MASTER OF SCIENCE IN EXERCISE SCIENCE & WELLNESS (M.S.)

Purpose
The Master of Science in Exercise Science and Wellness is an advanced degree designed to broaden understanding of nutrition, wellness, fitness, and performance in a variety of populations. This program gives students the opportunity to further their knowledge in the core of exercise science and wellness (exercise physiology, fitness assessment and programming, nutrition, statistics, and research methods), while specializing in one of two concentration areas:

1. Fitness and Performance

Program Learning Outcomes
The student will be able to:

1. Evaluate and explain the concepts in all core curricular areas of exercise science and wellness.
2. Synthesize research data utilizing knowledge of the exercise science and wellness literature and other scientific writings.
3. Understand and display ethical choices and professional practices in the exercise science and wellness sectors from a Christian worldview.

Fitness & Performance Concentration
The student will be able to develop programming that will enhance fitness and performance parameters of general, athletic, or occupational performance sectors.

Nutrition & Wellness Concentration
The student will be able to develop wellness programming that will enhance the health and wellness of the general, below averagely fit, and averagely fit populations.

Program Specific Admission Procedures
In addition to the general admission requirements, admission to the Master of Science in Exercise Science and Wellness program requires:

1. Earned baccalaureate degree or its equivalent from an institution accredited by an agency recognized by the U.S. Department of Education (e.g., SACSCOC, TRACS, ABHE, etc.)
2. An undergraduate cumulative GPA of 3.00 or above (on a 4.00 scale)
3. Self-Certification Form (for students in the final term of their bachelor’s degree)
4. Additional admission requirements for International Students. See International Admission section in this catalog.

Students who do not meet the minimum GPA requirement may be admitted on Academic Caution status. Students who have less than an undergraduate 2.50 GPA will not be admitted to the program.

Transfer Credit
Students may transfer up to 15 hours from an accredited institution subject to department approval. In order to transfer credit, students must have earned the minimum grade of B-, and courses must have been completed within 10 years of the start date of the program. Credits from a prior degree on the same academic level earned through Liberty University are considered transfer credits.

Graduation Requirements
1. Satisfactory completion of 33 total hours.
2. A maximum of 50% of the program hours may be transferred if approved and allowable, including credit from an earned degree from Liberty University on the same academic level.
3. Students must complete all courses with a 3.00 or higher cumulative grade point average.
4. No more than two grades of “C” may be applied to the degree (includes grades of C+ & C-).
5. No grades of “D” or below may be applied to the degree (includes grades of D+ & D-).
6. For information regarding the repeat policy, please refer to “Course Repeat Policy” in the Academic Information and Policies section of this Catalog.
7. Liberty University course work that is more than 10 years old may not be applied toward this degree. Students are required to repeat the course if it has exceeded the age limit.
8. Degree must be completed within 5 years.
9. Submission of Degree Completion Application must be completed within the last semester of a student’s anticipated graduation date.

Programs of Study
Delivery Format: Residential and Online
• Exercise Science & Wellness (M.S.) - Fitness & Performance
• Exercise Science & Wellness (M.S.) - Nutrition & Wellness

Career Opportunities
• Clinical Exercise Physiologist
• Corporate, University, Commercial, or Resort Fitness Trainer
• Exercise Physiologist
• Health Care Specialist
• Human Performance Specialist
• Nutrition and Exercise Specialist
• Sports Physiologist
• Sports Scientist
• Strength and Conditioning Coach
• Wellness Coach

Courses
EXSC 505 Foundations of Human Performance 3 Credit Hour(s)
This entry level graduate course will examine the physiological, biomechanical, measurement and evaluation, and program design theories and principles that are associated with numerous aspects of human performance.
Offered: Online
EXSC 510  Advanced Exercise Physiology  3 Credit Hour(s)
Prerequisite: Physiology/Exercise Physiology with a score of 3 or Exercise Physiology/Equivalent with a score of 3 or EXSC 505
Advanced study of physiological adaptations to acute and chronic exercise.
Offered: Resident and Online

EXSC 511  Advanced Exercise Physiology Lab  1 Credit Hour(s)
Prerequisite: Exercise Physiology/Equivalent with a score of 3 or Physiology/Exercise Physiology with a score of 3
Laboratory experience demonstrating acute physiological responses to exercise.
Offered: Resident and Online

EXSC 520  Statistical Analysis in Exercise Science  3 Credit Hour(s)
Prerequisite: Statistics or Equivalent with a score of 3 or EXSC 505
This course targets the development of understanding in statistical methodology as it relates to the field of exercise science. Students will be able to summarize, analyze, and interpret data using descriptive and inferential statistics.
Offered: Resident and Online

EXSC 525  Research Methods in Exercise Science  3 Credit Hour(s)
This course will examine the promotion of physical activity in the community setting. The scientific findings and applications that led to the emergence of the field of physical activity and public health are also examined.
Offered: Resident and Online

EXSC 540  Advanced Strength Development  3 Credit Hour(s)
This course focuses on the principles of strength development as presented through the M.O.R.R. training system.
Offered: Resident and Online

EXSC 541  Advanced Speed and Agility  3 Credit Hour(s)
Resident Prerequisite: EXSC 540 (may be taken concurrently)
Online Prerequisite: EXSC 540
This course focuses on the principles of speed and agility development as presented through the M.O.R.R. training system.
Offered: Resident and Online

