

## PROPOSAL FOR NEW DEGREE OR NEW DEGREE PROGRAM

### Nature of Request

Kent State University and the School of Exercise, Leisure and Sport (SELS), in the College of Education Health and Human Services seeks approval for a major in Exercise Science, located on Kent Campus. We currently offer a major in Physical Education with four concentrations, one of which is Exercise Science. We propose to modify the curriculum of the concentration and create a separate major.

### Objectives for the Proposed Program

The major in Exercise Science is designed to prepare individuals for the Health Care Industry who demonstrate a working knowledge of the competencies required in the professional work situation and apply acquired skills in the role of the professional practitioner within the chosen discipline.

The proposed major and its two concentrations strongly aligns with the mission of the Regional Campuses which is to meet the higher educational needs of the communities they serve. The offering of this degree also meets several of the University's strategic goals: *focus on those we serve; engage with the world beyond our campuses; and build and sustain relationships that foster success.*

The equipment and space that comprises the Exercise Physiology Laboratory at Kent State University which includes approximately 2100 square feet of teaching and research laboratory space offers the student state of the art tools for assessing a variety of exercise related variables. This advanced equipment designed for teaching and research in exercise testing, environmental and general physiology, behavioral medicine and exercise therapy for special populations (i.e. patients with Parkinson's disease). The environmental testing portion of the laboratory is equipped with an environmental chamber (Neslab, Corp), a cold-water immersion tank and a computer microprocessor for the integration of mean skin temperature and rectal temperatures. The body composition portion of the laboratory is equipped with an underwater weighing tank to measure body density and a Hologic® Dual

Emission X Ray Absorptiometry (DEXA, that is housed in University Health Center). The laboratory also contains skinfold calipers and 3 balance beam scales (to assess body mass) and a stadiometer (for the determination of height). The laboratory also contains 2 metabolic carts (Parvomedics, Sandy Utah) and 1 Sensormedics metabolic cart (Quogue, New York) for the determination of energy expenditure via indirect open circuit spirometry. In addition, the laboratory contains 4 Monark cycle ergometers, 1 electrically braked cycle ergometer (Lode®), 1 Monark anaerobic cycle ergometer, 3 treadmills, a Quinton 12 Lead ECG (that can integrate into 1 Quinton treadmill), 4 Schwinn Airdyne ergometers, a Cybex weight circuit and a Biodex for the determination of muscle strength and muscle endurance.

The Exercise Physiology Laboratory also contains a separate blood lab for the determination of various blood markers (i.e., centrifuges, a -80°F freezer, hood, etc). Lastly, the exercise physiology laboratory contains a space for pediatric exercise testing and cognitive test batteries (i.e., psychomotor vigilance testing). These various areas of the lab form the various components of the Exercise Physiology Laboratory and are used for experimental testing, teaching and research collaborations both with the KSU campus and with other smaller programs nearby.

### **Changes to the core Curriculum**

Below is the coursework that has been added to the current concentration in Exercise that help the individual become a professional practitioner within the discipline.

**Add:** Introduction to Exercise Science (new course)

**Delete:** Introduction to Physical Education and Sport

**Rationale:** Since our programs of study focuses less on the institution of sport then that of Physical Education our students will be better served by learning about the history of Exercise Science and the evolution of the research, technology and organizations that were vital in the establishment of the field of Exercise Science.

**Add:** Introduction to Gerontology (Existing course in FCS, Gerontology)

**Delete:** Sport in Society

**Rationale:** Exercise science focuses on the physiological impact physical activity has on the human body. While at times exercise as it relates to athletic performance is addressed our program areas do not specifically focus on sport or that institution's place in society. Because of this, the currently required Sport in Society course does not meet the knowledge skills or abilities for either of our concentrations. Conversely, because our population is aging there is an increased need to have a better understanding of the aging process and how to work with the older adult. (NOTE: this course compliments Exercise Programming for the Older Adult a requirement in the Exercise Specialist option).

**Add:** Nutrition Related to Health (Existing course in FCS, Nutrition)

**Delete:** History and Philosophy of Sport

**Rationale:** As discussed above, the institution of sport is not the focus of the field of exercise science. Therefore, this course does not meet the knowledge skills or abilities for either of our concentrations. Many of our graduates will work with clients in various settings (personal training, corporate fitness, strength and conditioning, etc.) in an effort to improve their fitness. An increased understanding of Nutrition and how it relates to wellness and health is a vital tool for an individual to be successful in this capacity.

#### **Changes to the Exercise Specialist Concentration**

*(To better meet the Knowledge Skills and Abilities (KSA's) needed for the ACSM Certification Exams):*

**The following Courses have been added:**

- Pathology and Pharmacology for Allied Health (existing course in SELS, ATTR Athletic Training)
- \* Exercise Leadership for the Older Adult (Was an elective In SELS now is a requirement, Fall 2008)
- \* Electrocardiography for Exercise Physiology (New Course in SELS, Fall 2008)

**Rationale**

These three courses will enhance the knowledge, skills and abilities for the individual seeking employment in a cardiac rehabilitation setting. Pathology and pharmacology for allied health: Will enable the student to understand how medications impact the body.

**Exercise Leadership for the Older Adult:**

Will build upon the Internship experience whereby the student is required to have 600 hrs in the field of practical experience and enable the student to have hands on experience working with the older adult.

**Electrocardiography for Exercise Physiology:**

Will enable the student to work in the Cardiac Rehabilitation setting and be able to "read" an ECG a much-needed skill that is a requirement for conducting an Internship at the Cleveland Clinic Foundation (and needed for the Exercise Scientist Certification).

**Delete Movement Experiences (One credit Physical Education Courses):**

Development and Analysis of Swimming

Fitness Walking

**Add: Fitness Assessments Section:**

- Lifetime Fitness
- Exercise and Weight Control
- Exercise Leadership (New Course in SELS Fall 2008)

**Rationale:** These courses are practical courses to teach the student about how to lead an exercise class in a variety of setting and provide the student with a basic approach to fitness and weight control.

In summary, these proposed changes are to better enable Kent State University to meet the standards for the Exercise Science major within our two distinct concentrations. Despite the need for change our current program at KSU is noteworthy as we have greater resources to provide to the student than a number of area institutions. Our faculty has obtained extramural funding from National Aeronautics and Space Association (NASA), the Department of Defense (DoD), Orbital Research Inc., Gatorade Sports Science Institute and InfoScitex (Waltham, MA) to help align our research focus in the area of STEM, moving our

laboratory, focus in part toward the Third Frontier. In doing so, we are the only Institution in the area (Northeast Ohio) that is able to provide the student with a more applied or “hands on” research experience and to thereby be more competitive in the job market and/or subsequent graduate study. Our program is distinct as it offers two concentrations and is comprehensive in both the Exercise Specialist Concentration equipping the individual to pursue a career in the health care setting and in the Exercise Physiology Concentration, equipping the individual to seek postgraduate study in a variety of Medical Fields (Note Figure 1). Other programs combine the two very distinct areas and thereby provide less comprehensive education in a given area. This may result in students lacking the sciences needed to pursue certain types of graduate work or a lack of sufficient clinical (“hands on”) experiences. In one such degree program sports management is a part of the course work and should be a separate major. Further, 75% of our faculty are also endorsed by the American College of Sports Medicine as either a Health Fitness Specialist, or Certified Personal Trainer and 50% of our faculty have earned the unique distinction as Fellow of the American College of Sports Medicine (ACSM), a distinction that one gains only after years of quality service or research to ACSM.

### **Rationale and Need for the Program**

Currently, the Exercise Science Concentration is one of many in the Physical Education Major (i.e., Human Movement Studies and Physical Education Teacher Education, Physical Education and Health and Physical Education). The need to formalize the degree is multifaceted. First and foremost, the core of required courses, for both the Exercise Specialist and Exercise Physiologist Options, has been changed slightly (note below) to better meet the needs of the individual that would seek either: A) a subsequent graduate degree in exercise science or another health care profession (i.e., physical therapy, medical school) via the Exercise Physiology Option or, B) a professional certification as an American College of Sports Medicine (ACSM) Certified Health Fitness Specialist (HFS) via the Exercise Specialist Option. The Exercise Specialist Option is currently endorsed by the ACSM however, by 2010, this Option needs to meet the standards of the Commission on Accreditation of Allied Health Education Programs (CAAHEP). The coursework that has been added to the core along with

the Exercise Specialist option would better fit the students' needs to pass one of the two ACSM certification exams currently offered through our program (certified personal trainer and health fitness specialist) as well as higher level ACSM certifications we hope to eventually offer (the ACSM Exercise Specialist® and the ACSM Registered Certified Exercise Physiologist® workshops and exams).

### **Market Analysis**

In the State of Ohio among the top highest paying jobs, 91 require post secondary training. Jobs requiring at least some formal training after high school will be growing at a faster rate than average rate, 13.5% compared to the statewide projected average of 7.3% (The Ohio Department of Job and Family Services, Occupational Trends, Ohio's Hot Jobs, Job Outlook to 2014, Columbus, OH).

Service and professional occupations particularly in the field of health, business and education dominate the lists of occupations gaining the most employment or growing the fastest. The data below represents the fastest growing jobs in Health Care Professions as reported by The Ohio Department of Job and Family Services, Occupational Trends, Ohio's Hot Jobs, Job Outlook to 2014, Columbus, OH. (Attached as Appendix D)

Further, when conducting a job search within a 100-mile radius of Kent State University via the website [www.ohioworkforceinformer](http://www.ohioworkforceinformer) using keywords such as wellness, or cardiac rehabilitation 500 or 100 jobs appear jobs immediately appear in these areas, respectively.

