

EXER 530: Stress, Health, and Human Performance

Summer 2025

Location: TBA

Course: Stress, Health, and Human Performance

Instructor: Jeff Buxton

Email: buxtonjd@gcc.edu

Office: PLC 208

Mailbox: 2858

Phone: 724 – 458 - 2125 Office

Office Hours: TBA

*** Due to research demands and other possible work-related meetings I may not always be available during these hours. If you schedule with me in advance, I will always do my best to meet with you.*

Required Text: None

Recommended Text/Resources:

Course Description: This course will provide a deeper understanding of human biology and specifically how various forms of hormetic stress can be leveraged to optimize our health and human performance potential. These include carbon dioxide tolerance, altitude, temperature, light exposure, caloric restriction and others. Students will gain a greater understanding of how these stressors affect our biology and how we can harness these to improve health and performance outcomes through classroom lecture as well as hands-on experiential learning. On campus lab-Summer. (3 credits)

Prerequisites: None

Learning Outcomes: Students will:

1. Understand the mechanisms by which various hormetic stressors can positively impact health and performance (quizzes and final exam)
2. Understand safe and effective dosing strategies of various hormetic stressors (quizzes and final exam)
3. Create a written literature review with suggested application for a hormetic stressor (lit review)
4. Understand how various hormetic stressors impact the students' own physiology (weekly journal/biometrics tracking)

Kinesiology Master Program Objectives and Student Learning Outcomes

Program Outcomes

The goal of this program is to provide students with the knowledge, skills, and practical experiences to effectively attain employment and successfully meet the professional demands within the fields of Exercise Science, Research, and/or Sports Performance.

Students will have the ability to:

Upon completion of the program, the student will:

1. Critically appraise research, generate meaningful research questions and projects, and implement research-driven ideas into practice.
2. Demonstrate an understanding of the current issues and trends, and advanced concepts and theories in exercise science?
3. Gain advanced laboratory skills and knowledge of Human Performance Laboratory instrumentation.
4. Understand the mechanistic connections between nutrition and metabolism and human performance, health and disease.
5. Possess a comprehensive understanding of the biological contributions of physical activity and sedentarism.
6. Implement and interpret testing strategies to assess various components of movement competency, performance, and recovery.
7. Gain practical experience teaching and coaching advanced exercises.
8. Understand the biological effects of a variety of stresses on the human body and how we might leverage some stresses to improve health and performance.
9. Develop an understanding of initiation and termination of human movement and factors that affect optimal movement.
10. Complete a directed research project or internship.

Learning Outcome	Assessment	Departmental Objective
1. Understand the mechanisms by which various hormetic stressors can positively impact health and performance	Weekly quizzes, Final Exam	1, 2, 7, 8
2. Understand safe and effective dosing strategies of various hormetic stressors	Weekly quizzes, Final Exam	1, 2, 7, 8
3. Create a written literature review with suggested application for a hormetic stressor	Literature review project	1, 2, 7, 8
4. Understand how various hormetic stressors impact the students' own physiology	Weekly Journal/tracker	1, 2, 7, 8

Grading Procedure:

Weekly Quizzes (4)	25%
Final Exam	20 %
Weekly Journal/tracking	15 %
Literature Review Project	25%
Class Participation	5 %

100 %

Weekly Quizzes & Final Exam:

Each week of this course we will explore several new hormetic stress strategies, the proposed mechanisms by which they work as well as dosing/implementation strategies. Students will complete a quiz at the end of each week reflecting their understanding the science behind each of the weekly topics. The final exam will be comprehensive. Exam questions will be related to lecture content as well as hands-on days. Always take notes!

Weekly Journal/Tracking:

Students will complete a daily journal which will be used to track various objective biomarkers (sleep scores, HRV, etc.) and subjective markers (sleep quality, mood, stress, recovery, etc.) for the purpose of learning how each stressor experienced in class impacts their individual biology. Journals will be maintained for every day of the week and submitted at the end of each week along with a simple reflection.

Literature Review Project:

Students will choose a topic of interest related to the idea of stress hormesis and growth mindset and create a thorough literature review including proposed mechanisms for health and performance enhancement as well as dosing/implementation strategies. Students will submit this literature review as a written word document using APA method of citation. Students will also present their findings in class.

Class Participation:

You will be graded on your overall level of active participation in this class throughout the semester based on a sliding Likert scale of “poor (70%)”, “fair (80%)”, “good/average (90%)” or “excellent (100%)”. Class attendance, answering or attempting to answer in class questions, asking questions, participating in hands-on portions in sincere manner, overall attention (are you paying attention to the class or your cell phone?), etc. will be used to determine this grade. To receive an “excellent” score you must attend every class within reason (excluding legit illnesses, injuries, or other circumstances out of your control), participate in class discussion by adding to the conversation or asking questions related to conversation, sincerely engage in all the hand-on portions of class, arrive to every class on time, avoid distractions from cell phone and other media on your computer. A score of “poor” will be provided if you regularly miss class, arrive late to class, do not provide full attention to class, goof off during hands-on, and do not ever engage in discussion.

