

EASTERN MICHIGAN UNIVERSITY

SCHOOL OF HEALTH PROMOTION & HUMAN PERFORMANCE

B.S. Degree in EXERCISE SCIENCE

STUDENT HANDBOOK



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Table of Contents

Why Should I Study Exercise Science?	3
Description of Exercise Science Program	4
Exercise Science Program Vision Statement	4
Exercise Science Program Objectives	4
Facilities	5
Postgraduate Preparation	5
Employment Opportunities	5
Post-graduate Professional Education	6
Membership Affiliations	6
College of Arts and Sciences Annual Symposium	6
Application Procedures	7
Intent	8
Candidacy	8
Curriculum	10
General Education	11
Required Classes (pre-candidacy)	12
Required Classes (post-candidacy)	13
Internship Options	13
Graduation Requirements	14
Academic Policies	14
Faculty	16
Faculty Members and Contact Information	17
Courses Taught	17
Specialty Areas	17
Research Interests	18
Ruth Boughner Development Fund	18
Appendices	19
A. Department Declaration of Major Form	20
B. Candidacy Application Form	21

WHY SHOULD I STUDY EXERCISE SCIENCE?



Description of Program

Exercise Science is an exciting and rapidly growing field of study. With physical inactivity considered a major risk factor for heart disease and other morbidities, exercise and fitness have become essential parts of daily life. Not only has exercise been recognized as important for preventing diseases, it has also been acknowledged as essential “medicine” in treating various illnesses -- heart disease, diabetes, osteoporosis, lung disease, Parkinson’s disease, and obesity to name a few.

Located in the School of Health Promotion and Human Performance within the College of Health and Human Services, the Exercise Science Program is one of two specialty majors within the field of Sports Medicine and leads to a Bachelors of Science (B.S.) degree in Exercise Science. Besides the basic studies requirements, the Exercise Science Program is an interdisciplinary program based on the medical sciences. Required courses outside the department include those from the following programs: Biology, Chemistry, Physics, Psychology, and Dietetics.

Exercise Science Program Vision Statement

To provide a multidisciplinary, quality undergraduate and graduate education which lays a foundation for personal and professional growth. Additionally, to develop students who are critical thinkers and who will contribute and respond to current trends within their field of expertise.

Exercise Science Program Objectives

To provide a quality program leading to a Bachelor of Science degree in Exercise Science.

To provide a curriculum consistent with the core courses recommended by the American College of Sports Medicine and the National Strength and Conditioning Association in preparation for national certification examinations.

To provide a curriculum that integrates personal and practical skills to produce entry-level competence in any field of exercise science.

To recruit personable, dedicated and highly motivated students.

To provide faculty and staff who possess the knowledge, training and skills necessary to provide an environment conducive for teaching and learning.

To provide the student with quality advising and counseling to promote timely and efficient progression through the program.

To graduate confident competent students who will be able to successfully complete a national certification exam.

To graduate confident competent students who will be able to successfully compete in the marketplace.

Facilities

Faculty offices are located in the Porter Building, Suite 318/319.

The Laboratory of Applied Physiology is located in the Warner Building rooms 247-249. Equipment maintained within the lab are: Quinton treadmills, Monark stationary cycle ergometers (1 dedicated for anaerobic testing), electrocardiographs (Schiller and Marquette), Viasys Oxycon Mobile Metabolic Carts, Chattanooga Bioelectric Impedance Analysis body composition assessment machines, skinfold calipers, hydrostatic weighing apparatus, ultrasound machine for body composition analysis, hand-aneroid sphygmomanometers, YSI lactate analyzers, glucose analyzers, blood draw capabilities, and an area for biochemical assays.

Postgraduate Preparation

A degree in Exercise Science provides the student with a strong undergraduate education in preparation for starting a professional career or continuing educational goals in graduate or professional schools.

Employment Opportunities

Not only is exercise considered “medicine” for a long list of morbidities, it is also considered preventive “medicine”. Therefore, our graduates find employment in hospitals (cardiac rehabilitation, clinical exercise physiology, hospital wellness centers), corporations (worksite health promotion, corporate wellness centers, work hardening), and community settings (public or private fitness centers).