Additionally, health care is a growing field in the state. The Ohio Department of Family Services 2008 data reports that from 2000 to 2007 the need for jobs has increased 17.7%.

Program benefits for students, the institution and the region or state include faculty experience. Faculty members within Exercise Science at KSU have taught across the state of Ohio for ACSM. At KSU, we attract students from a wide range of universities throughout the state from as far as Ohio State University (OSU) as we offer the ACSM workshops here that are not offered in Columbus. Therefore, there is a critical need to offer these workshops

that, in the future, will only be offered at schools that are accredited. As we continue to grow and offer the ACSM workshops we will be supplying our workforce with more individuals in the clinical areas of exercise physiology (termed the "Exercise Specialist" to work in the areas of Cardiac Rehabilitation/Wellness/Fitness/Pulmonary Rehabilitation/Corporate Fitness) of which there is a clear need based on the data reported above from [ohioworkforceinformer.com](http://ohioworkforceinformer.com); or, serving as a foundation for our graduate program in Exercise Physiology, Biology, or other graduate study in the area of medicine. In a time when we are an aging population to better serve the state of Ohio and the "graying" of America our field is growing and will continue to do so. For example, in 2000, 35 million Americans were age 65 and older—a 12 percent increase from 1990. Almost half of these 35 million were older than 75 (US Census). With the aging population there is a need to educate our students to work with the older adult to enhance their understanding of the physiology of aging and exercise. In the age when we are becoming more technologically driven, the changes to our degree programs will enhance the quality of the graduates coming from KSU and set us apart from the other schools, but, enable others at the same time to make a smooth transition into our new major. The changes in the coursework reflect the increasing understanding of the need to have professionals in the field of wellness and who are capable of explaining and encouraging individuals across the lifespan the need to be exercise to enhance their quality of life.

There are approximately 500,000 individuals employed as public health workers at all levels of government in the United States. Very few of these professionals have formal public health training or even share a common academic base (C. William Keck and F Douglas Scrutchfield "principles of Public Health Practice", 2003). Therefore, there is an increasing need to educate these health care professionals and, as part of that education, certify such individuals.

According to the Health Policy Institute of Ohio, Ohio mirrors the national health care dilemma, with high costs of health care, widespread lack of insurance, insufficient investment in primary care and chronic illness management, burgeoning technology, and significant

disparities-geographic, ethnic, racial, economic-in access to health care. ("Mapping health spending and insurance coverage in Ohio" Health Policy Institute of Ohio, 2007). Therefore, there is a clear problem in the delivery of our service and this is also reflected in the high prevalence of obesity as we are currently ranked 43<sup>rd</sup> in the nation which as we know, is due to an imbalance between energy expenditure and energy intake, and is a huge risk factor of cardiovascular disease, chronic disease and greatly alters our activities of daily living. This problem is one that not only the physical therapist works with but the exercise physiologist works with as well. As stated by the Portage County Health Commissioner, Duwayne Porter, "The health department affects everybody, everyday. In Portage County alone there are not enough health care providers despite the fact that the baby boomers are now growing in number and becoming older, there is an urgency to provide health care to a segment of the population that is living longer with chronic diseases due to advancements in technology and medication and medical interventions.

Letters of support for establishing this major are attached as Appendix C.

*Figure 1:* Schematic of the Exercise Science Major with the two Concentrations and the professional areas/specializations that the students will seek after commencement:

### **Exercise Science Major**

#### **Concentration 1. Exercise Physiology Concentration**

Physical Therapy  
Occupational Therapy  
Physical Therapy Assistant  
Medical School (MD)  
Osteopathic School (DO)  
Occupational Therapy  
Chiropractor  
Masters Degree and then PhD in Exercise Physiology

#### **Concentration 2. Exercise Specialist**

Clinical Exercise Physiology  
Cardiac Rehabilitation  
Wellness Centers (YMCA's and JCC's)  
Pulmonary Rehabilitation  
ACSM: Certified Personal Trainer®  
ACSM: Health Fitness Specialist®  
MA in Exercise Physiology  
Corporate Fitness



### **Accreditation**

The Exercise Science Major and its two distinct concentrations require both increased visibility and eventual accreditation through Commission on Accreditation of Allied Health Education Programs, i.e., CAAHEP. The establishment of Exercise Science as a stand-alone major will increase the programs visibility which, along with the new Exercise Science core and the modification to one of the two options will improve the programs chances of eventual accreditation. These changes will also provide students with courses more focused on the knowledge, skills and abilities put forth by the ACSM for Exercise Science majors. We feel that this will enhance the student's ability to pursue various jobs and graduate programs in the health care arenas. The laboratory/practical courses that we have added offer new "hands on" experiences for the student in a major that is practical in approach as well as gaining skills to work in the health care setting. If our program does not seek and obtain CAAHEP accreditation then we will no longer be capable of offering the workshops and the exams that serve our University as well as other colleges within a 50-mile radius. We were selected by the American College of Sports Medicine to offer these workshops as we are the strongest Institution with the capabilities and facilities to do so.

### **Additional Needs Met by the Program**

One example of an institution that will be better served by an increased number of college graduates qualified to work in the allied health field is the Cleveland Clinic. The Cleveland Clinic, located in Cleveland, Ohio, is a not-for-profit multispecialty academic medical center that integrates clinical and hospital care with research and education. Each year, people come to Cleveland Clinic for care from across the country and around the world. Founded in 1921, Cleveland Clinic is a nonprofit teaching hospital. Today, 1,700 physicians and scientists practice in and conduct research in more than 120 medical specialties and annually provide for more than 2.9 million patient visits, 54,000 hospital admissions and 69,000 surgical procedures. Our students that pursue the clinical exercise physiology (exercise specialist option) or the exercise physiology concentrations have sought and obtained employment at the Cleveland Clinic since we have the most comprehensive program in the

region. One area of the Clinic best served by Exercise Physiologists has been the Cleveland Clinic Heart Center Stress Lab, which performs over 12,000 stress tests each year. A wide array of patients, including healthy preventive testing to more complicated cases involving many types of cardiac and pulmonary diseases are assessed each day at this center (CCF, 2008). The need for trained exercise physiologists to assist with these tests is great and will increase as the number and scope of these evaluations and the health care industry continues to grow (approximately 17% from 2000 to 2007, Ohio Department of Family Services, 2008).

### **Evidence of Student Interest in the Program**

Below are data reflecting student interest in the program, as well as projections of enrollment (full-time and part-time) for each of the first five years of the program.

The number of students enrolled in the two separate Exercise Science options in the fall of 2000 to the fall of 2007:

SUBMAJOR	2000F	2001F	2002F	2003F	2004F	2005F	2006F	2007F
Exercise Specialist	49	37	58	58	69	70	98	125
Exercise Physiology	65	77	83	81	74	93	120	128
Grand Total	114	114	141	139	143	163	218	253

Note: Fall 2008 data was available at the time of this proposal however, as the abbreviations for the concentrations in the transition to the "banner" data base did not account for all data, therefore it is incomplete and omitted.

The table above illustrates a 222% increase in student enrollment in the Exercise Science concentrations over a seven-year period.

Programs similar to the one proposed that are offered in both public and independent institutions within a 50-mile radius of the proposed instructional site are as follows:

1. University of Akron: "Sports Science and Wellness Education" (undergraduate program only) ~ 50 students, 1 full time tenure track faculty

2. Cleveland State University "Exercise Fitness Specialist" and "Sports Manager"  
(undergraduate program and masters degree) ~ 50 students; faculty 2 full time tenure track faculty)
3. Youngstown State University "Exercise Science-Pre Physical Therapy" and "Exercise Science" undergraduate and masters degree program 5 faculty, 100 students.
4. Mt. Union College (undergraduate program only 1 Full time faculty 1 NTT)
5. Baldwin Wallace "Exercise Science" (undergraduate program only) 2 Full Time faculty, 40 students.

These programs differ from the one proposed because a) Kent State University offers the only doctoral program in North East Ohio, and b) KSU continues to closely collaborate with faculty in exercise science from Cleveland State, Akron University (Akron University's program is within a division termed "Sport Science and Wellness Education"), Youngstown (which has a major termed Exercise Science), and Mt Union College. All of these institutions have former exercise science doctoral students from KSU as either program coordinators or faculty in their respective area (Mt Union College: Ronald Mendel, Akron University: Ronald Otterstetter, Akron University (Nutrition) Lonnie Lowry; Youngstown University: Nicole Mullins; Cleveland State: Katherine Little). Since KSU is the largest program in the region and has a terminal degree program in Exercise Physiology as well as the most faculty and research resources we have forged natural research and teaching collaborations with all of the aforementioned schools. Our previously outlined laboratory facilities including, but not limited to, treadmills, metabolic carts, a 12 lead ECG, ergometers an environmental chamber, an underwater weighing tank, and dual emission x-ray absorptiometry (off site at the University Health Center) exceed the resources at the other regional universities therefore allowing for both teaching and research opportunities that would otherwise be unavailable to our colleagues at these schools. Further, we have attracted many successful transfer students from these schools due our two distinct concentration areas and our ACSM endorsement.

**Specific examples of collaboration that involve the Scholarship of Application/Research**

Kent State University has partnered with the University of Akron in the mentoring both undergraduate and graduate students. We have mentored students from the University of Akron by allowing the students to work with our faculty and to work in our laboratory facilities. In doing so we have engaged them in the Scholarship of Application/Discovery. The research that we have conducted thus far has involved caffeine supplementation and exercise performance. Further, we have jointly presented the research data at our annual research meeting.

