

PHYSIOLOGICAL BASIS OF EXERCISE

APK 6116

3 CREDITS

FALL 2020

THIS CLASS IS ENTIRELY ON-LINE. ALL YOUR COURSE LECTURES WILL BE IN VIDEO FORMAT AND ALL ASSESSMENTS WILL BE SUBMITTED IN CANVAS.

INSTRUCTOR: Linda Nguyen, Ph.D.

FLG 144

Email: linda.nguyen@ufl.edu

Preferred method of contact: email tool in CANVAS

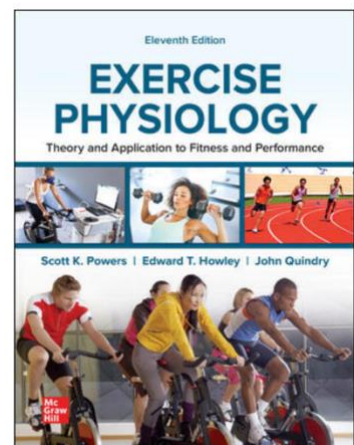
OFFICE HOURS: Weekly virtual office hours will be posted in CANVAS and students may request individual Zooms meetings by appointment via CANVAS email

COURSE WEBSITE: [www.http://lss.at.ufl.edu](http://lss.at.ufl.edu)

COURSE COMMUNICATIONS: General questions for the course should first be posted to the general discussion board. If your questions are not sufficiently answered, then please email the instructor through the email tool for the course management system (CANVAS) rather than through a personal email account.

REQUIRED MATERIALS: You will need the following resources for class:

- **TEXTBOOK:** *Exercise Physiology: Theory and Application to Fitness and Performance* by Powers, Howley and Quindry 11th edition. McGraw-Hill.
- **SUPPLEMENTARY MATERIALS:** Addition materials in the form of original scientific journal articles and a documentary will also be assigned and posted on the course Canvas page.



COURSE OVERVIEW: This graduate level exercise physiology course is designed to examine the acute and chronic physiological responses to exercise. Topics covered include the systemic and cellular adaptations that occur in response to acute and chronic exercise, the physiological adaptations that occur in specific organ systems with exercise and principles of effective training paradigms to elicit physiological changes.

PREREQUISITE KNOWLEDGE AND SKILLS: APK6116 is an introductory exercise physiology course aimed at graduate students who possess an undergraduate level understanding of human exercise physiology. This course is specific for students enrolled in the APK Online Master's Program and there are no course prerequisites to take APK6116. However, any previous experiences in the following areas will be helpful to students taking this course: medical terminology, physiology, exercise physiology, anatomy, and/or biology.

PURPOSE OF COURSE: The purpose of this course is for graduate students to obtain an understanding of human physiological processes and how these processes respond to different stimuli and perturbations (i.e. exercise). Course content will present information and engage students in exercise physiology that promotes analytical, critical and creative thinking within the framework of health and movement. Students will be asked to not only understand basic physiological processes of the human body but will also be expected to apply these fundamental concepts to a physical activity/athlete of their choice. This is intended to enhance the long-term retention of the concepts covered and prepare students for future courses they may take which require health or movement-based problem solving.

COURSE GOALS: By the end of this course, students will be able to:

- Understand and identify theories and laboratory techniques utilized in assessing human physiological responses to exercise and training.
- Graphically describe and explain systemic and cellular changes that occur with exercise
- Explain the efficacy of specific exercise training paradigms and the effect on the human body, both at the systemic and cellular level
- Identify and describe the gross and microscopic structures of the organ systems covered.
- Describe the relationship between structure and function at all levels of anatomical organization (molecular, cellular, tissue, organ, system, organism).
- Predict changes in function and adaptations on the body's organ systems if given a disease, environmental perturbation or training paradigm
- Critically evaluate and interpret scientific literature in exercise physiology
- Engage in critical and constructive academic discussions of exercise physiology topics

- Effectively communicate (written and verbally) with peers and professions using scientific knowledge in exercise physiology

COURSE POLICIES:

PARTICIPATION POLICY: Because this is an entirely online course, you are not expected to physically be on UF's campus at any time. However, you most certainly ARE expected to participate in discussion posts, assignments, engagement activities, and exams.

