

Annual Assessment Report: 2010
Bachelor of Science in Exercise Science
School of Kinesiology
College of Health Professions
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Introduction

The School of Kinesiology offers the Bachelor of Science degree program in Exercise Science with three areas of emphases including Exercise Physiology, Health and Wellness, and Strength and Conditioning. Previously, the undergraduate Adult Fitness/Exercise Science concentration was offered under the Bachelor of Arts program in Physical Education. Several reasons were behind the change in emphasis. First, current CAAHEP (Commission on Accreditation of Allied Health Education Programs) and CoAES (Committee on Accreditation for the Exercise Sciences) accreditation standards require that Exercise Science be a standalone degree (or degree program). Secondly, the Bachelor of Arts in Physical Education has outlived its purpose and is grossly outdated and the scope of practice is different from our colleagues in Physical Education Pedagogy.

The description of the Exercise Science profession used in this accreditation process by CAAHEP and COSAES includes, “graduates of Exercise Science programs are trained to assess, design, and implement individual and group exercise and fitness programs for individuals who are apparently healthy and those with controlled disease. Employment opportunities for Exercise Science professionals are located in the health and fitness industry where skills in evaluating health behaviors, risk factors, conducting fitness assessments, writing exercise prescriptions for healthy and controlled disease population, motivating individuals to modify negative health habits, and promoting positive healthy lifestyle changes are essential components of their respective job. Exercise Science professionals work in university, corporate, commercial, community, and clinical settings aimed at promoting a healthy lifestyle and disease prevention.

Mission Statement

The Bachelor of Science, Exercise Science degree program in the School of Kinesiology at Marshall University supports the aspirations of students seeking and gaining scholarly as well as practical knowledge for the purpose of improving human health through exercise and physical activity.

The Exercise Science degree program will reflect the institutions goals and objectives. Marshall University mission states that “Marshall University is a multi-campus public university providing innovative undergraduate and graduate education that contributes to the development of society and the individual.” The Exercise Science degree program mimics this statement in that the emphases within this degree program are innovative, reflect current trends, and move Marshall University forward. By offering three emphases within this major, this degree will prepare students to be well trained health professionals and clinicians serving our society in the medical, health, and fitness industries.

Program Objectives

The Bachelor of Science in Exercise Science will provide the opportunity to:

1. Acquire skills and knowledge required for advanced practice [criteria delineated by the Commission on Accreditation of Allied Health Education Programs (CAAHEP)].
2. Develop specialized skills for management, clinical education, assessment, and exercise prescription for apparently health and diseased populations.
3. Become engaged in life-long learning and to prepare for post-baccalaureate studies.
4. Meet societal needs for advanced level exercise physiologists able to practice in diverse healthcare environments.
5. Utilize critical thinking skills in exercise science practice.
6. Apply communication skills to exercise science practice.
7. Serve in leadership roles in the health fitness industry, as coordinators and directors of fitness programs.
8. Promote the component of exercise and fitness for a healthy lifestyle, in a safe, legal, and ethical manner.
9. Be eligible for application for the American College of Sports Medicine (ACSM) Health Fitness Instructor Certification and the National Strength and Conditioning Association (NSCA) Certified Strength and Conditioning Specialist.

Program Student Learning Outcomes

1. Students will demonstrate a sound foundational knowledge and understanding of the applied and basic sciences as they relate to responses and adaptations to physical activity and exercise among the apparently healthy and diseased population.
2. Students will demonstrate basic laboratory skills pertaining to health and fitness assessments in the exercise sciences including: (a) Screening, stratification, and risk stratification of clients/patients, (b) Prepping individuals for exercise testing, exercise therapy, and training, (c) Performing single and multi-stage exercise testing skillfully, understanding and applying contraindications to exercise stress testing and exercise, (d) Developing and teaching exercise prescription for apparently healthy and diseased population, (e) Developing and maintaining client progress reports, (f) Interpreting lipid profiles and related bloodwork findings and relating them to patient/client clinical interventions and outcomes, (g) Developing skills in measuring blood pressure and heart rate assessment, (h) Relating risk factor identification and management to intervention strategies, risk reduction and outcomes; (i) Developing EKG

reading and interpretation skills, and (j) developing a comprehensive understanding of the overall acute and chronic effects of physical activity on human physiology.