In addition, faculty at Kent State University have secured extramural funding with Cleveland State University and Orbital Research, Inc (along with the lead scientist being a KSU alumni, Aaron Rood). Dr. Kenneth Sparks and our laboratory have collaborated on research protocols, the area of STEM (with Orbital Research Inc and NASA) as well as the advisement of his students that may endeavor to pursue a more research-oriented degree at KSU.

KSU and the Exercise Science major and its faculty thrive on collaborations. In working with other schools around NE Ohio and beyond we will enrich the student's educational experience at KSU. The newly formed exercise science major will enhance our visibility so as to enable other institutions beyond NE Ohio to work with us in a collaborative manner.

**Academic Planning**

In response to several reports related to the need for higher education programs in the area and in response to employers who have asked for a program that accommodates and develops skills/knowledge needed for success in the variety of healthcare work settings the development of this Major in Exercise Science was created to meet these needs. The Exercise Science faculty after consulting with various similar programs (across the United States) developed a major with two concentrations to identify a focus for the curriculum. Research of the literature was conducted to identify the focused curriculum resulting in a list of skills, knowledge gained and abilities. The Exercise Science faculty developed the curriculum after consulting with ACSM, other Department Chairs and Program Coordinators

in Exercise Science as to the learning outcomes. Throughout the process, communication and consultation with other colleges, departments, and ACSM have been an ongoing process.

New majors must be aligned with the college mission which is to create and advance knowledge as it educates professionals who enhance health and well-being and enable learning across the

The following university bodies were used as consultants or advisory committees in development of the proposed program (append copies of reports from such consultants or advisory committees).

Faculty Advisory Committee	Spring 2008
College Curriculum Committee	Fall 2008
Educational Policy Committee (EPC) Review	Fall 2008
Faculty Senate	Fall 2008

In preparing the proposal for the new major with the two new concentrations, we compared our current curriculum with that of other "research intensive institutions" across the country. These institutions have already completed this process. The Exercise Science faculty proceeded to alter slightly our program concentrations to better fit the need of the pre-med student (Exercise Physiology) and to assure that we would gain accreditation with CAAHEP (Exercise Specialist Concentration). The School Chair, the Associate Dean and the Dean of Education Health and Human Services as well as colleagues across campus (Family and Consumer Studies, Gerontology, Nutrition, Athletic Training) were consulted as well.

### **Academic Control**

The School of Exercise Leisure and Sport in the College of Education, Health, and Human Services is the academic home for the Exercise Science major. Responsibility for the academic content and the approval for the faculty to teach the courses will continue within the academic department/schools whose courses are included in the curriculum. The Board of Regents grants KSU-main campus the authority to offer this major.

We have also begun work on an articulation agreement with Cuyahoga Community College (after our major has been established, Note Appendix B) to better serve the needs of the students of NE Ohio. Additionally, we have begun to work on articulation agreements with Cuyahoga Community College (CCC: Sport and Exercise Studies Program), Lorain County Community (LCC: "Group Exercise Instructor") and KSU-Stark. With CCC's Sport and Exercise Studies Program, we have evaluated their syllabi for preliminary approval to move forward with an articulation agreement. They offer similar courses but due to their limited resources cannot cover the courses in great detail or in the same the depth. The student learns about how to perform a given test (i.e., an exercise test on a treadmill), while never actually conducting one in the laboratory. Twenty-four students enrolled at the program at CCC in 2008 with a part time faculty of four instructors. Upon completion of their two years at CCC these students will move seamlessly into the Exercise Specialist concentration. While students from these institutions already enroll in Exercise Science at KSU future articulation agreements similar to the one mentioned here coupled with the increased visibility the creation of a new major would likely further increase our transfer student numbers. In addition to providing a viable option for students graduating from community colleges, several of our students, both current and former (Jackie Iwanski, Katie Pierce, David Bellar), have been employed by them part time to help support the needs of their programs.

### **Curriculum**

A program description, including each option and concentration, as it would appear in a catalog is provided below.

#### Catalog Copy of the Requirement Sheet for the Exercise Sciences Major (Fall 2009)

Liberal Education Requirements (LER)	37-38
I. Composition	6
ENG 10001 and ENG 10002.	
II. Math and Critical Reasoning	4
Students pursuing the Exercise Sciences Concentration must take MATH 11011-College Algebra (4)	
III. Humanities and Fine Arts	9

At Least one course must be selected from the Humanities in Arts and Sciences section, and at least one course must be selected from Fine Arts section.

IV. Social Sciences 6

Courses must be selected from two curricular areas.

Students pursuing the Exercise Sciences Concentration must take PSYC 11762.

V. Basic Sciences 6 or 10

At least one laboratory course must be selected.

Students pursuing the Exercise Sciences Concentration must select one group below depending on

Program Option chosen 6-10 hours):

Exercise Specialist: CHEM 10050 (3), 10052 (2), and 10053 (1).

OR

Exercise Physiology: CHEM 10060 (4), 10061 (4), 10062 (1), and 10063 (1),

VI. Additional 3-6

Select three (Exercise Physiology) to six (Exercise Specialists)

Hours of courses in Categories II-V above. Select no more than one course from any category.

VII. University Orientation, US 10097 1

VIII. Diversity Requirement

All students must complete a two-course Diversity Requirement as described on page \_\_\_ of this Catalog. One course must come from the LER requirement (with a global focus); the second course could be PEP 25059, Sport in Society (a domestic focus).

IX. Writing Intensive Requirement

At least one course must be taken from the Writing Intensive course list in the catalog; a student must earn a "C" or higher in the Writing Intensive course. PEP 35010, Motor Behavior and PEP 35065, History and Philosophy meet this requirement.

X. Foundation Core	20	
<b>X</b> EXSC    15010, Intro to Exercise Science		2
EXSC    25057, Human Anatomy and Physiology I	3	
EXSC    35054, Biomechanics	3	
GERO    14029, Intro to Gerontology	3	
NUTR    23511, Science of Human Nutrition	3	
PEP     25033, Lifespan Motor Development	3	
PEP     35010, Psychological Dimensions	3	

Exercise Sciences Concentration

XI. Fitness Assessments	6	
EXSC    10035, Lifetime Fitness	2	
EXSC    12424, Exercise & Weight Control	1	
EXSC    35022, Exercise Leadership	3	

XII. Options

Exercise Physiology Option	27	
ATTR    25036, Principles of Athletic Training	3	
CHEM    20481, Basic Organic Chemistry I	4	
CHEM    30284, Intro Biological Chemistry	4	
EXSC    25058, Human Anatomy and Physiology II	3	
EXSC    45080, Physiology of Exercise	3	
<b>X</b> EXSC    45091, Senior Seminar	1	
<b>X</b> EXSC    45096, Individual Investigation in ES	3	
NUTR    33512, Nutrition	3	

PEP	25068, Measurement and Evaluation	3
Exercise Specialist Option		43
ATTR	25036, Principles of Athletic Training	3
ATTR	45039, Therapeutic Rehabilitation	4
ATTR	45040, Pathology and Pharmacology	3
CHEM	20284, Physiological Chemistry	4
EXSC	25058, Human Anatomy and Physiology II	3
EXSC	35075, Exercise Programming	3
EXSC	40612, Exercise Leadership for the Older Adult	3
EXSC	45065, Exercise Testing	3
EXSC	45070, EKG's for Ex Phys	3
EXSC	45080, Exercise Physiology	3
X EXSC	45490, Internship Seminar	1
EXSC	45492, Internship in Phys Fit/Cardiac Rehab	4
NUTR	33512, Nutrition	3
PEP	25068, Measurement and Evaluation	3

### XIII. Guided Electives 23-28

16-17 hours for Exercise Specialists (0 upper division courses) and 30-31 hours for Exercise Physiology (13 upper division courses).

#### Total Hours

A minor and/or are selected to meet the students' personal interests as well as to enhance their professional preparation. Students interested in research careers in exercise physiology should consult with their advisor about enhancing their sciences preparation. If a minor is included, total coursework may exceed the minimum 121 credit hours required for graduation.

Below are courses (title, number, semester/quarter credit hours and catalog description)

that would constitute the requirements and other components of the proposed program.

Indicate courses that are currently offered and will be new (indicate new courses with an X)

#### **X Introduction to Exercise Science, EXSC 15010, 2 credit hours**

Course Description: An introduction to the discipline of exercise science including the history of the field, current position stands of the American College of Sports Medicine, the responsibilities of the Exercise Physiologist and the current trends in Exercise Science.

#### **Human Anatomy & Physiology I, EXSC 25057, 3 credit hours**

Course Description: Comprehensive examination of anatomy and physiology related to the organization of the body and basic cell and tissue types. Specific structure and function of the muscular, skeletal, cardiovascular, nervous and respiratory systems are addressed.

Prerequisite: none.



**Biomechanics, EXSC 35054, 3 credit hours**

Course Description: Anatomical and mechanical bases of human movement. Emphasis is placed on tools and techniques for motion analysis, mechanical concepts, forces and performance analysis. Lecture and laboratory. Prerequisite: PEP 25051

**Introduction to Gerontology, GERO 14029, 3 credit hours**

Course Description: An interdisciplinary approach to the aging process. Experiences with older members of the community are included. Prerequisite: None. This course may be used to satisfy the Liberal Education Requirements (LER) and diversity requirement.

