

## NEW GRADUATE CERTIFICATE

*A graduate certificate shall have a clear and focused academic topic or competency as its subject, meet a clearly defined educational need of a constituency group, such as required continuing-education or accreditation for a particular profession, respond to a specific state mandate or provide a basic competency in an emerging (preferably interdisciplinary) topic. Certificates are minimally nine graduate credit hours but typically no more than 15. Completed forms must receive appropriate department/school approval and sent to the college for review.*

*Once approved at the college level, your college will send the proposal to the Graduate Council for review. Once approved at the Graduate Council, the Graduate Council will send the proposal to the Senate Council office for additional review via a committee and then to the Senate Council. Once the Senate Council has approved the proposal, it is moved to the University Senate. Once approved by that body, the University Senate will send the proposal to the Registrar to be included in the Bulletin. The contact person listed on the form will be informed throughout this process.*

*By default, graduate certificates shall be approved for a period of six (6) years. Re-approvals are also for six years.*

1. GENERAL INFORMATION			
1a	Date of contact with Institutional Effectiveness <sup>1</sup> :	11/20/2015	
	<input checked="" type="checkbox"/> Appended to the end of this form is a PDF of the reply from Institutional Effectiveness.		
1b	Home college: <i>Education</i>		
1c	Home educational unit (department, school, college <sup>2</sup> ): <i>Department of Kinesiology and Health Promotion</i>		
1d	Proposed certificate name: <i>High Performance Coaching</i>		
1e	CIP Code (provided by <a href="#">Institutional Effectiveness</a> ):	31.0505	
1f	Requested effective date:	<input checked="" type="checkbox"/> Fall semester following approval.	OR <input type="checkbox"/> Specific Date <sup>3</sup> : <i>Fall 20</i>
1g	Contact person name: <i>Mark Abel</i>	Email: <i>mark.abel@uky.edu</i>	Phone: <i>257-4091</i>
2. OVERVIEW			
2a	Provide a brief description of the proposed new graduate certificate. (300 word limit)		
	<i>The field of High Performance Coaching is a relatively new profession in the United States that is quickly gaining popularity and creating new employment opportunities. Collegiate and professional teams are hiring High Performance Coaches to optimize athlete development. The role of the High Performance Coach is to collaborate with other team specialists to enhance the performance of the athlete. Traditionally, athletes' consulted with Nutritionists, Sport Psychologists, Sports Medicine personnel, and Strength and Conditioning Coaches independently. Contemporarily, it has become the role of the High Performance Coach to collaborate with these</i>		

<sup>1</sup> You can reach Institutional Effectiveness by phone or email (257-2873 or [institutionaleffectiveness@uky.edu](mailto:institutionaleffectiveness@uky.edu)).

<sup>2</sup> Only cross-disciplinary graduate certificates may be homed at the college level.

<sup>3</sup> Certificates are typically made effective for the semester following approval. No program will be made effective unless all approvals, up through and including University Senate approval, are received.

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	<i>professionals, collect additional physiological data and integrate this information to enhance athletes' performance. Currently, there are no academic programs in the United States to prepare professionals for the unique needs of a High Performance Coach.</i>		
2b	This proposed graduate certificate (check all that apply):		
	<input checked="" type="checkbox"/> Has a clear and focused academic competency as its subject.		
	<input type="checkbox"/> Meets a clearly defined educational need of a constituency group (e.g. continuing education or licensing)		
	<input type="checkbox"/> Responds to a specific state mandate.		
	<input checked="" type="checkbox"/> Provides a basic competency in an emerging, preferably interdisciplinary, topic.		
2c	<b>Affiliation.</b> Is the graduate certificate affiliated with a degree program? ( <i>related to 3c</i> )	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
	If "yes," include a brief statement of how it will complement the program. If "no," incorporate a statement as to how it will provide an opportunity for a student to gain knowledge or skills not already available at UK. (300 word limit)		
	<i>The Graduate Certificate in High Performance Coaching will complement the graduate program in Exercise Science by adding a curriculum that will enhance the academic preparation for individuals interested in becoming a Strength and Conditioning Coach, High Performance Coach, or Fitness Professional.</i>		
2d	<b>Duplication.</b> Are there similar regional or national offerings?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
	If "Yes," explain how the proposed certificate will or will not compete with similar regional or national offerings.		
	<i>Despite an increased demand for prepared High Performance Coaches, we have not been able to identify any programs in the United States.</i>		
2e	<b>Rationale and Demand.</b> State the rationale for the new graduate certificate and explain the need for it (e.g. market demand, student requests, state mandate, interdisciplinary topic). (400 word limit)		
	<i>Market Demand: There has been an increase in the number of High Performance Coaching positions at professional and collegiate levels in the United States; a trend that has been evident in other countries for quite some time. There are limited academic programs to prepare individuals for these positions. Therefore, this program would be the first of its kind in the United States.</i>		
	<i>Interdisciplinary Topic: The Graduate Certificate in High Performance Coaching represents an interdisciplinary approach to Coaching. As demanded by the profession, the High Performance Coach must possess skills in Exercise Physiology, Strength and Conditioning, Sport Psychology, Leadership, and Analytics. Therefore the curriculum will reflect coursework in these interdisciplinary content areas.</i>		
2f	<b>Target student population.</b> Check the box(es) that apply to the target student population.		
	<input checked="" type="checkbox"/> Currently enrolled graduate students.		
	<input type="checkbox"/> Post-baccalaureate students.		
2g	Describe the demographics of the intended audience. (150 word limit)		
	<i>The intended demographic is primarily graduate students in Exercise Science. However, this Certificate may also attract students (as a complementary certificate/training) currently enrolled in other graduate programs on campus (e.g., Rehabilitation Sciences, Nutrition, etc.).</i>		
2h	<b>Projected enrollment.</b> What are the enrollment projections for the first three years?		
	Year 1	Year 2 (Yr. 1 continuing + new	Year 3 (Yrs. 1 and 2 continuing +

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			<i>entering)</i>	<i>new entering)</i>
	<i>Number of Students</i>	3	8	13
2i	<b>Distance learning (DL).</b> Initially, will any portion of the graduate certificate be offered via DL?			Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
	If "Yes," please indicate below the percentage of the certificate that will be offered via DL.			
	1% - 24% <input type="checkbox"/>	25% - 49% <input type="checkbox"/>	50% - 74% <input type="checkbox"/>	75 - 99% <input type="checkbox"/> 100% <input type="checkbox"/>
	If "Yes," describe the DL course(s) in detail, including the number of required DL courses. (300 word limit)			
<b>3. ADMINISTRATION AND RESOURCES</b>				
3a	<b>Administration.</b> Describe how the proposed graduate certificate will be administered, including admissions, student advising, retention, etc. (150 word limit)			
	<i>Applications for the High Performance Coaching Certificate will be sent to a staff assistant. Then, Certificate Faculty (listed below) will review the applications and determine acceptance into the Certificate Program. Upon acceptance, a Certificate faculty member will advise the student regarding sequence of courses, identifying an appropriate elective and evaluating the student's performance.</i>			
3b	<b>Faculty of Record and Certificate Director.</b> (related to 2c) The faculty of record consists of the graduate certificate director and other faculty who will be responsible for planning and participating in the certificate program. The director must be a member of the Graduate Faculty of the University and is appointed by the dean of the Graduate School. The faculty of record must be comprised of three or more faculty. At least three members of the graduate certificate's faculty of record must be members of the Graduate Faculty.			
	The graduate certificate is affiliated with a degree program.			Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
	If "Yes," list the name of the affiliated degree program below. If "No," describe below the process for identifying the faculty of record and the certificate director, including selection criteria, term of service, and method for adding and removing members. (150 word limit)			
	Graduate Program in Exercise Science - Faculty Certificate Program Faculty: Mark Abel, PhD, CSCS*D, TSAC*D, USAW, Associate Professor, Full Graduate Faculty Rob Shapiro, PhD, Associate Dean, Professor, Full Graduate Faculty Marc Cormier, PhD, CC-AASP Lecturer Steve Parker, EdD, Associate Dean, Associate Professor, Associate Graduate Faculty Justin Nichols, PhD, Lecturer			
3c	<b>Course utilization.</b> Will this graduate certificate include courses from another unit(s)?			Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
	If "Yes," two pieces of supporting documentation are required.  <input type="checkbox"/> Check to confirm that appended to the end of this form is a letter of support from the other units' chair/director <sup>4</sup> from which individual courses will be used. The letter must include demonstration of true collaboration between multiple units <sup>5</sup> and impact on the course's use on the home educational unit.			

<sup>4</sup> A dean may submit a letter only when there is no educational unit below the college level, i.e. there is no department/school.