3. Students will demonstrate requisite skills and abilities for a career or continued education in various fields related to the exercise sciences.
4. Students will be able to discuss and understand the importance and influence of physical activity and exercise on health and become an advocate for physically active lifestyles as a means to improve quality of life and reduce the risk and prevalence of lifestyle related diseases.
5. Students will gain employment in exercise science related areas or pursue graduate studies in an exercise science related area or one of the health care professions.

Assessment Activities/Assessment Methods

Student performance will be assessed in the following ways:

- (1) Routine examinations and writing assignments in each course.
- (2) Students are evaluated on their performance in research projects, class workshop assignments, class team presentations, independent studies, objective exams, class meetings, case study presentations, and individual presentations to classmates.
- (3) Students will be required to develop a portfolio packet regarding their respective experiences during their internship. (**The portfolio development is in progress and the goal is to start utilizing during Fall Semester of 2011**).
- (4) Development of a comprehensive test comprised of **200** questions will be given to each student pursuing the BS degree in Exercise Science after completion of all coursework. Questions will cover all academic content that provides the foundation for knowledge in Exercise Science (e.g., **Exercise Physiology, Biomechanics, Basic Anatomy, Basic Physiology, Exercise Prescription and Programing, Electrocardiography, Disease Prevention and Rehabilitation, Intro to Athletic Training, Strength and Conditioning, Basic Nutrition, Exercise Metabolism, and First Aid**).

1. 2. Program quality is assessed in the following ways:

- (1) Students evaluate professors at the completion of each course.
- (2) Students evaluate course content at the completion of each course.
- (3) Students rate the achievement of course objectives.
- (4) The School of Kinesiology Chair evaluates faculty teaching, advising, scholarly activity, university service, and community service annually.
- (5) Dialogue with program graduates and their employers as well as extensive input from internship supervisors and a growing network of SOK program graduates permits feedback for evaluating program content and effectiveness.
- (6) Involvement with the Centers for Disease Control, the American Association for Cardiovascular & Pulmonary Rehabilitation, American Diabetes Association, the American College of Sports Medicine, the National Athletic Trainers Association, the American Heart Association, and collaboration with the conference planning committees and grant applications for the College of Health Professions keeps the faculty apprised of clinical standards and

guidelines for excellence in medicine and allied health that includes health promotion, human performance, disease prevention, and rehabilitation.

1. 3. Core course objective achievement is assessed in the following ways:

Curriculum core course objective achievement is assessed. Student responses will be valuable when obtained in year 2010 as they provide insights to learning objectives not available from University surveys.

**Marshall University
Assessment of Program’s Student Learning Outcomes for the
2010 Exercise Science Program**

As noted, specific content areas (e.g., basic anatomy, basic biomechanics, exercise physiology, and exercise prescription and programming) are being included in the content areas. There other area content areas that will be included along with other student outcomes. The objective of the Program Assessment is to follow the Guidelines set forth by CAAHEP, the accrediting body for Exercise Science. Much work is needed in regard to assessment and moving forward toward accreditation. Below are the initial stages of improving the Assessment piece of the BS program in Exercise Science.

Not every student learning outcome must be assessed every year. However, it is expected that at least one-fourth of the outcomes will be assessed each year, allowing for assessment of all outcomes within a four-year cycle. It also is important to use more than one assessment measure for each outcome.

Program’s Student Learning Outcomes	Year evaluated	Assessment Measures (Tools)	Benchmarks	Results	Analysis/Planned Actions
Admission competencies		GPA	Maintain 2.5 GPA - Graduation		
Upon the completion of the BS program in Exercise Science students will be able to: Content Knowledge (Basic Anatomy) 1. Identify and label regional or topographic anatomy organized specifically to regions, parts, or divisions of the body.	Spring 2012	Final grade in relevant lab and lecture courses. Final Comprehensive Exam upon completion of all coursework.	Mean score of at least 80% on courses related to specific content and on test questions on Comprehensive Final.		

