Doctor of Science in Health Science
Athletic Training

ROCKY MOUNTAIN UNIVERSITY of HEALTH PROFESSIONS

Thomas Cappaert, PhD, ATC, CSCS
Professor & Director of Post Professional Research
tcappaert@rmuohp.edu

Malissa Martin, EdD, ATC
Program Director and Concentration Track Director
mmartin@rmuohp.edu

122 East 1700 South
Provo, UT 84606
801.375.5125
866.780.4107 Toll Free
801.375.2125 Fax
info@rmuohp.edu
www.rmuohp.edu

Curriculum

The vision of Rocky Mountain University of Health Professions (RMUoHP) is to become widely recognized for excellence in healthcare education. The Doctor of Science (DSc) in Health Science with concentration areas in Athletic Training, Clinical Electrophysiology, Health Promotion and Wellness, Human & Sport Performance, and Neurologic Rehabilitation prepare and support students to complete an academic terminal doctoral degree which can provide opportunities for employment in institutions of higher education, healthcare and research clinics, hospital settings and other healthcare venues. The DSc in Health Sciences prepares stewards of healthcare disciplines.

Each concentration is committed to the development of lifelong scholars who can conduct, evaluate, publish, present and integrate research findings into their daily academic agenda and/or clinical practice; act in leadership roles in their discipline and community; provide the highest level of intervention to their patients/clients; and participate in undergraduate and graduate education environments to effectively teach the next generation of evidence-based clinicians, scholars and educators in academic and healthcare programs.

The program is designed for practitioners and educators to continue professional work obligations during the program while attending eight semesters of didactic work followed by qualifying exams and completion of a dissertation. The dissertation emphasizes the application of scientific principles related to the application of evaluation, intervention and research of clinically related issues of inquiry seen in healthcare and education. Dissertation committee members are known experts in the field from across the United States with members of the RMUoHP faculty providing guidance and support.

Degree Objectives

The DSc in Health Science Program is committed to the development of the healthcare professional who can:

- Conduct and disseminate evidence-based sound, ethical, cost-effective scholarship;
- Make significant and relevant contributions to the current body of scientific knowledge in the discipline;
- Develop knowledge expertise in the area of dissertation interest;
- Develop and deliver instructional designs, strategies and curriculum based upon best practices in the scholarship of teaching and learning.
- Influence ethical and legal management of healthcare through education of providers, consumers, and society at large;
- Enhance leadership abilities, including competence in the roles of clinician, researcher, educator, and leader;
- Describe and distinguish the various theories associated with the concentration area and develop advanced evidence-based practice knowledge.

Curriculum

Core Courses: All students are required to complete a set of core research courses including evidence based practice, quantitative and qualitative inquiry, biostatistics, epidemiology as well as required theory courses. These courses provide the foundation for the dissertation phase and research process.

Concentration Courses: Students are required to select a concentration area before enrolling in the DSc program. Concentration courses provide further knowledge, skills and abilities essential to advanced clinical practice and support research areas students often pursue.

Concentrations:

- Athletic Training
- Clinical Electrophysiology
- Health Promotion & Wellness
- Human & Sport Performance
- Neurologic Rehabilitation
- Pediatric Science

Admission Requirements

1. A master's or professional practice degree beyond the baccalaureate from an accredited college or university.
2. Grade point average of 3.2 (on a 4.0 scale) on all work completed during the Master's or professional practice degree (i.e, DPT, PA).
3. Possess writing and oral communication skills sufficient to conduct and deliver the results of meaningful research. Must submit an essay that includes current personal, intellectual and professional interests and why the student is applying to the degree program.
4. Submit a current Curriculum Vitae.

5. Possess information technology skills sufficient to effectively participate in RMUoHP's DSc program and effectively conduct research.
6. Have successfully completed, with a grade of B- or better, at least one course in Research Methods or Statistics at the Master's or higher level.
7. Prefer a minimum of one (1) year in clinical practice.

*Exceptions to these criteria will be considered on a case-by-case basis with consultation of the concentration director.

