Department recruit and retain the most highly-qualified scholars in their fields. In addition, the Graduate Council, in a recent review of the program, has recommended the Department consider development of a PhD program in order to advance the scholarship of the Department.

There is continues to be a strong need for qualified faculty in education programs in healthcare disciplines such as Physical Therapy. Faculties across the country continue to seek highly qualified scholars and researchers who will become professional leaders. The national shortage of faculty in Physical Therapy is highly likely to persist due to shortages in the work force creating higher salaries for clinical positions, and increasing degree requirements for practicing clinicians. For example, the Department of Physical Therapy at the University of Utah recently changed its entry-level degree for Physical Therapists from a Masters (MPT) to a Clinical Doctorate (DPT) degree. This follows a national trend in the profession which has increased the need for faculty members with higher terminal degrees. The doctoral program in Rehabilitation Science is designed to prepare scholars to address the need for faculty created by our rapidly changing health care system.

Labor Market Demand

There are several advertisements for open faculty positions in Physical Therapy, Occupational Therapy, and related rehabilitation education programs across the country. The majority of these positions are seeking PhD trained faculty with an expertise in rehabilitation and related sciences.

Student Demand

There has been no formal tracking of the inquiries that the Department of Physical Therapy has received regarding the availability of a doctoral program; however the faculty in the Division who are engaged in research activities have each been approached by several potential students expressing a desire to be mentored in the pursuit of a doctoral degree. Several of these potential doctoral students have been graduates of our DPT program who are interested in careers in teaching and research. In the past the

Department has recommended the program in the Department of Exercise Science for these students, or they have chosen to enroll in programs at other institutions that were more suited to the pursuit of a PhD in the science of rehabilitation. Currently the faculty of the Department of Physical Therapy are serving as co-chairs on the supervisory committees of 4 PhD students enrolled in the Department of Exercise Science. Each of these individuals has a background as a rehabilitation provider and would likely have selected to enroll in a PhD program in Rehabilitation Science had one been available at the University of Utah. The expectation is to be able to attract a sufficient number of high-quality applicants to a doctoral program in Rehabilitation Science at the University of Utah. The program would be the first of its kind in the Intermountain West. The most highly-regarded PhD programs in Rehabilitation Science include the Universities of Southern California, Delaware, Pittsburgh, Florida, and the University of Washington in St. Louis. We expect that students interested in the degree who wish to live or remain in the region would be attracted to the program at the University of Utah. The faculty at the University of Utah are recognized nationally for research excellence which would also make the program attractive to potential applicants.

Similar Programs

There are no doctoral programs in Rehabilitation Science within the Utah State Higher Education system. The nearest existing programs are located in California or in the Midwest. The table lists existing programs that are similar in scope: Texas Womens' University, The Ohio State University, University of Buffalo, University of Delaware, University of Florida, University of Iowa, University of Kansas, University of Minnesota, University of Pittsburgh, University of Southern California, University of Washington, Washington University, St. Louis.

Collaboration with and Impact on Other USHE Institutions

Not Applicable

Benefits

The UHSE would benefit from a doctoral program in Rehabilitation Science. The program would provide career opportunities for students who graduate from the University of Utah or elsewhere. The University of Utah would benefit from this doctoral program by attracting additional high quality students into the College of Health and Department of Physical Therapy. The addition of these individuals to the Department of Physical Therapy will enhance the educational experience of the DPT students as well. The national reputation of the University of Utah will be enhanced as students graduate from the program and become productive researchers, teachers and professional leaders.

Consistency with Institutional Mission

The doctoral program in Rehabilitation Science would be consistent with the University of Utah's mission to "educate the individual, and to discover, refine, and disseminate knowledge." The University of Utah is consistently recognized nationally and internationally as being a top leader in education for the health sciences. Developing an opportunity to train leaders in the field of rehabilitation is consistent with the mission of the University and the academic mission of the programs in the Health Sciences. A doctoral program in Rehabilitation Science is also consistent with the mission of the Department of Physical Therapy to "Investigate, discover and transmit knowledge related to physical therapy."