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	<input type="checkbox"/> Check to confirm that appended to the end of this form is verification that the chair/director of the other unit has consent from the faculty members of the unit. This typically takes the form of meeting minutes.
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3d	<b>Financial Resources.</b> What are the (non-course) resource implications for the proposed graduate certificate, including any projected budget needs? (300 word limit)
	<i>We will likely need to hire an instructor to teach the Analytics course.</i>

3e	<b>Other Resources.</b> Will the proposed certificate utilize resources (e.g. departmentally controlled equipment or lab space) from additional units/programs?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
	If "Yes," identify the other resources that will be shared. (150 word limit)		

	<p>If "Yes," two pieces of supporting documentation are required.</p> <p><input type="checkbox"/> Check to confirm that appended to the end of this form is a letter of support from the appropriate chair/director<sup>4</sup> of the unit whose "other resources" will be used.</p> <p><input type="checkbox"/> Check to confirm that appended to the end of this form is verification that the chair/director of the other unit has consent from the faculty members of the unit. This typically takes the form of meeting minutes.</p>
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**4. IMPACT**

4a	<b>Other related programs.</b> Are there any related UK programs and certificates?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
	If "Yes," describe how the new certificate will complement these existing UK offerings. (250 word limit)		

	<p>If "Yes," two pieces of supporting documentation are required.</p> <p><input type="checkbox"/> Check to confirm that appended to the end of this form is a letter of support from each potentially-affected academic unit administrators.</p> <p><input type="checkbox"/> Check to confirm that appended to the end of this form is verification that the chair/director has input from the faculty members of the unit. This typically takes the form of meeting minutes.</p>
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**5. ADMISSIONS CRITERIA AND CURRICULUM STRUCTURE**

5a	<b>Admissions criteria.</b> List the admissions criteria for the proposed graduate certificate. (150 word limit)
	<ul style="list-style-type: none"> <li>• <i>Students are required to take four core KHP classes as requirements for the Certificate, as well as one elective course.</i></li> <li>• <i>In order to remain in good standing, the Graduate School requires that a student must have a minimum GPA of 3.0 in the set of courses required for completion of the graduate certificate in order to be awarded the certificate.</i></li> <li>• <i>Courses taken within two years prior to admission to the certificate can be used in the certificate.</i></li> <li>• <i>Certificates will only be awarded to students who have completed a four-year bachelors degree.</i></li> <li>• <i>The Director approves the individual certificate curriculum for each student and informs</i></li> </ul>

<sup>5</sup> Show evidence of detailed collaborative consultation with such units early in the process.

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<i>the Registrar when the certificate is complete and may be awarded.</i>			
<b>5b Core courses.</b> List the required core courses below.			
Prefix & Number	Course Title	Credit Hrs	Course Status <sup>6</sup>
<i>KHP 690</i>	<i>Applied Foundations of High Performance</i>	3	New
<i>KHP 691</i>	<i>Analytics in High Performance</i>	3	New
<i>KHP 683</i>	<i>Leadership, Theory, and Practice</i>	3	No Change
<i>KHP 547</i>	<i>Psychology of Sport and Physical Activity</i>	3	No Change
<i>***Please select from the following electives to achieve a minimum of 15 credit hours for the Certificate (see list of suggested electives below)</i>			Select one....
<i>Total Credit Hours of Core Courses:</i>			
<b>5c Elective courses.</b> List the electives below.			
Prefix & Number	Course Title	Credit Hrs	Course Status <sup>7</sup>
<i>KHP 557</i>	<i>Practicum in Exercise Science</i>	<i>3-6 cr</i>	No Change
<i>KHP 695</i>	<i>Independent Study</i>	<i>1-3 cr</i>	No Change
<i>KHP 580</i> <i>KHP 550</i>	<i>Group Dynamics in Sport and Physical Activity</i> <i>Principles of Resistance Training</i>	3 3	No Change
<i>CNU 605</i>	<i>Wellness in Sport Nutrition</i>	3	No Change
<i>KHP 720</i> <i>AT 700</i>	<i>KHP 720: Sports Medicine</i> <i>AT 700: Muscle Mechanics</i>	3 3	No Change
<i>STA 671/672</i>	<i>Regression and Correlation / Design and Analysis of Experiments</i>	<i>2 cr each</i>	No Change
<b>5d</b>	Are there any other requirements for the graduate certificate? If "Yes," note below. <i>(150 word limit)</i>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
	<i>Select 1 of the above electives</i>		

<sup>6</sup> Use the drop-down list to indicate if the course is a new course ("new"), an existing course that will change ("change"), or if the course is an existing course that will not change ("no change").

<sup>7</sup> Use the drop-down list to indicate if the course is a new course ("new"), an existing course that will change ("change"), or if the course is an existing course that will not change ("no change").

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5e	Is there any other narrative about the graduate certificate that should be included in the Bulletin? If “Yes,” please note below. (300 word limit)	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<p><i>The field of High Performance Coaching is a relatively new profession in the United States that is quickly gaining popularity and creating new employment opportunities. Collegiate and professional teams are hiring High Performance Coaches to optimize athlete development. The role of the High Performance Coach is to collaborate with other team specialists to enhance the performance of the athlete and requires an interdisciplinary skillset encompassing exercise physiology, strength and conditioning, analytics, leadership, and sport psychology.</i></p>			
<p><b>6. ASSESSMENT</b></p>			
6a	<p><b>Student learning outcomes.</b> Please provide the student learning outcomes for the graduate certificate. List the knowledge, competencies, and skills (learning outcomes) students will be able to do upon completion. (Use action verbs, not simply “understand.”) (250 word limit)</p>		
<ul style="list-style-type: none"> <li>• <i>The certificate requires that students apply physiological principles related to strength and conditioning methodologies.</i></li> <li>• <i>Students completing the certificate will demonstrate the leadership skills required to be an effective High Performance Coach.</i></li> <li>• <i>Students will demonstrate the ability to analyze performance metrics to design individualized programs to facilitate recovery and enhance performance.</i></li> <li>• <i>Students will be able to apply psychological principles to optimize athletic performance.</i></li> </ul>			
6b	<p><b>Student learning outcome (SLO) assessment.</b> How and when will student learning outcomes be assessed? Please map proposed measures to the SLOs they are intended to assess. Do not use grades or indirect measures (e.g. focus groups, surveys) as the sole method. Measures likely include artifacts such as course-embedded assessment (e.g., portfolios, research papers or oral presentations); and course-embedded test items (embedded test questions, licensure/certification testing, nationally or state-normed exams). (300 word limit)</p>		
<p><i>KHP 690 - Applied Foundations of High Performance: Take in 1<sup>st</sup> year, Spring term</i>  <i>Measures: Oral presentations (seminar format); literature review paper</i>  <i>Benchmark: Students are required to achieve proficiency in describing physiological principles associated with strength and conditioning.</i></p> <p><i>KHP 691 - Analytics in High Performance: Take in 2<sup>nd</sup> year, Fall term</i>  <i>Measures: Data analysis and interpretation project</i>  <i>Benchmark: Students are required to achieve proficiency in analyzing and interpreting data sets.</i></p> <p><i>KHP 547-Psychology of Sport and Physical Activity: Take in 2<sup>nd</sup> year, Spring term</i>  <i>Measures: Development of a Resource Manual</i>  <i>Benchmark: Students are required to achieve proficiency in developing a resource manual for a specific aspect of sport psychology.</i></p> <p><i>KHP 683 - Leadership, Theory, and Practice: Take in 2<sup>nd</sup> year, Spring term</i>  <i>Measures: Group work, projects, and presentations</i>  <i>Benchmark: Students are required to achieve proficiency in demonstraing leadership skills through group work, projects, and presentations.</i></p> <p><i>In addition, the student will be required do demonstrate proficiency in the above content areas in the Graduate School's (required) final Oral Examination.</i></p>			

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6c	<p><b>Certificate outcome assessment<sup>8</sup>.</b> Describe evaluation procedures for the proposed graduate certificate. Include how the faculty of record will determine whether the program is a success or a failure. List the benchmarks, the assessment tools, and the plan of action if the program does not meet its objectives. <i>(250 word limit)</i></p>
	<p><i>Evaluation procedures for the High Performance Coaching Certificate will include achieving the proposed student enrollment benchmarks outlined in 2h. Assessment tools include a survey of existing students to identify the students' perception of the Certificate's quality and perceived deficiencies. Modifications of specific courses and the certificate requirements will be considered and implemented if warranted and determined to be feasible. These assessments will be evaluated on an annual basis.</i></p>

**7. OTHER INFORMATION**

7a	Is there any other information about the graduate certificate to add? <i>(150 word limit)</i>
	NA

**8. APPROVALS/REVIEWS**

Information below does not supersede the requirement for individual letters of support from educational unit administrators and verification of faculty support (typically takes the form of meeting minutes).

	Reviewing Group Name	Date Approved	Contact Person Name/Phone/Email
8a	<i>(Within College) In addition to the information below, attach documentation of department and college approval. This typically takes the form of meeting minutes but may also be an email from the unit head reporting department- and college-level votes.</i>		
	<i>KHP Dept. Faculty</i>	<i>10/22/2015</i>	<i>Ben Johnson / 257-5827 / bfjohnson@uky.edu</i>
	<i>COE C&amp;C</i>	<i>4/25/2016</i>	<i>Justin K. Nichols/257-4748/justin.nichols2@uky.edu</i>
	<i>College of Education</i>	<i>5/30/2016</i>	<i>Rosetta Sandidge/8-2887/rosetta.sandidge@uky.edu</i>
			/ /

8b	<b>(Collaborating and/or Affected Units)</b>		
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8c	(Senate Academic Council)	<b>Date Approved</b>	<b>Contact Person Name</b>
	Health Care Colleges Council (if applicable)		
	Graduate Council		

<sup>8</sup> This is a plan of how the certificate will be assessed, which is different from assessing student learning outcomes.