ASSIGNMENT POLICY: All assignments are open-resource; however, please avoid using random web-sites and sites such as Wikipedia. Your #1 resource should be your textbook and appropriate scientific literature. Late submissions for all assessments/assignments/discussion posts are not accepted.

EXAM POLICY: There will be 4 lecture exams during this semester. These exams are closed-notes exams—very much like you would take if you were on an actual college campus. There is a zero tolerance policy for missed exams. If you miss an exam, you have chosen to accept a zero for that exam.

MAKE-UP POLICY: Unexcused missed exams will result in a zero on the exam (this includes contacting the instructor after the exam window if you are ill). If you are sick or have an emergency that prevents you from taking the exam at the scheduled time, it is your responsibility to contact the instructor as soon as possible. Documentation of the illness or emergency will be required. If you need to schedule a make-up exam, please email the course instructor giving a detailed explanation and attaching any documentation that verifies your reasoning. Make-up exams will be given at the discretion of the instructor. Scheduling make-up exams is the responsibility of the student and should be done—if at all possible—before the scheduled exam time. If you have a serious emergency or death, please contact the Dean of Students Office (www.dso.ufl.edu) and they will contact your instructor so that you do not have to provide documentation of the emergency/death in order to get a make-up exam. Make-up exams are NOT permitted for the following (among others): family vacation, sporting event travel, attending weddings (unless you are IN the wedding), having exams in other classes on the same day.

Requirements for class attendance and make-up exams, assignments, and other work are consistent with the university policies that can be found at <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

UF POLICIES:

UF STUDENT COMPUTING REQUIREMENTS: As a 100% online course and as per the UF student computing requirements, “access to and on-going use of a computer is required for all students.” UF does not recommend students relying on/regularly using tablet devices, mobile phones or Chromebook devices as their primary computer as it may not be compatible with specific platforms used in this course or UF (<https://it.ufl.edu/policies/student-computing-requirements/>). Access to fast, secure Wi-Fi will be necessary for this course. If a student is in an area with limited wi-fi access, UF students can access **eduroam** for free with their GatorLink log-in credentials.

How to connect to eduroam:

1. If you can get a Wi-Fi signal at any of the eduroam locations (see below) and your mobile device (laptop, smartphone, or tablet) has already been configured for eduroam, then you will automatically connect.
2. Otherwise, follow the instructions for connecting here: <https://helpdesk.ufl.edu/connecting-to-eduroam-off-campus/>.

There are more than 100 Wi-Fi hotspots in Florida, including several state university campuses and community colleges. You don't have to sit in a car--many locations have open spaces and communal rooms available so you can get online while socially distancing and following CDC guidelines in an air-conditioned space. Also, in Florida all of the UF/IFAS Research and Education Centers (REC) are equipped with eduroam, so if you live in a rural area of your county you can visit an REC to securely watch course videos and take care of your academic needs. Here's a link to all the eduroam sites in the U.S.: <https://incommon.org/eduroam/eduroam-u-s-locator-map/>.

If you have any problems connecting to eduroam you can call (352-392-HELP/4357) or [email](#) the UF Computing Help Desk.

UNIVERSITY POLICY ON ACCOMMODATING STUDENTS WITH DISABILITIES: Students requesting accommodation for disabilities must first register with the Dean of Students Office (<http://www.dso.ufl.edu/drc/>). DRC-registered students must request their accommodation letter to be sent to their instructors via the DRC file management system prior to submitting assignments or taking quizzes/exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations. Students may reach out and contact their course instructor to verify receipt of their accommodation letter.

Students registered with the DRC: DRC-registered students will take their exams, both lecture and lab, in Canvas similar to other students but with their specific accommodations (i.e. extended time, use of screen reader, etc.) Please contact the instructor if the start time of exams needs to be adjusted due to overlap with other courses.

It is imperative that you verify your specific access needs with your course instructor at least 48 hours PRIOR to scheduled assessments.

UNIVERSITY POLICY ON ACADEMIC MISCONDUCT: Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at <https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>.

