**Virginia Tech**

**Department of Human Nutrition, Foods, and Exercise**

**OMALS: Applied Nutrition and Physical Activity Concentration**

**HNFE 5984 Exercise, Physical Activity, and Health**

**2019, CRN: XX Spring 2019, CRN: 20240, 3 creditsXXX, 3 credits**

**Instructor**

# **Angela Anderson, Ph.D.**

# 295 West Campus Drive, Wallace Hall, 252

# Email: **asphay@vt.edu** (preferred contact method)

*Every effort will be made to respond very promptly.*

*However, a response is guaranteed in 24 hours.*

Phone: **540-231-2487**

Office hours: Tuesdays 10:30-12:30 in Wallace 252 or via Zoom- email for a link.

**Course Description**

This course enhances student knowledge and skills related to the concept of exercise is medicine and exercise science and physical activity as applied to healthy living.  Health appraisal; foundations of fitness training principles and prescription; nutrition and energy cost; physiological adaptations; and application of physical activity recommendationsand exercise prescription for disease prevention and treatment will be explored.  Practical applications of exercise and physical activity for students interested in health promotion and/or disease prevention, treatment, and rehabilitation will be a focus.

# **Course Meeting**

This course is an asynchronous virtual campus (online) course. There are no formal or required meeting times. All requirements and assignments may be completed at students’ choice of time and pace as long as due dates are met. The lectures, slides, and associated materials will be posted online **by 9 AM each Wednesday** for the following week’s assignments.

**Learning Objectives**

1. Discuss the historical evolution of U.S. physical fitness recommendations as they relate to the health of the nation.
2. Examine the etiology of diseases related to physical inactivity.
3. Evaluate the current scientific literature on diseases related to physical inactivity.
4. Apply principles of lifestyle management, particularly exercise and nutrition, for health promotion and disease prevention within diverse populations.
5. Illustrate concepts of, and interventions related to, health behavior change.
6. Describe principles of physiological (metabolic and cardiorespiratory) adaptations to exercise, both acute and chronic.
7. Demonstrate the value, protocols, and procedures for assessing cardiorespiratory fitness, muscular fitness, flexibility, and body composition.
8. Design safe, effective, and enjoyable exercise programs for healthy adults.

**Required Materials**

**Textbook:** Bouchard C, Blair SN, Haskell WL; **Physical activity and health**, 2nd Edition. 2012. Human Kinetics.

* Additional readings and resources (peer-reviewed journal articles, websites, videos, handouts, interactive tools/databases) will be posted on Canvas throughout the semester. Some will be required for assignments and class preparation and others will be further information for those interested. You will be informed if they are required or optional when they are posted.
* Additional required readings will be from the following other sources. PDFs of these required readings will be uploaded on Canvas, but if you prefer to purchase these optional textbooks, it is at your discretion:
* **Applied Exercise and Sport Physiology**; 4th Edition; Housh, Housh, & DeVries; ISBN-13: 978-1621590491; ISBN-10: 1621590496
* **ACSM’s Guidelines for Exercise Testing and Prescription**; 10th Edition; American College of Sports Medicine; ISBN-13: 978-1496339072; ISBN-10: 149633907X

**Assessment and Grading**

Additional information about each of the following will be provided on Canvas, including a grading rubric.

|  |  |  |
| --- | --- | --- |
| **Assessments** | **Points** | **% of Final Grade** |
| 13 Quizzes (one for each module) | 5 pts each X 13 modules = 65 | 22% |
| 13 Assignments | 10 pts each X 13 assignments = 130 | 44% |
| 2 Case Reports: Health Assessment; Exercise prescriptions | 50 pts each X 2 reports = 100  | 34% |
| **Total** | **295** | **100%** |

* No make-up quizzes/exams will be given without prior consent of the instructor. Justification for permission to take alternate quizzes/exams include multiple-day university-sponsored travel (ex: out-of-town competition, conference related to graduate program) or documented illness. Please notify the instructor in writing at least one week prior to the quiz or exam due date or in the case of illness, as soon as possible before the due date. Late assignments and projects will be accepted with a penalty of -10%. No extra credit will be offered.
* Grades will be posted throughout the semester on Canvas. Please email as soon as possible if you believe there is an error in one of your grades.