Concentration – Athletic Training

The doctoral program in athletic training prepares scientific scholars and stewards of the discipline who can function as clinicians, researchers and/or academicians. Graduates can become leaders in the athletic/sports healthcare community through the completion of the doctoral program. The curriculum combines a rehabilitation science core with an adult learning theory emphasis. The central element of the program is the completion of a dissertation that incorporates clinical or education research and advances knowledge in the area of athletic training. Evidence-based practice, quantitative and qualitative research, biostatistics, epidemiology and professional writing courses provide a complimentary foundation. The curriculum is intended to increase the student's abilities to utilize research theory to enhance evidence-based practices and to prepare manuscripts for publication. Advanced therapeutic intervention courses enhance the student's abilities in the assessment and implementation of sound scientific principles in the treatment of athletes and other physically active individuals. The adult learning emphasis affords students an interactive environment focusing on the designing and assessment of learning for athletic training education. Education coursework includes instructional design/delivery, assessment of learning, curriculum development, education technology, and higher education administration.

The program is designed to enable athletic trainers to continue professional work obligations during the didactic portion of the program while completing eight semesters, consisting of online and blended course work. Students engage in readings, assignments, threaded discussions, group activities well as attend on campus face-to-face interaction with peers and mentors in a traditional classroom setting. During the blended terms students travel to campus for 4-6 days of immersion experiences. Courses noted "Online" have no on-site days allotted. For all courses, students complete coursework throughout the entire semester. A written qualifying examination and dissertation are required following the didactic portion of the curriculum.

The DSc Health Science academic terminal degree athletic training program is committed to the development of an individual who can:

- Integrate current literature and evidence-based practices through a systematic review and critical analysis approach into various therapeutic interventions and preventative measures for physically active patients in various age groups and activity levels.
- Analyze, critique, and synthesize literature to prepare manuscripts for publication
- Analyze, critique, and synthesize evidence and apply to clinical practices.

- Conduct independent, methodologically sound research.
- Collect and critically analyze research data.
- Design learner-centered instruction and instructional delivery skills based upon evidence-based practices of the scholarship of teaching and learning.
- Integrate curriculum/leadership theory into professional teaching and administrative practices that guide and direct CAATE accredited programs.
- Provide leadership to the profession/community through stewardship of the profession.

*Eligibility Requirements

1. Current Board of Certification for the Athletic Trainer credential

Program Module Calendar

	Start Date	On-site Dates	End Date
Semester 1 Sum 2016	May 2, 2016	June 8-12, 2016	August 19, 2016
Semester 2 Fall 2016	August 29, 2016	*ONLINE*	December 16, 2016
Semester 3 Win 2017	January 9, 2017	February 9-12, 2017	April 28, 2017
Semester 4 Sum 2017	May 8, 2017	*ONLINE*	August 25, 2017
Semester 5 Fall 2017	September 5, 2017	November 2-5, 2017	December 22, 2017
Semester 6 Win 2018	January 8, 2018	February 28-March 4, 2018	April 27, 2018
Semester 7 Sum 2018	May 7, 2018	June 14-18, 2018	August 24, 2018
Semester 8 Fall 2018	September 4, 2018	November 3-5, 2018	December 21, 2018
Semester 9 Winter 2019	Dissertation	CC 833A	
Semester 10 Summer 2019		CC 833B	
Residency		Student must register for Residency Credit (CC 877A, CC 877B, etc.) each semester until dissertation is completed & minimum credit requirement for program is attained.	
Eight-year deadline from start of program is May 2, 2024			

Semester 1

(7 credits)

Start Date	On-site Dates	End Date
May 2, 2016	June 8-12, 2016	August 19, 2016

HS 710 Evidence-based Practice **(3 credits; 2 days On-site)**

This course is designed to prepare healthcare professionals with the knowledge, skills and abilities necessary to make independent judgments about the validity of clinical research and to implement evidence-based clinical practice in their careers. This course will focus on the concepts of evidence-based practice with emphasis on forming answerable clinical questions and effective literature search strategies. The evaluative approach to appraising the research literature will prepare the students to judge the evidence on: 1) the accuracy and validity of diagnostic tests and the application of important diagnostic tests in the care of a specific patient; 2) the effectiveness of clinical interventions; 3) the natural history of health-related conditions; 4) risk of harm from select preventative and therapeutic interventions. Based on presentation of case scenarios, students will be required to formulate the key question(s), rapidly search medical and health-related databases, appraise the evidence with a critical analysis and describe application of the evidence in a clinical context. Instructor: Jennifer McKeon, PhD, ATC, CSCS