<p>2. Identify and label the major bones, muscles, and joints of the body.</p>		<p>Final grade in relevant lecture and lab courses. Comprehensive Exam upon completion of coursework</p>	<p>Mean score of at least 80% on courses related to specific content and on test questions on comprehensive exam.</p>		
<p>3. Define and understand the function of joints and muscles as they relate to human movement.</p>		<p>Final grade in relevant lecture and lab courses. Comprehensive Exam upon completion of all coursework.</p>	<p>Mean score of at least 80% on courses related to specific content and on test questions on comprehensive exam.</p>		
<p>4. List, match, and define the role of the spinal nerves and their innervation patterns</p>		<p>Final grade in relevant lecture and lab courses. Comprehensive Exam upon completion of all coursework.</p>	<p>Mean score of a least 80% on in courses related to specific content and test questions on comprehensive exam.</p>		
<p>5. Define and label systemic anatomy (e.g., nervous system, endocrine system)</p>		<p>Final grade in relevant lecture and lab courses. Comprehensive Exam upon completion of all course work.</p>	<p>Mean score of a least 80% on in courses related to specific content and test questions on comprehensive exam.</p>		
<p>6. Define and explain the following terms: supination, pronation, flexion, extension, abduction, adduction, hyperextension, rotation, circumduction, agonist, antagonist, and stabilizer.</p>		<p>Final grade in relevant lecture and lab courses. Comprehensive Exam upon completion of all course work.</p>	<p>Mean score of a least 80% in courses related to specific content and test questions on comprehensive exam.</p>		

<p>(Basic Biomechanics)</p> <p>1. Apply the principles of biomechanics to human movement.</p> <p>2. Describe the interrelationships among center of gravity, base of support, balance, stability, and proper spinal alignment.</p> <p>3. Analyze and critique the biomechanics of a human movement activity.</p>		<p>Final grade in relevant lecture and lab courses. Final Comprehensive Exam upon completion of all course work.</p> <p>Final grade in relevant lecture and lab courses. Comprehensive Exam upon completion of all course work.</p> <p>Project where student (s) will select a human movement activity related to exercise and sport and biomechanics equipment and video will be utilized in the evaluation. ESS 321 Biomechanics.</p>	<p>Mean score of at least 80% in courses related to specific content and test questions on comprehensive exam.</p> <p>Mean score of at least 80% in courses related to specific content and test questions on comprehensive exam.</p> <p>Score of at least 75% on the project analyzing and critiquing human movement.</p>		
<p>(Exercise Physiology)</p> <p>1. Discuss the basic knowledge of Exercise Physiology as it relates to Exercise Prescription.</p>		<p>Final grade in relevant lecture and lab courses. Comprehensive Exam upon completion of all course work.</p>	<p>Mean score of at least 80% in courses related to specific content and test questions on comprehensive exam.</p>		

<p>2. Discuss and apply the roles of anaerobic and aerobic energy systems regarding the performance of various exercise and sport related activities.</p>		<p>Final grade in relevant lecture courses. Comprehensive exam upon completion of all course work.</p>	<p>Mean score of at least 80% in courses related to content and test questions on comprehensive exam.</p>		
<p>3. Describe the acute and chronic adaptations that physical activity (e.g., exercise) exerts on anaerobic and aerobic metabolism, muscle physiology, neurophysiology, endocrine physiology, cardiovascular physiology, and respiratory physiology at rest and during exercise.</p>		<p>Final grade in relevant lecture courses. Comprehensive exam upon completion of all course work.</p>	<p>Mean score of at least 80% in courses related to content and test questions on comprehensive exam.</p>		
<p>4. Describe the physiological adaptations that occur at rest and during submaximal exercise and maximal exercise following chronic aerobic and anaerobic exercise training.</p>		<p>Final grade in relevant lecture courses. Comprehensive exam upon completion of all course work.</p>	<p>Mean score of at least 80% in courses related to content and test questions on comprehensive exam.</p>		
<p>(Exercise Prescription and Programming)</p>					
<p>1. Discuss the importance of a health/medical history along with the value of medical clearance prior to exercise participation.</p>		<p>Final grade in relevant lecture courses. Comprehensive exam upon completion of all course work.</p>	<p>Mean score of at least 80% in courses related to content and test questions on comprehensive exam.</p>		
<p>2. Show how to measure pulse rate and blood pressure properly during exercise.</p>		<p>Grade based on a practical lab exam in ESS 375.</p>	<p>Mean score of at least 80% on the practical exam.</p>		