In addition to working with diseased individuals or individuals trying to prevent disease, another area our graduates find employment in is strength and conditioning. Strength and conditioning coaches are specialists in performance enhancement and injury prevention, and usually work with an athletic population.

Postgraduate Professional Education

The Exercise Science program provides the student interested in pursuing graduate work and research in Exercise Physiology with a well-rounded foundation for success. Additionally, for those students interested in Medicine, Physical Therapy, or Physician Assistant Programs, a number of required courses in our program meet admission requirements for these schools. Courses in Pathophysiology, Pharmacology, Electrocardiography, Gross Anatomy Lab, and patient care experience during a 600-hour internship make our graduates very attractive to admission committees of professional schools. In addition, the flexibility of 15-18 credit hours of electives allows for completion of additional requirements without delaying the application process. Of course, it is imperative that the faculty advisor is made aware of plans for post-graduate education as early in the program as possible.

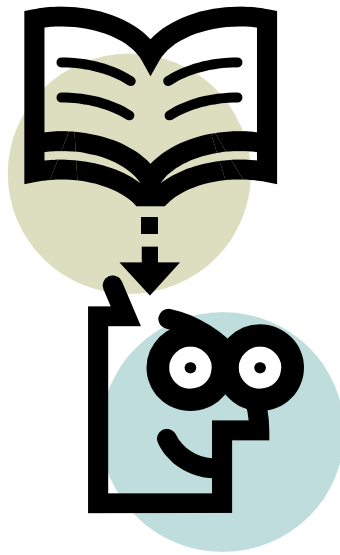
Membership Affiliations

It is strongly recommended that once in the Exercise Science Program, you apply for student membership in the American College of Sports Medicine (ACSM), the governing body of the profession. In addition, memberships may be obtained in the regional association Midwest ACSM. Benefits include a monthly journal, quarterly newsletter (online), discounts to regional and national conferences and most importantly, the opportunity to network with other students, faculty, and professionals in the profession. Networking provides an avenue for discovering leads for graduate school placement or future employment.

College of Arts and Sciences Annual Undergraduate Symposium

Each year, the College of Arts and Sciences sponsors a symposium where students from any department in the university can present a topic of interest related to their chosen field of study. This is a great opportunity to promote our program, the students in our program, as well as educating the general public to the field of Exercise Science. Additionally, this is an invaluable experience in public speaking while providing an impressive addition to your resume or graduate school application. Please contact any faculty member if you are interested or would like more information.

APPLICATION PROCEDURES



Intent

Students entering the exercise science program are listed as “intents” and will be considered for candidacy when the following criteria are met:

- 1) Declaration of intent to major in exercise science by going to the University Advising & Career Development Center. You can access the major declaration form at the following web address:
http://www.emich.edu/uacdc/forms_library/majmin.php
- 2) An overall GPA at Eastern Michigan University of 2.80 (transfer GPA evaluated separately).
- 3) Completion of all pre-candidacy courses in the exercise science major with a B- or better.

When an “intent” has successfully achieved the above, he or she must complete the candidacy application, including the application form, and a biographical sketch, and turn this in to their advisor. Once accepted into candidacy, the student must maintain a minimum 2.8 GPA. The student will not be allowed to complete the internship experience (SPMD 480) if the GPA falls below 2.8. In addition, a grade of B- or better must be attained in all required and elective courses in the exercise science major. If the above are not met, the course(s) in question must be retaken. CPR certification by the American Red Cross or American Heart Association is also required as part of this program.

Candidacy

Achieving candidacy is the formal acceptance in to the Exercise Science Program. Candidacy must be obtained before taking most 400 level courses in the program. Ideally, you should be applying for candidacy by the end of your sophomore year or one year after transferring into the program. To receive candidacy in the Exercise Science Program you must meet the following criteria.

- 1) The following classes must be completed with a “B-” grade or better (a grade of “C+” will not suffice):
 - a. **SPMD 144**
 - b. **BIO 105 (or 110)**
 - c. **CHEM 120 (or 121/122)**
 - d. **PHY 221**
 - e. **SPMD 201**
 - f. **SPMD 202**
 - g. **SPMD 300**

Note: if you intend to graduate in four years, these classes should be completed in your first 45-60 hours.