# **Graduate Certificate in High Performance Proposal**

## **Overview**

The field of High Performance Coaching is a relatively new profession in the United States that is quickly gaining popularity and creating new employment opportunities. Collegiate and professional teams are hiring High Performance Coaches to optimize athlete development. The role of the High Performance Coach is to collaborate with other team specialists to enhance the performance of the athlete. Traditionally, athletes' consulted with Nutritionists, Sport Psychologists, Sports Medicine personnel, and Strength and Conditioning Coaches independently. Contemporarily, it has become the role of the High Performance Coach to collaborate with these professionals, collect additional physiological data and integrate this information to enhance performance. Currently, there are few academic programs in the United States to prepare professionals for the unique needs of a High Performance Coach.

## **Certificate Standards**

Dedicated to the University of Kentucky's mission of providing excellence in teaching, research, and service, and developing innovative partnerships, the Graduate Certificate in High Performance promotes a broad array of values, knowledge, and skills essential to the field of athletic development. As such, the proposed Graduate Certificate has the potential to attract high quality students.

- In order to remain in good standing, the Graduate School requires that a student must have a minimum GPA of 3.0 in the set of courses required for completion of the graduate certificate in order to be awarded the certificate.
- Students are required to take four core KHP classes as requirements for the Certificate, as well as one elective course.
- Courses taken within two years prior to admission to the certificate can be used in the certificate.
- Certificates will only be awarded to students who have completed a four-year bachelors degree.
- The Director approves the individual certificate curriculum for each student and informs the Registrar when the certificate is complete and may be awarded.

## **Administrative Structure**

The Faculty Director for the High Performance Graduate Certificate will be Dr. Mark Abel, Associate Professor of Exercise Physiology, Director of the Exercise Physiology Laboratory, and an instructor in the Certificate curriculum. Dr. Abel will work with the affiliated faculty on any and all curricular components.

## **Certificate Curriculum**

The Certificate curriculum is focused on enhancing the students' understanding of: physiological and applied concepts related to strength training and conditioning; analytical aspects related to physiological readiness and the stress-response to physiological and psychological stimuli; leadership dynamics within an athletic setting; and psychology of athletic performance.

Collectively, students will demonstrate a proficiency in these content areas to provide the foundation for career as a High Performance Coach and the following positions: Sports scientist, High Performance Manager, Strength and Conditioning Coach, Professional Coach, Fitness Coach, Rehabilitation Coach, Performance Analyst, Fitness Advisor, Sports Science Manager.

### **Certificate Learning Outcomes**

- The certificate requires that students apply physiological principles related to strength and conditioning methodologies.
- Students completing the certificate will demonstrate the leadership skills required to be an effective High Performance Coach.
- Students will demonstrate the ability to analyze performance metrics to design individualized programs to facilitate recovery and enhance performance.
- Students will be able to apply psychological principles to optimize athletic performance.

### **Certificate Core Courses**

Students must enroll in each of the following courses:

#### **KHP 690 –Applied Foundations of High Performance**

*(New course:* To be offered in Spring; To be taken in the 1<sup>st</sup> year Spring term for Exercise Science graduate students; 3 credits) –Instructor: Dr. Mark Abel

Prerequisite: Graduate level course in Exercise Physiology (e.g., KHP 620) or consent of instructor.

This course evaluates physiological responses to exercise stimuli including a detailed examination of neuromuscular, metabolic and morphological skeletal muscle adaptations. In addition, factors that affect force production, advanced periodization, concurrent training, and recovery strategies are examined. Finally, applied training strategies and evaluations are discussed and performed.

#### **KHP 691 – Analytics in High Performance** (*New course;* To be taken in the 2<sup>nd</sup> year Fall term; 3 credits) – Instructor: Dr. Mark Abel / TBD

This course examines the use of athlete monitoring systems and other metrics to evaluate the stress-response relationship. Functional systems theory and other stress-response theories are discussed and applied to training and recovery strategies to optimize athlete performance. An emphasis is placed on data analysis and visualization of data trends.

#### **KHP 547 - Psychology of Sport and Physical Activity** (*Existing course;* To be taken in the 2<sup>nd</sup> year Spring term; 3 credits) – Instructor: Dr. Marc Cormier

The field of sport psychology is an interdisciplinary science that explores the relationship between various psychological factors and participation in sport and/or physical activity. This course is designed to provide an in depth overview of the psychological aspects of sport.

Throughout the course, participants will explore, sport psychology theory, research, and various psychological methods of sport- and exercise-related performance enhancement. Additionally, specific ethical and legal aspects of providing sport performance enhancement services to various clientele (e.g., athletes, coaches, parents, etc.). Specific course objectives include the following: To establish a solid theoretical foundation related to applied sport psychology; To understand the impact of psychological factors on performance in sport and physical activity; To acquire the necessary skills and knowledge about applied sport psychology that can be applied in various personal and professional situations.

**KHP 683 - Leadership, Theory, and Practice** (Existing course; To be taken in the 2<sup>nd</sup> year Spring term; 3 credits) –Instructor: Dr. Justin Nichols

The course examines the trends in leadership in varied segments and businesses in the sports industry. The focus is on effective leadership styles, principles, models, and practices as they relate to sport organizations. This includes leadership and ethical behavior, inter- and intra-organizational leadership strategies, management theory and practice, and organizational culture.

### **Elective Courses (Take one of the following courses)**

KHP 695 – Independent Study (Offered Summer, Fall, & Spring; 1-3 credits) - Instructor: Certificate faculty or other approved faculty.

This course is designed to allow the student to work directly with an athletic team to assist them in meeting their needs. Based on the circumstances, the student may be required to provide a literature review on a relevant topic; propose a plan that meets the team's needs; collect, analyze, and interpret data as appropriate; and provide a written and oral presentation to the to the instructor and the team.

KHP 580 – Group Dynamics in Sport and Physical Activity (Existing course; Offered Spring; 3 cr) – Instructor: Dr. Marc Cormier

This course provides a comprehensive analysis of sport and physical activity from both social psychological and group dynamics perspectives. Sport and physical activity are highly social environments that can have a wide and far-reaching influence upon those who participate in them. This class will focus on and provide an overview of the major social and group dynamic factors that affect those involved in sport. In-depth group discussions will occur and students will be given practical assignments to ensure that they are able to apply this information in real world settings.

KHP 557 – Practicum in Exercise Science (3-6 credits)

Extensive practical work experiences with qualified practitioners and KHP faculty. Repeatable up to 6 credit hours. Prereq: KINE, HEPR, KHPR majors only

CNU 605 – Wellness in Sports Nutrition (3 credits)

Emphasis is directed toward nutrition as applied to prevention of disease through lifestyle management and the application of nutrition in exercise and sport. Targeted focus areas are: body composition and energy expenditure, the metabolic basis of weight management, nutrient needs throughout the lifecycle, the metabolic changes associated with obesity, behavioral management of obesity, nutrient metabolism and exercise, water and electrolyte balance during exercise, nutritional ergogenic aids, nutrition-strength and performance enhancement. Prereq: PGY 412G, and BCH 401G or equivalent or consent of instructor. (Same as NS/PT 605.)

KHP 720 – Sports Medicine (3 credits)

A study of the basic areas covered in sports medicine with readings and discussions of current international trends in the research and practice in this field. Prereq: Twelve semester hours; credit in the field of biological sciences; consent of instructor. (Same as AT 720.)

STA 671 – Regression and Correlation (2 credits)

Simple linear regression, elementary matrix algebra and its application to simple linear regression; general linear model, multiple regression, analysis of variance tables, testing of subhypotheses, nonlinear regression, step-wise regression; partial and multiple correlation. Emphasis upon use of computer library routines; other special topics according to the interests of the class. Lecture, three hours per week; laboratory, two hours per week for seven and one half weeks. Offered the first or second half of each semester. Prereq: STA 570 or STA 580.

STA 672 – Design and Analysis of Experiments (2 credits)

Review of one-way analysis of variance; planned and unplanned individual comparisons, including contrasts and orthogonal polynomials; factorial experiments; completely randomized, randomized block, Latin square, and split-plot designs: relative efficiency, expected mean squares; multiple regression analysis for balanced and unbalanced experiments, analysis of covariance. Lecture, three hours per week; laboratory, two hours per week for seven and a half weeks. Offered the first or second half of each semester. Prereq: STA 671.

STA 677 – Applied Multivariate Methods

Survey of multivariate statistical techniques. The multivariate normal distribution; the general linear model; general procedures for parameter estimation and hypothesis testing in the multivariate case; Hotelling's  $T^2$ , multivariate analysis of variance and covariance; structural models for the covariance matrix; utilization of existing computer programs. Prereq: STA 671 and 672.

**Total required certificate hours: 15 hours**

The curriculum for this certificate in High Performance was developed in consultation with faculty members at University of Kentucky and High Performance Coaches currently practicing in the field. We anticipate that this 15-hour Graduate Certificate will draw students from the Master's Program in Exercise Physiology and other graduate programs across campus.