<p>3. Discuss the knowledge, and apply the skills and abilities in assessing the health status of an individual.</p> <p>4. Conduct fitness testing and analyze results.</p> <p>5. Describe the purpose of a specific submaximal or maximal exercise protocol and conduct an assessment of cardiovascular fitness utilizing a cycle ergometer or treadmill.</p> <p>6. Calibrate exercise physiology laboratory equipment and explain procedures for calibration (e.g, Metabolic Cart, motor driven-treadmill, hydrostatic weighing tank, cycle ergometer, electrocardiograph, and aneroid and mercury sphygmomanometers).</p> <p>7. Analyze, Interpret, and apply knowledge regarding the results of a fitness evaluation and exercise test for various populations (e.g., health or known disease).</p>		<p>Grade based on a practical lab exam in ESS 375.</p> <p>Grade based on a practical lab exam in ESS 375.</p> <p>Grade based on a practical lab exam in ESS 375.</p> <p>Grade based on a practical lab exam in ESS 375.</p> <p>Grade based on a practical lab exam in ESS 375.</p> <p>Comprehensive exam upon completion of all course work.</p>	<p>Mean score of at least 80% on the practical exam.</p> <p>Mean score of at least 80% on the practical exam.</p> <p>Mean score of at least 80% on the practical exam.</p> <p>Mean score of at least 80% on the practical exam.</p> <p>Mean score of at least 80% on practical exam and test questions on comprehensive exam.</p>		
<p>Discovery and Critical Thinking</p>					

Communicate Effectively, Written/Oral					
Technology					
Research Design					
Collaboration: Exercise Science majors should foster relationships with colleagues, clinicians and community agencies to support the students' professional growth and well-being.					
Diversity (among students and how to relate to clients/patients socially and clinically)					
Recognize and Solve Problems					
Related Literature					
Clinical Skills					
Best Practices					
Technical Skills					
Graduate Satisfaction					
Employer Satisfaction					

Internal Evaluation Report (IA)

Evaluation is a critical component to effective programs. Marshall University has a systematic and on-going evaluation process. All departments must submit an annual evaluation and program evaluation through the Office of Program Review and Assessment. A systematic evaluation plan will be developed to evaluate the cooperative program. CAAHEP accreditation requires a comprehensive assessment plan in relation to the Exercise Science program mission and goals.

All faculty are employed at Marshall University which conducts annual employee evaluations. All courses developed will be submitted through the appropriate committees for approval by Marshall University. Throughout the Bachelor of Science in Exercise Science program, a variety of measures are employed to assess student learning and comprehension. Among the measures utilized in the classroom setting include, but are not limited to, written objectives and examinations. In the clinical setting, student competence will be formally evaluated by the faculty at the mid-point and the end of each clinical rotation.

Another common practice of measuring competence is through student GPA. The Bachelor of Science in Exercise Science program policies state that a student must maintain a GPA of 2.50 throughout the program. If the student's GPA falls below a 2.50, they will be placed on academic probation and have one semester to bring it to an acceptable level or be suspended from the program for one academic year.

The Graduate Survey is another method utilized to measure preparedness for advanced practice. After working in the field for six and twelve months, graduates will be asked to complete a survey that solicits their feedback on the program's effectiveness in preparing them for practice.

External Evaluation Report (EA)

The Bachelor of Science in Exercise Science program will adopt the master assessment program of the accredited Athletic Training program and will institute the program in Fall 2009. The assessment plan for the Bachelor of Science in Exercise Science program is as follows.