Section IV: Program and Student Assessment

Program Assessment

This program is not subject to accreditation from a specific agency. As a graduate program at the University of Utah, the program will be subject to review from the Graduate Council. In addition, the Department of Physical Therapy will extend the program assessment procedures used to evaluate the DPT program to the PhD program in Rehabilitation Science. These procedures include:

1. Exit interviews – these interviews are held with every student just prior to their graduation, following completion of the dissertation defense. Students come to the interview having completed a survey form. Using the survey as the basis for discussion, the interviews consist of collecting further information about the students' impressions of the facilities, the faculty, and the program of study, along with their most positive experiences and those elements of the program they would like to see changed.
2. Graduate survey – Graduates are sent a 32 question survey about one year post-graduation. Graduates are asked to reflect on their preparedness for employment on a scale from strongly-agree to strongly-disagree.

The faculty of the Department of Physical Therapy will use these assessment tools to conduct an informal internal review of the program on a yearly basis. Because graduate information will not be available for the first few years of the program, the informal review will be conducted as a meeting of the involved faculty members.

Expected Standards of Performance

Graduates of the Doctoral Program in Rehabilitation Science will have a specific area of expertise in rehabilitation science. The graduates will become researchers, scholars, teachers, thinkers, and planners in the demanding and changing field of Rehabilitation Science. The graduates will possess the skills necessary to become successful in a career as members of University faculties, or other research-related positions. The ability of the doctoral program to achieve these goals will be assessed from the program assessment procedures described above. The acquisition of these skills by an individual student will be assessed by the student's supervisory committee who will oversee the student's completion of the following requirements for graduation:

1. Successful completion of a minimum of 66 credit hours, comprising 18 credits from the research and statistics core, 14 credits in the student's area of emphasis, 4 credits of rehabilitation science seminar, 14 additional credits of independent study or electives, and 18 credits of doctoral dissertation research.
2. Successful completion of a Qualifying Examination, demonstrating competency in the domains of research and statistic, and the student's are of emphasis in rehabilitation science. The Qualifying Examination will be judged by the student's supervisory committee to ensure that the student is adequately prepared to accomplish his or her dissertation research.
3. Submission of a written dissertation and successful completion of the oral defense of the dissertation. The written and oral defense of the dissertation will be judged by the student's supervisory committee to ensure that the student possesses the skills necessary to conduct, present, and defend his or her research. After final approval of the dissertation by the supervisory committee, the student will have completed all requirements of the doctoral program.

Section V: Finance

Financial Analysis Form					

	Year 1	Year 2	Year 3	Year 4	Year 5
Students					
Projected FTE Enrollment	4	8	10	11	11
Cost Per FTE	20000	18000	17000	17000	17000
Student/Faculty Ratio	15	25	35	35	45
Projected Headcount	3	6	9	10	12
Projected Tuition					
Gross Tuition	12000	23000	26000	22000	24000
Tuition to Program	7000	14000	16000	13000	15000
5 Year Budget Projection					
	Year 1	Year 2	Year 3	Year 4	Year 5
Expense					
Salaries & Wages	55000	102000	118000	130000	120000
Benefits	18700	35000	40000	45000	41000
Total Personnel					
Current Expense					
Travel	1300	1000	2000	2500	2500
Capital	5000	5000	7000	7500	7500
Library Expense					
Total Expense	\$80000	\$143000	\$167000	\$185000	\$171000
Revenue					
Legislative Appropriation					
Grants & Contracts	100000	125000	155000	165000	170000
Donations					
Reallocation					
Tuition to Program	7000	14000	16000	13000	15000
Fees					
Total Revenue	\$107000	\$139000	\$171000	\$178000	\$185000
Difference					
Revenue-Expense	\$27000	\$-5000	\$1000	\$-9000	\$14000

Budget Comments

The costs associated with the implementation of the doctoral program in Rehabilitation Science would be those required for instruction of four new courses (total of 12 credit hours per year) needed for the program. It is anticipated that these courses would be taught by regular faculty members as part of their existing FTE status, or auxiliary faculty with appropriate expertise. The revenue from grants and contracts is associated with the offsetting of salary and benefits of faculty. The expenses assume that there will be some additional expense burden per student as the program begins and that the cost per student FTE will decrease slightly as the program becomes established. As students progress in the PhD the number of credit hours they take will decrease as they finish their coursework and then begin their dissertation and research hours.