**Core Faculty Affiliated with the High Performance Certificate:**

Mark Abel, PhD, CSCS\*D, TSAC\*D, USAW, Associate Professor, Full Graduate Faculty  
Rob Shapiro, PhD, Associate Dean, Professor, Full Graduate Faculty

Marc Cormier, PhD, CC-AASP Lecturer

Steve Parker, EdD, Associate Dean, Associate Professor, Associate Graduate Faculty

Justin Nichols, PhD, Lecturer

**University of Kentucky**  
**KHP 690: Applied Foundations of High Performance**

**Instructor:** Mark Abel, Ph.D., CSCS\*D, TSAC-F\*D, USAW  
Office: 217 Seaton Center  
E-mail: mark.abel@uky.edu  
Phone: 257-4091

**Office Hours:** Tuesday & Thursday: 2:00-4:00pm (or by appointment)

**Term:** Spring 2017: Wednesday, 3:00-5:30pm  
Classroom: Seaton Building, Rm. 119

**Required Materials:** No Textbook required

**Recommended Texts:** High Performance Training for Sports. Joyce, Lewindon, Human Kinetics, 2014. ISBN: 1-4504-4482-2

**Prerequisite:** Graduate level Exercise Physiology course or consent of the instructor.

**Research and Reflection for Learning and Leading.** This is the theme of the conceptual framework for the College of Education and reflects how the College and this course approach the preparation of graduate students in exercise science. This course will review **research** that supports the concepts instrumental to athletic and occupational performance. You will be required to review scientific literature and **reflect** upon the results of experiments. Proper **reflection** will lead to **learning** physiological concepts relevant to human performance in diverse populations. This knowledge base will prepare you for **leading** and training others to promote desired outcomes.

### **Course Objectives**

This course evaluates physiological responses to exercise stimuli including a detailed examination of neuromuscular, metabolic and morphological skeletal muscle adaptations. In addition, factors that affect force production, advanced periodization, concurrent training, and recovery strategies are examined. Finally, applied training strategies and evaluations are discussed and performed.

### **Student Learning Outcomes:**

1. Describe basic muscle architecture and function.
2. Describe the neural interaction with skeletal muscle.
3. Describe factors that affect force production and apply these principles to training.
4. Describe physiological and neurological adaptations to training stimuli.
5. Describe functional systems theory.
6. Describe concurrent training and the interference effect.
7. Describe several periodization strategies for athletes and determine which are appropriate.
8. Describe alternative methods for training athletes.
9. Describe muscular fatigue, soreness and effective regeneration strategies.
10. Demonstrate the ability to communicate and interpret data.

Learner Outcomes	Assessment	Standards
1-9) Demonstrate the ability to understand advanced concepts and interpret data and scientific literature for a variety of performance outcomes.	Exams / Seminars / Literature Review	NASPE: 1,2,5,6,7,8,9,10
10) Demonstrate the ability to communicate and interpret data.	Literature review / Exams / Seminars	NASPE: 1,2,5,6,7,8,9

### Criteria for Evaluation

- 1. Written exams.** There will be 3 exams for this course. The final exam will be comprehensive.
- 2. Seminars.** Each student will be responsible for providing a Power Point presentation and facilitating a discussion on a given topic for 2 of the seminars listed on the course schedule. Students will be graded on the quality of the content, the degree of preparation, mechanics of the presentation, quality of the discussion, and quality of article selected for discussion. In general, the presentation and discussion should be about 30-45 minutes per seminar. *Students must email a copy of the slides to the instructor at least 24 hours before the class. In addition, each student will select 1 peer-reviewed journal article for the class to read. The article needs to be approved to the instructor at least 2 weeks before the seminar, for approval.*
- 3. Literature Review.** (Due: 4/8/15) Provide a 20 page (double-spaced) review of the current literature on a topic of your choice related to performance. An abstract of less than 300 words should also be included. Cite a minimum of 15 references from peer-reviewed scholarly journals in the literature review. Use APA formatting for the manuscript, in-text references, and the references cited section.
 

**Abstracts:** (1 pt) Email a copy of the *abstracts* of each article cited within the manuscript to the instructor prior to class on 4/8/15.

**Outline:** (2 pt) An outline of the topics to be covered in the literature review is to be typed and turned in to class on **March 11th**.
- 4. Participation.** You are expected to read the assigned material and be prepared to actively participate and contribute to class discussions. Note, additional articles will be posted on Blackboard that you are expected to review. I reserve the right to give pop-quizzes if I feel students are not prepared for class.

### Grading Scale

- A: 90-100%
- B: 80-89%
- C: 70-79%
- E: ≤ 69%

**Evaluation**

<u>Item</u>	<u>Course Points</u>
Exam 1	18
Exam 2	18
Exam 3	20
Literature review	20
Seminar (10 pt ea)	20
<u>Participation</u>	<u>4</u>
<b>Total</b>	<b>100</b>

**Tentative Course Schedule**

<b>Date</b>	<b>Topic</b>	<b>Reading</b>
1/14	Introduction / Muscle architecture and fiber anatomy The motorneuron / The neuromuscular junction / Neuromuscular transmission / Muscle receptors Motor Units / Motor unit recruitment / Muscle contraction / Post-activation potentiation-Complex training	SM: Ch. 1 Azizi et al., 2008 SM: Ch. 2, 3, 10, 4 SM: Ch. 12 & 13 Monti et al., 2001 SM: Ch. 11 Tillin & Bishop, 2009 Wilson et al., 2013
1/21	Resistance/Power Training Adaptations	
1/28	Olympic Lifts	
2/4	Functional Movement (FMS)	
2/11	<b>EXAM 1</b>	
2/18	Factors affecting force production / Training for Power – Optimal Loads	Cormie et al., P1 Cormie et al., P2
2/25	Training Adaptations / Supercompensation Theory <i>(Articles due for the Concurrent Training Seminar)</i>	SM: Ch. 20 HP: Ch. 6, 18, 22
3/4	<b>Seminar:</b> Concurrent Training & Minimizing the Interference Effect (3 presenters) <b>(Literature Review Outline Due)</b>	Baar (2006) Garcia-Pallares, 2011 Wilson et al., 2012
3/11 March 9: Midterm	<i>Spring Break</i> <i>(Articles due for the Periodization Seminar)</i>	
3/18	Utilization of GPS Tracking Systems for Athletes (3:00- 4:15PM) <b>Exam 2 (4:15-5:30PM)</b>	Guest speaker: Chris Ronald
3/25	<b>Seminar:</b> Periodization Strategies (4 presenters) <i>(Articles due for the Training Methods Seminar)</i>	Issurin, 2008 Issurin, 2010 Ch. 19-HP Text
4/1	Alternative Training Methods (bands / chains) RT - Bar Velocity <b>(Literature Review Due)</b>	
4/8	<b>Seminar:</b> Training Methods for Performance Outcomes (3 presenters) <i>(Articles due for the Recovery Strategies Seminar)</i>	HP: Ch. 8-17
4/15	Central and Peripheral Fatigue / Delayed onset of muscle soreness	SM: Ch. 15, 21 Articles TBD

4/22	Sleep: Role in Recovery	
4/29	<b>Seminar:</b> Regeneration strategies (4 presenters)	HP: Ch. 24

\*HP: High Performance Training for Sports textbook.

**Final Exam (Comprehensive):** Scheduled for 3:30pm on Monday, May 4<sup>th</sup> in Seaton Rm. 119.

**Excused Absences**

Students need to notify the professor of absences prior to class when possible. *Senate Rules 5.2.4.2* defines the following as acceptable reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, and (e) other circumstances found to fit “reasonable cause for nonattendance” by the professor.

Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays no later than the last day in the semester to add a class. Two weeks prior to the absence is reasonable, but should not be given any later. Information regarding major religious holidays may be obtained through the Ombud (859-257-3737, [http://www.uky.edu/Ombud/ForStudents\\_ExcusedAbsences.php](http://www.uky.edu/Ombud/ForStudents_ExcusedAbsences.php)).

Students are expected to withdraw from the class if more than 20% of the classes scheduled for the semester are missed (excused) per University policy.

Per *Senate Rule 5.2.4.2*, students missing any graded work due to an excused absence are responsible: for informing the Instructor of Record about their excused absence within one week following the period of the excused absence (except where prior notification is required); and for making up the missed work. The professor must give the student an opportunity to make up the work and/or the exams missed due to an excused absence, and shall do so, if feasible, during the semester in which the absence occurred.

**Verification of Absences**

Students may be asked to verify their absences in order for them to be considered excused. *Senate Rule 5.2.4.2* states that faculty have the right to request “appropriate verification” when students claim an excused absence because of illness, or death in the family. Appropriate notification of absences due to University-related trips is required prior to the absence when feasible and in no case more than one week after the absence.

**Academic Integrity**

Per University policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the University may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website:

<http://www.uky.edu/Ombud>. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

*Senate Rules 6.3.1* (see <http://www.uky.edu/Faculty/Senate/> for the current set of *Senate Rules*) states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about a question of plagiarism involving their work, they are obliged to consult their instructors on the matter before submission.

When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording, or content from another source without appropriate acknowledgment of the fact, the students are guilty of plagiarism.

Plagiarism includes reproducing someone else's work (including, but not limited to a published article, a book, a website, computer code, or a paper from a friend) without clear attribution. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work, which a student submits as his/her own, whoever that other person may be. Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone.

When a student's assignment involves research in outside sources or information, the student must carefully acknowledge exactly what, where and how he/she has employed them. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content, and phraseology intact is plagiaristic. However, nothing in these Rules shall apply to those ideas, which are so generally and freely circulated as to be a part of the public domain.