HS 712 Research Methods: A Quantitative Approach **(3 credits; 2 days On-site)**

This course provides an introduction to general research principles and research ethics. The student will be introduced to the following topics in the research process: question formulation, principles of measurement, basic design and methodological features, issues of reliability and validity, and fundamentals of conducting a literature review. A quantitative article critique will be conducted in class and outside of class. The class format will include lecture, small group discussion, and practice. Instructor: Douglas Powell, PhD, CSCS, TASC-F

HS 714 Scientific/Professional Writing **(1 credit; Online)**

This pass/fail course reviews PubMed, Index Medicus, other search methodologies, American Medical Association Manual of Style editorial format, the composition of a scientific/professional manuscript, and the style of Scientific/professional writing, its construction and formats. Instructor: Lori Thein Brody, PhD, PT, SCS, ATC

Semester 2

(5 credits)

Start Date	On-site Dates	End Date
August 29, 2016	*ONLINE*	December 16, 2016

HS 760 Instructional Technology **(2 credits; Online)**

This course identifies, explores, and practices the use of instructional technology in the design and delivery of online, blended, and traditional classroom learning environments. Best practices for online and blended course design and strategies for online instructional delivery will be discussed. Current instructional technologies utilized in the 21st century higher education classroom will be systematically design, created, shared, and reviewed. Instructor: Jan Reese, MS

AT 640 Connective Tissue and Injury Repair: An Evidence Based Approach **(3 credits; Online)**

This course provides an evidence based approach to connective tissue injury including degenerative processes, healing, and rehabilitation implications. Understanding of the relationships among connective tissues such as bone, ligaments, cartilage, capsule, tendon and muscle on a micro and macro level will be emphasized. Sports injuries, issues of aging, and rehabilitation principles in special populations will also be included. These principles will be applied to treatment procedure choices in rehabilitation and preventative training. Instructor: Lori Thein Brody, PhD, PT, SCS, ATC

Semester 3

(6 credits)

Start Date	On-site Dates	End Date
January 9, 2017	February 9-12, 2017	April 28, 2017

HS 720 Survey of Qualitative Research **(3 credits; 2 days On-site)**

This course introduces the student to qualitative research methods and their applications to problems and phenomena in healthcare. Emphasis is placed on the appropriate use and differences of qualitative methods, their philosophical underpinnings, and application to clinical issues. Instructor: Angela R. Merlo, PT, DPT, PhD

HS 722 Biostatistics 1 **(3 credits; 2 days On-site)**

The purpose of this course is to introduce the student to biostatistics, the science of evaluating information in a biological setting. Such topics as simple descriptive statistics, basic probability concepts, probability distributions (normal & binomial), sampling distributions, and an introduction to t-distributions will be covered. Instructor: Tom Cappaert, PhD, ATC, CSCS

Semester 4

(6 credits)

Start Date	On-site Dates	End Date
May 8, 2017	*ONLINE*	August 25, 2017

COURSES FOR STUDENT SELECTION: Students must submit course selection form to registrar prior to the start of Semester 4. Choose one of the following two courses:

HS 732 Biostatistics 2 **(3 credits; Online)**

The purpose of this course is to build upon the topics introduced in Biostatistics 1. This course will cover such topics as interval estimation, confidence intervals, hypothesis tests, and one and two-sample t-tests. Prerequisite: HS 722. Instructor: Tom Cappaert, PhD, ATC, CSCS