There will be no additional costs associated with mentoring PhD students. The time required for mentoring can be absorbed into existing faculty FTE. There are no new costs required for space or equipment associated with this program.

Funding Sources

Additional funding from the University for the credit hours generated by the doctoral program will help to offset the costs associated with creation of the program. Assuming an enrollment of three students who would take 6 credits each per year of courses offered through the Department, the additional funding generated would be approximately \$2000 per year (18 credits at a differential tuition rate of \$108/credit hour). This is a conservative estimate and it is anticipated that the additional funding will grow in subsequent years as the program is able to take on additional enrollment. There are also additional funds that are available through other departments that have students they want to be in the program.

Reallocation

Not applicable.

Impact on Existing Budgets

All of the proposed costs for the doctoral program in Rehabilitation Science will be absorbed into the existing budget of the Department of Physical Therapy. No other programs will be impacted. Funding increases due to increased credit hours will initially offset a portion of the additional costs. The majority of funds will be generated through grant acquisition.

Appendix A: Program Curriculum

All Program Courses

List all courses, including new courses, to be offered in the proposed program by prefix, number, title, and credit hours (or credit equivalences).

Course Prefix & Number	Title	Credit Hours
Core Courses	NURS 7201 - Statistics I	4
	NURS 7202 - Statistics II	4
	NURS 7001 - Descriptive Research Designs	3
	NURS 7002 - Experimental and Correlational Design	3
	New Course: Principles of Clinical Research I	3
	New Course: Principles of Clinical Research II	3
	New Course: Rehabilitation Science Seminar	1
	Sub-Total	21

Course Prefix & Number	Title	Credit Hours
Elective Courses	Elective courses based on emphasis:	
	New Course - Principles of Evidence-Based Practice	3
	FP MD 6100 - Intro to Biostatistics	3
	FP MD 6300 - Intro to Epidemiology	3
	FP MD 6105 - Adv Top in Epidemiology and Biostats	2
	FP MD 63305 - Adv Methods of Epidemiologic Res	2
	FP MD 6405 – Health Services Research	2
	GERON 6003 – Research Methods in Aging)	3
	MDCRC 6010 – Introduction to Epidemiology	2
	MDCRC 6110 – Intermediate Epidemiology	2
	MDCRC 6120 - Cost-Effectiveness Analysis	1
	MDCRC 6230 - Health Services Research	2
	New Course - Neuromuscular Adaptation to Rehabilitation	3
	ESS 6380 - Muscle Physiology	3
	BIOEN 6430 - Functioning of the Nervous System	4
	BIOEN 6010 - Systemic Physiology II	3
	ESS 6300 - Advanced Exercise Physiology I	3
	ESS 6310 - Advanced Exercise Physiology II	3
	ESS 6320 - Exercise and Disease	3
	GERON 6001 – Introduction to Gerontology	3
GERON 6003 – Research Methods in Aging	3	
GERON 6604 – Physiology and Psychology of Aging	2	
NUERSC 6040 - Cellular and Molecular Neuroscience	4	
NUERSC 6245 - Cellular and Molecular Neuroscience Lab	2	
	Sub-Total	61
Track/Options (if applicable)	Evidence-Based Practice in Rehabilitation Neuromuscular Adaptations to Rehabilitation	
	Sub-Total	
	Total Number of Credits	*** available (min 66 cr)

New Courses to be Added in the Next Five Years

List all new courses to be developed in the next five years by prefix, number, title, and credit hours (or credit equivalences). Use the following format:

The new course numbers are being finalized with the curriculum committee.

NEW COURSE: Principles of Clinical Research I (3 credits): The purpose of this course is to provide an overview of the general principles behind clinical research. The course will focus on such topics as models of disablement guiding clinical research, principles of hypothesis testing, concepts and issues in data collection and database management, protocol development, and research ethics.

NEW COURSE: Principles of Clinical Research II (3 credits): This course will cover methods in the design, conduct, and reporting of clinical research. The course content will cover various research designs including the relative advantages and limitations of each, and issues related to the statistical methods used in each design. Emphasis is placed on clinical research examining causation, natural history, diagnostic testing, and the evaluation of treatment efficacy.