Final grades will be based on the following percentage totals:

93+ A 73-76 C

90-92 A- 70-72 C-

87-89 B+ 67-69 D+

83-86 B 63-66 D

80-82 B- 60-62 D-

77-79 C+ < 60 F

**File Format**

All files submitted for this course should be labeled using the following format:

**Last Name, First Name ASSIGNMENT TITLE, date (month day)**

***Ex: Bird, Hokie ASSIGNMENT- CALCULATIONS, October 15***

It is students’ responsibility to make sure files are completely and accurately uploaded to Canvas by the due date.

**Pre-Lecture Reading**

To prepare you adequately for the information covered in the video lecture, it is always advisable to read ahead or at least skim over the information covered. Quiz material will be from the video lecures, however if there is information that is unclear or you want more content on what is covered, this is where reading the assigned readings are important.

**Quizzes**

Questions are based on the lecture material presented. Some information is given orally and will not be on the slides. Therefore, it is imperative to watch the video lectures and take notes, prior to taking the quiz. All questions will contribute to the final quiz grade for the module. There will be 10 questions per quiz and you will have a 20 min time limit for completion. The quizzes are open book/open lecture. They will open by 9AM each Wednesday the prior week and are due the following **Wednesday by 11:59 PM**.

**Assignments**

Each module includes an assignment to be submitted after completing the required quiz and viewing the video lecture. Assignments are due **each Monday by 11:59 PM**.

**Case Reports**

**Projects are due by 11:59 pm on the following dates (Fridays):**

**Report 1 (*Health Assessment*) – 3/22/19 by 11:59PM**

**Report 2 (*Exercise Prescription*) – 5/3/19 by 11:59PM**

Specific details for each case report will be posted to Canvas. These independent assignments are designed to offer experience building on concepts reviewed in class and applying knowledge to practical work with athletes and non-athletes. Additional details for each assignment will be provided on Canvas.

**Course Conduct**

The instructor is committed to offering a positive, valuable, engaging course. To get the most out of the course (and enjoy the experience), students are expected to:

* **Take time to become familiar with the course Canvas site.** Assignments will be much more straightforward if you can efficiently navigate the course site. A variety of helpful (and interesting!) information will also be included to supplement your learning.
* **Get the textbook.** Students can be successful in some courses without the textbook. This is not one of those courses. Quizzes, exams, assignments, and projects will all require the textbook. Print copy or e-book is acceptable.
* **Plan ahead and budget time accordingly.** It is recommended that students regularly allot two or three time slots per week to work on Exercise and Health: one session for pre-reading, another for viewing video lectures and quiz, and a third session for completing weekly assignments. Case studies may require additional time commitment. (This is just a suggestion – a different arrangement may work best for you!)
* **Give honest effort with each assignment and project.** This course offers the opportunity to grow significantly in your knowledge of exercise science foundations and practical applications. Students also have many opportunities to express themselves creatively and select topics based on individual interests. You will get out of it what you put in!
* **Challenge yourself, your peers, and the instructor through considering diverse approaches and viewpoints**. And it’s always ok to complement and thank others! We will honor the VT Principles of Community in this course:

<http://www.inclusive.vt.edu/content/dam/inclusive_vt_edu/resources/forums/docs/2014-signed-poc.pdf>

**Honor Code**

The tenets of the Virginia Tech Graduate Honor Code will be strictly enforced in this course, and all assignments shall be subject to the stipulations of the Graduate Honor Code. For more information on the Graduate Honor Code, please refer to the [GHS Constitution](http://graduateschool.vt.edu/academics/expectations/graduate-honor-system/ghs-constitution.html).