- 2) An overall **GPA of 2.8** is required.
- 3) When steps 1 and 2 are fulfilled, an application for candidacy (see appendix B) should be obtained from the program coordinator, completed and submitted to your program advisor. You may apply for candidacy by the end of the semester you're taking your last pre-candidacy class(es), however candidacy will not be granted until final grades are received. Included in the application should be a one to two page biographical sketch describing your background, why you chose to enter the field of Exercise Science, career goals, and any other information pertinent to your candidacy application. Additionally, two letters of recommendation (two professional – any University faculty member(s) other than your advisor, boss or supervisor; and one personal – parent, friend, significant other) should be submitted.
- 4) Your program advisor will either recommend or not recommend your application for candidacy and then forward to the program coordinator for confirmation.
 - a. If both agree you should be admitted to candidacy, your name will be submitted to the Records and Registration office and your major status will be changed from "Intent" to "Candidate".
 - b. If there is a disagreement as to your admittance, an interview will be scheduled with the Exercise Science faculty to better assess your application.
 - c. If both agree you should **not** be admitted to candidacy, or following the interview process your application is denied, you will be notified within three days and given the option of either taking additional classes to improve your GPA or retake candidacy-required courses to achieve acceptable grades in these classes.

Any questions and concerns should be addressed to Professor Andrew Cornett, Program Coordinator.

CURRICULUM



General Education Program

Please go to the following website: <http://www.emich.edu/gened> for approved courses

Area I: Effective Communication

- Required course in Written Composition (ENGL 121) or Waiver
- Required course in Oral Communication (CTAC 124) or Departmental Waiver
- Other University Requirement: All students must complete an approved upper-level "Writing Intensive" course. Students should check with their major advisors. In the schedule book, "Writing Intensive" courses will always be indicated with a "W" after the course prefix and number.

Area II: Quantitative Reasoning

- One EMU-approved course in Quantitative Reasoning (QR) or Waiver

Area III: Perspectives on a Diverse World

- One EMU-approved course on Global Awareness
- One EMU-approved course on US Diversity

Area IV: Knowledge of the Disciplines

- Two EMU-approved courses in the Arts with different prefixes
- Two EMU-approved courses in Humanities with different prefixes
- Two EMU-approved courses in Natural Sciences with different prefixes
- Two EMU-approved courses in Social Science with different prefixes

Area V: Learning Beyond the Classroom (LBC)

Satisfy two (2) of the six (6) groups through a combination of LBC-approved experiences and/or courses

Group 1 - Self and Well-Being

Group 2 - Community Service, Citizenship & Leadership

Group 3 - Cultural & Academic Activities & Events

Group 4 - Career and Professional Development

Group 5 - International & Multicultural Experience

Group 6 - Undergraduate Research

Exercise Science Program – Required Courses Pre-Candidacy

The following courses are required in order to apply for candidacy: (24-25 hours)

Course Number/Title	Credit Hours	Semester Offered	Pre-requisites Required	Semester Taken/Grade
SPMD 144 Intro to Exercise Science	2	F, W	None	
BIO 105 (or 110) Intro Biology – Non Majors	4 (or 5)	F, W, Su	None	
CHEM 120 (or 121/122) Fund of Organic & Biochem	4	F, W, Su	CHEM 117/118 or High School Chem, Math 104	
PHY 221 Mechanics, Heat & Sound	4	F, W, Su	Math 105 and 107 or Placement	
SPMD 201 Human Anatomy	3	F, W	BIO 105, 2.5 GPA Dept Permission	
SPMD 202 Human Physiology	3	F, W	BIO 105, 2.5 GPA Dept Permission	
SPMD 300 Physiology of Exercise	4	F, W, Su	SPMD 201 & 202	

Completion of the above courses with a grade of **B-** or better, a GPA of at least 2.8, and at least 60 total credit hours completed are required for Candidacy.