- Honor code violations of any kind will not be tolerated and sanctions will be determined by the course instructor for first-time violators
- Any use, access, or handling of technology during an exam will result in a zero on the exam
- Students should use proper citations on assignments. Plagiarism of any kind is not permitted and violations will be reported.
- All allegations, regardless of the severity, will be reported to the Dean of Students Office for University-level documentation and processing

NETIQUETTE - COMMUNICATION COURTESY: All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats. Please consider the following pointers for emailing your course instructor:

- Send your email to the address preferred by your instructor. For this course, your instructor prefers to be contacted with the email tool in CANVAS.
- Use a professional salutation at the beginning of your message (“Good Morning, Dr. Nguyen” or “Hello, Dr. Nguyen”).
- Keep your message as clear and concise as possible. Reading a three-page dissertation on the importance of your family vacation is not fun for anyone except your mother.
- All uppercase letters indicates shouting...PLEASE AVOID THIS UNLESS YOU ARE HAPPY!
- Refrain from profanity in your message, even if it is meant to be humorous.
- Refrain from using texting abbreviations such as OMG or BTW. Your course instructor is not tech-savvy and has no idea what most of these abbreviations mean.
- Close your emails respectfully and politely (“Thank you for your time, John McSmarty”).
- <http://teach.ufl.edu/wp-content/uploads/2012/08/NetiquetteGuideforOnlineCourses.pdf>

COURSE EVALUATIONS: Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>. Thank you for serving as a partner in this important effort.

HONORLOCK SYSTEM REQUIREMENTS (EXAM PROCTORING): Exams will be proctored using HonorLock. Students will not need to sign-up/scheduling a testing time nor do students need to create an account. To ensure your device is compliant with HonorLock a series of pre-assessment checks must be performed before gaining access to the exam. Specifications necessary for HonorLock to work are listed below:

- **System compatibility and quiz setup:**
 - HonorLock is only supported through [Google Chrome web browser](#) on Mac, PC (no other mobile devices or tablets are supported)
 - Students must install the [HonorLock Extension](#) within Chrome
 - Beginning July 1, 2020 HonorLock will no longer support Windows 8, Windows 8.1, Mac OSX 10.11 and Mac OSX 10.12. After July 1st, you will find the updated Minimum System Requirements as well as a system compatibility test at honorlock.com/support
- **Additional considerations using HonorLock for exams:**
 - You will need to take the exam on a desktop computer or laptop with a microphone and webcam set up on your chosen device. This will not work on mobile devices, such as iPads, tablets or smart phones
 - You need to make sure that the camera is facing YOU at all times – if the camera does not stay facing you or if you are out of frame, the exam will pause preventing you from continuing with the exam even mid-way through.
 - You need to open Canvas on the **Google Chrome internet browser** and to download the HonorLock Chrome Extension. Any other internet browsers will not be compatible with HonorLock.
 - Make sure you have a stable Internet connection wherever you are taking the exam (i.e. good Wi-Fi)
 - A 360-degree scan of your testing room/environment will be required. If you are using a laptop, you will need to pick up your laptop and rotate it for the room scan including your examination surface (i.e. desk), floor space, your lap, etc. The testing environment should be cleared of any clutter, no notes, textbooks, etc. laying out that could be deemed as accessible that could constitute violation of the Honor Code (i.e. academic dishonesty).
 - Make sure the room you are taking the exam in is well-lit and that you are by yourself. Rooms that are not bright enough may get flagged as “blurry” or “unclear”.

- You must have a valid Photo ID (Gator ID, driver's license, passport, etc.).
- Only one screen (I.e. cannot have multiple monitors) and one tab (i.e. the tab that is being used for the exam) in Chrome is allowed. HonorLock also has an integrity algorithm that can detect search-engine use, so do not attempt to search for answers, even if it is on a secondary device.
- An HonorLock Practice Test will be set up under Quizzes in Canvas. **Please go through this practice test well in-advance of taking the exam.** This practice test allows you to go through all of the pre-assessment checks so you will know what to expect when taking the exam itself. **Take the practice test on the device you intend to take the exam on and in the same environment (building, room, etc).**
- **Failure to meet the items above may result in a 0 grade.** If you encounter any issues with the testing platform or the exam, you need to email your course instructor immediately with specific details of what occurred so that they can assist you as quickly as possible.

