LSC Use Only No:	LSC Action-Date:	UWUCC USE Only No.	UWUCC Action-Date:	Senate Action Date:
		08-90m	AP-4/14/09	App-4/28/09

Curriculum Proposal Cover Sheet - University-Wide Undergraduate Curriculum Committee

Contact Person	Email Address
Madeline P. Bayles	mpbayles@iup.edu
Proposing Department/Unit	Phone
Health and Physical Education Department	724-357-7835

Check all appropriate lines and complete information as requested. Use a separate cover sheet for each course proposal and for each program proposal.

1. Course Proposals (check all that apply)

__x__New Course _____Course Prefix Change _____Course Deletion

_____Course Revision _____Course Number and/or Title Change _____Catalog Description Change

***Current* Course prefix, number and full title**	***Proposed* course prefix, number and full title, if changing**
	HPED 414 Exercise Electrocardiography

2. Additional Course Designations: check if appropriate

_____ This course is also proposed as a Liberal Studies Course.

_____ This course is also proposed as an Honors College Course.

_____ Other: (e.g., Women's Studies, Pan-African)

3. Program Proposals

_____Catalog Description Change _____Program Revision

_____New Degree Program _____Program Title Change _____Other

_____New Minor Program _____New Track

***Current* program name**	***Proposed* program name, if changing**

4. Approvals		**Date**
Department Curriculum Committee Chair(s)		
Department Chair(s)	Signatures on 08-90a	
College Curriculum Committee Chair		
College Dean		
Director of Liberal Studies *		
Director of Honors College *		
Provost *		
Additional signatures as appropriate: (include title)		
UWUCC Co-Chairs	Gail DeChiust	4-14-09

* where applicable

Received
APR 02 2009
Liberal Studies

SYLLABUS OF RECORD

HPED 414 Exercise Electrocardiography **1 class hours**
1 lab hours
2 credits

CoRequisite/Prerequisite: PESP/Exercise Science Majors, HPED 343 **(1c-11-2cr)**

I. Course Description

Provides an introduction to the basic concepts of electrocardiography (ECG), including an understanding of electrophysiology, electrode lead placement, both rhythm strips and 12-lead interpretation. Utilizing electrocardiograms students will also be able to recognize normal and abnormal rhythms including those ECG abnormalities brought about by exercise. Normal and Abnormal responses during Graded Exercise Testing will also be interpreted.

II. Course Outcomes

Students will be able to:

1. Interpret and discuss normal and abnormal cardiac electrophysiology.
2. Interpret and demonstrate electrode placement and lead systems for a single monitoring and 12-Lead ECG.
3. Recognize and discuss components of the normal resting 12-lead electrocardiogram.
4. Detect abnormal rhythms including those due to chamber enlargement, conduction abnormalities, myocardial ischemia and patterns of infarction.
5. Evaluate ECG changes associated with incremental exercise testing for those with and without cardiovascular disease.

III. Detailed Course Outline

A. Basic Electrocardiography and lead placement (6 hours)
   1. Coronary artery disease
   2. Scheme for ECG interpretation
   3. Components of the ECG

B. Abnormal Rhythms (4 hours)
   1. SA node and atrial arrhythmias
   2. Junctional arrhythmias
   3. Ventricular arrhythmias

C. Blocks (4 hours)
   1. Normal electrical conduction
   2. 1^{st}-3^{rd} degree blocks

D. Patterns of Myocardial Ischemia, Injury and Infarction (6 hours)
   1. Myocardial Infarction
   2. Myocardial Ischemia
   3. Myocardial Injury

3. Myocardial Injury

E. Graded Exercise Testing (8 hours)
   1. Normal exercise ECG
   2. Abnormal exercise ECG
   3. Practice graded exercise testing

F. Final Exam- during Final Exam Week

IV. Evaluation Methods

Evaluation of the student will consist of:

20% Perform and interpret 12-Lead ECG's. Students will be required to perform and interpret three 12-lead ECG's on a variety of subjects.

20% Students will be assigned practice ECG's as homework throughout the semester which will be assigned a variable amount of credits.

25% There will be quizzes given throughout the semester.

20% Students will be required to perform a complete maximum graded exercise treadmill test. Students will be expected to complete this assignment with a partner from class. This assignments includes a pre-activity assessment appropriate treadmill protocol and all related calculations.

15% One cumulative final examination will be given during the class's scheduled final examination time.