NEW COURSE - Principles of Evidence-Based Practice (3 credits): The purpose of this course for this course is to introduce students to the principles related to evidenced-based practice in rehabilitation disciplines. The course content will cover principles for obtaining and evaluating the quality of published evidence. Additional emphasis will be placed on designing and evaluating the outcomes of translational research that seeks to integrate evidence into clinical practice.

NEW COURSE: Neuromuscular Performance and Adaptation to Rehabilitation (3 credits): This course examines the neuromuscular performance in a rehabilitation context. Emphasis is placed on the mechanisms required for functional activity, particularly in persons with disease or disability, and the role of rehabilitation interventions in maximizing function.

NEW COURSE: Rehabilitation Science Seminar (1 credit): This course is designed to provide students with an opportunity to critically review professional literature and discuss contemporary issues related to the science of rehabilitation.

Appendix B: Program Schedule

The PhD program will be individualized for each student based on their choice of emphasis and elective courses. Sample curricular plans are provided below.

SAMPLE PLAN OF STUDY – Evidence-Based Practice Emphasis

Semester #1 – Fall_01

NURS 7201 Statistics I (4 credits)

NEW COURSE Principles of Clinical Research I (3 credits)

NEW COURSE Rehabilitation Science Seminar (1 credit)

FP MD 6100 Introduction to Biostatistics (3 credits)

NEW COURSE Independent Study in Rehabilitation Science (2 credits)

Semester #2 – Spring_01

NURS 7202 Statistics II (4 credits)

NEW COURSE Principles of Clinical Research II (3 credits)

FP MD 6300 Introduction to Epidemiology (3 credits)

NEW COURSE Rehabilitation Science Seminar (1 credit)

NEW COURSE Principles of Evidence-Based Practice (3 credits)

Semester #3 – Summer_01

NEW COURSE Independent Study in Rehabilitation Science (4 credits)

Semester #4 – Fall_02

FP MD 6105 Advanced Topics in Epidemiology and Biostatistics (2 credits)
NURS 7001 Descriptive Research Designs (3 credits)
NEW COURSE Rehabilitation Science Seminar (1 credit)
MDCRC Cost-Effectiveness Analysis (2 credits)
GER ON 6003 Research Methods in Aging (3 credits)

SEMESTER #5 – Spring_02

NURS 7002 Experimental and Correlational Design (3 credits)
FP MD 6305 Advanced Methods of Epidemiologic Research (2 credits)
NEW COURSE Rehabilitation Science Seminar (1 credit)
FP MD 6405 Health Services Research (2 credits)
NEW COURSE Independent Study in Rehabilitation Science (2 credits)
COMPLETE PRELIMINARY COMPETENCY EXAMINATION

SEMESTER #6 – Summer_02

NEW COURSE Independent Study in Rehabilitation Science (2 credits)
NEW COURSE Dissertation Thesis Research (3 credits)

SEMESTER #7 – Fall_03

NEW COURSE Dissertation Thesis Research (3 credits)
MDCRC Clinical Research Ethics (1 credit)
FP MD 6500 Introduction to Public Health (3 credits)

SEMESTER #8 – Spring_03

NEW COURSE Dissertation Thesis Research (3 credits)

SEMESTER #9 – Summer_03

NEW COURSE Dissertation Thesis Research (3 credits)

SEMESTER #10 – Fall_04

NEW COURSE Dissertation Thesis Research (3 credits)

SEMESTER #11 – Spring_04

NEW COURSE Dissertation Thesis Research (3 credits)

TOTAL NUMBER OF CREDITS (minimum 66 required):	76
Research Design and Statistics Credits (minimum 18 required):	20
Core Courses in Emphasis Area (minimum 14 required):	20
Rehabilitation Science Seminar Credits (minimum 4 required):	4
Electives, independent study, etc, credits (minimum 12 required):	14
Dissertation Credits (minimum 18 required):	18