Please note: Any assignment you turn in may be submitted to an electronic database to check for plagiarism.

### **Accommodations due to disability**

If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (DRC). The DRC coordinates campus disability services available to students with disabilities. It is located on the corner of Rose Street and Huguelet Drive in the Multidisciplinary Science Building, Suite 407. You can reach them via phone at (859) 257-2754 and via email at [drc@uky.edu](mailto:drc@uky.edu). Their web address is <http://www.uky.edu/DisabilityResourceCenter>.

**University of Kentucky**  
**KHP 691: Analytics in High Performance**

**Instructor:** Mark Abel, Ph.D., CSCS\*D, TSAC-F\*D, USAW  
Office: 217 Seaton Center  
E-mail: [mark.abel@uky.edu](mailto:mark.abel@uky.edu) (Preferred method of communication)  
Phone: 257-4091

**Office Hours:** TBD

**Term:** Fall 2016

**Reading Materials:** Independent reading materials will be posted.

**Prerequisites:** Undergraduate or graduate level Statistics course.

**Research and Reflection for Learning and Leading.** This is the theme of the conceptual framework for the College of Education and reflects how the College and this course approach the preparation of graduate students in exercise science. This course will review **research** that supports the concepts instrumental to athletic and occupational performance. You will be required to review scientific literature and **reflect** upon the results of experiments. Proper **reflection** will lead to **learning** analytical concepts relevant to human performance in diverse populations. This knowledge base will prepare you for **leading** and training others to promote desired outcomes.

**Course Description**

This course examines the use of athlete monitoring systems and other metrics to evaluate the stress-response relationship. Functional systems theory and other stress-response theories are discussed and applied to training and recovery strategies to optimize athlete performance. An emphasis is placed on data analysis and visualization of data trends.

**Student Learning Outcomes**

By the end of this course, the student will be able to:

1. Describe how to predict performance outcomes in sports.
2. Describe how to predict injury outcomes in sports.
3. Describe and calculate properties of data/data sets/variables commonly associated with high performance in sport in order to distinguish between levels of performance.
4. Utilize common statistical procedures and parameters to analyze high performance data/data sets in order to distinguish between levels of performance.
5. Describe, analyze, and interpret output from heart rate variability and DC potential.
6. Describe, analyze, and interpret GPS tracking data.
7. Describe, analyze, and interpret sleep outcomes.
8. Describe, analyze, and interpret wellness surveys.
9. Describe how to evaluate training stress balance.
10. Describe how to use social media to increase fan bases.
11. Describe how rules changes and collective bargaining agreements may affect injury outcomes.
12. Demonstrate proficiency in written and oral communication skills.

Learner Outcomes	Assessment	Standards
1-9) Demonstrate the ability to analyze and interpret data for a variety of performance outcomes.	Exams / Assignments / Project	NASPE: 1,2,5,7,8,9,10
10-11) Describe how to use social media and evaluate rules changes in sports.	Exam / Project	NASPE: 1,2,5,6,7,8,9
12) Demonstrate the ability to communicate and disseminate data.	Project / Presentation	NASPE: 1,2,5,6,7,8,9

### Criteria for Evaluation

1. **Written exams.** There will be 2 exams for this course.
2. **Project.** (Due: X/X/XX) Describe a problem or research question regarding athletic/occupational data and provide an analysis and interpretation to answer the question. The report should be 5 pages in length and include figures/tables as necessary. Include a separate supplemental literature review supporting the concepts discussed in the summary report. The literature review must be a minimum of 10 pages, use APA formatting, and cite references as necessary.
3. **Presentation.** Each student will be responsible for providing a Power Point presentation and facilitating a discussion on a given topic. Students will be graded on the quality of the content, the degree of preparation, and mechanics of the presentation. *Students must email a copy of the slides to the instructor at least 24 hours before the class.* Additional instructions will be provided regarding presentation requirements.
4. **Participation.** You are expected to read the assigned material and be prepared to actively participate and contribute to class discussions. Note, additional articles will be posted on Canvas that you are expected to review. I reserve the right to give pop-quizzes if I feel students are not prepared for class.
5. **Assignments.** Assignments will supplement the weekly content. Directions for the assignments will be provided.

**Grading Scale**

A: 90-100%

B: 80-89%

C: 70-79%

E:  $\leq$  69%

\*Final course grade values are rounded to the nearest whole number (i.e., 89.4 = 89%; 89.5 = 90%)

**Evaluation**

<u>Item</u>	<u>Course Points</u>
Exam 1	15
Exam 2	15
Assignments (4; 5 pt ea)	20
Project	20
Presentation	20
Participation	10
<b>Total</b>	<b>100</b>

**Tentative Course Schedule**

<b>Date</b>	<b>Topic</b>	<b>Assignment Due</b>	<b>Reading</b>
Week 1	Introduction		
Week 2	GPS Tracking Systems for Athletes		
Week 3	Heart rate variability and DC Potential	Assign. #1 due	
Week 4	Sleep & Physical Activity Monitoring Devices	Assign. #2 due	
Week 5	Wellness & Recovery Surveys		
Week 6	<b>Exam 1</b>		
Week 7	<i>Review Exam 1</i> Training Stress Balance		
Week 8	Predicting performance and injury outcomes		
Week 9	Spreadsheet Design & Visualization of Data (Pivot tables/graphs, Radar Graphs)	Assign. #3	
Week 10	Social Media and Sports	Assign. #4	
Week 11	Collective Bargaining and Injury		
Week 12	Data Collection and Imputation / Report Preparation		
Week 13	<b>Exam 2</b>		
Week 14	<i>Review Exam 2</i> Report Preparation		
Week 15	Student Presentations		
Week 16	Student Presentations		

**Communication**

The preferred method of communication with the instructor is via email. The instructor will respond to email inquiries within 1 business day.

**Minimum Electronic Technical Requirements for the class include the following:**

Table of Hardware and Software Requirements	
Hardware	<ul style="list-style-type: none"> <li>• Headset with a microphone</li> <li>• Webcam (<i>Recommended</i>)</li> </ul>
Software	<ul style="list-style-type: none"> <li>• MS Office (including Excel, Word, &amp; Power Point) Available here: <a href="http://www.uky.edu/ukat/help/software">http://www.uky.edu/ukat/help/software</a></li> <li>• SPSS (Statistical Package for the Social Sciences) Available here: <a href="http://www.uky.edu/ukat/help/software">http://www.uky.edu/ukat/help/software</a></li> <li>• The latest version of Java (<a href="#">Available Here</a>)</li> <li>• The latest version of Adobe Flash (<a href="#">Available Here</a>)</li> <li>• The latest version of Adobe Acrobat Reader (<a href="#">Available Here</a>)</li> <li>• Microsoft Office (Available free to students through <a href="http://download.uky.edu">http://download.uky.edu</a>)</li> </ul>
	<ul style="list-style-type: none"> <li>• 1 MBPS Broadband Connection</li> </ul>

**Recommendations regarding Laptop / Tablet capabilities may be found here:**

<http://www.uky.edu/ukat/hardwareguide>

**Excused Absences**

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feasible, during the semester in which the absence occurred.

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Please note: Any assignment you turn in may be submitted to an electronic database to check for plagiarism.

**Accommodations due to disability**

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**University of Kentucky  
KHP 691-DL: Analytics in High Performance**

**Instructor:** Mark Abel, Ph.D., CSCS\*D, TSAC-F\*D, USAW  
Office: 217 Seaton Center  
E-mail: [mark.abel@uky.edu](mailto:mark.abel@uky.edu)  
Phone: 257-4091

**Term:** Fall 2016

**Reading Materials:** Independent reading materials will be posted.

**Prerequisites:** Undergraduate or graduate level Statistics course.

**Instructor's Virtual Office Hours:** TBA

**Preferred Method of Communication:** Email: [mark.abel@uky.edu](mailto:mark.abel@uky.edu)

**Maximum Timeframe for Responding to Student Communication:** Students may expect the instructor to have responses to email inquiries within 24 hours excluding weekends and holidays.

**Teaching and Academic Support:** Contact the Teaching and Academic Support Service Center at <http://www.uky.edu.TASC/index.php> or 859-257-8772

**Procedures to Resolve Technical Problems:** Contact the Information Technology Customer Service Center at <http://www.uky.edu/UKIT/> or 859-257-1300.

**Information on Distance Learning Library Services:** Available through the Web at: [www.uky.edu/Libraries/DLLS](http://www.uky.edu/Libraries/DLLS), DL Librarian (Carla Contagallo via email at [dlservice@email.uky.edu](mailto:dlservice@email.uky.edu) or telephone at 859-257-0050 x2171 or 1-800-828-0439) or Distance Learning Interlibrary Loan Services: [http://www.uky.edu/Libraries/libpage.php?Iweb\\_id=253&llib\\_id+16](http://www.uky.edu/Libraries/libpage.php?Iweb_id=253&llib_id+16)

**Communication**

The preferred method of communication with the instructor is via email. The instructor will respond to email inquiries within 1 business day.