The following courses are program requirements. They may be taken before you have been accepted into candidacy. (13 hours)

Course Number/Title	Credit Hours	Semester Offered	Pre-requisites Required	Semester Taken/Grade
DTC 204 (or DTC 203#) Sports Nutrition	3	W	CHEM 120	
SPMD 280 Pharmacology	2	F, Su	SPMD 202	
SPMD 305 Kinesiology	3	F, W	SPMD 201&202 PHY 221	
SPMD 380 Behavioral Aspects of Sports Medicine	3	F, Su	PSY 101	
SPMD 325 Practicum	2	F, W, Su	SPMD/PHED 300 Dept Permission	
CPR for the Professional Rescuer *	0			

* Taken at the American Red Cross (Healthcare Provider offered by the American Heart Association will also meet this requirement)

DTC 203 is often recommended for pre-professional students

Exercise Science Program – Required Courses Post-Candidacy

The following courses may only be taken after Candidacy has been achieved.
(24 Hours)

Course Number/Title	Credit Hours	Semester Offered	Pre-requisites Required	Semester Taken/Grade
SPMD 410 Lab Techniques Human Performance	4	F, W	Candidacy, 2.8 GPA SPMD/PHED 300	
SPMD 430 Electrocardiography	3	F, W	Candidacy, 2.8 GPA SPMD/PHED 300	
SPMD 431 Pathology	3	F, W	Candidacy, 2.8 GPA SPMD/PHED 300	
SPMD 432 Exercise Programming	3	F, W	Candidacy, 2.8 GPA SPMD 410	
SPMD 433 Principle of Strength & Cond.	3	F, W	Candidacy, 2.8 GPA SPMD/PHED 300 & SPMD 305	
SPMD 480 Internship	8	F, W, Su	Candidacy, 2.8 GPA All Courses Completed	

Restricted Electives (Must take two classes; 5-6 Hours)

Course Number/Title	Credit Hours	Semester Offered	Pre-requisites Required	Semester Taken/Grade
SPMD 407 Fitness Center Mgmt.	3	W	SPMD 300	
SPMD 434 Echocardiography	2	W	SPMD 430	
SPMD 508 Exercise Epidemiology	3	Su	Sr. Standing	
SPMD 515 Diabetes & Obesity	3	F	SPMD 300 Sr. Standing	
SPMD 518 Sports Supplements	3	Su	DTC 204 Sr. Standing	
PHED 260 Motor Development	2	F, W, Su	Instructor Permission	
PHED 360 Motor Learning	3	F, W, Su	Instructor Permission	
ATTR 295 Assess. Lower Body Injuries	3	F	Inst. Perm. & SPMD 201/202	
ATTR 296 Assess. Upper Body Injuries	3	W	Inst. Perm. & SPMD 201/202	

University Electives: 15-18

For those students in Pre-Med, Pre-Physician Assistantm, or Pre-Physical Therapy, the prerequisites for admission to those schools will meet this requirement (i.e., additional courses in biology, chemistry, and physics)

For students interested in Fitness Center Management, a minor in Management (21 hours) is encouraged and will meet this requirement. Suggested courses: MGMT 202, 384, 386, 388, 460, ACC 130, MKT 360

Appropriate courses that may be taken are CTAC 225, 226; ENG 326; PSY 323, 362, 365; MATH 105, 107, 120; MKT 360, MGMT 202, ACC 130

Please see your program advisor for consultation on appropriate courses.

Internship Options

The internship is the final requirement before graduation. You must complete all courses in the program and have a minimum GPA of 2.8 before initiating an internship. For a more explicit description of the internship procedure and availability of internship sites, please see the Eastern Michigan University **Exercise Science Program Student Internship Manual**. There are two options available for completing this requirement.

1) 600-hour off campus practical experience

The student identifies an approved off campus agency (hospital, corporation, community center, strength and conditioning clinic) and performs 600 hours of supervised practical experience. This translates into 15 weeks of 40 hours/week. **This is a volunteer experience**, however, some agencies will offer some type of stipend ranging from free lunch and parking to \$650.00/month. These may also be more competitive to secure.

2) Senior Thesis

Instead of the 600-hour internship, you may have the option of performing a research project under the guidance of a faculty member. This option is recommended for students who plan on pursuing graduate (Ph.D.) studies in Exercise Physiology. Specific requirements are still being determined. If interested, see program coordinator for more details.