V. Example Grading Scale

A $\geq$ 90% B: 80% to 89% C: 70% to 79% D: 60 % to 69% F: < 60%

VI. Undergraduate Course Attendance Policy

The University expects all students to attend class. Attendance will be taken every class. University policy recognizes the need to miss class because of illness or personal emergencies. Students will be allowed total excused absences equivalent to the number class credit hours. Only students with an excused absence will be allowed to make up any missed work. Unexcused absences on exam days will result in a zero score for the exam or quiz. Students with excused absences will be given a separate exam.

VII. Required Text

Huszur, R.J. Basic dysrhythmias: interpretation and management, 3rd Edtion. Mosby, Philadelphia, PA 2001

Recommended Text& Internet Sites

Conover, M.B. Understanding Electrocardiography8th Edition, Mosby, St. Louis, MO 2003.

ECG Practice Diagnostic Websites:

http://www.unm.edu/lkravitz/EKG/ekgwebsites.html
http://www.unm.edu/lkravitz/EKG/ekg.html

VIII. Special Resource Requirements

None required

IX. Bibliography

Ehlert, B. *ECGs made easy*. 2nd edition. Mosby, 2002.

Jackson, K. *ECG Interpretation made incredibly easy.* 2nd edition. Springhouse, 2002.

Walraven, G. *Basic arrhythmias*. 5th edition. Prentice Hall, 1999.

Huszar, R.J. *Basic dysrhythmias interpretation and management.* 3rd Edition. Mosby, Philadelphia, PA, 2001.

Conover, M.B. *Understanding electrocardiography*, 8th Edition. Mosby, St Louis, MO, 2003.

American College of Sports Medicine. *ACSM Resource Manual for Guidelines for Exercise Testing and Prescription*, 5th Edition. Lippincott, Williams and Wilkins, Philadelphia, PA, 2005.

Berne, R.M. and Levy, M.N. *Cardiovascular physiology.* 8th Edition. Mosby, St Louis, MO, 2001.

Gibbons, R.J., Balady, G.J., Beasely, J.W. et al. *Guidelines for Exercise Testing, J Am Coll Card*, 30, 260-315, 1997.

Historical

Scheidt, S. and J.A. Erlebacher. *Basic electrocardiography*. Novartis Pharmaceuticals Corporation, New Jersey, 1986.

Scheidt, S. and Netter, F.H. *Interactive Electrocardiography* (CD ROM). Novartis Medical Education, Summitt, New Jersey, 1997.

Frolicher, V.F. Wolthuis, R. Fischer, J. and Uhl, G. *Variations in Normal Electrocardiographic Response to Treadmill Testing, The American Journal of Cardiology*, 47, 1161-1167, 1981.

Course Analysis Questionnaire

A. Details of the Course

A1. Skills in basic electrocardiography are part of the KSA's (knowledge, skills and abilities) required for students in CAAHEP accredited undergraduate exercise science program. Minimal content previously provided to students in electrocardiography is no longer adequate and requires a greater emphasis on electrocardiography as it relates to graded exercise testing and exercise programming for clients with stable chronic diseases.

A2. This course does not require changes in any other course in the department.

A3. This course was taught in the Fall, 2008 as a special topics HPED 481 and had an enrollment of 17 students

A4. This course in not dual-listed

A5. This course is not to be taken for variable credit.

A6. Similar courses are offered at the following institutions, among others:
ESS 667 Exercise Electrocardiography UNC- Greensboro
KIN 153C Exercise Electrocardiography University of California, Sacramento

A7. This content of this course is part of the knowledge, skills, and abilities in the area of exercise electrocardiography required as part of program accreditation.

B. Interdisciplinary Implications

B1. This course will be taught by one instructor.

B2. The content of this course is specific to the opportunities for exercise science majors within the profession.

B3. This course will not be cross-listed.

C. Implementation

C1. Currently faculty resources and equipment are adequate.

C2. Other resources

a. Current space in the Human Performance Lab is adequate.

b. We will require a yearly budget for electrodes and ECG paper.
There is currently one portable ECG machine in the laboratory that is over ten years old and an additional ECG machine intergrated into our metabolic cart that is state-of –the art.

c. Laboratory supplies from the Human Performance laboratory will be used for this course.

d. Library holdings are adequate.
e. No additional budgetary resources are needed.

C3. There are no grant funded resources required for this class.

C4. This course will be offered in the Fall and Spring semesters.

C5. One section of this course will be offered in the Fall and Summer semesters.

C6. Enrollment in the course will be limited to 25 students.

C7. No professional society recommends enrollment limits or parameters for this course.

C8. This course is not being offered as distance education.

D. Miscellaneous
No additional information is necessary.

Part III. Letters of Acknowledgement
(None)