**Minimum Electronic Technical Requirements for the class include the following:**

Table of Hardware and Software Requirements

Hardware	<ul style="list-style-type: none"><li>• Headset with a microphone</li><li>• Webcam (<i>Recommended</i>)</li></ul>
Software	<ul style="list-style-type: none"><li>• MS Office (including Excel, Word, &amp; Power Point) Available here: <a href="http://www.uky.edu/ukat/help/software">http://www.uky.edu/ukat/help/software</a></li><li>• SPSS (Statistical Package for the Social Sciences) Available here: <a href="http://www.uky.edu/ukat/help/software">http://www.uky.edu/ukat/help/software</a></li><li>• The latest version of Java (<a href="#">Available Here</a>)</li><li>• The latest version of Adobe Flash (<a href="#">Available Here</a>)</li><li>• The latest version of Adobe Acrobat Reader (<a href="#">Available Here</a>)</li><li>• Microsoft Office (Available free to students through <a href="http://download.uky.edu">http://download.uky.edu</a>)</li></ul>
	<ul style="list-style-type: none"><li>• 1 MBPS Broadband Connection</li></ul>

**Recommendations regarding Laptop / Tablet capabilities may be found here:**

<http://www.uky.edu/ukat/hardwareguide>

**Other important resources:**

<https://www.uky.edu/ukat/elearning/SACS-Syllabus-Requirements>

**Research and Reflection for Learning and Leading.** This is the theme of the conceptual framework for the College of Education and reflects how the College and this course approach the preparation of graduate students in exercise science. This course will review **research** that supports the concepts instrumental to athletic and occupational performance. You will be required to review scientific literature and **reflect** upon on the results of experiments. Proper **reflection** will lead to **learning** analytical concepts relevant to human performance in diverse populations. This knowledge base will prepare you for **leading** and training others to promote desired outcomes.

**Course Description**

This course examines the use of athlete monitoring systems and other metrics to evaluate the stress-response relationship. Functional systems theory and other stress-response theories are discussed and applied to training and recovery strategies to optimize athlete performance. An emphasis is placed on data analysis and visualization of data trends.

**Student Learning Outcomes**

By the end of this course, the student will be able to:

1. Describe how to predict performance outcomes in sports.
2. Describe how to predict injury outcomes in sports.
3. Describe and calculate properties of data/data sets/variables commonly associated with high performance in sport in order to distinguish between levels of performance.
4. Utilize common statistical procedures and parameters to analyze high performance data/data sets in order to distinguish between levels of performance.
5. Describe, analyze, and interpret output from heart rate variability and DC potential.
6. Describe, analyze, and interpret GPS tracking data.
7. Describe, analyze, and interpret sleep outcomes.
8. Describe, analyze, and interpret wellness surveys.
9. Describe how to evaluate training stress balance.
10. Describe how to use social media to increase fan bases.
11. Describe how rules changes and collective bargaining agreements may affect injury outcomes.
12. Demonstrate proficiency in written and oral communication skills.

<b>Learner Outcomes</b>	<b>Assessment</b>	<b>Standards</b>
1-9) Demonstrate the ability to analyze and interpret data for a variety of performance outcomes.	Exams / Assignments / Project	NASPE: 1,2,5,7,8,9,10
10-11) Describe how to use social media and evaluate rules changes in sports.	Exam / Project	NASPE: 1,2,5,6,7,8,9
12) Demonstrate the ability to communicate and disseminate data.	Project / Presentation	NASPE: 1,2,5,6,7,8,9

### Criteria for Evaluation

- 1. Written exams.** There will be 2 exams for this course.
- 2. Project.** (Due: X/X/XX) Describe a problem or research question regarding athletic/occupational data, collect data, and provide an analysis and interpretation to answer the question. The report should be 5 pages in length and include figures/tables as necessary. Include a separate supplemental literature review supporting the concepts discussed in the summary report. The literature review must be a minimum of 10 pages, use APA formatting, and cite references as necessary.
- 3. Presentation.** Each student will be responsible for providing a video of a Power Point presentation and facilitating a video-based or written discussion on the data analyzed in the project via a Discussion Post on Canvas. Students will be graded on the quality of the content, the degree of preparation, and mechanics of the presentation. Additional instructions will be provided regarding presentation requirements.
- 4. Participation.** You are expected to read the assigned material and be prepared to actively participate and contribute to Discussion Board posts on Canvas. Note, additional articles will be posted on Canvas that you are expected to review.
- 5. Assignments.** Assignments will supplement the weekly content. Directions for the assignments will be provided.

### Grading Scale

- A: 90-100%
- B: 80-89%
- C: 70-79%
- E:  $\leq$  69%

\*Final course grade values are rounded to the nearest whole number (i.e., 89.4 = 89%; 89.5 = 90%)

### Evaluation

<u>Item</u>	<u>Course Points</u>
Exam 1	15
Exam 2	15
Assignments (4; 5 pt ea)	20
Project	20
Presentation	20
<u>Participation</u>	<u>10</u>
<b>Total</b>	<b>100</b>

**Tentative Course Schedule**

<b>Date</b>	<b>Topic</b>	<b>Assignment Due</b>	<b>Reading</b>
Week 1	Introduction		
Week 2	GPS Tracking Systems for Athletes		
Week 3	Heart rate variability and DC Potential	Assign. #1 due	
Week 4	Sleep & Physical Activity Monitoring Devices	Assign. #2 due	
Week 5	Wellness & Recovery Surveys		
Week 6	<b>Exam 1</b>		
Week 7	<i>Review Exam 1</i> Training Stress Balance		
Week 8	Predicting performance and injury outcomes		
Week 9	Spreadsheet Design & Visualization of Data (Pivot tables/graphs, Radar Graphs)	Assign. #3	
Week 10	Social Media and Sports	Assign. #4	
Week 11	Collective Bargaining and Injury		
Week 12	Data Collection and Imputation / Report Preparation		
Week 13	<b>Exam 2</b>		
Week 14	<i>Review Exam 2</i> Report Preparation		
Week 15	Student Presentations		
Week 16	Student Presentations		

### **Excused Absences**

Students need to notify the professor of absences prior to class when possible. *Senate Rules 5.2.4.2* defines the following as acceptable reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, and (e) other circumstances found to fit “reasonable cause for nonattendance” by the professor.

Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays no later than the last day in the semester to add a class. Two weeks prior to the absence is reasonable, but should not be given any later. Information regarding major religious holidays may be obtained through the Ombud (859-257-3737, [http://www.uky.edu/Ombud/ForStudents\\_ExcusedAbsences.php](http://www.uky.edu/Ombud/ForStudents_ExcusedAbsences.php)).

Students are expected to withdraw from the class if more than 20% of the classes scheduled for the semester are missed (excused) per University policy.

Per *Senate Rule 5.2.4.2*, students missing any graded work due to an excused absence are responsible: for informing the Instructor of Record about their excused absence within one week following the period of the excused absence (except where prior notification is required); and for making up the missed work. The professor must give the student an opportunity to make up the work and/or the exams missed due to an excused absence, and shall do so, if feasible, during the semester in which the absence occurred.

### **Verification of Absences**

Students may be asked to verify their absences in order for them to be considered excused. *Senate Rule 5.2.4.2* states that faculty have the right to request “appropriate verification” when students claim an excused absence because of illness, or death in the family. Appropriate notification of absences due to University-related trips is required prior to the absence when feasible and in no case more than one week after the absence.

### **Academic Integrity**

Per University policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the University may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website:

<http://www.uky.edu/Ombud>. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

*Senate Rules 6.3.1* (see <http://www.uky.edu/Faculty/Senate/> for the current set of *Senate Rules*) states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about a question of plagiarism involving their work, they are obliged to consult their instructors on the matter before submission.

When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording, or content from another source without appropriate acknowledgment of the fact, the students are guilty of plagiarism.

Plagiarism includes reproducing someone else's work (including, but not limited to a published article, a book, a website, computer code, or a paper from a friend) without clear attribution. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work, which a student submits as his/her own, whoever that other person may be. Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone.

When a student's assignment involves research in outside sources or information, the student must carefully acknowledge exactly what, where and how he/she has employed them. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content, and phraseology intact is plagiaristic. However, nothing in these Rules shall apply to those ideas, which are so generally and freely circulated as to be a part of the public domain.

Please note: Any assignment you turn in may be submitted to an electronic database to check for plagiarism.

**Accommodations due to disability**

If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (DRC). The DRC coordinates campus disability services available to students with disabilities. It is located on the corner of Rose Street and Huguelet Drive in the Multidisciplinary Science Building, Suite 407. You can reach them via phone at (859) 257-2754 and via email at [drc@uky.edu](mailto:drc@uky.edu). Their web address is <http://www.uky.edu/DisabilityResourceCenter>.

# Faculty Meeting Minutes

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*October 22, 2015*

**Present:** Ben Johnson, Melody Noland, Mike Pohl, Aaron Beighle, Brad Fleenor, Randy Crist, Lucian Taylor, Kristen Mark, Rosie LaCoe, Justin Nichols, Brian Wallace, Liz Fettrow, Marc Cormier, Haley Bergstrom, Steve Parker, Mark Abel, Jonell Pedescleaux, Rob Shapiro, Joaquin Fenollar, Nick Trubee, Stephanie Bennett, Mindy Ickes, Jody Clasey, Heather Erwin, Kevin Flora, Steve Erena

**Not present:** Jill Day, Lance Bollinger

## 1. Approval of Minutes

Dr. Mark noted that Justin Nichols was not present at the September meeting and should be removed from the list of attendees. A motion was made and seconded to approve the minutes with the suggested revision. All were in favor.

