KNES 260 – Science of Physical Activity and Cardiovascular Health

Semester: WinterTerm, 2015
Classroom & Time: On-Line
Instructor: James Hagberg, PhD
Office: Rm 2134E, SPH Building
Phone: 301-405-2487
Email: hagberg@umd.edu

Required Texts and Other Readings: Forty-eight published articles from the research literature in this area serve as the readings for this course; they are posted on the course Canvas site. These articles come from the Journal of the American Medical Association (JAMA), New England Journal of Medicine, Lancet, Circulation, and other high level clinical and physiological journals.

Additional Materials Required: None

Catalog Course Description
This course will detail (1) the public health importance of and the processes underlying cardiovascular disease, (2) the risk factors for cardiovascular disease and the methods whereby they were identified, and (3) the principles of the scientific evidence supporting the use of physical activity to prevent cardiovascular disease.

Course Learning Objectives:
Upon completing this course, the student will be able to:
1. Demonstrate a broad understanding of scientific principles and the ways scientists in this particular discipline conduct research.
2. Apply quantitative, mathematical analyses to science problems.
3. Solve complex problems requiring the application of several scientific concepts.
4. Look at complex questions and identify the science and how it impacts and is impacted by political, social, economic, or ethical dimensions.
5. Communicate scientific ideas effectively.

Kinesiology Competencies Addressed in this Course:
The following competencies for the Kinesiology program are addressed in this course:
1. Know, apply, and evaluate scientific principles of physical activity as a foundation for healthy living.
2. Describe and critically analyze the role of physical activity in health, wellness, and the quality of life.
3. Understand the value of physical activity.
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<thead>
<tr>
<th>Topic Number</th>
<th>Topic</th>
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<td>1</td>
<td>Public health importance of heart disease</td>
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<td>2</td>
<td>Process of heart disease</td>
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<td>3</td>
<td>What are the risk factors for heart disease? (LO Posting Due - Jan 7th)</td>
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<td>4</td>
<td>Interrelationships among risk factors</td>
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<td>5</td>
<td>Prevalence of risk factors</td>
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<td>6</td>
<td>Overall effect of risk factors (LO Posting Due – Jan 10th)</td>
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<td>7</td>
<td>How were heart disease risk factors identified?</td>
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<td>8</td>
<td>Proof of importance of risk factors</td>
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<td>9</td>
<td>Medical treatment of risk factors</td>
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<td>10</td>
<td>MID-TERM EXAM (on-line 9–11 AM EST, Wednesday Jan 14th)</td>
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<td>11</td>
<td>Physical activity recommendations</td>
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<td>12</td>
<td>Effects of physical activity on CV fitness (LO Posting Due - Jan 17th)</td>
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<td>13</td>
<td>Effects of physical activity on plasma lipid levels</td>
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<td>14</td>
<td>Effects of physical activity on high blood pressure and on left ventricular hypertrophy</td>
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<td>15</td>
<td>Effects of physical activity on obesity (LO Posting Due – Jan 21st)</td>
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<td>16</td>
<td>Effects of physical activity on glucose and insulin metabolism</td>
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<td>17</td>
<td>Physical activity and primary prevention of diabetes and hypertension</td>
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<td>18</td>
<td>Effects of strength training</td>
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<tr>
<td>Jan 23</td>
<td>FINAL EXAMINATION (On-line 3 – 6 PM EST)</td>
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**General Course Information**

The course will be held on-line according to the schedule above for WinterTerm, 2015. The instructor is James Hagberg, PhD; his email address is hagberg@umd.edu. All students should contact him for any questions or issues during the course. A Course Introduction video lecture explaining the course requirements and the Syllabus will be posted on the course Canvas ELMS site for you to listen to prior to beginning the course. There will be 18 audio lectures from Dr. Hagberg posted on Canvas addressing topics 1 – 18 listed above. These lectures will be based on PowerPoint slides that are also available on the course Canvas site to print out before you listen to the lectures. The MidTerm Exam will be administered on-line at the time and date listed above. You will have one hour to complete this exam within the 2 hrs that it is available. Submitting the exam acknowledges that you have in essence signed the Honor Pledge indicating that you completed the work on your own. The Final Exam will also be administered on-line at the time and date indicated above; you will have two hours to complete the Final Exam within the three hours that it is available. And, again, submitting the exam acknowledges that you have in essence signed the Honor Pledge indicating that you completed the work on your own. A Written Assignment will be due the last day of the class. More information on this is presented below and on the course Canvas ELMS site.