GETTING HELP:

For issues with technical difficulties for Canvas, please contact the UF Help Desk at:

- helpdesk@ufl.edu
- (352) 392-HELP - select option 2
- <https://request.it.ufl.edu/>

Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from Helpdesk when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

Other resources are available at <http://www.distance.ufl.edu/getting-help> for:

- Counseling and Wellness resources
- Disability resources
- Resources for handling student concerns and complaints
- Library Help Desk support

Should you have any complaints with your experience in this course please visit <http://www.distance.ufl.edu/student-complaints> to submit a complaint.

GRADING POLICIES:

The following table outlines the four components to the course on which you will be evaluated. The total points earned from each component will be summed and divided by the total points possible in the course: 530.

Evaluation Components (number of components)	Points Per Component (total)	% of Total Grade
Lecture Exams (4)	50 points each = 200 points total	37.7%
BYOA Project (10)	20 points each = 200 points total	37.7%
Fact or Fiction Project (3)	55 points total	10.4%
Engagement	50 points total	9.4%
Reflection	15 points total	2.8%
Syllabus Quiz	10 points total	1.9%

Syllabus Quiz - The syllabus quiz will consist of 10 questions, 1 point per question to ensure all students are aware of and understand the course assessments and policies. Students will be given an unlimited number of attempts on the quiz and to access all course material, students must receive a score of 10 points. It is recommended that students complete the quiz as soon as possible in order to unlock the course material. [Students will receive a zero for the syllabus quiz if it has not been completed prior to taking to Exam 1.](#)

Exams – Each module will have an exam worth 50 points. Question formats include: fill in the blank, multiple choice, multiple response, true/false and short answer/free response. Students are not permitted access to any kind of materials or notes during these exams and will utilize HonorLock for exam proctoring. Exam questions are generated by the course instructor and will be based on the lecture material and any supplemental material assigned to students. Each exam will need to be completed within a 48-hour window. Students who do not complete the exam within the given time frame (i.e. 48-hours) will receive a zero for the exam. [All lecture exams for this course will be available from 12pm \(noon\) Friday – 12pm \(noon\) Sunday. You must take the exam within that time frame.](#)

Build your own Athlete (BYOA) Project – Students will be asked to choose a sport or activity at the beginning of the course for their particular athlete as part of this project. As each physiological system is presented in the course on a weekly basis, students will be required to identify, describe and justify the factors that would be most optimal for their chosen activity. Leading questions will be provided for each week’s topic to assist students in their weekly

write-up. BYOA submissions are due by Friday at 11:59pm EST of their scheduled week.
Submissions will be uploaded in Canvas as PDF documents.

Reflection – Students will generate a one-page, single-spaced word document evaluating the BYOA as an experience. What did you learn? What did you take away from this project? How did you feel about the weekly submissions? How did this project make you feel? In hindsight, what would you have changed, if anything? This is your opportunity to give your genuine opinion(s). This reflection paper will be read but will not be graded on content. If you thought that this project was total garbage and a waste of your time, you are absolutely free to write that and no hard feelings or judgements will follow. Your grade for this portion of the project will simply come from the parameters outlined in the rubric.

Exercise Physiology Fact or Fiction Project – Students will sign up in duos or trios for a particular health “myth”, anecdote, recommendation or saying. Sign-ups will begin the second week of classes after the drop/add period. If students fail to sign up for a topic by the designated deadline, students will be assigned a topic/placed in a group by the course instructor. The fact or fiction project has 3 components: a video presentation, submission of slides used in the presentation and a peer evaluation. Students will be responsible to work within their duo/trio to appropriately research their chosen topic and evaluate whether it is true or not based on scientific and original research articles. Rubrics for all components of this project is available in Canvas.