EXSC 542  Advanced Conditioning & Recovery  3 Credit Hour(s)
Resident Prerequisite: EXSC 540 (may be taken concurrently)
Online Prerequisite: EXSC 540
This course focuses on the principles of conditioning and recovery as presented through the M.O.R.R. training system.
Offered: Resident and Online

EXSC 545  Motor Learning and Performance  3 Credit Hour(s)
This course includes the philosophy and application of qualitative movement analysis as the foundation for exercise prescription within a standard operating procedure.
Offered: Resident and Online

EXSC 550  Advanced Biomechanical Analysis  3 Credit Hour(s)
Prerequisite: Biomechncs, physics/Equivalent with a score of 3 or EXSC 505
This course involves the application of mechanical principles, quantitative analysis of human movement, and advanced study of biomechanical instrumentation systems. Critical analysis of current research in the field of biomechanics is also emphasized.
Offered: Resident and Online

EXSC 551  Advanced Biomechanical Analysis Lab  1 Credit Hour(s)
Prerequisite: EXSC 550 (may be taken concurrently)
In this course the student will apply kinetic and kinematic concepts through the use of biomechanical instrumentation for the advanced study of human movement.
Offered: Resident

EXSC 610  Graded Exercise Testing and Electrocardiotherapy  3 Credit Hour(s)
Prerequisite: EXSC 510 and EXSC 511
This course provides the framework for the exercise physiologist to develop and apply the academic background for clinical exercise testing. Students will become competent in the physiological and pathophysiological responses of the body during various exercise testing protocols. Guidelines based on ACSM standards will be applied while vital signs are measured and evaluated during exercise testing. Cardiac physiology will be covered through electrocardiographic monitoring and interpretation.
Offered: Resident and Online

EXSC 633  Exercise and Physical Activity for People with Disabilities  3 Credit Hour(s)
This course is designed to investigate the background, opportunities, and challenges faced by people with disabilities as related to physical activity. Physical activity program planning, implementation, and evaluation for various impairments will be examined.
Offered: Online

EXSC 635  Exercise Prescription for Special Populations: Cardiac and Pulmonary Disorders  3 Credit Hour(s)
Prerequisite: EXSC 510
This course provides the foundational understanding for the pathophysiological processes of various common chronic conditions. A clinical understanding of limitations and special needs will be provided, which allows the exercise scientist to appropriately interact and serve the cardiopulmonary client.
Offered: Resident and Online

EXSC 637  Exercise Prescription for Special Populations: Chronic Health Conditions  3 Credit Hour(s)
Prerequisite: EXSC 510 and EXSC 635 (may be taken concurrently)
This course provides the foundational understanding for the pathophysiological processes of various common chronic conditions. A clinical understanding of limitations and special needs will be provided, which allows the exercise scientist to appropriately interact and serve the clinical client.
Offered: Resident and Online

EXSC 640  Public Health and Physical Activity  3 Credit Hour(s)
This course focuses on the integration of public health and exercise science. The techniques used to measure physical activity, the effects of physical activity on health, and strategies for physical activity promotion will be examined. The scientific findings and applications that led to the emergence of the field of physical activity and public health are also examined.
Offered: Online

EXSC 650  Promoting Physical Activity in the Community  3 Credit Hour(s)
Online Prerequisite: EXSC 640 (may be taken concurrently)
This course will examine the promotion of physical activity in the community setting. The techniques, theories, and strategies for physical activity promotion will be examined.
Offered: Online
**EXSC 660  Fitness Assessment and Programming  3 Credit Hour(s)**
This course is a study of the laboratory and field tests used for assessing physical fitness components as well as principles of exercise prescription. Test results are used in developing individualized exercise prescriptions to improve cardiorespiratory fitness, muscular fitness, body weight and body composition, and flexibility.

**Offered:** Resident and Online

**EXSC 689  Thesis Proposal and Design  3 Credit Hour(s)**
**Prerequisite:** EXSC 525
This course is designed as a secondary step towards a graduate level thesis; following EXSC 525 - Research Methods in Exercise Science. The student continues with their selected topic of interest and solidifies a research proposal. The process is designed to deepen the comprehension of research methods, expand the knowledge of current evidence based understanding and enhance skills necessary for scholarly writing.

**Offered:** Resident and Online

**EXSC 690  Thesis Defense  3 Credit Hour(s)**
**Prerequisite:** EXSC 689
The Thesis Defense is the culminating event for the student's education through the research conducted as a continuation of prior coursework. The research will be the foundation for the written report and oral defense of the selected thesis. A final copy of a publishable manuscript is submitted to a thesis defense committee for review prior to a formal defense by way of presentation and responses to verbal inquiry by the defense committee.

**Offered:** Resident

**EXSC 699  Internship  1-6 Credit Hour(s)**
**Prerequisite:** EXSC 510 and EXSC 511 and EXSC 520 and EXSC 525 and EXSC 550 and EXSC 551 and HLTH 645
This course involves practical work experience in an approved exercise or fitness-related agency, or similar setting/facility supervised by a qualified professional. Selection of the internship site should coincide with academic track selected and intended career path.

**Registration Restrictions:** Complete all other Masters of Exercise Science coursework

**Offered:** Resident