**Science of Human Nutrition, NUTR 23511, 3 credit hours**

Course Description: Basic concepts and principles in the science of human nutrition, energy balance and weight control, individual nutrient needs, diet selection, nutrition related metabolism and physiological functions, nutritional diseases and current human nutrition controversies. Prerequisite: None. This course may be used to satisfy the Liberal Education Requirements (LER).

**Lifespan Motor Development, PEP 25033, 3 credit hours**

Course Description: Introduction to motor development across the lifespan. Special emphasis on description of motor development changes and factors influencing change. Prerequisite: PSYC 11762.

**Psychological Dimensions of Motor Behavior, PEP 35010, 3 credit hours**

Course Description: Psychological factors in exercise, physical activity and sport, emphasizing motor control, learning and performance. Laboratory included. Prerequisites: Junior standing and PEP 25068. This course may be used to satisfy the writing-intensive requirement with approval of major department.

**Lifetime Fitness, EXSC 10035, 2 credit hours**

Course Description: The role of exercise in enhancing physical fitness. Lectures on principles of planning scientifically sound exercise programs. Laboratory experiences in personal fitness evaluation and exercise routines. Prerequisite: none.

**Exercise and Weight Control, EXSC 12424, 1 credit hour**

Course Description: Instruction in and practice of exercises based upon proper food selection for the purpose of weight control. Prerequisite: none.

**Exercise Leadership, EXSC 35022, 3 credit hours**

Course Description: Designed to provide the students with a knowledge base in exercise leadership. Topic areas and competencies using a variety of techniques in leading and demonstrating safe and effective methods of applying the fundamental principles of exercise science. The exercise leader will demonstrate all forms of group exercise, flexibility and balance training. Prerequisite: PEP 25057.

**Principles of Athletic Training, PEP 25036, 3 credit hours**

Course Description: Principles of the profession, including injury prevention, basic sports trauma, injury management and specific sports conditions. Practical competency in emergency care and first aid; athletic taping, wrapping and bracing; and equipment fitting. Prerequisite: none.

**Basic Organic Chemistry I, CHEM 20481, 4 credit hours**

Course Description: Survey of the structure, preparation and reactions (including mechanisms) of organic compounds, emphasizing the chemistry of biologically important functional groups. Prerequisite: CHEM 10061 or 10961.

**Introductory Biological Chemistry, CHEM 30284, 4 credit hours**

Course Description: Chemistry and metabolism of biochemically important compounds; nature of enzyme action; metabolic regulation and bioenergetics. Prerequisite: CHEM 20481 or 30481.

**Human Anatomy Physiology II, EXSC 25058, 3 credit hours**

Course Description: Comprehensive examination of anatomy and physiology related to the human body under rest and exercise conditions. Specific structure and function of the metabolic, endocrine, lymphatic, digestive, urinary and reproductive systems are addressed. Advanced coverage of neurological, cardiovascular and respiratory systems are also addressed. Prerequisite: EXSC 25057.

**Physiology of Exercise, EXSC 45080, 3 credit hours**

Course Description: Response of the human to acute and chronic exercise with emphasis on the underlying physiological mechanisms. Prerequisites: EXSC 25057 and 25058 and special approval. Corequisite: BSCI 30030.

**X Senior Seminar in Exercise Science, EXSC 45091, 1 credit hour**

Course Description: The course provides an overview of the research responsibilities available for the exercise science major. The Institutional Review Board, Research Methodology, and the risks and benefits of research in the area of Exercise Science will be discussed in detail. This class currently exists under the title of Senior Seminar (PEP 45491). With the creation of the new Exercise Science major we will only be altering the title to make it clearer for Exercise Science students which section of seminar they need to take.

**X Individual Investigation in Exercise Science, EXSC 45096, 3 credit hours**

Course Description: Independent study completed under the supervision of a faculty member. Written approval of supervising faculty member and school director prior to registration. Repeatable to 6 credit hours. IP permissible. This class currently exists under the title of Individual Investigation (PEP 45096). With the creation of the new Exercise

Science major we will only be altering the title to make it clearer for Exercise Science students which section of Individual Investigation they need to take.

**Nutrition, NUTR 33512, 3 credit hours**

Course Description: Functions, sources and interactions of essential nutrients. Nutritional needs of family members, methods of meeting these needs, sources of reliable nutrition information. Prerequisites: CHEM 10060 and 10061 and 20481; or CHEM 10050 and 10052; or CHEM 10054.

**Measurement and Evaluation in Fitness and Sport, PEP 25068, 3 credit hours**

Course Description: Measurement and statistics applied to physical education and exercise/sport sciences; laboratory experiences in statistics, test construction and administration, and evaluation. Prerequisite: none.

**Principles of Athletic Training, ATTR 25036, 3 credit hours**

See Course Description Above

**Therapeutic Rehabilitation, ATTR 45039, 4 credit hours**

Course Description: The study and clinical application of rehabilitation techniques including strategies for proper exercise selection based on anatomical and physiological considerations, program administration and guidelines for program progression.

Prerequisites: ATTR 25036 and PEP 25051

**Pathology and Pharmacology for Allied Health Care Providers, ATTR 45040, 3 credit hours**

Course Description: Investigation of specific pathological conditions presented by professionals including physicians and pharmacists. Will discuss common pathologies, associated pharmacological treatment and physiologic affects for various afflictions.

Prerequisites: senior standing and special approval.

**Physiological Chemistry, CHEM 20284, 4 credit hours**

Course Description: Chemistry and metabolism of carbohydrates, lipids, nucleic acids and proteins; regulation of metabolism, nature of enzyme action, clinical aspects of biochemistry.

Prerequisite: CHEM 10052 or 10054 or 20481.

**Human Anatomy and Physiology II, EXSC 25058, 3 credit hours**

See Course Description Above

**Exercise Programming, EXSC 35075, 3 credit hours**

Course Description: Problems and issues in developing exercise programs in institutional and commercial settings. Prerequisites: PEB 20035 and BSCI 20020.

**Exercise Leadership for the Older Adult, EXSC 40612, 3 credit hours**

Course Description: Designed to provide students with a knowledge base in exercise leadership in the older adult population, including special populations. Students participate in the leading, supervision and evaluation of participants within the exercise program. They also assist in the collection of functional fitness data. Prerequisite: PEP 35022.

**Exercise Testing, EXSC 45065, 3 credit hours**

Course Description: Lecture and laboratory experiences dealing with the administration and interpretation of exercise tests. Prerequisites: PEP 35075 and EXSC 45080.

**Electrocardiography for the Exercise Physiologist, EXSC 45070, 3 credit hours**

Course Description: Designed to provide students with the knowledge base in electrocardiography. Students work on interpreting the 12-lead electrocardiogram with clinical case studies to enhance the knowledge base of the exercise specialist. Prerequisites: EXSC 25057 and special approval. Corequisite: EXSC 25058.

**Physiology of Exercise, EXSC 45080, 3 credit hours**

Course Description: Response of the human to acute and chronic exercise with emphasis on the underlying physiological mechanisms. Prerequisites: EXSC 25057 and 25058 and special approval. Corequisite: BSCI 30030.

**X Internship Seminar in Exercise Science, EXSC 45490, 1 credit**

Course Description: An overview of the internship possibilities that are available for the exercise science major. The American College of Sports Medicine (ACSM) certification workshops and the scope of practice for the Exercise Specialist will be discussed in detail.

**Internship in Physical Fitness/Cardiac Rehabilitation, EXSC 45492, 2 – 8 credit hours**

Course Description: (Repeatable for a total of 8 hours) Supervised experience providing practical experience in administration and operation of programs in physical fitness, health enhancement and/r cardiac rehabilitation. S/U grading; IP grade permissible. Sixty clock hours per credit hour. Prerequisites: EXSC 45490 and senior standing and special approval.

**Nutrition, NUTR 33512, 3 credit hours**

See Course Description Above

**Measurement and Evaluation in Fitness and Sport, PEP 25068, 3 credit hours**

See Course Description Above

**Evaluation Of The Proposed Program Following Implementation**

Processes associated with the University's AQIP process will be utilized. Faculty and curriculum committees will be involved in the ongoing process of evaluation. Specific learner achievement will be assessed in the following ways:

- Demonstrate a working knowledge of the competencies required in a professional work situation via successfully passing the American College of Sports Medicine Certification Exams.
- Apply acquired skills in the role of the practitioner within the chosen health care field

- Plan subsequent graduate study i.e., career advancement strategy that utilizes the knowledge and skills obtained through the earning program.

#### **Other specialized accreditation**

The Exercise Specialist Option which is the endorsed by ACSM (accreditation will soon be sought) will lead to the individual enrolling in the ACSM Health Fitness Specialist workshop, offered at KSU, (due to the quality the size, of our program as well as the geographical location) and then allowing the student to take the ACSM exam on our campus to obtain their certification. No other program in the area offers this workshop as we are permitted to do at a reduced cost to the student with our ACSM Endorsement. This endorsement and the subsequent accreditation are essential for the Exercise Science program to offer these certifications, and perhaps expand to additional ones, in the future.