## 2. Chair Comments

- Dr. Johnson requested ideas for upgrading the COE/KHP website to help with graduate student recruitment. Please communicate ideas to him.
- The NCATE visit is November 15 and 16, 2016.
- There is a SACS deadline October 31, 2016.
- Student learning outcomes are due by October 31<sup>st</sup>.
- The Dean would like to involve graduate students more in teaching in an effort to reduce the number of PTIs. There is also a possibility that if lecturers leave for a new position that graduate students would be considered for teaching the open classes.
- Please look at the COE Rules Document and provide feedback to Dr. Johnson
- Dr. Johnson has almost completed faculty interviews. He will be in contact with those he has not met with yet.

## 3. Retention Initiative

Kevin Flora presented his findings regarding retention of first time, full-time freshman. He reported that there is a four times cost savings in focusing on retention of current students than focusing on recruitment of new students. He reported statistical findings of retention percentages from fall 2009 through fall 2015 both in the College of Education and the Department of Kinesiology & Health Promotion. Retention is defined as a student returning to UK for the fall semester of their sophomore year even if they change majors.

There were three suggestions to increase retention. The first is early alerts. Contact students as soon as possible if they are not attending class or for any other issues you are encountering. The second was for faculty to reach out to new freshman and introduce themselves and invite them to meet to discuss our programs in depth. Kevin suggested dividing up the incoming KHP majors evenly throughout the faculty to send an email to initiate this contact. He will send out an email with wording that faculty can use to contact students. The third suggestion was to match upperclassmen with freshman for informal mentoring.

Kevin noted that quite a few students who transferred to KHP came from Undergraduate Studies. It would be helpful to raise awareness of our programs with the advisors from US and to attend their major's fair.

Dr. Fenollar asked if students who took UK 101 had a higher percentage retention rate. He wondered if this class could be mandatory for all freshman. Kevin will check on the impact that this class has on retention.

Dr. Ickes commented that QPR (Question, Persuade Refer) training is available to faculty which is a method of identifying students at risk. She highly recommended that everyone attend a training session.

#### **4. DOE Fairness Document**

The DOE fairness document was drafted in an attempt to leverage faculty assignments in regard to low enrollment/high enrollment classes, credit hour allocation and research production. KHP faculty gave feedback about classes/roles that they felt ought to have increased percentages. These included mentoring masters and doctoral students, teaching clinical courses, student teaching supervision, practicum classes and advising. Dr. Ickes was concerned about those professors who only teach graduate classes as these classes have the lowest enrollment and this is reflected on the DOE. Dr. Shapiro commented that chairs may use their discretion in all aspects of assigning DOE percentages. Additional feedback on the document may be addressed to Dr. Erwin or Dr. Johnson.

#### **5. Graduate Certificate in High Performance**

Dr. Abel presented a proposal for a graduate certificate in High Performance. This is an evolving field in which there are few collegiate programs offered at this time. It combines leadership, psychology, strength coaching, nutrition and analytic skills. Four new courses would be added for the curriculum. Feedback was elicited from the faculty. The grade point average necessary to graduate needs to be changed from 2.75 to 3.0. Dr. Mark expressed concern about having enough faculty to cover the new classes since current Exercise Science faculty already have a full-time load. Dr. Abel felt that this would not be a problem as they would offer classes on a rotational basis from year to year. Dr. Nichols reported that the proposal would have to go through the Provost's office before it was presented to the courses and curricula committee. Dr. Shapiro made a motion to pass the proposal, seconded by Dr. Fenollar. All were in favor.

#### **6. Health Promotion Minor**

Dr. Noland is promoting the health promotion minor program and has created a flier that she distributed to faculty. The number of minors has decreased in the past year.

#### **7. Announcements**

Dr. Fenollar announced that there will be a video conference on November 19, 2015 at Young Library at 12:00 PM. A vascular surgeon from Spain who uses no anesthesia with certain procedures, will present his method of using the mind to block out pain in the body. All are welcome to attend.

Minutes respectfully submitted by,

Beth Graham

# Faculty Meeting Minutes

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February 4, 2016

**Present:** Lucian Taylor, Justin Nichols, Ben Johnson, Heather Erwin, Aaron Beighle, Rosie LaCoe, Kristen Mark, Stephanie Bennett, Liz Fettrow, Haley Bergstom, Brad Fleenor, Rob Shapiro, Lance Bollinger, Randy Crist, Jonell Pedesleaux, Mark Abel, Jody Clasey, Steve Parker, Melody Noland, Brian Wallace, Marc Cormier, Joaquin Fenollar, Jill Day, & Nick Trubee.

**Absent:** Mike Pohl

## Approval of Minutes for November

- Minutes were approved as written from the November meeting.

## Comments

- Dr. Trubee has accepted a new position in Cleveland, OH and he will be leaving at the end of the spring 2016 semester. We have several lecture open positions at this time.
- Lecturer positions will be advertised soon and committee's formed.
- Keri needs all syllabi for all classes soon.
- Look at the KHP website and give any suggestions or corrections to Beth.
- Budget cuts for this year and next year, according to the governor's budget cuts for higher education.

## Possible DOE Equity Document Changes

- Dr. Erwin & Dr. Abel - Faculty council needs feedback on DOE class credit percentage (12.5% vs 10%), online classes and low enrollment. Fifty hour work week comments are needed and they will take these to faculty council. Faculty should not get the same percentage on a 1 hr. credit class as he or she would receive for a 3 hr. credit class.
- Dr. Cormier- LLC - KHP will be combined with the wellness focus. LLC is already up to 50 students.
- Dr. Parker stated that KHP 101 will be required for all students that will be attending UK. Arts and Sciences are going in the direction of block scheduling. KHP may look into block scheduling also.
- Dr. Johnson advised that retention is one of the topics that the university is working on. A proposal to aid in retention of students was discussed and put forth by the Deans of Education, Communications and Business that will eventually lead to a an undergraduate major (with tracks in each college) in Sport Management.

## High Performance Certificate

- Dr. Abel gave information regarding the certificate. Pending the requested revisions, a motion was unanimously carried to modify the new course as a Distance Learning section of KHP 691- Analytics in High Performance as part of the curriculum in the proposed Graduate Certificate in High Performance Coaching. Dr. Nichols also stated that minor changes requested to update SACS-COC learning targets and assessments table, replace Jake Karnes name in DRC and religious liaison contact information, and change "Course Objectives" to "Student Learning Outcomes". Also, contact information for eLearning to be moved to the beginning of the syllabus.

- A motion was unanimously carried to convert KHP 781 – Physiological Foundations in High Performance to KHP 690 – Applied Foundations in High Performance. Justification will be provided to Courses and Curricula for the conversion.

### **Health Promotion**

- Dr. Ickes stated that the Health Promotion faculty is proposing to breakout the option in Health Promotion within the existing Kinesiology degree to ensure that this program area is noted in the student's transcript and on their diploma. 1) list multiple stats classes that will better fulfill our students 2) require KHP 577 – practicum/internship experience for those not doing a thesis (Plan A) 3) increase total required hours to 33 for Plan A and Plan B. A motion was proposed to formalize a Health Promotion option within the existing MS Department of Health and Kinesiology degree. All were voted on and approved unanimously.

### **Coaching Minor**

- Dr. Erwin gave information on the coaching minor. The motion was approved for the KHP proposed coaching minor with amendments of adding KHP 573/473 and KHP 350, as possible electives and the possible inclusion of KMA/KHSAA Safety Certification for credit. The new proposed course KHP 280: Intro to Coaching. Both were voted on and approved unanimously.

### **Study Abroad Approvals**

- Dr. Nichols advised that study abroad classes must be approved each year by Course and Curriculum. Summer classes do not have to be approved, but any full semester classes must be approved for coverage and internal approval.

### **Seaton Beautification**

- Dr. Noland stated that Jeannine Schaefer is giving ideas on updating Seaton. She has some items to give that would update the building, such as furniture, floor lamps, wooden hall benches, easel white boards, chairs, and etc. Some pictures will be hung and some ceiling tiles will be replaced. Several updates will be added in different areas.

### **Proposals to Provost**

- Dr. Johnson gave information on some proposals that he produced at the request of the Dean for her meeting with the Provost. He noted that the only way KHP will be able to make major renovations/additions to Seaton Center is if the Provost provides the money. Dr. Johnson prepared the proposal and shared it with the Chair's Advisory Committee for feedback prior to submitting it to Dean O'Hair. The proposal highlighted the significant challenges presented by the exceptionally large number of KHP majors and the limited number of full-time faculty and classroom/lab facilities we have. These are only proposals at this point. Once feedback is received from the Provost and if/when funding is available, we will formally decide on facility renovation priorities.

### **Other Announcements**

- Dr. Johnson made the announcement that a Childhood Obesity Grant is available, if someone acts immediately. Dr. Fettrow has shown interest and if anyone else is, let Dr. Johnson know.