Late Work:

*Late work will **not** be accepted unless permission has been granted by the professor.*

Make-up Exams:

*There will be **no** make-up exams. All students must be present to take the exams.*

Grading Scale

The following grading scale will be used for this class:

90 – 100	A
80 – 89	B
70 – 79	C
< 70	F

The catalog describes each of the grades as follows:

The 'A' grade may be interpreted to mean that the instructor recognized exceptional capacities and exceptional performance.

The grade of 'B' signifies that the student has, for any combination of reasons, demonstrated a significantly more effective command of the material than is generally expected in the course.

The 'C' grade is the instructor's certification that the student has demonstrated the required mastery of the material.

The 'F' grade indicates failure to master the essentials and the necessity for repeating before credit may be allowed.

Schedule

Tentative Schedule of Topics/Assignments

Week 1: Course Introduction/Hormetic Stress and CO₂ – the molecule of stress

Quiz 1 at end of week

Biometrics tracking and reflection journal due at end of week

Week 2: Heat, Cold or Both

Quiz 2 at end of week

Biometrics tracking and reflection journal due at end of week

Choose Lit Review Topic

Week 3: Light Exposure and Light Therapies

Quiz 3 at end of week

Biometrics tracking and reflection journal due at end of week

Week 4: Caloric Restriction, Fasting and other stressors

Quiz 4 at end of week

Biometrics tracking and reflection journal due at end of week

Present Lit Reviews

Comprehensive Final Exam

FINAL EXAM

“As stated in the *Bulletin*, final exams must be administered according to the time scheduled by the Registrar’s office and cannot be changed to suit the convenience of the student. It is your responsibility to schedule your travel and work plans accordingly. Students with a GCC excused absence will receive permission to reschedule their final exams. In addition, any student who has three exams scheduled on a given day may request permission from the Dean of the school of the student’s first major to reschedule one exam; however, the Dean is not required to grant such a request.”

Exercise Science DEPARTMENT PROCEDURES FOR CLASS ATTENDANCE

Attendance

Each student may elect to take two unexcused cuts (per semester) before it will affect their grade. Each cut beyond the allotted two will lower the final grade one letter. If all of the student’s cuts are excused and are six or more in number, the grade shall be an incomplete (I).

Provost’s Excuse

Absences incurred through participation in authorized College activities are excused by the Provost and count as an excused cut. The faculty supervisor of each organization, or coach of each sports team, will provide the Office of the Provost with names of students whose participation causes them to miss classes. Students should inform the instructor of his/her absence before and after the missed classes. It is the responsibility of the student to make-up any missed work.

Absences incurred due to legitimate illnesses or to death in the immediate family

In case of a death in the family, students are excused provided the instructor is notified before the student leaves campus and written verification is submitted to the instructor upon returning to class. In case of illness, the student should have been to Zerbe Health Center or his/her own personal physician for medical attention. In either of these circumstances, the student must make up the work missed for the class, and provide written verification of their condition to the instructor at the next class they attend.

Student attending class with injury

Students attending class with an injury that prevents them from participating in all activities will be excused by the instructor from those activities that would otherwise cause further injury or pain. Students are expected to be properly dressed for class and assist their class in any way possible.

Student attending class with illness

Students attending class with an illness that prevents them full participation will be excused by the instructor from activities that day. Students may be asked to assist their class and/or the instructor.

Student late for class

Students arriving after class has started and attendance has been taken, will receive a warning on the second offense and will be assigned a cut on the third offense.

Telephone calls

Students who are too ill or injured to report to class may leave a message on instructor's voice mail or contact the instructor via email. Written verification from Zerbe Health Center or the student's personal physical, of the condition or illness, must be provided to the instructor at the next class attended.

Test days

If an unexcused absence occurs on a test day, it will be left to the discretion of the instructor as to whether the test may be made up. If an excused absence (verified by a Provost's Excuse) occurs on a test day, the student must make arrangements with the instructor to take the exam prior to the day of class that will be missed.

Written assignments

Class projects or written assignments are to be submitted at class time unless permission to be late is granted by the instructor. An automatic 5 points or 5% will be deducted for each day an assignment is late.

Student suspension

Students not permitted to remain on campus and attend classes due to disciplinary suspension sanctioned by the Office of Student Life and Learning will be permitted to make up classes missed during the time of suspension. For attendance purposes only, students may attend additional classes, assigned by the instructor, during the first week of attendance on campus after the suspension period. Make-ups for any written work, including quizzes or exams, missed during the suspension period will not be permitted.

HONESTY IN LEARNING

Revised Academic Integrity Policy Spring 2020

Preamble

Grove City College is deeply invested in upholding academic integrity and honesty. Three of the college's five core values, faithfulness, excellence, and community, directly relate to academic integrity because any violation of academic integrity is a form of theft and deceit that affects the one stolen from, as well as the community of students and faculty at the college. In addition, cheating is a violation of three of the Ten Commandments: the prohibitions against stealing, lying, and coveting. However, as the Ten Commandments and the totality of Scripture demonstrate to us, we are fallen creatures who at times do what we ought not do.