Graduation Requirements

An overall GPA of 2.8 and the completion of 124 credit hours (including the internship) are required to graduate with a Bachelor of Science degree in Sports Medicine specialization in Exercise Science. The breakdown of credit hours is as follows:

General Education	39*
Program Requirements	66-68
<u>Electives</u>	<u>19*</u>
Total	124

* Numbers may vary depending on courses taken

Program Academic Policies

A grade of **B- or better** is required for **all courses within the major**. You will be asked to repeat any course in the major completed with a grade of **C+ or lower**.

After achieving candidacy, you are expected to maintain a 2.8 overall GPA. If your GPA falls below 2.8, you may be delayed from initiating the internship.

Students are not to engage in any form of **academic dishonesty** including, but not limited to: plagiarism, alteration of records, substitution of another student's work and representing it as one's own, submitting work previously used to complete other course requirements or knowingly assisting another student in such activity. Plagiarism is defined as the knowing use, without appropriate approval, of published materials, expressions, or works of another with the intent to represent the work as one's own.

Any of the above actions may result in disciplinary action by the Program and/or University. Penalties may range from failure on that assignment or exam, to failure in the course, to removal from the program, to dismissal from the University.

All procedures for **grade changes, incompletes and filing of grade grievances** will be adhered to as set forth in the Eastern Michigan University Undergraduate Catalogue.

FACULTY



Faculty Members and Contact Information

<u>Faculty Member</u>	<u>Title</u>	<u>Porter Building Office #</u>	<u>Phone # 734-487-xxxx</u>	<u>Email _____@emich.edu</u>
Stephen McGregor, Ph.D.	Professor, Human Performance Lab Coordinator	318T	2820	smcgregor
Shel Levine, M.S., C.E.S.	Associate Professor, Clinical Coordinator	319P	2818	slevine
Anthony Moreno, Ph.D.	Professor	318Q	2821	amoreno
Christopher Herman, Ph.D.	Associate Professor	318R	2815	cherman2
Andrew Cornett, Ph.D.	Assistant Professor, Program Coordinator	319L	2810	acornet2
Rebecca Moore, Ph.D.	Assistant Professor	319S	2824	rmoore41

Courses Traditionally Taught

<u>Faculty Member</u>	<u>Courses Taught</u>
Shel Levine, M.S., C.E.S	EKG, Lab Techniques, Exercise Programming, Exercise Physiology, Diabetes and Obesity
Stephen McGregor, Ph.D.	Exercise Physiology, Pharmacology, Graduate Advanced Exercise Physiology
Rebecca Moore, Ph.D.	Laboratory Techniques, Graduate Exercise Testing & Techniques of Exercise Prescription, Introduction to Exercise Science
Anthony Moreno, Ph.D.	Biomechanics, Principles of Performance Enhancement, Research Methods
Christopher Herman, Ph.D.	Pathology, Fitness Center Management, Statistics, Exercise Epidemiology, Anatomy & Physiology, Exercise Physiology
Andrew Cornett, Ph.D.	Anatomy & Physiology, Statistics

Specialty Areas

<u>Faculty Member</u>	<u>Specialty Area</u>
Stephen McGregor, Ph.D.	Sport Nutrition, Molecular Biology, Exercise Metabolism, Applied Performance Physiology
Shel Levine, M.S., C.E.S.	EKG, Clinical Exercise Physiology
Anthony Moreno, Ph.D.	Pediatric Kinesiology, Youth Sport Injury Prevention
Christopher Herman, Ph.D.	Exercise Epidemiology, Pathology
Andrew Cornett, Ph.D.	Statistics, Exercise Physiology, Performance Analysis
Rebecca Moore, Ph.D.	Pediatric Exercise Physiology, Economy/Energy Expenditure in Youth

Research Interests

<u>Faculty Member</u>	<u>Research Interests</u>
Stephen McGregor, Ph.D.	Ergogenic supplements; Molecular response to muscle injury; Molecular Biology of muscle growth and regeneration
Shel Levine, M.S., C.E.S.	Role of exercise in treating clinical populations; Barriers to exercise in clinical populations; Use of RPE in clinical populations
Anthony Moreno, Ph.D.	Resistance training in youth; Youth injury in sports
Christopher Herman, Ph.D.	Exercise Epidemiology (e.g. CVD and Cancer)
Andrew Cornett, Ph.D.	Performance Physiology, Swimming Performance, Growth and Maturation
Rebecca Moore, Ph.D.	Substrate utilization and fluid replacement in youth during/after exercise; Youth sports drink consumption's effect on performance

Exercise Science/Physiology Development Fund

The Exercise Science/Physiology Development Fund was set up to help support activities of the Laboratory of Applied Physiology and the Exercise Science/Physiology programs. Donations received through this fund help support the purchase of new equipment for the Lab, maintain existing equipment in the Lab, support research in progress, and assist in the preparation of posters for presentations at conferences. There are two ways you, as a student in the Exercise Science Program, can help to build this fund.