#### **Facilities and Support Services**

The Exercise Science Laboratory at Kent State University includes approximately 2100 square feet of teaching and research laboratory space. Within that space is a variety of advanced equipment designed for exercise testing and teaching. The environmental testing portion of the laboratory is equipped with an environmental chamber (Neslab, Corp), a cold-water immersion tank and a computer microprocessor for the integration of mean skin temperature and rectal temperatures. The body composition portion of the laboratory is equipped with an underwater weighing tank to measure body density and a Hologic® Dual Emission X Ray Absorptiometry (DEXA, that is housed in University Health Center). The laboratory also contains skinfold calipers and 3 balance beam scales (to assess body mass) and a stadiometer (for the determination of height). The laboratory also contains 2 metabolic carts (Parvomedics, Sandy Utah) and 1 Sensormedics metabolic cart (Quogue, New York) for the determination of energy expenditure via indirect open circuit spirometry. In addition, the laboratory contains 4 Monark cycle ergometers, 1 electrically braked cycle ergometer (Lode®), 1 Monark anaerobic cycle ergometer, 3 treadmills, a Quinton 12 Lead ECG (that can integrate into 1 Quinton treadmill), 4 Schwin Airdyne ergometers, a Cybex weight circuit and a Biodex for the determination of muscle strength and muscle endurance.

The Exercise Physiology Laboratory also contains a separate blood lab for the determination of various blood markers (i.e., centrifuges, a -80°F freezer, hood, etc). Lastly, the exercise physiology laboratory contains a space for pediatric exercise testing and cognitive test batteries (i.e., psychomotor vigilance testing). These various areas of the lab form the various components of the Exercise Physiology Laboratory and are used for experimental testing, teaching and research collaborations both with the KSU campus and with other smaller programs nearby.

Facilities will not be impacted beyond the laboratories capabilities. As enrollments potentially increase there may be a need to expand the number of sections of the various courses. Additionally, we do not anticipate the need for additional facilities, faculty modifications and/or additional support for the proposed program at this time.

Exercise Science faculty is currently composed of four tenure track faculty and one part time faculty. If enrollment continues to grow we will have to increase the sections of certain courses or potentially hire one more tenure track faculty members.

#### **Existing Library Support**

The current Exercise Science major is met by the current library standards, professional societies and or accrediting agencies that will evaluate the program. Furthermore, since a large amount of the relevant research literature is available via OhioLink and online the resources at the library are sufficient for the program.

#### **Financial Resources**

Projected FTE Enrollments for Exercise Science Major attached below. There is no additional funding needed for the Exercise Science major. Current full time faculty loads and the continued utilization of part-time faculty to supplement the program will cover the needs of the major. The pending curricular changes will afford the Exercise Science major the opportunity to seek accreditation. The initial costs for CAAHEP accreditation are approximately \$1000.00. Reoccurring costs will be the costs associated with accreditation visits (approximately every 3-4 years).



# Kent State University

## New Program- Undergraduate

### ASSUMPTIONS

The assumptions used in developing the business plan are an integral component of the business plan. The assumptions should provide validity to the marketing, operational, and financial projections. Therefore, this exhibit should be used to list all assumptions used in developing the plan. Attach all relevant documentation concerning market research data, all revenue and expense line items and related growth rates. The assumption line items listed below are not all-inclusive, but should be used as a guide to create a complete list of assumptions.

Description	Yr. 0	Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5
-------------	-------	-------	-------	-------	-------	-------

#### GENERAL ASSUMPTIONS

- 1) Tuition will be priced at the current undergraduate amount.
- 2) SSI is calculated based on a two rolling average with a one year lag.

#### REVENUES

Tuition - Initial (UG)	Na	318	318	318	318	318
Tuition Increases (UG)	Na	0.0%	0.0%	0.0%	0.0%	0.0%
SSI Increases (UG)	Na	0.0%	0.0%	0.0%	0.0%	0.0%
Enrollment Initial - Students (UG)	Na	50	60	72	86	104
Enrollment Increase - Student % (UG)	Na	0	20.0%	20.0%	20.0%	20.0%
Enrollment - FTE (UG)	Na	55	97	141	187	223
Enrollment Increase - FTE (UG)	Na	Na	42	44	47	36
Other - Initial	Na	0				
Other Increases	Na	0.0%	0.0%	0.0%	0.0%	0.0%

Tuition = \$4,215 - \$717 (fees)/11 or hrs.

#### EXPENSES

Staff salary percentage increase.	Na	3.0%	3.0%	3.0%	3.0%	3.0%
Faculty salary percentage increase.	Na	3.0%	3.0%	3.0%	3.0%	3.0%
Summer Program	Na	0	0	0	0	0
Student salary percentage increase.	Na	3.0%	3.0%	3.0%	3.0%	3.0%
Non Payroll Increase.	Na	0.0%	0.0%	0.0%	0.0%	0.0%
Insurance, Retirement, Fee Waiver, Other	35.2%	35.2%	35.2%	35.2%	35.2%	35.2%
Inflation for Current Expenses	Na	2.0%	2.0%	2.0%	2.0%	2.0%
Maintenance & Repairs	Na	0.0%	0.0%	0.0%	0.0%	0.0%
Utilities	Na	0.0%	0.0%	0.0%	0.0%	0.0%
Student Aid	Na	0.0%	0.0%	0.0%	0.0%	0.0%
University Service Charge	Na	9.0%	0.0%	0.0%	0.0%	0.0%
Senate Bill 140	Na	0.0%	0.0%	0.0%	0.0%	0.0%
Miscellaneous/Consultants	Na	0.0%	0.0%	0.0%	0.0%	0.0%
Bad Debt	Na	0.0%	0.0%	0.0%	0.0%	0.0%
DL Vendor Revenue Share Percentage	Na	0.0%	0.0%	0.0%	0.0%	0.0%
Equipment/Start-up	0	0	0	0	0	0
Academic Affairs Overhead		N	N	N	N	N
Administrative Overhead		N	N	N	N	N

HURDLE RATE (Obtain from Treasury Department)	10.0%
LOAN INT. RATE (Obtain from Treasury Department)	5.0%
LOAN TERM (Obtain from Treasury Department)	10

#### NEW FACULTY & STAFF

Faculty Position - TT	0	0	0	0	0	0
Faculty Position - NTT	0	0	0	0	0	0
Faculty Position - NTT	0	0	0	0	0	0
Faculty Position - Adjunct	0	0	0	0	0	0
Total Faculty Positions	0	0	0	0	0	0
Staff	0	0	0	0	0	0
Staff	0	0	0	0	0	0
Admin/Prof Staff Positions	0	0	0	0	0	0
Total Admin/Prof Staff Positions	0	0	0	0	0	0
Hourly Staff Positions	0	0	0	0	0	0
Hourly Staff Positions	0	0	0	0	0	0
Hourly Staff Positions	0	0	0	0	0	0
Total Hourly Staff Positions	0	0	0	0	0	0
Graduate Assistant - Masters	0	0	0	0	0	0
Graduate Assistant - PhD	0	0	0	0	0	0
Students	0	0	0	0	0	0
Total Students	0	0	0	0	0	0

# Kent State University

## New Program - Undergraduate

### Project Profit & Loss/Cash Flow Statement

*all figures listed in '000' increments*

	Yr. 0	Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5
<b>Estimated Revenue</b>						
Tuition and Fees	\$ -	\$ 118	\$ 289	\$ 511	\$ 763	\$ 905
State Share in Instruction (SSI)	0	0	25	111	255	435
Other Income	0	0	0	0	0	0
<b>Total Net Revenue (Exhibit C)</b>	<b>\$ -</b>	<b>\$ 118</b>	<b>\$ 314</b>	<b>\$ 622</b>	<b>\$ 1,017</b>	<b>\$ 1,340</b>
<b>Estimated Annual Expenses</b>						
Salaries, Wages and Employee Benefits (Exhibit C)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Supplies and Other Expenses (Exhibit C)	0	1	-	-	-	-
Equipment/Start-up Expenses (Exhibit C)	0	0	0	0	0	0
Overhead Expense (Exhibit C)	0	0	0	0	0	0
<b>Total Expense</b>	<b>\$ -</b>	<b>\$ 1</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Net Income (Deficit)</b>	<b>\$ -</b>	<b>\$ 117</b>	<b>\$ 314</b>	<b>\$ 622</b>	<b>\$ 1,017</b>	<b>\$ 1,340</b>
<b>Cumulative Net Income (Deficit)</b>	<b>\$ -</b>	<b>\$ 117</b>	<b>\$ 431</b>	<b>\$ 1,052</b>	<b>\$ 2,070</b>	<b>\$ 3,410</b>

Construction Cost (Exhibit G):	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Leasehold Improvements (Exhibit A):	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Annual Cash Flow:	\$ -	\$ 117	\$ 314	\$ 622	\$ 1,017	\$ 1,340
Cumulative Cash Flow:	\$ -	\$ 117	\$ 431	\$ 1,052	\$ 2,070	\$ 3,410
NPV (@10% of Annual Cash Flow):	\$ 2,360					