**Course Readings**

All required course materials, lecture objectives, writing assignment information, and lecture overheads will be available on-line at the University of Maryland Canvas ELMS site (www.elms.umd.edu). Follow the instructions on the page to log in. Once logged in, you will see a link for KNES 260. The KNES 260 Canvas site contains all course information. Adobe
Acrobat Reader is required to download course content.

**On-Line Lecture Objective Postings**

Each student is responsible for posting on-line their responses to four sets of Lecture Objectives over the three weeks of WinterTerm. The goal for these postings is to provide you with a start for a study guide for the MidTerm and Final Exams and to assist you in staying up-to-date in the course and not leaving everything until the end. These postings will be graded in terms of them being correct and complete. These four Lecture Objective grades will account for 15% of your overall final course grade. These assignments must be posted by 11:55 PM EST on the dates listed in the Course Schedule above. There is a tab on the course Canvas site where the Lecture Objectives the student is to respond to are listed and where these responses can be pasted into a posting site. **Any late submissions will not be graded and not counted for grades.**

**Writing Assignment**

Each student will be responsible for one written assignment during WinterTerm. Grades for the written assignment will be based on the information presented relative to the purpose of the paper and the presentation including grammar, spelling, format, and readability. The paper must be >2000 words in length and must cite appropriate references from the research literature. More information concerning the writing assignment is included on the course Canvas web site. In addition there is an audio presentation of this information by Dr. Hagberg on the course Canvas site.

The written assignment is due on-line by 5:00 PM EST the last day of class, January 23rd. Scores will be reduced by 10% for each day the paper is handed in after this deadline. **This paper must be submitted electronically on Canvas by 5 PM on that date. Any late submissions after this deadline must be submitted as an email attachment directly to Dr. Hagberg.** The purposes of this paper are to (1) analyze quantitatively your risk of developing cardiovascular disease in the future, (2) analyze quantitatively the cardiovascular disease risk of an older relative and a reference individual whose data will be provided, (3) analyze quantitatively the impact of changing different cardiovascular disease risk factors, (4) assess your and your older relative’s habitual physical activity levels, (5) design physical activity programs to optimize the future cardiovascular health of yourself, your older relative, and the reference individual, and (6) quantify the expected effects of these exercise programs on the cardiovascular disease risk of the three different individuals. Risk prediction regression equations presented in class are to be the primary basis for these analyses. The results would be most valid if each student had a recent measure of their blood lipid levels. Habitual physical activity levels should also be assessed using the Paffenbarger questionnaire, which is on the course Canvas site. Submitting the paper acknowledges that you have in essence signed the Honor Pledge indicating that you completed the work on your own.

**Tests and Grading**

A list of Lecture Objectives is included on the course Canvas web site and all Mid-Term and Final Examination test questions will be based on these Objectives. The Mid-Term and Final Examinations will be administered according to the schedule above. The format for both examinations will be primarily multiple choice questions with some short answer and short essay questions included. Test scores will be curved based on A >90%, B = 80-89%, C = 70-79%, D = 60-69%, and F <60% with 100% being the maximum individual student score attained on the examination. No plus/minus grades will be earned in this class; thus, the only course grades that
can be earned are A, B, C, D, or F. The MidTerm and Final Exams will each count for 30% of the final course grade (for a total of 60%). The writing assignment will count for 25% of the final course grade and the On-Line Lecture Objective Postings will count for 15% of the final course grade.

**CORE Distributive Studies**

You may have chosen this course as part of your CORE Liberal Arts and Sciences Studies Program, the general education portion of your degree program. CORE Distributive Studies courses are designed to ensure that you will take a look at several different academic disciplines and the way they create and analyze knowledge about the world. A faculty and student committee approved this CORE Distributive Studies course in the area of Life Sciences: NonLaboratory (LS) because it will introduce you to ideas and issues that are central to Kinesiology, a major intellectual discipline, and because it promises to involve you actively in the learning process. Please take advantage of the opportunities this course will offer you.

