MASTER OF SCIENCE IN HUMAN PERFORMANCE (M.S.)

Purpose
The Master of Science in Human Performance is an advanced degree designed to broaden understanding of health, wellness, and performance in a variety of client populations. This program gives students the opportunity to further their knowledge in the core of exercise science (exercise physiology, biomechanics, sports nutrition, statistics and research methods), while specializing in one of four cognate areas: human performance, nutrition, clinical, or community physical activity.

Program Learning Outcomes
The student will be able to:

1. Evaluate and explain the concepts in all core curricular areas of exercise science.
2. Interpret scientific information in the area of exercise science.
3. Synthesize research data and scientific writings in the area of exercise science.
4. Develop programming that will enhance health and performance parameters of general, athletic, or clinical populations.
5. The student will be able to evaluate ethical choices and professional practices in exercise science from a Christian worldview.

Course Requirements
The Master of Science in Human Performance is a 35-hour program that offers four cognates: Clinical, Fitness and Wellness, Strength Training and Conditioning, and Nutrition. Students complete 17 core hours in five disciplines: exercise physiology, biomechanics, sports nutrition, statistics and research methods, with labs in exercise physiology and biomechanics. These classes are combined with 12 credit hours in one of the four cognate areas and 6 credit hours of either thesis or internship.

Program Specific Admission Procedures
In addition to the general admission requirements, admission to the Master of Science in Human Performance 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. TOEFL Scores for students who speak English as a second language (score of 600 paper-based test; 250 computer-based test, 80 internet-based test)
4. Program Undergraduate Class Prerequisites: A class in each of the following subjects must be completed prior to enrolling in most graduate-level exercise science courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXSC 510</td>
<td>Advanced Exercise Physiology</td>
<td>3</td>
</tr>
<tr>
<td>EXSC 520</td>
<td>Statistical Analysis in Exercise Science</td>
<td>3</td>
</tr>
<tr>
<td>EXSC 550</td>
<td>Advanced Biomechanical Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

This requirement may be met via previously completed undergraduate coursework or by enrolling in the missing courses or EXSC 505 Foundations of Human Performance (3 c.h.) after admission to the program:

- Physiology or Exercise Physiology
- Biomechanics or Physics
- Statistics

1 Students who do not have any or all of the above undergraduate prerequisite classes must enroll in EXSC 505 Foundations of Human Performance (3 c.h.) prior to enrolling in EXSC 510 Advanced Exercise Physiology (3 c.h.), EXSC 520 Statistical Analysis in Exercise Science (3 c.h.) and EXSC 550 Advanced Biomechanical Analysis (3 c.h.).

Transfer Credit
Students may transfer up to 15 graduate credit 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.

Programs of Study
Delivery Format: Residential and Online
- Human Performance (M.S.) - Clinical
- Human Performance (M.S.) - Fitness & Wellness
- Human Performance (M.S.) - Nutrition
- Human Performance (M.S.) - Strength Training & Conditioning

Career Opportunities
- Cognitive Performance Specialist
- Exercise Physiologist
- Exercise Specialist
- Health Statistician
- Sports Performance Coach
- Strength and Conditioning 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)
In this course students will be given the opportunity to develop their knowledge of the applied theories behind exercise science research methods. An emphasis will be placed on study design and approval, manuscript format and preparation, application of statistical analysis and data evaluation.
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 and Online

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 and Online