**NOTE:**

# Kent State University

## New Program - Undergraduate

### Financial Summary

	Yr. 0 Plan	Yr. 1 Plan	Yr. 2 Plan	Yr. 3 Plan	Yr. 4 Plan	Yr. 5 Plan
<u>Revenues:</u>						
Student Fees	0	117,660	288,744	511,217	762,742	905,356
SSI	0	0	25,145	110,564	254,752	434,844
Other	0	0	0	0	0	0
Total Revenues	0	117,660	313,889	621,781	1,017,494	1,340,201
<u>Personal Service:</u>						
Contract-Admin/Prof	0	0	0	0	0	0
Hourly	0	0	0	0	0	0
Faculty	0	0	0	0	0	0
Summer Program	0	0	0	0	0	0
Students	0	0	0	0	0	0
Total Personal Service	0	0	0	0	0	0
<u>Staff Benefits:</u>						
Insurance, Retirement, Fee Wavier, Other	0	0	0	0	0	0
Total Staff Benefits	0	0	0	0	0	0
<u>Current Expenses:</u>						
Travel	0	0	0	0	0	0
Entertainment	0	0	0	0	0	0
Supplies	0	0	0	0	0	0
Duplic&Printing	0	0	0	0	0	0
Telephone	0	0	0	0	0	0
Postage	0	0	0	0	0	0
Other Info&Commun	0	0	0	0	0	0
Maint&Repairs	0	0	0	0	0	0
Rentals	0	0	0	0	0	0
Utilities	0	0	0	0	0	0
DL Vendor Revenue Share	0	0	0	0	0	0
Student Aid	0	0	0	0	0	0
Senate Bill 140	0	0	0	0	0	0
Miscellaneous	0	1,000	0	0	0	0
University Service Charge	0	0	0	0	0	0
Bad Debt	0	0	0	0	0	0
Total Current Expenses	0	1,000	0	0	0	0
Equipment/Start-up	0	0	0	0	0	0
Total Expenditures	0	1,000	0	0	0	0
Academic Affairs Overhead	0	0	0	0	0	0
Administrative Overhead	0	0	0	0	0	0
Total Overhead	0	0	0	0	0	0
ADJ Expenditures	0	1,000	0	0	0	0
Excess(Deficiency) of Revenue over Expenditures	0	116,660	313,889	621,781	1,017,494	1,340,201

**APPENDIX A:**  
**EXPLANATION OF EXERCISE SCIENCE MAJOR**

---

Name: \_\_\_\_\_

Catalog Year: \_\_\_\_\_

S.S.#: \_\_\_\_\_

Date: \_\_\_\_\_

*Please note: This requirement sheet will become void unless 12 hours of credit at Kent State University have been earned in a two-year period. Preserve this sheet. It is your only assured official statement of degree requirements.*

**General Course Work (37-38 Exer. Spec. or 38-39 Exer. Phys. hours)**

US 10097 First Year Experience FLASH Point... 1

**Composition**

ENG 11011 College Writing I ..... 3  
ENG 21011 College Writing II ..... 3

**Mathematics & Critical Reasoning**

MAT 11009 Modeling Algebra (4) **OR**  
H  
11010 Algebra for Calculus (3) ..... 3-4

**Social Sciences**

PSYC 11762 General Psychology ..... 3  
Choose ONE from LER Social Sciences (See Reverse)(no Psyc)  
..... 3

**Humanities and Fine Arts (See Reverse)**

Select 3 from LER Humanities & Fine Arts. One must be  
from Arts & Sciences and one must be a fine arts course.  
(A&S) ..... 3  
..... 3  
(Fine Arts) ..... 3

Diversity requirements met? ☐ Global ☐ Domestic

**Basic Sciences (6 or 10 hours)**

Take appropriate CHEM courses based on Option chosen (see below)

**Exercise Physiology: (10 hours)**

CHEM	10060	General Chemistry I	4
CHEM	10062	General Chemistry I Lab	1
CHEM	10061	General Chemistry II	4
CHEM	10063	General Chemistry II Lab	1

**OR Exercise Specialist: (6 hours)**

CHEM	10050	Fundamentals of Chemistry	3
CHEM	10052	Intro to Organic Chemistry	2
CHEM	10053	Inorganic & Organic Lab (Spr only)	1

**Additional** ..... 3 or 6

Choose ONE or TWO from LER in Categories II-V. Select no more than  
one course from any Category.

**Exercise Physiology:** (other LER included in Basic Sciences)

Choose ONE (3)

**OR Exercise Specialist:** (3)

Choose TWO (3)

**Major Course Work (53 Exer. Phys. or 68 Exer. Spec. Hours)**

A minimum 2.25 GPA or better is required in all major coursework

**Core Requirements (20 hours)**

PEP	150	Intro to PE, Fitness & Sport	2
EXSC	15XXX	Intro to Exercise Science	2
PEP	25033	Lifespan Motor Development	3
EXSC	25057	Human Anatomy & Physiology I	3
GERO	14029	Intro to Gerontology	3
PEP	25054	Sport in Society (domestic diversity)	3
NUTR	23511	Nutrition Related to Health	3
w PEP	35010	Psych Dimensions (prereq. 25068)	3
EXSC	35054	Biomechanics (prereq. 25057)	3
w PEP	35065	History & Philosophy of Sport	3

**CONCENTRATION: Exercise Physiology (27 hours) (ESEP)**

ATTR	25036	Principles of Athletic Training	3
CHEM	20481	Basic Organic Chemistry I (CHEM 10061)	4
CHEM	30284	Intro to Biological Chemistry (prereq. 20481)	4
NUTR	33512	Nutrition (prereq. CHEM 20481)	3
EXSC	25058	Human Anatomy & Physiology II (25057)	3
PEP	25068	Measurement & Evaluation	3
EXSC	45080	Physiology of Exercise	3
EXSC	45091	Senior Seminar (Fall Only)	1
EXSC	45096	Individual Investigation in ES	3

**Fitness Assessment (6 hours)**

PEP	15018	Develop. & Analysis of Swimming	1
PEB	10035	Lifetime Fitness	2
PEB	12424	Exercise & Weight Control	1
EXSC	35022	Exercise Leadership	3

**CONCENTRATION: Exercise Specialist (42 hours) (ESES)**

ATTR	25036	Principles of Athletic Training	3
ATTR	45039	Therapeutic Rehabilitation	3
ATTR	45040	Path and Pharm for Allied Health	3
CHEM	20284	Physiological Chemistry (CHEM 10052)	4
NUTR	33512	Nutrition (prereq. CHEM 20481)	3
EXSC	25058	Human Anatomy & Physiology II (25057)	3
PEP	25068	Measurement & Evaluation	3
EXSC	35075	Exercise Programming (Spring only)(10035)	3
EXSC	40612	Exercise Leadership for the Older Adult	3
EXSC	45065	Exercise Testing (Fall only)(35075&45080)	3
EXSC	45070	Electrocardiography for Ex. Phys.	3
EXSC	45080	Physiology of Exercise (prereq. 25058)	3
EXSC	45490	Internship Seminar (Spring Only)	1
EXSC	45492	Internship Phys Fit/Cardiac Rehab (45490)	4

Electives-16-17 hours for Exer. Spec. (0 upper division hours) or 30-31 for Exer. Phys. (13 upper division hours)

See faculty advisor

.....  
.....  
.....

Total Hours Completed

I have reviewed the requirement sheet and professional requirements with an advisor

Student Signature \_\_\_\_\_

Advisor's Signature \_\_\_\_\_

[www.ehhs.kent.edu/oss](http://www.ehhs.kent.edu/oss)

Please refer to page 2 for program notes.

Core	_____
Movement Exper.	_____
Option	_____
General Electives	_____
Total for Degree	_____

**APPENDIX B:**

**CUYAHOGA COMMUNITY COLLEGE AND KSU**

Hello Dr. Ellen Glickman,

My name is Dr. Holly Clemens. I am an Associate Professor of PE and Health at Cuyahoga Community College. I am e-mailing you to see if we can have some type of future collaboration with your university and Cuyahoga Community College. We are in the process of completing a two-year Associate of Applied Science degree program in Sport Management and Exercise Studies. We will have two tracks including Sport Management and Exercise Science. We will also be including preparation for the ACSM Personal Trainer certification, perhaps Health Fitness Instructor certification, and NSCA Certified Personal Trainer certification (along with other certifications, such as Group Fitness Instructor, etc.).

We have been in contact with other universities on future collaboration and are getting welcome responses. Even though our program is a two-year final degree program, we are definitely inviting students to further enhance their education by completing an undergraduate degree program. We have designed our curriculum to meet KSAs of the American College of Sports Medicine so that our courses would transfer to programs at four-year universities, such as the Exercise Science and Human Movement programs at Kent State.

I would definitely like to see if this collaboration is possible with Tri-C and Kent State. Please contact me when you have time or let me know who if there are other faculty or administrators I should contact within your department. I would be more than glad to share our proposed curriculum and planning thus far. Our advisory board is meeting on April 26 to complete the program mapping and outcomes.

Sincerely,  
Holly Clemens, Ph.D.  
Associate Professor-PE/Health  
Cuyahoga Community College  
216-987-5070  
[holly.clemens@tri-c.edu](mailto:holly.clemens@tri-c.edu)



**APPENDIX C:**  
**LETTERS OF SUPPORT**

November 17, 2008

Heather Nettle, MA  
Coordinator, Exercise Physiology Services  
Exercise Physiologist  
Cleveland Clinic  
Sports Health and Orthopaedic Rehabilitation  
9500 Euclid Avenue  
Cleveland, Ohio 44195  
(216) 444-2096  
Nettleh@ccf.org

To Whom It May Concern:

I am writing on behalf of Ellen Glickman, Ph.D., Professor of Exercise Science School of Exercise, Leisure, and Sport. It has been brought to my attention that Kent State University is considering making an official undergraduate Exercise Science major. In my position as Coordinator, Exercise Physiology Services, part of my responsibilities include the review of job candidates and their qualifications as it pertains to Exercise Science. In a review of thirty applicants, I will likely have almost exclusively Exercise Science undergraduate degreed candidates. It is rare for me to come across individuals who have an undergraduate degree in something such as physical education, and if they do, the degree is often misleading. The field of Exercise Science and Physical Education really are two very separate disciplines. An individual who has a degree in Physical Education really does not have the qualifications or knowledge to provide the clinical care required in an exercise science or physiology position. It is for that reason alone, some excellent candidates may not receive the adequate consideration they deserve for positions. It is unlikely anyone in a position to hire Exercise Science candidates would do a thorough review of the program's curriculum in an initial screening of applicants. For this reason alone there are likely Kent State University graduates who have been overlooked for positions they are qualified.