**From:** Toland, Michael D  
**Sent:** Wednesday, March 23, 2016 5:57 PM  
**To:** Abel, Mark G <[mgabel2@uky.edu](mailto:mgabel2@uky.edu)>; Bradley, Kelly D <[kelly.bradley@uky.edu](mailto:kelly.bradley@uky.edu)>; Reese, Robert J <[jeff.reese@uky.edu](mailto:jeff.reese@uky.edu)>; Bieber, Jeffery P <[jpbieb01@uky.edu](mailto:jpbieb01@uky.edu)>  
**Subject:** RE: New Course

**Mark,**  
**Based on the revised syllabus goals and content I don't see any concern or overlap with other courses offered in EDP.**  
**Thanks for checking with us and good luck with the new course.**  
**Michael**

Michael Toland, PhD  
Associate Professor  
Educational Psychology Program - Quantitative & Psychometric Methods  
Department of Educational, School, & Counseling Psychology  
University of Kentucky  
251C Dickey Hall  
Lexington, KY 40506-0017  
Office phone: 859.257.3395  
Skype: toland.md  
<http://sites.education.uky.edu/apslab/>

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**From:** Abel, Mark G  
**Sent:** Wednesday, March 23, 2016 2:02 PM  
**To:** Toland, Michael D; Bradley, Kelly D; Reese, Robert J; Bieber, Jeffery P  
**Subject:** RE: New Course

Hello All,

I want to thank you for reviewing the course objectives for the proposed course: KHP 691-Analytics in High Performance. I have taken your helpful feedback into consideration and revised the course objectives accordingly. Please review the attached syllabi and let me know your thoughts regarding its autonomy from existing courses in your Department.

Thank you,  
Mark

Mark Abel, Ph.D., CSCS\*D, TSAC-F\*D, USAW-L1  
Director, Exercise Physiology Laboratory  
Associate Professor  
Department of Kinesiology and Health Promotion  
University of Kentucky  
217 Seaton Building  
Lexington, KY 40506-0219  
Office: (859) 257-4091  
Fax: (859) 323-1090

**Mark,**

**This appears to be a much more specialized course. It makes a lot of sense to complete 557 or 558 and then take this class, as indicated by the prereq. I see no issues with this course moving forward. Best, Kelly**

*Kelly D. Bradley, Ph.D.*

Professor; Quantitative Methods  
Interim EPE Director of Graduate Studies  
Vice-Chair COE Faculty Council  
Educational Policy Studies & Evaluation  
University of Kentucky; College of Education  
131 Taylor Education Building  
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[www.uky.edu/~kdbrad2](http://www.uky.edu/~kdbrad2)

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**Sent:** Wednesday, March 23, 2016 2:02 PM

**To:** Toland, Michael D; Bradley, Kelly D; Reese, Robert J; Bieber, Jeffery P

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Thank you,  
Mark

Mark Abel, Ph.D., CSCS\*D, TSAC-F\*D, USAW-L1  
Director, Exercise Physiology Laboratory  
Associate Professor  
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Lexington, KY 40506-0219  
Office: (859) 257-4091  
Fax: (859) 323-1090  
[mark.abel@uky.edu](mailto:mark.abel@uky.edu)

**From:** Toland, Michael D

**Sent:** Monday, February 15, 2016 1:08 PM

**To:** Abel, Mark G <[mgabel2@uky.edu](mailto:mgabel2@uky.edu)>; Bradley, Kelly D <[kelly.bradley@uky.edu](mailto:kelly.bradley@uky.edu)>; Toland, Michael D <[toland.md@uky.edu](mailto:toland.md@uky.edu)>; Reese, Robert J <[jeff.reese@uky.edu](mailto:jeff.reese@uky.edu)>; Bieber, Jeffery P <[jpbieb01@uky.edu](mailto:jpbieb01@uky.edu)>

**Subject:** RE: New Course

Mark

Please let us know if we can do any more to help as we know first hand how much work goes into this process.

Warmly  
Michael

Sent from my Sprint Samsung Galaxy S® 6.

----- Original message -----

From: "Abel, Mark G" <[mgabel2@uky.edu](mailto:mgabel2@uky.edu)>

Date: 2/15/2016 12:49 PM (GMT-05:00)

To: "Bradley, Kelly D" <[kelly.bradley@uky.edu](mailto:kelly.bradley@uky.edu)>, "Toland, Michael D" <[toland.md@uky.edu](mailto:toland.md@uky.edu)>, "Reese, Robert J" <[jeff.reese@uky.edu](mailto:jeff.reese@uky.edu)>, "Bieber, Jeffery P" <[jpbieb01@uky.edu](mailto:jpbieb01@uky.edu)>

Subject: RE: New Course

Kelly, Michael, et al.,

Thank you for your prompt feedback. We will reflect on this information and redirect accordingly. I will resubmit our revisions to you before moving forward to C & C.

Thank you,  
Mark

Mark Abel, Ph.D., CSCS\*D, TSAC-F  
Associate Professor  
Department of Kinesiology and Health Promotion  
University of Kentucky  
217 Seaton Building  
Lexington, KY 40506-0219  
Office: (859) 257-4091  
Fax: (859) 323-1090  
[mark.abel@uky.edu](mailto:mark.abel@uky.edu)

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**From:** Bradley, Kelly D

**Sent:** Monday, February 15, 2016 11:42 AM

**To:** Toland, Michael D; Abel, Mark G; Reese, Robert J; Bieber, Jeffery P

**Subject:** RE: New Course

I'm coming into the conversation late, but it appears most of what is being taught, we already cover. So, the question becomes is if the two items not covered constitute an entire analysis course?

*Kelly D. Bradley, Ph.D.*

Professor; Quantitative Methods  
Interim EPE Director of Graduate Studies  
Vice-Chair COE Faculty Council  
Educational Policy Studies & Evaluation

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[www.uky.edu/~kdbrad2](http://www.uky.edu/~kdbrad2)

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**From:** Toland, Michael D  
**Sent:** Saturday, February 13, 2016 10:23 AM  
**To:** Abel, Mark G; Reese, Robert J; Bradley, Kelly D; Bieber, Jeffery P  
**Subject:** RE: New Course

Mark (cc Jeff Reese, Jeff Bieber, Kelly Bradley),

Thank you for your email. Before I chime in fully I think it is only fair to share my review and comparison with what we offer in EDP/EPE for statistics related courses with all parties that have a role in the joint department efforts to teach statistics related courses in the COE. Thus, EDP chair, Jeff Reese, EPE chair, Jeff Bieber, and fellow colleague in EDP who teaches other stats related courses, Kelly Bradley, are included.

Below I have highlighted in yellow the direct similarities in the proposed course student learning outcomes with what is learned in EDP/EPE 558. Note, when you write psychometric I interpret this as analysis of the properties of test score reliability and validity as covered in EDP/EPE 679. As a psychometrician this has a different meaning for me than maybe what you had intended. If this is the case, then learning outcome 1 overlaps with a basic learning outcome in EDP/EPE 679. If you remove the word psychometric it would just be similar to a learning outcome of EDP/EPE 558 which is what I believe you intended.

1. Describe and calculate basic psychometric properties of data sets/variables.
2. Calculate measures of central tendency and dispersion.
3. Describe, perform, and interpret parametric and nonparametric comparisons of mean differences/proportions.
4. Describe, perform, and interpret parametric and nonparametric analyses of regression.
5. Describe, perform, and interpret analyses utilizing standardized scores and modified z-scores.
6. Calculate effect sizes, absolute and relative difference scores, and smallest worthwhile change, and transferability.
7. Describe, perform, and interpret visual analyses of trends with scatterplots, bar graphs, radar graphs, pivot tables, and modified Bland-Altman plots.
8. Describe and interpret output from athlete monitoring systems, including heart rate variability, DC potential, GPS tracking systems, objective sleep monitoring, accelerometry, and wellness surveys.
9. Demonstrate proficiency in written and oral communication skills.

When I look at the new course schedule I see most overlap with EDP/EPE 558 occurring up to Exam 1 and a small amount after exam 2.

Michael

Michael Toland, PhD  
Associate Professor

Educational Psychology Program - Quantitative & Psychometric Methods  
Department of Educational, School, & Counseling Psychology  
University of Kentucky  
251C Dickey Hall  
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Office phone: 859.257.3395  
Skype: toland.md  
<http://sites.education.uky.edu/apslab/>

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**From:** Abel, Mark G  
**Sent:** Friday, February 12, 2016 4:03 PM  
**To:** Stromberg, Arnold; Toland, Michael D  
**Subject:** New Course

Dear Drs. Stromberg and Toland,

The Department of Kinesiology and Health Promotion is proposing a Graduate Certificate in High Performance Coaching. As part of the curriculum we are developing a course entitled "Analytics for High Performance" (KHP 691). Please find the syllabus and New Course Form attached. The course will be focused on the analysis, visualization, and interpretation of large data sets composed of training outcomes. Our goal is to prepare students for jobs involving Sport Science Analytics and High Performance Coaching. I kindly request that you review the syllabus and provide feedback with regard to any overlap of content with courses you may already offer. If you do not take issue with the proposed course objectives conflicting with an existing class, then please indicate that in your emailed response.

Thank you for your assistance.

With kind regards,  
Mark Abel

Mark Abel, Ph.D., CSCS\*D, TSAC-F\*D, USAW-L1  
Director, Exercise Physiology Laboratory  
Associate Professor  
Department of Kinesiology and Health Promotion  
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217 Seaton Building  
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Office: (859) 257-4091  
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[mark.abel@uky.edu](mailto:mark.abel@uky.edu)