OR

HS 734 Qualitative Research 2 **(3 credits; Online)**

This course is the second in a two-course sequence on qualitative research methods that extends and elaborates on the topics covered in HS 720. Major approaches used in conducting qualitative research and the application of these methods to problems and phenomena in healthcare will be examined. The emphasis of the course is on the collection, management, analysis, and interpretation of qualitative data. Exploration and application of topics such as sampling, interviewing and observation techniques, data analysis methods, and reporting of qualitative research will be addressed. Evaluation and critique of research studies utilizing qualitative methods will also be examined. Prerequisite: HS 720. Instructor: Angela R. Merlo, PT, DPT, PhD

AT 618 Preventative Measures **(3 credits; Online)**

This course will expose students to contemporary topics in athletic training clinical practice such as, mild brain injury, environmental illnesses and musculoskeletal injury. Students will examine and synthesize current research on these topics and present evidence-based preventative measures in order to curb their incidence. Instructor: Kim Peer, EdD, FNATA

Semester 5

(9 credits)

Start Date	On-site Dates	End Date
September 5, 2017	November 2-5, 2017	December 22, 2017

HS 730 Epidemiologic Methods **(3 credits; 2 days On-site)**

This course will introduce the student to important epidemiological methodology/concepts commonly used in evidence-based practice/medicine. The course will focus on the common observational designs, and common measures of

disease frequency, risk association, and validity of diagnostic tests. The use and construction of receiver operating curves will be discussed. The course will also include an introduction into logistic regression and survival analysis methods in how they apply to disease outcomes/disorders. Students will conduct and apply basic epidemiological concepts using statistical software, and learn how to design and develop. The student will be provided with information to aid in data collection and management. *Prerequisite: HS 710.* Instructor: Jason Brumitt, PhD, AT, PT, CSCS

HS 752 Curriculum Development **(2 credits; Online)**
This course examines various classical and modern curriculum theorists as they apply curriculum development. Emphasis is placed on congruence between institutional mission, philosophy, and goals; professional standards; and needs and expectations of a program's communities of interest. Students design a curriculum to meet the needs of a stated role and setting. Instructor: Kristen Johnson, EdD, PT

AT 631 Motor Control and Movement Analysis **(3 credits; 2 days On-site)**
Discussion and analysis of scientific principles related to the mechanical understanding of motor control and the human body in motion. Review of related literature and research in motor learning and control. The focus of this course will be on qualitative analysis of motor assessment as related to musculoskeletal assessment and physiotherapy interventions. Instructor: Kathryn B. Schwartzkipf-Phifer, DPT, OCS, CSCS and Kyle Matsel PT, DPT, SCS, CSCS

Semester 6

(8 credits)

Start Date	On-site Dates	End Date
January 8, 2018	February 28-March 4, 2018	April 27, 2018

AT 652 Extensive Therapeutic Exercise **(3 credits; 2 days On-site)**
This course will explore the current best evidence related to the continuum of athlete care associated with rehabilitation and return to play decision-making. Evidence-based injury rehabilitation will be instructed through a system of screening, testing, and assessment, as well as a progressive continuum of fundamental movements. The system will serve to guide corrective exercise intervention strategies to restore optimal movement patterns. Students will be exposed to injury prediction/prevention research and gain clinical skills in performance of the Functional Movement Screen, Y Balance Test along with discussing a neurodevelopmental model for corrective exercise progressions. Critical thinking will be emphasized, allowing students to compare and contrast core training program with an emphasis in the motor control model of spinal stabilization. Students will work together to develop return to sport models that build on the basics but also focus on movement constructs that will minimize future injury risk. Instructor: Kathryn B. Schwartzkipf-Phifer, DPT, OCS, CSCS and Kyle Matsel PT, DPT, SCS, CSCS

HS 740 Teaching and Learning Theory **(3 credits; 2 days On-site)**
This course incorporates a learner centered approach to course development and instructional delivery based on the best evidence of how people learn. Students will demonstrate both traditional and innovative instructional techniques and strategies for teaching in didactic and clinical settings based upon the evidence-base of best teaching practices. Instructor: Malissa Martin, EdD, ATC