**Course Support**

***Technical-***

Requests for technical support can be directed to VT 4Help at 540.231.HELP (4357). Students with minimal Canvas experience may find[Canvas: Getting Started for Students helpful.](https://vt4help.service-now.com/kb_view_customer.do?sysparm_article=KB0010590) Canvas assistance is available around the clock via chat, phone, or email. Click on “Help” on the upper right corner of the Canvas screen.

***Accommodations for Special Needs****-*

Any student who needs an accommodation because of a disability is encouraged to email the instructor as soon as possible, preferably before the end of the second week of class. Documentation from the Office of Services for Students with Disabilities will be required for exam accommodations or other considerations to be made. For more information please visit <http://www.ssd.vt.edu/>

***For complete information on student services at Virginia Tech***, please see <http://www.dsa.vt.edu/students.php>

**HNFE 5984 Exercise, Physical Activity, & Health**

**Course Schedule**

(schedule subject to change with advanced notice)

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| --- | --- | --- | --- | --- |
| **Modules** | **Topic(s)** | **Course Work** | **Quiz Due Dates (Wednesdays by 11:59 PM)** | **Assignment****Due Dates (Mondays by 11:59 PM)** |
| **Module 1** | ***Introduction/ Overview*** | * Readings:
	+ Syllabus
	+ Familiarize yourself w/ the Canvas site
* Video lecture and quiz
* Assignment #1
 | 1/23 | 1/28 |
| **Module 2** | ***Ramifications of Physical Inactivity*** | * Readings:
	+ BBH Textbook Ch 4
	+ Inactivity physiology article (Hamilton et. al. 2008)
* Video lecture and quiz
* Assignment #2
 | 1/30 | 2/4 |
| **Module 3** | ***Exercise Science and Physical Activity Recommendations*** | * Readings:
	+ BBH Textbook Ch 2 (pg. 27-35) and 23
* Video lecture and quiz
* Assignment #3
 | 2/6 | 2/11 |
| **Module 4** | ***Responses to Physical Activity*** | * Readings:
	+ BBH Textbook Chs 5-7
* Video lecture and quiz
* Assignment #4
 | 2/13 | 2/18 |
| **Module 5** | ***Organ and Tissue Adaptations to Physical Activity*** | * Readings:
	+ BBH Textbook Chs 8-9
* Video lecture and quiz
* Assignment #5
 | 2/20 | 2/25 |
| **Module 6** | ***Health Assessment*** | * Readings:
	+ On Canvas- ACSM Chs 2-4
* Video lecture and quiz
* Assignment #6
 | 2/27 | 3/4 |
| **Module 7** | ***Mobility and Flexibility*** | * Readings:
	+ On Canvas- HHD Ch 12
* Video lecture and quiz
* Assignment #7
* Health Assessment Case Report- Due 3/22
 | 3/6 | 3/11 |
| **Module 8** | ***Resistance Exercise*** | * Readings:
	+ BBH Textbook Ch 16
* Video lecture and quiz
* Assignment #8
 | 3/20 | 3/25 |
| **Module 9** | ***Aerobic Exercise*** | * Readings:
	+ On Canvas- HHD Ch 10
* Video lecture and quiz
* Assignment #9
 | 3/27 | 4/1 |
| **Module 10** | ***Adapted Exercise Programming*** | * Readings:
	+ BBH Textbook Chs 11, 13-15
* Video lecture and quiz
* Assignment #10
 | 4/3 | 4/8 |
| **Module 11**  | ***Nutritional Considerations*** | * Readings:
	+ On Canvas- HHD Chs 15-16
* Video lecture and quiz
* Assignment #11
 | 4/10 | 4/15 |
| **Module 12** | ***Concepts of Behavioral Change/ Exercise Adherence*** | * Readings:
	+ On Canvas- ACSM Ch 12
* Video lecture and quiz
* Assignment #12
 | 4/17 | 4/22 |
| **Module 13** | ***Exercise and Weight Management*** | * Readings:
	+ BBH Textbook Ch 12
* Video lecture and quiz
* Assignment #13
* Exercise Prescription Case Report- Due 5/3
 | 4/24 | 4/29 |