**Course Policies:**

*Class Participation*

The University policy on attendance is available on http://www.testudo.umd.edu/soc/atedasse.html and in the Undergraduate Catalog. This policy includes information about overall class participation including: religious holidays, inclement weather, excused absences, and makeup exams.

*Email – The Official University Correspondence:*

Verify your email address by going to www.my.umd.edu.

All enrolled students are provided access to the University’s email system and an email account. All official University email communication will be sent to this email address (or an alternate address if provided by the student). Email has been adopted as the primary means for sending official communications to students, so email must be checked on a regular basis. Academic advisors, faculty, and campus administrative offices use email to communicate important and time-sensitive notices.

Students are responsible for keeping their email address up to date or for redirecting or forwarding email to another address. Failure to check email, errors in forwarding email, and returned email (from “full mailbox” or “unknown user” errors for example), will not excuse a student from missing University announcement, messages, deadlines, etc. Email addresses can be quickly and easily updated at www.my.umd.edu or in-person at the Student Service Counter on the first floor of the Mitchell Building.

For technical support for University email: www.helpdesk.umd.edu or call 301-405-1400.

*Religious Observances:*

The University System of Maryland policy provides that students should not be penalized because of observances of their religious beliefs; students shall be given an opportunity, whenever feasible, to make up within a reasonable time any academic assignment that is missed due to individual participation in religious observances. It is the student’s responsibility to
inform the instructor at the beginning of the semester or at least one week in advance of any intended absences for religious observance.

The policy that includes information about Religious Observance is available on: http://www.president.umd.edu/policies/iii510a.html

Special Accommodations / Disability Support Services:
If you have a documented disability and wish to discuss academic accommodations for test taking or other needs, you will need documentation from Disability Support Service (301-314-7682). If you are ill or encountering personal difficulties, please let the instructor know as soon as possible. You can also contact Learning Assistance Services (301-314-7693) and/or the Counseling Center (301-314-7651) for assistance.

The University services for students with disabilities is available on: http://www.counseling.umd.edu/DSS/avail_services.html

Academic Integrity:
The University's code of academic integrity is designed to ensure that the principle of academic honesty is upheld. Any of the following acts, when committed by a student, constitutes academic dishonesty:

- **CHEATING**: intentionally using or attempting to use unauthorized materials, information, or study aids in an academic exercise.
- **FABRICATION**: intentional and unauthorized falsification or invention of any information or citation in an academic exercise.
- **FACILITATING ACADEMIC DISHONESTY**: intentionally or knowingly helping or attempting to help another to violate any provision of this code.
- **PLAGIARISM**: intentionally or knowingly representing the words or ideas of another as one's own in any academic exercise.

For more information see: [http://www.shc.umd.edu/code.html](http://www.shc.umd.edu/code.html).

The Honor Pledge is a statement undergraduate and graduate students should be asked to write by hand and sign on examinations, papers, or other academic assignments. The Pledge reads:

*I pledge on my honor that I have not given or received any unauthorized assistance on this assignment/examination.*

The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit [http://www.shc.umd.edu](http://www.shc.umd.edu).

Inclement Weather / University Closings:
In the event that the University is closed for an emergency or extended period of time, the instructor will communicate to students regarding schedule adjustments, including rescheduling of examinations and assignments due to inclement weather and campus emergencies. Official closures and delays are announced on the campus website (http://www.umd.edu) and snow phone line (301-405-SNOW), as well as local radio and TV stations.

**Early Warning Grades:** Early warning grades will be submitted for those undergraduate students who are newly enrolled at Maryland. These grades are an important component of our retention efforts as they provide timely feedback to those students who are unfamiliar with our academic expectations. A letter grade or “satisfactory/unsatisfactory” (S/U) marks may be submitted.

**Course evaluation:** Your participation in the evaluation of courses through CourseEvalUM is a responsibility you hold as a student member of our academic community. Your feedback is confidential and important to the improvement of teaching and learning at the University as well as to the tenure and promotion process. CourseEvalUM will be available online (www.courseevalum.umd.edu) for you to complete your courses evaluations. By completing all of your evaluations each semester, you will have the privilege of accessing the summary reports for thousands of courses online at Testudo.