Accordingly, the college has created a policy both to define what cheating is and to describe our process for dealing with allegations of cheating in order to discourage cheating and provide an opportunity for meaningful repentance and restoration when students do cheat.

Pledge

As a student of Grove City College, I pledge to do my work faithfully with honesty in accordance with my calling as a student working for Christ's glory.

Cheating and Plagiarism may be present in many areas, including (but not limited to) the following:

1. **Doing Papers, Outside Work.** Work done out of class, which a student submits as his/her own work to a professor, should be his/her own and should not contain that which has been obtained from another, other than properly credited references, sources, and citations.
2. **Taking Exams, Tests, Quizzes.** Work done on a test, exam, or quiz, which a student submits to a professor, should be his/her own and should not contain that which has been knowingly obtained from another. By default, no resources are permitted unless explicitly allowed by the instructor.
3. **Preparing for Exams.** A student should not seek to gain an advantage on an exam he/she is about to take by obtaining advanced access to particular questions or advance copies of a professor's exam, or by giving access to other students. This includes access to exams from prior semesters.
4. **Group Work.** In courses where group work or teamwork is allowed, the members of the group may collaborate and share resources among themselves, but not with other groups or prior and subsequent classes.
5. A student should not cooperate with, aid, or encourage another student's violation of the above rules, even though he or she receives no direct benefit. Any student who does so is also guilty of cheating, and can have their grade from current or past semesters (if relevant) reduced.
6. **Instructor-Imposed Limitations.** Faculty may add (via syllabus, assignment instructions, or verbal instructions) additional rules and limitations pertaining to cheating in their particular discipline, class, and assignment.

Special Note: Plagiarism includes

1. Any direct quotation of another's words, from simple phrasing to longer passages, without using quotation marks and properly citing the source of those words.
2. Any summary or paraphrase of another's ideas without properly citing the source of those ideas.
3. Any information that is not common knowledge—including facts, statistics, graphics, drawings—without proper citation of sources.
4. Any cutting and pasting of verbal or graphic materials from another source and representing as one's own work—including books, databases, web sites, journals, newspapers, etc.—without the proper citation for each of the sources of those materials; this includes any copyrighted artwork, graphics, or photography downloaded from the Internet without proper citation.
5. Any wholesale "borrowing," theft, or purchasing of another's work and presenting it as one's own, whether from the Internet or from another source.
6. Any presentation of "ghost-written" work including—whether paid for or not—as one's own original work, including papers, computer code, visual artwork, and other forms of written and non-written work.

7. Making one's work available for copying by others, as well as copying work posted on the Internet or otherwise made available by another.
8. Self-citation: you cannot submit the same work for two different classes. If you use part of an earlier work, or ideas from an earlier work, you should reference it, as with any other source.

Please note: In signing their application form, all Grove City College students have pledged themselves to academic integrity. (cf. page 49 of the 2015-16 Grove City College Bulletin).

In addition, by vote of the Grove City College faculty, a student who violates, or who assists another to violate, the Honesty in Learning Policy shall be penalized with a minimum of a failing grade for the specific work for which the dishonesty was committed. More severe penalties may be imposed by faculty including failure in the course. For the processes through which incidents are handled please refer to your Crimson, the 2015-16 College Bulletin, or the Academic Integrity link on mygcc.

CLASSROOM COMPUTER POLICY

Students are welcome to use their computers for note-taking or other class-relevant activities. The manner in which you use your computer in class is considered a matter of honor and professionalism. Students are to adhere to the following guidelines:

- The student computer should NOT be connected to the network (wireless or hardwire) unless instructor-initiated classroom activities require the network.
- Computer use must be for note-taking or other class-relevant activities.
- Use of the computer must be subtle and non-distracting to classmates and the instructor. Other uses (such as those described below) constitute a significant visual distraction for others seated nearby who have paid for the right to be free of these unnecessary intrusions.

Inappropriate use of a computer in the classroom may be viewed as being disrespectful to the instructor, is often distracting to other students, and is unprofessional. Examples (not a comprehensive list) of inappropriate activities include:

- E-mailing
- Instant Messaging
- Surfing the Web
- Working on projects/assignments for other classes (or the current class unless directed to do so by the instructor)
- Playing games
- Watching movies
- Listening to music

Judgment as to the appropriateness of student computer use is at the discretion of the instructor. The consequences for violating this policy are also at the discretion of the instructor.

- First offense: you will be asked to turn off your computer for the remainder of class.
- Second offense: you will be asked to leave class immediately.
- Third offense: you will be asked to leave class immediately and attend class for the remainder of the semester without your computer, and therefore take notes with pen and paper only.

Accessibility & Accommodations

It is Grove City College's goal that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on a disability, please let me know immediately so that we may discuss options. You are also welcome to contact the disability services office to begin this conversation or to establish accommodations. The Disability Services Coordinator may be reached at 724-264-4673 or DisabilityServices@gcc.edu.