- 1) If you have a parent, family member, friend, or know an alumni of EMU who wishes to make a donation to the University, please ask them to indicate on their donation form or check they wish the donation be dedicated to the Applied Physiology Lab Fund.
- 2) After you graduate from EMU and are settled in a new job, whether after your undergraduate program or a future graduate or professional program, please consider making a personal donation to the Applied Physiology Lab Fund. Help us to educate the Exercise Science majors of the future.

APPENDICIES

Eastern Michigan University
School of Health Promotion and Human Performance
Exercise Science "Intent" Application

DO NOT SUBMIT THIS FORM UNLESS YOU HAVE DECLARED YOUR MAJOR AS **EXERCISE SCIENCE** IN THE ACADEMIC ADVISING OFFICE (301 PIERCE HALL) OR ONLINE (<http://www.emich.edu/aac/majmin.htm>)

NAME _____ STUDENT# E _____

LOCAL ADDRESS _____
STREET CITY STATE
ZIP CODE

LOCAL PHONE NUMBER _____

PERMANENT ADDRESS _____
STREET CITY STATE ZIP CODE

PERMANENT PHONE NUMBER _____

EMAIL ADDRESS _____

HIGH SCHOOL _____

GRADUATION DATE FROM HIGH SCHOOL _____

OTHER UNIVERSITIES/COLLEGES ATTENDED _____

TRANSFER HOURS _____ TRANSFER GPA _____

WHY DO YOU WANT TO MAJOR IN EXERCISE SCIENCE?

CIRCLE YOUR PREFERRED EXERCISE SCIENCE-RELATED CAREER INTEREST (ONLY ONE):

CARDIAC REHABILITATION STRENGTH AND CONDITIONING/PERSONAL TRAINING

PRE-PHYSICAL THERAPY PRE-PHYSICIAN ASSISTANT CORPORATE FITNESS
OTHER

WHY DID YOU SELECT EASTERN MICHIGAN UNIVERSITY?

SIGNATURE _____

DATE _____

EASTERN MICHIGAN UNIVERSITY
School of Health Promotion & Human Performance
EXERCISE SCIENCE PROGRAM

APPLICATION FOR CANDIDACY

Student _____ Student # _____ Date _____

Campus Address:

Home Address:

Phone # _____

Phone # _____

Email _____

EMU Faculty Advisor: _____

Semester Hours Completed to date: _____

Cumulative Grade Point Average: _____

Pre-Candidacy required classes currently enrolled (grade to this point):

Other courses currently enrolled (grade to this point):

List other Universities/Colleges you have attended. Include hours completed or degrees earned.

Please list any work or volunteer experiences. (Include agency, job title, dates, hrs/wk):

Please provide any additional information that will help get to know you better (honors/awards, extra-curricular activities, hobbies, military service, family obligations, etc.).

Do you have any physical or psychological challenges for which accommodations should be made? If yes, please describe.

Please attach the following:

1. A two page biographical sketch describing your background, why you chose to enter the field of Exercise Science, career goals and any other information you feel pertinent to your candidacy application.

My signature indicates that all information is complete and accurate. Deliberate failure to provide accurate information may be grounds for denial or dismissal from the Exercise Science Program. If admitted, I am committed to follow Exercise Science course sequencing while maintaining a 2.8 GPA. Additionally, I must achieve a grade of B- or better in all courses within the major. I understand if my GPA falls below the required GPA, or I receive a grade less than B- in the above courses, I may not be allowed to perform my internship until deficiencies are corrected.

(Signature)

(Date)

I have reviewed the above application and have determined this student meets all program requirements for candidacy.

(Advisor Signature)

(Date)