The evaluation tools are designed to be aggregated in order to provide an overall picture of the effectiveness of the Exercise Science Education Program (ESEP). The ACI/CI (Approved Clinical Instructor/Clinical Instructor) evaluations offer a continuum of feedback. The ESEP faculty can track student development in areas of knowledge, behavior, and professional development. By obtaining feedback on a bi-semester basis, the ESEP faculty can insure student development and make corrections as needed and when needed (not in hindsight). The ESEP faculty evaluation of a clinical site-ACI/CI offers feedback with regard to an "education fostering" environment for Exercise Science students. This allows the ESEP to monitor appropriate clinical practices and use of ESEP students.

The student evaluation of the ACI/CI and student evaluation of the clinical site offers additional insight into clinical site practices and use of clinical students. It offers the ESEP information, along with student clinical daily journals, with regard to what kind of experiences students are exposed to at individual clinical sites. It also offers an overview of the semester of ACI/CI interaction with the student from the student's perspective. This gives a broader view of ACI/CI-student interaction aside from the ESEP faculty evaluation of a clinical site-ACI/CI. The ESEP faculty complete "spot" checks a minimum of one time at each clinical site each semester. This provides the ESEP with a limited view of what experiences students participate in on a daily basis.

The COEHS, Marshall, and ESEP Senior Exit Surveys offer feedback from graduating seniors as to how prepared they feel at the time of their graduation. This gives the ESEP information with regard to how well the ESEP is preparing our students for the transition from undergraduate education to the working environment and/or graduate school.

The one year post graduation survey gives feedback on how graduates evaluated various components of the ESEP after being out of school for a year. This along with initial employer surveys gives the ESEP feedback on how well students were actually prepared to enter the work force and/or graduate school. This gives the ESEP valuable feedback on actual strengths and/or weakness and not perceived strengths and/or weakness of graduating seniors.

Data obtained from all these assessment instruments allow the ESEP to make informed and appropriate changes to the ESEP as needed.

	Frequency Completed	Who Completes This Form	Who Receives This Form (who it is turned into)	How Information from this Is Used by ATEP
ACI/CI Evaluation of Student	2 Times each Clinical Course	ACI/CI completes and signs and goes over evaluation with student	This form is turned into the ESEP faculty assigned that clinical experience course	This information is used to track progression of students at their clinical sites
ESEP Evaluation of ACI/CI	Randomly done when ESEP faculty completes a site visit (minimum one time per semester)	ESEP Faculty	ESEP PD	This information is used to help determine clinical site compliance to ESEP policies and procedures as well as assist in determining level of interaction between ACI/CI and Exercise Science students
ESEP Student Evaluation of ACI/CI	Completed once when student is finished with that clinical experience	Exercise Science student enrolled in a clinical experience course	ESEP Faculty assigned to the clinical experience course	Used to gain students belief of how well their ACI/CI worked with them during their clinical experience. Assists in determining continuation of an ACI/CI
ESEP Student Evaluation of Clinical Site	Completed once when student is finished with that clinical experience	Exercise Science student enrolled in a clinical experience	ESEP Faculty assigned to the clinical experience course	Used to determine the clinical experience at a particular clinical site. Assists in determining

		course		continuation of placement at that site.
COEHS Graduation Exit Survey	Once when graduating	ESEP Student	COEHS	Will begin to use Spring 2009
ESEP Graduation Exit Survey	Once when graduating	ESEP Student	ESEP PD	Help determine if students perceive they have been prepared for the work force and to help determine if ESEP Mission and Goals are being met
Marshall Graduation Exit Survey	Once when graduating	ESEP Student	Institutional Research	Will begin to use Spring 2009
1 Year Post Undergraduate Survey	1 year after graduating from ATEP	ESEP Graduate	ESEP PD	Help determine if students perceive they have been prepared for the work force after being out of the ESEP for one year and to help determine if ESEP Mission and Goals are being met
Initial Employer Survey	1 year after graduating from ESEP	ESEP Graduate Initial Employer	ESEP PD	Help determine if students have been prepared for the work force, if the ESEP is keeping up with current trends, and to help determine if ESEP Mission and Goals are being met

