

**Doctor of Philosophy, Exercise Science
with Physical Medicine & Rehabilitation Specialization
Department of Exercise Sciences**

Application Deadline: FEBRUARY 1
Last Update: October 2006

- 60 Credits; Residence Requirement
- Comprehensive Exam and Dissertation required

This program prepares students for leadership in their profession. Students are prepared in the scientific bases of exercise science, well acquainted with the scientific literature, able to teach college courses, and conduct independent research. Most students become university or college faculty.

ADMISSION REQUIREMENTS

- A. Fulfill requirements for BYU Graduate School admission. Include both academic and clinical recommendations.
- B. Bachelor's or master's degree in Exercise Science or a related field with competencies in:
 1. Measurement and Evaluation/Elementary Statistics (EXSC 360 or STAT 221)
 2. Motor Learning (EXSC 361)
 3. Kinesiology/Biomechanics (EXSC 362)
 4. Physiology of Activity (EXSC 363, 367)
 5. Problems in Conditioning (EXSC 468)
 6. Philosophical and Ethical Issues in Exercise Sciences (EXSC 302)
 7. Anatomy and Physiology (PDBIO 220, 362)
 8. College Chemistry (CHEM 105, 106)
 9. College Algebra (MATH 110)
 10. Research Methods (EXSC 630)
 11. Statistics (equivalent to EXSC 631 or STAT 510 and STAT 511, 512)
- C. GPA of 3.5 for last 60 semester hours of academics.
- D. Satisfactory scores on the GRE.
- E. A letter of intent that includes:
 1. Preparation and background for the program
 2. Areas of interest and professional goals
 3. Reasons for career choice
 4. Special qualities/talents that enhance success
 5. Particular reasons for applying at BYU
 6. Statement of research interests
- F. Master's thesis/publishable research manuscript.
Note: A student who has not completed a master's thesis is required to complete a publishable research manuscript before beginning work on a dissertation (EXSC 797R, 4 hrs). These 4 hours are in addition to the 4 hours required and do not count toward the required 60 hours.

COURSE WORK

Minimum of 60 hours beyond bachelor's degree in addition to all prerequisites. No 100 through 400 level classes apply. All doctoral students are expected to be engaged in a continual program of research during their studies, either original or collaborative, and to present at a regional, national, or international conference or submit a manuscript to a refereed journal. This is in addition to the thesis and dissertation.

PhD students are also required to gain teaching experience by teaching or team-teaching appropriate courses in the undergraduate major or minor curriculum as approved by the department chair.

RESEARCH CORE (27–31 hours)

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| EXSC 691 | Graduate Seminar (1) |
| EXSC 693R | Graduate Seminar Readings (2–6) |
| EXSC 751 | Doctoral Seminar: Professional and Scholarly Writing (1) |
| EXSC 753 | Doctoral Seminar: Research and Grantsmanship (1) |
| EXSC 797R | Individual Research and Study (4) |
| EXSC 799R | Dissertation (18) |

PHYSICAL MEDICINE & REHABILITATION SPECIALIZATION (17 hours)

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| EXSC 560 | Orthopaedic Pathomechanics (2) |
| EXSC 668 | Pathomechanical Human Anatomy (3) |
| EXSC 625R | Advanced Topics: Physical Medicine & Rehabilitation (12) <ul style="list-style-type: none"> • Electrotherapy, Ultrasound, & Diathermy (2) • Cryotherapy (2) • Functional Testing & Exercise (2) • Neural Basis of Rehabilitation (2) • Strength Rehabilitation (2) • Mobilization & Manual Therapy (2) • Orthotics (2) • Clinical and Educational Administration (2) |

SUPPORTING AREAS Complete a minimum of 16 hours in one or more of the following supporting areas (approved by your committee) that add depth or breadth to your studies.

Muscle Function

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| EXSC 662 | Mechanical Analysis of Activities (2) |
| EXSC 663 | Research Techniques in Biomechanics of Sport (2) |
| EXSC 666 | Exercise Physiology (3) |
| EXSC 667 | Exercise Physiology Laboratory Methods (2) |
| EXSC 669 | Exercise Testing and Prescription (2) |
| EXSC 769 | Advanced Exercise Physiology/Skeletal Muscle (3) |

Pedagogy

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| EXSC 649 | Curriculum Theory and Design (3) |
| EXSC 658 | Learning Theory, Sport Pedagogy, and Instruct (3) |
| IP&T 560 | Microcomputer Materials Production (3) |
| IP&T 564 | Instructional Design (3) |
| IP&T 620 | Principles of Learning (3) |
| IP&T 652 | Assessing Learning Outcomes (4) |
| IP&T 665 | Instructional Video Production (4) |

Physiology and Developmental Biology

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| PDBIO 561 | Physiology and Drug Mechanisms (3) |
| PDBIO 562 | Neurophysiology (3) |
| PDBIO 565 | Endocrinology (3) |
| PDBIO 662 | Renal and Gastrointestinal Physiology (2) |
| PDBIO 664 | Cardiovascular and Respiratory Physiology (2) |

Biology (Prerequisites: CHEM 481, MMBIO 430 and 441)

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| CHEM 582 | Biochemistry of the Nucleic Acids (3) |
| CHEM 584 | Biochemistry Laboratory (2) |
| MMBIO 601 | Molecular Biology of the Cell (3) |

Health/Wellness

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| EXSC 661 | Fitness/Wellness in the Workplace (3) |
| EXSC 671 | Health Risk Management (3) |
| EXSC 673 | Obesity and Weight Management (3) |
| HLTH 602 | Epidemiology (3) |
| HLTH 604 | Biostatistics (3) |
| HLTH 608 | Behavioral Health (3) |
| HLTH 612 | Health Education Program Planning (3) |
| HLTH 615 | Community Organization for Health (3) |
| HLTH 668 | Health and Aging Process (2) |

Nutrition (Prerequisites: CHEM 351, 362, 481, NDFS 410, 435, 459, 470)

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| NDFS 531 | Advanced Human Nutrition 1 (3) |
| NDFS 532 | Advanced Human Nutrition 2 (3) |
| NDFS 631R | Selected Topics in FSN (0.5–3) |
| NDFS 638 | Advanced Clinical Nutrition (4) |
| NDFS 632 | Diet & Cancer (2) |