I am a former alum of the Exercise Physiology graduate program, and acquired a Master's of Arts degree in Exercise Physiology. Had my official degree been a Master's of Education in Physical Education with a concentration in Exercise Physiology, I would not have been considered for the position I hold today.

In my professional opinion, the changes in coursework will enhance the Exercise Science and better prepare KSU graduates for professional positions as well. The professional direction for exercise physiologists will be changing over the next decade. As the geriatric population continues to grow, and healthcare changes to a more wellness based focus, exercise science majors can now look

forward to careers that include weight control and geriatric fitness and wellness programs. The field of Exercise Physiology is becoming increasingly diverse due to advancements in medical technology and medications available. Further, the field and scope of practice is growing every day, and educational programs need to adapt in order to produce students who are comfortable and knowledgeable in the newest trends and scopes of practice in the healthcare environment.

I am excited KSU is looking to enhance prospective members of the Exercise Science and Physiology community. Changes to the curriculum such as these can help recruit and retain some of the best and brightest in the field, and best plan for the future changes in Exercise Science. Please feel free to contact me with any questions you may have regarding this manner.

Sincerely,

A handwritten signature in black ink, appearing to read 'H. Nettle', with a large, stylized 'H' and a long, sweeping underline.

Heather Nettle, MA  
Coordinator, Exercise Physiology  
Services  
Cleveland Clinic  
Sports Health and Orthopaedic  
Rehabilitation



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
U.S. ARMY RESEARCH INSTITUTE OF ENVIRONMENTAL MEDICINE  
KANSAS STREET, BUILDING 42  
NATICK MA 01760-5007

November 17, 2008

Thermal and Mountain Medicine

Dear Sir/Madam:

I wish to express my full support for the changes that Dr. Ellen Glickman is implementing at Kent State University. I have known Dr. Glickman for 6 years as both my professor and a colleague. I have always been impressed with her professionalism and knowledge. Dr Glickman has been a full professor at Kent State for 10 years. I strongly believe that these implementations will strengthen the Exercise Physiology program at Kent State University.

Sincerely,

A handwritten signature in black ink, appearing to read "Rob Demes", is written over a series of horizontal dotted lines.

Rob Demes



To Whom It May Concern:

Kent State University has a strong exercise science program. We are the only program in Northeast Ohio that grants a PhD in this field and many of our graduates are professors at neighboring institutions (University of Akron, Cleveland State, and Mount Union). The problem is that our current major is called "physical education." This not only reduces the visibility of our program in the fitness and health care fields but also likely contributes to less of our graduates being hired.

Nearly all other Ohio institutions have defined exercise science majors and certain employers are looking for students with this degree. Take, for example, the University of Akron. Their major is called "sport science and wellness" which clearly delineates the scope of their program. Our current major is poorly defined to those in the health care field and a change needs to be made.

Program visibility is crucial in acquiring and maintaining students. With the current push towards preventative medicine and reduced health care cost, exercise science is at the forefront of the allied health professions. Many students are interested in strength and conditioning, nutritional supplements, and clinical research with the elderly. Although our lab has recently excelled in all of these areas, potential students cannot find our program because it is embedded within PE. Since both the fitness and clinical settings are becoming increasingly competitive, a person with a degree in exercise science has an edge on a person with a degree in physical education.

I am currently in the PhD program at Kent State after completing both the bachelor's and masters programs here in physical education/exercise science. As an undergrad, I took several courses that did not prepare me to go out and get a job in the health and fitness field. Drs. Glickman and Barkley have proposed revamping the current curriculum, removing courses that have not helped our students and adding courses like Gerontology and Nutrition Related to Health which are highly recommended by physical and occupational therapy schools.

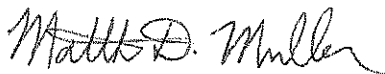
**School of Exercise, Leisure and Sport**

P.O. Box 5190 • Kent, Ohio 44242-0001

(330) 672-2012 • Fax: (330) 672-4106 • <http://www.kent.edu>

On a personal note, I will be entering medical school next year. After taking all of the biology, chemistry, physics, and calculus classes as an undergrad, I find it frustrating to defend my academic background to admissions personnel. My training is in physiology research and I do not consider myself a physical educator. Since our program teaches "exercise science," we should be designated as such by removing unneeded courses, adding courses that will help our students, and changing to become our own major.

Sincerely,

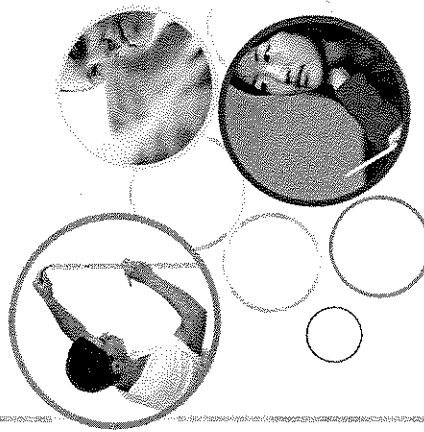
A handwritten signature in black ink that reads "Matthew D. Muller". The signature is written in a cursive style with a large, stylized 'M' and 'D'.

Matthew D. Muller, M.A.

**APPENDIX D:**

**OHIO JOB AND FAMILY SERVICES  
OCCUPATIONAL TRENDS 2006- 2016**

# Career Opportunities



## Occupational Trends 2006-2016

Occupational trends are only one aspect of career choice and education planning. Other factors to consider include wages, job satisfaction, general unemployment patterns, method of obtaining the required education or training, and working conditions. Use the following sources for additional information:

The Ohio Job Outlook includes industry and occupational employment projections for the State of Ohio.

<http://OhioJOL.com/proj/OhioJobOutlook.htm>

The Occupational Outlook Handbook offers national information about required training and education, earnings, job prospects, what workers do on the job and working conditions.

<http://www.bls.gov/oco/>

Local One-Stop Offices can offer assistance with career decisions.

<http://ifs.ohio.gov/workforce/jobseekers/onesstopmap.stm>



Ted Strickland, Governor

Jan Allen, Acting Director  
Ohio Department of Job and Family Services  
Office of Workforce Development  
Bureau Labor Market Information  
P.O. Box 1618  
Columbus, Ohio 43216-1618  
Phone (614) 752-9494

(12/2008)

Equal Opportunity Employer and Service Provider

## Occupational Trends 2006-2016

Identifying occupations with favorable job prospects is important when making career decisions. Several factors need to be considered. The two most important are the employment growth rate and total job openings.

Jobs with fast growth rates generally offer good job opportunities.

However, large occupations with slow or moderate job growth often provide more job openings than small, fast-growing occupations. For example, occupational therapist assistants are expected

to grow by 31 percent with 109 job openings a year, while cashiers are expected to grow by only 13 percent, but will provide 6,600 openings per year. Therefore, it is important to look at both the rates of growth and total annual openings to determine future job prospects.

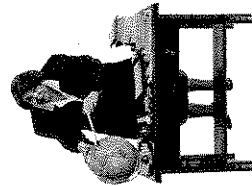
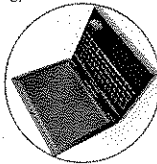
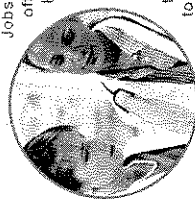
Jobs will be available at all education levels. Not surprisingly, among the 100 highest paying jobs, 92 require at least post-secondary training. Jobs requiring at least some formal training after high school will grow at a faster than average rate—10.7 percent compared to the statewide projected average of 5.0 percent.

Total annual openings result from new job growth and replacement job openings due to transfers, deaths, or retirements. Many occupations with the most annual openings have high employment and high replacement needs and tend to be lower skilled. However, more than one in four of these jobs will require training after high school.

Most job openings in the majority of occupations result from the need to replace workers who leave the labor force or transfer to another occupation. Therefore, even declining occupations provide opportunities for employment, although job prospects are generally not as favorable as in growing occupations. Examples of declining occupations in Ohio that will have substantial replacement needs include cashiers, stock clerks and order fillers; team assemblers; and general and operations managers.

The fastest growing occupations, based on rate of employment growth, offer good employment opportunities and conditions favorable for wage advances. More than 60 percent of fast-growing occupations require at least a bachelor's degree. The projected employment growth rates of these occupations are impressive compared to the 5.0 percent projected growth for all occupations combined. However, remember that annual openings may be few.

Service and professional occupations, particularly in the fields of health, business, and education, dominate the list of occupations gaining the most employment or growing the fastest.



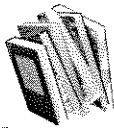


## Evaluate Interests

Students should evaluate their interests, skills and aptitudes when choosing careers. However, another factor to consider is the number of job opportunities that are likely to be available upon graduation. In addition to the expected number of annual openings, the number of students entering a career field affects how easy or difficult it may be to find a job.

## Education and Training

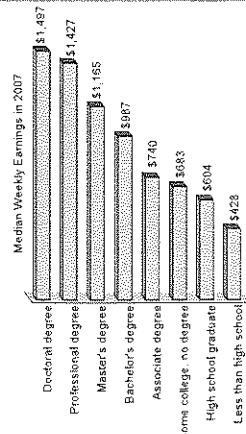
For one in seven occupations, high school is the usual education attained. The fastest growing occupations are those with workers with at least some college education.