HS 800 Dissertation Prep I **(2 credits; 1 day On-site)**
The conduct of scientific inquiry requires careful planning and forethought to assure the eventual implementation of a study will successfully result in interpretable and meaningful measurements and that valid conclusions may be drawn. This course will provide students with the necessary background and experience to formulate a clearly delineated hypothesis/research question-driven dissertation prospectus that can be used to convince funding agencies and/or doctoral committees to support the study. Emphasis will be placed on developing a clear background, scientific/clinical rationale, and hypothesis/research question along with the start of a methods section and strategies to form a dissertation committee. In addition, this course will provide key information about the responsible conduct of research, the informed consent process, and the Institutional Review Board process so the student will be able to design a safe and ethical environment for their volunteer subjects. Instructor: Brent Alvar, PhD, CSCS*D, RSCC*D, FNSCA, FACSM

Semester 7

(8 credits)

Start Date	On-site Dates	End Date
May 7, 2018	June 14-18, 2018	August 24, 2018

HS 727 Survey Mixed Methods Research **(3 credits; 1 day onsite)**
This course will familiarize students with theory and application of survey research design and methods with integration of a mixed methods approach. Students will learn the principles and practices of conducting survey research including: accounting for and reducing sources of error, designing appropriate sampling strategies, assessing the reliability and validity of self-constructed questionnaires and interview protocols, administering surveys through various means and analyzing and reporting results of survey research. How to integrate qualitative inquiry with survey research to develop and conduct a mixed method study including writing results will be emphasized. Instructor: TBA

AT 617 Evidence-based Advanced Therapeutic Interventions **(3 credits; 1.5 days On-site)**
This course provides an advanced analysis of how to search for and appraise published reports on therapeutic modalities and tissue healing. Students will acquire advanced knowledge and skill in interpreting the medical literature to make informed decisions regarding the best therapeutic modality applications, procedures, and protocols to use for individual patients. Instructor: Kirk Armstrong, PhD, ATC

AT 670 Learning Assessment and Evaluation **(3 credits; 1.5 days On-site)**
This course examines a variety of assessment models and techniques used to evaluate student classroom performance, student clinical performance, instructor performance and educational programs. Students will design and execute assessment plans, interpret assessment data and develop continuous improvement plans. Instructor: Scott Heinerichs, EdD, LAT, ATC

Semester 8

(4 credits)

Start Date	On-site Dates	End Date
September 4, 2018	November 3-5, 2018	December 21, 2018

HS 810 Dissertation Prep II **(1 credit; 1 day On-site)**
This course is a continuation of HS800 Dissertation Prep I where students will finalize their written prospectus. Students will continue securing dissertation committee commitments and be prepared to defend a mock prospectus defense via presentation while on campus. Students prepare for the Institutional Review Board process by completing the CITI Human Subjects Research course, becoming familiar with the online submission platform, and drafting informed consent documents. Instructors: Brent Alvar, PhD, CSCS*D, RSCC*D, FNSCA, FACSM; Malissa Martin, EdD, ATC

AT 718 Climate of Higher Education **(3 credits; 2 days On-site)**
This course will focus on presenting and analyzing contemporary social, political and economic issues surrounding higher education and the effects these issues have on health professions education programs. Current challenges in healthcare education programs will also be explored. Students will learn how to successfully navigate the role of a faculty member in the higher education environment. A brief history of higher education will be included. Instructor: Malissa Martin, EdD, ATC

Dissertation Phase

(Eight-year deadline from start of program to complete degree)

(12-credit minimum)

Each doctoral student will be required to complete a dissertation that is evidence-based and involves applied research of experimental, nonexperimental, or descriptive designs. Examples of dissertations include: small randomized control trials; single-case/subject designs, quasi-experimental designs, qualitative methods, survey research, epidemiological designs (cross-sectional, cohort or case-control) normative research, and correlational designs.

In 9th semester students will complete comprehensive exams
CC 833A Doctoral Dissertation 1 – Semester 9 **(6 credits)**
CC 833B Doctoral Dissertation 2 – Semester 10 **(6 credits)**

Semesters of Dissertation Residency Credit (CC 877A, CC 877B, etc.) as needed