SAMPLE PLAN OF STUDY – Neuromuscular Adaptations Emphasis

Semester #1 – Fall_01

NURS 7201 Statistics I (4 credits)
NEW COURSE Principles of Clinical Research I (3 credits)
NEW COURSE Rehabilitation Science Seminar (1 credit)
ESS 6380 Muscle Physiology (3 credits)
NEW COURSE Independent Study in Rehabilitation Science (2 credits)

Semester #2 – Spring_01
NURS 7202 Statistics II (4 credits)
NEW COURSE Principles of Clinical Research II (3 credits)
BIOENG 6010 Systemic Physiology (3 credits)
NEW COURSE Rehabilitation Science Seminar (1 credit)
NEW COURSE Neuromuscular Performance and Adaptation to Rehabilitation (3 credits)

Semester #3 – Summer_01
NEW COURSE Independent Study in Rehabilitation Science (4 credits)

Semester #4 – Fall_02
BIOEN 6430 System Neuroscience (4 credits)
NURS 7001 Descriptive Research Designs (3 credits)
NEW COURSE Rehabilitation Science Seminar (1 credit)
ESS 6300 Advanced Exercise Physiology I (3 credits)
GERON 6001 Introduction to Gerontology (3 credits)

SEMESTER #5 – Spring_02
NURS 7002 Experimental and Correlational Design (3 credits)
ESS 6310 Advanced Exercise Physiology II (3 credits)
NEW COURSE Rehabilitation Science Seminar (1 credit)
ESS 6320 Exercise and Disease (3 credits)
NEW COURSE Independent Study in Rehabilitation Science (2 credits)
COMPLETE PRELIMINARY COMPETENCY EXAMINATION

SEMESTER #6 – Summer_02
NEW COURSE Independent Study in Rehabilitation Science (2 credits)
NEW COURSE Dissertation Thesis Research (3 credits)

SEMESTER #7 – Fall_03
NEW COURSE Dissertation Thesis Research (3 credits)

SEMESTER #8 – Spring_03
NEW COURSE Dissertation Thesis Research (3 credits)

SEMESTER #9 – Summer_03
NEW COURSE Dissertation Thesis Research (3 credits)

SEMESTER #10 – Fall_04
NEW COURSE Dissertation Thesis Research (3 credits)

SEMESTER #11 – Spring_04

NEW COURSE Dissertation Thesis Research (3 credits)

TOTAL NUMBER OF CREDITS (minimum 66 required):	80
Research Design and Statistics Credits (minimum 18 required):	20
Core Courses in Emphasis Area (minimum 14 required):	25
Rehabilitation Science Seminar Credits (minimum 4 required):	4
Electives, independent study, etc, credits (minimum 12 required):	13
Dissertation Credits (minimum 18 required):	18

Appendix C: Faculty

Department of Physical Therapy Faculty

Lee Dibble, PhD, PT, ATC

K. Bo Foreman, PhD, PT

Julie M. Fritz, PhD, PT, ATC

Ed Gappmaier, PhD, PT

Paul LaStayo, PhD, PT, CHT

Robin L. Marcus, PhD, PT, OCS

Gina Maria Musolino, EdD, PT, MEd

Diane E. Nicholson, PhD, PT, NCS

R. Scott Ward, PhD, PT

Adjunct Faculty and Collaborators

Department of Orthopedics

Robert Burks, MD, Assoc. Professor

Patrick Greis, MD, Asst. Professor

Christopher Peters, MD, Assoc. Professor

Charles Saltzman, MD, Professor and Chair

Division of Physical Medicine and Rehabilitation

Pamela Hansen, MD, Asst. Professor

Richard Kendall, DO, Asst. Professor

Stuart Willick, MD, Asst. Professor

Department of Neurology

John Rose, MD, Asst. Professor

John Steffens, MD, Asst. Professor

Department of Internal Medicine

Don McLain, MD, PhD, Professor and Chief, Division of Endocrinology and Metabolism

Mark Supiano, MD, Professor, Executive Director, University of Utah Center on Aging

School of Nursing

Susan Beck, PhD, RN, Assoc. Professor

Kathi Mooney, PhD, RN, Professor

Ginny Pepper, PhD, RN, Professor

Department of Mechanical Engineering

Staci Bamberg, PhD, Asst. Professor