On the whole, workers with higher levels of education have more options in the job market and better prospects for obtaining higher paying jobs than those with less education.

### Education Pays

Education and training can benefit workers in their careers. Typically, the more education, the higher the weekly earnings.



Earnings are for full-time wage and salary workers, ages 25 and over, in the United States.

Source: U. S. Bureau of Labor Statistics

## Occupations in Ohio with High-Employment Prospects

The occupations listed below offer an average median wage of \$14.85 an hour and are projected to have at least 750 openings per year.

Occupational Title	Average Annual Openings 2006-2016	Average Wage May 2007
<b>MODERATE-TERM ON-THE-JOB TRAINING</b>		
Customer Service Representatives	3,958	\$15.00
Truck Drivers, Heavy & Tractor-Trailer	2,001	\$18.25
Bookkeeping, Accounting & Auditing Clerks	1,795	\$15.15
Construction Laborers	537	\$17.77
<b>LONG-TERM ON-THE-JOB TRAINING</b>		
Carpenters	928	\$18.37
Fire Fighters	503	\$19.08
Police & Sheriff's Patrol Officers	854	\$22.55
Electricians	758	\$22.81
<b>WORK EXPERIENCE IN A RELATED OCCUPATION</b>		
Sales Reps., Wholesale & Mfg., ex. Tech./Sci. Products	1,876	\$30.12
Executive Secretaries & Administrative Assistants	1,545	\$18.67
First-Line Supervisors & Mgrs. of Retail Sales Workers	1,334	\$18.39
First-Line Supervisors & Mgrs. of Office & Admin. Support	953	\$21.87
First-Line Supervisors & Mgrs. of Prod./Operating Workers	699	\$24.49
<b>POSTSECONDARY VOCATIONAL AWARD</b>		
Licensed Practical & Licensed Vocational Nurses	1,593	\$18.67
Automotive Service Technicians & Mechanics	801	\$17.03
<b>ASSOCIATE DEGREE</b>		
Registered Nurses	4,425	\$27.56
Computer Support Specialists	652	\$19.70
<b>BACHELOR'S DEGREE</b>		
Elementary School Teachers, ex. Special Education	1,831	\$31.880*
Secondary School Teachers, ex. Special & Voc. Ed.	1,367	\$28.41
Insurance Sales Agents	903	\$25.99
Computer Software Engineers, Applications	880	\$37.29
Middle School Teachers, ex. Special & Voc. Ed.	830	\$35.29*
Computer Systems Analysts	730	\$34.21
Network Systems & Data Communication Analysts	544	\$34.32
Securities, Commodities & Financial Service Sales Agents	542	\$32.82
Network & Computer Systems Administrators	523	\$29.98
<b>WORK EXPERIENCE PLUS A BACHELOR'S OR HIGHER DEGREE</b>		
Postsecondary Teachers	1,547	\$66.157*
General & Operations Managers	1,369	\$47.17
Management Analysts	706	\$36.75
Lawyers	642	\$48.42

\*Training is met through a two-year associate degree, a three-year diploma or a four-year bachelor's degree.

\*Annual earnings, typically for a 9-month school year.

## Occupations in Ohio with the Most Annual Job Openings 2006-2016

Occupational Title	Average Annual Openings 2006-2016	Average Wage May 2007
Cashiers	6,630	\$6.44
Waiters & Waitresses	6,370	\$8.12
Retail Salespersons	5,867	\$11.51
Registered Nurses	4,425	\$27.56
Laborers and Freight, Stock & Material Movers, Hand	4,125	\$11.72
Customer Service Representatives	3,958	\$15.00
Comb. Food Prep. & Service Workers, Inc. Fast Food	3,401	\$7.79
Office Clerks, General	2,734	\$11.93
Janitors & Cleaners, ex. Maids & Housekeeping	2,461	\$11.48
Home Health Aides	2,408	\$9.64
Truck Drivers, Heavy & Tractor-Trailer	2,001	\$18.25
Sales Reps., Wholesale & Mfg., ex. Tech./Scientific Products	1,876	\$30.12
Team Assemblers	1,850	\$13.29
Nursing Aides, Orderlies & Attendants	1,801	\$11.20
Bookkeeping, Accounting & Auditing Clerks	1,795	\$15.15
Food Preparation Workers	1,714	\$9.07
Elementary School Teachers, ex. Special Education	1,631	\$51.880*
Child Care Workers	1,618	\$6.93
Licensed Practical & Licensed Vocational Nurses	1,593	\$18.57
Second School Teachers, ex. Special & Voc. Ed.	1,586	\$53.420*
Postsecondary Teachers	1,547	\$66.157*
Executive Secretaries & Administrative Assistants	1,545	\$18.67
Stock Clerks & Order Fillers	1,538	\$10.80
Receptionists & Information Clerks	1,422	\$11.14
General & Operations Managers	1,369	\$47.17
Accountants & Auditors	1,357	\$28.41
Cooks, Restaurant	1,356	\$9.99
First-Line Supervisors & Mgrs. of Retail Sales Workers	1,334	\$18.39
Tellers	1,255	\$10.83
Cooks, Fast Food	1,184	\$6.24

\*Annual earnings, typically for a 9-month school year.

## Ohio's Fastest Growing Occupations 2006-2016

Occupational Title	Projected Employment Growth Rate 2006-2016	Average Annual Wage May 2007
Home Health Aides	48.1%	\$9.64
Network Systems/Data Comm. Analysts	47.6%	\$34.32
Personal & Home Care Aides	40.8%	\$9.44
Computer Software Engineers, Applications	38.9%	\$37.29
Skin Care Specialists	37.9%	\$13.50
Personal Financial Advisors	34.0%	\$41.04
Subst. Abuse/Behav. Disorder Counselors	34.0%	\$16.52
Social & Human Service Assistants	33.6%	\$12.74
Veterinary Technologists & Technicians	33.2%	\$13.87
Medical Assistants	32.1%	\$12.47
Physical Therapist Assistants	31.8%	\$22.64
Veterinarians	30.2%	\$43.56
Mental Health Counselors	29.9%	\$19.85
Mental Health/Subst. Abuse Soc. Workers	29.8%	\$17.15
Appraisers & Assessors of Real Estate	28.5%	\$23.52
Manicurists & Pedicurists	27.3%	\$11.30
Health Educators	26.1%	\$20.03
Occupational Therapist Assistants	25.3%	\$22.02
Physical Therapists	24.8%	\$34.80
Social & Community Service Managers	24.5%	\$27.96
Medical & Public Health Social Workers	24.5%	\$20.68
Database Administrators	24.4%	\$32.47
Environmental Engineers	24.3%	\$37.03
Financial Analysts	23.6%	\$33.63
Physician Assistants	23.4%	\$38.12
Occupational Therapists	23.0%	\$33.95
Cardiovascular Technologists & Technicians	22.7%	\$22.98
Registered Nurses	22.6%	\$27.56
Surgical Technologists	22.4%	\$17.36
Fitness Trainers & Aerobics Instructors	22.3%	\$12.02

# KENT STATE UNIVERSITY

## CERTIFICATION OF CURRICULUM PROPOSAL

Preparation Date 26-Nov-08

Curriculum Bulletin \_\_\_\_\_

Effective Date Fall 2009

Approved by EPC \_\_\_\_\_

Department SCHOOL OF EXERCISE LEISURE  
College EH - Education, Health and Human Services  
Degree BA - Bachelor of Arts  
Program Name **EXERCISE SCIENCE** Program Code \_\_\_\_\_  
Concentration(s) EXERCISE PHYSIOLOGY AND EXERCISE SPECIALIST Concentration(s) Code(s) \_\_\_\_\_  
Proposal Establish Program

### Description of proposal:

THE NEW PROGRAM WILL BE CALLED "EXERCISE SCIENCE MAJOR" WITHIN THE SCHOOL OF EXERCISE LEISURE AND SPORT. THE EXERCISE SCIENCE MAJOR (IS A CONCENTRATION WITH TWO OPTIONS AND THEREBY) IS A MODIFICATION OF THE PHYSICAL EDUCATION PROFESSIONAL MAJOR.

Does proposed revision change program's total credit hours? ☐ Yes ☒ No

Current total credit hours: 121

Proposed total credit hours 121


Describe impact on other programs, policies or procedures (e.g., encroachment and duplication issues; enrollment and staffing considerations; need; audience; prerequisites; teacher education licensure):

THE NEW MAJOR WILL CHANGETHE PREFIX TO SEVERAL COURSES IN THE ATHLETIC TRAINING MAJOR (ATTR), HEALTH AND PHYSICAL EDUCATION, PHYSICAL EDUCATION TEACHER EDUCATION, HUMAN MOVEMENT SCIENCES, INTEGRATED HEALTH STUDIES THAT CAN BE MODIFIED WHEN THEY ARE REVIEWED.

Units consulted (other departments, programs or campuses affected by this proposal):

SCHOOL OF EXERCISE, LESIURE AND SPORT  
FAMILY AND CONSUMER STUDIES (NUTRITION, GERONTOLOGY)

### REQUIRED ENDORSEMENTS

  
\_\_\_\_\_  
Department/Chair / School Director / Campus Dean

12/4/08

\_\_\_\_\_  
College Dean

\_\_\_\_/\_\_\_\_/\_\_\_\_

\_\_\_\_\_  
Executive Dean of Regional Campuses / Dean of Graduate Studies

\_\_\_\_/\_\_\_\_/\_\_\_\_

\_\_\_\_\_  
Senior Vice President for Academic Affairs and Provost

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