- Each group will be responsible for a generating a video presentation based chosen topic in which they will present their findings and determine whether it is “fact or fiction”. The recorded video presentation will be approximately 20-25 minutes long detailing the topic, relevant background information (where the myth/anecdote came from), the physiological basis confirming or debunking the myth/anecdote, methodology and results of original research studies and the student’s own interpretation and critique of the myth/anecdote. Presentations that exceed 25 minutes may be docked points; conciseness, clarity, and information delivery will be part of your grade. This component will be graded out of 20 points.
- Each group will submit their PowerPoint presentation slides that are used in their video presentation to the instructor via Canvas for grading. This component will be graded out of 15 points.
- Students are expected to provide adequate, critical, informative and constructive feedback on their peers’ video presentations. Feedback interviews between the presenter and peer evaluator will be recorded via Zoom and uploaded to Canvas for grading. This component will be graded out of 20 points.

Engagement – Students will earn up to 50 points through various aspects of course engagement. Students are free to choose their own method(s) of engagement from the list below. Students are encouraged to propose alternate ideas to the course instructor and points can be negotiated for those ideas if accepted. Students may earn a maximum of 15 points during each module to ensure that students are actively engaged during the entire semester. Engagement points will be tallied and updated in the Canvas gradebook after each module.

- **“Hi...my name is...” (3 points)** – This discussion board will only be open during Module 1 as a way to introduce you to one another. You should include your name, your location (some students may be in different locations in the US/world), what you do outside of class (hobbies, job, etc.), what your hopes are for the class/semester, and/or something interesting about yourself.
- **Discussion posts (5 points)** – posting an interesting article about exercise physiology to the “Isn’t THAT cool!” discussion board along with a paragraph explaining how it relates to course content. No more than one article or post per chapter.
- **Practice Question posts (6 points)** - Post 3 clinically applied practice test questions to the “Practice Questions” discussion board. You can only get points for this if another student attempts to answer and you provide feedback AFTER they’ve answered. Your questions cannot be too similar to any other student’s questions. These must be multiple choice with at least four options. You may do this once per exam/module.
- **Answering discussion board questions (1-4 pts)** – students may answer questions posted by other students to the “Chapter Content Questions” discussion board. Responses should be explanatory in nature and not simply one word responses. Listing appropriate page numbers from the textbook to help guide fellow classmates is recommended, but may not always be necessary. Another suggestion would be to post a helpful image or website. Points will be at the discretion of the instructor and largely based on accuracy of the answer as well as helpfulness of the explanation.
- **Creative expression (1-10 pts)** – students may generate any kind of creative project related to physiology and exercise. Examples would be poems, songs, paintings, sculptures, baked goods, etc. I would love to see you have FUN with this stuff! Points will be assigned at the instructor’s discretion and will largely be based on effort. For example, if you post a drawing that you traced or looks like only took you a few minutes...you may only get a point (maybe). If you post a 30-line poem about the respiratory system...that’s worth a lot more.

GRADING SCALE: All points earned in the course will be summed and divided by the total points available. Any discrepancies with points displayed in either gradebook should be pointed out to the instructor before the last day of class. There is no curve for this course and grades will not be rounded up under any circumstance. See the UF undergraduate catalog web page for information regarding current UF grading policies: www.registrar.ufl.edu/catalog/policies/regulationgrades. *Any requests for extra credit or special exceptions to these grading policies will be interpreted as an honor code violation (i.e., asking for preferential treatment) and will be handled accordingly.*

The following table describes the grade scale and GPA impact of each letter grade.

Letter Grade	Points Needed to Earn Each Letter Grade	Percent of Total Points Associated with Each Letter Grade	GPA Impact of Each Letter Grade
A	492.9-530.00	93.00-100	4.00
A-	477.00-492.89	90.00-92.99	3.67
B+	461.10-476.99	87.00-89.99	3.33
B	439.90-461.09	83.00-86.99	3.00
B-	424.00-439.89	80.00-82.99	2.67
C+	408.10-423.99	77.00-79.99	2.33
C	386.90-408.9	73.00-76.99	2.00
C-	371.00-386.99	70.00-72.99	1.67
D+	355.10-370.99	67.00-69.99	1.33
D	318.00-355.09	60.00-66.99	1.00
E	0-317.99	<60.00	0.00

COURSE SCHEDULE:

Module #	Week	Date	Topic	Assignments
1	1	Aug 31-Sep 4	Instructor welcome video Intro to Physiology and Historical Perspectives	Syllabus Quiz Select Athlete/Sport for BYOA Project
	2	Sept 7 – Sep 11	Homeostasis <i>Sept. 7 – Labor Day</i>	Sign up for Fact or Fiction Topic
	3	Sep 14 -Sep 18	Bioenergetics	BYOA – Homeostasis and Limits to Performance
	4	Sep 21 – Sept 25	Exercise Metabolism	
Exam 1 – opens Fri. Sept. 25 at 12pm and closes on Sunday Sept. 27 at 12pm EST				

2	5	Sep 28 – Oct 2	Endocrine System and Exercise	BYOA – Energy Sources and Doping
	6	Oct 5 – Oct 9	Nervous System and Movement	BYOA – Hormones
	7	Oct 12 – Oct 16	Skeletal Muscle Function	BYOA – Nervous System Function
Exam 2 – opens Fri. Oct. 16 at 12pm and closes on Sunday Oct. 18. at 12pm EST				
3	8	Oct 19 – Oct 23	Cardiovascular Responses to Exercise	BYOA – Skeletal Muscle Fiber Types
	9	Oct 26 – Oct 30	Respiratory Responses to Exercise	BYOA – Cardiovascular Regulation
	10	Nov 2 – Nov 6	Acid-Base Balance	BYOA – Respiratory Function
Exam 3 – opens Fri. Nov. 6 at 12pm and closes on Sunday Nov. 8 at 12pm EST Fact or Fiction – Presentation Slides and Presentation Recordings due by Sunday Nov. 8 at 11:59pm EST				
4	11	Nov 9 – Nov 13	Temperature Regulation Nov. 11 – Veteran’s Day	
	12	Nov 16 – Nov 20	Adaptation, Injury and Repair	BYOA – Temperature Regulation
	13	Nov 23 – Nov 27	Nov. 27-29 – Thanksgiving	
	14	Nov. 30 – Dec. 4	Training Paradigms	BYOA – Injury and Adaptations
	15	Dec. 7 – Dec 9	Review	BYOA – Training Programs
Fact or Fiction – Peer Evaluation Feedback Videos due by Wed. Dec. 9 at 11:59pm EST BYOA Reflection due by Wed. Dec. 9 at 11:59pm EST Exam 4 – opens Fri. Dec. 11 at 12pm and closes on Sunday Dec. 13 at 12pm EST				

Disclaimer: This syllabus represents current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity.

STUDY TIPS FOR DR. NGUYEN’S CLASS:

- Read the assigned pages from the text BEFORE you watch a lecture. Do not take notes, underline, highlight, or attempt to memorize anything...JUST READ and enjoy!
- Snow-ball the lecture notes. Begin studying lecture material immediately after the first lecture. Then, after the second lecture, begin your studies with day one lecture material. Continue this all the way up to the exam.
- Engage your classmates. This material is meant to be discussed...and you can’t do that well with just yourself. Post questions to the discussion board. Exchange contact information and have a phone conversation. Post cool videos you find regarding related material to the discussion boards. ENGAGE!
- Re-write questions. Taking complex questions and breaking them down to identify exactly what the question is REALLY asking for is very helpful. It is also helpful to look at incorrect answer choices and identify what makes those choices wrong. Ask yourself, “How could I make that statement correct?” A good place to look for these types of questions is at the end of each chapter – the critical thinking questions.

SUCCESS TIPS FOR DR. NGUYEN’S CLASS:

- Do not fall behind...and you can easily get overwhelmed if you procrastinate.
- Stay organized. Keep track of all important due dates and move through each module in a uniform manner so that you are always aware of what you have done and what is left to be completed.

- Check CANVAS announcements/emails daily...just pretend it is Facebook for school. Your course instructor will post important and helpful information (such as friendly reminders of upcoming due dates) as announcements.
- Have a positive attitude! Approaching the course with a defeatist attitude will hinder your learning and grade...crack a smile now and then. THIS STUFF IS COOL!

PERSONAL NOTE FROM DR. NGUYEN:

I recognize that this is can be intense course. In combination with everything going on in your life, stress may creep in. If you are overwhelmed by the stresses of your semester and feel like you can't handle the pressure, please contact me and/or someone at UF's Counseling and Wellness center. I care for my students' wellbeing. Please take care!

