Course Description
An examination of how living organisms cope with short- and long-term exposure to extreme environmental conditions related to water and nutrient availability, temperature, and pressure. A basic understanding of organismal physiology is expected.

Required Text
You should also have an introductory, college-level anatomy and physiology text for reference.

A Note about Summer Courses
Summer courses are not abbreviated versions of courses offered during the fall and/or spring semesters. They are the same courses condensed into a shorter time period. If you were taking this course on campus, it would meet 3 hours per week for 15 weeks (45 hours total) during the fall or spring semester plus a 2-hour final exam period. During the summer it must meet the same total number of hours to be worth the same amount of credit. Therefore, you should expect this course to “meet” 5-6 hours per week for 8 weeks. This “meeting time” includes attending lectures, participating in discussions, and taking quizzes or exams, but it does not include work you would do outside of a traditional classroom setting (looking up references, writing papers, reading the text, studying for quizzes and exams). I am fully aware that the 4th of July holiday falls during the term. While some families have large gatherings or reunions that involve extensive travel during this holiday time, other families don’t and many people simply observe the holiday itself with a picnic and fireworks. I cannot rearrange the entire course schedule around a one-day holiday.

Course Objectives
1. Students will be able to explain the relationship between homeostasis and stress.
2. Students will be able to analyze linear and parallel survival systems.
3. Students will be able to differentiate between adaptation, acclimatization, acclimation, and cross-acclimation (positive and negative), and provide examples of each.
4. Students will be able to explain how organisms adapt to limited or excessive nutrient supplies and the consequences of these extremes on growth.
5. Students will be able to explain how organisms adapt to limited or excessive water availability and why salt water is an unacceptable substitute for fresh water.
6. Students will be able to explain how organisms adapt to temperature fluctuations and temperature extremes.
7. Students will be able to explain how organisms adapt to changes in air pressure and gravitational forces.

Tentative Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic(s)</th>
<th>Chapter(s)</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (June 4)</td>
<td>Homeostasis, survival, and adaptation</td>
<td>1, 2, 3</td>
<td>Quiz 1</td>
</tr>
<tr>
<td>2 (June 11)</td>
<td>Nutrient availability</td>
<td>4</td>
<td>Assignment 1, Quiz 2</td>
</tr>
<tr>
<td>3 (June 18)</td>
<td>Water availability and issues with salt water</td>
<td>5, 6</td>
<td>Exam 1</td>
</tr>
<tr>
<td>4 (June 25)</td>
<td>Heat</td>
<td>7, 8</td>
<td>Quiz 3</td>
</tr>
<tr>
<td>5 (July 2)</td>
<td>Cold</td>
<td>9, 10, 11</td>
<td>Assignment 2, Quiz 4</td>
</tr>
<tr>
<td>6 (July 9)</td>
<td>Hyperbaric environments</td>
<td>12, 13, 14</td>
<td>Exam 2</td>
</tr>
<tr>
<td>7 (July 16)</td>
<td>Hypobaric environments</td>
<td>15</td>
<td>Quiz 5</td>
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Determination of Grade
There will be 3 timed, on-line exams. The first two exams will have a take-home portion and the final exam will be comprehensive over the entire course. In addition, there will be 5 timed, on-line quizzes.

- Two (2) on-line exams (100 points each) 200 points
- Two (2) take-home exams (50 points each) 100 points
- Five (5) on-line quizzes (20 points each) 100 points
- Three (3) take-home assignments (50 points each) 150 points
- Comprehensive on-line final exam 200 points
- Total points possible 750 points

Letter grades will be assigned on the following scale:
- A+ (98-100%, 735-750 points) A (92-97%, 690-734 points) A- (90-91%, 675-689 points)
- B+ (88-89%, 660-674 points) B (82-87%, 615-659 points) B- (80-81%, 600-614 points)
- C+ (78-79%, 585-599 points) C (72-77%, 540-584 points) C- (70-71%, 525-539 points)
- F (less than 450 points)

Course Policies
All assignments must be submitted as an e-mail attachment in Microsoft Word format. So that I can easily identify documents, your name must be a part of the name of the document. For example, if I were a student in the class and were submitting assignment 1, I would name my document something like “steele-assignment1.docx.” In addition, your name must be on each page of the document in the upper right hand corner so that I can easily identify the documents when I print them out, and pages must be numbered. If an assignment has a page specification, margins and font sizes will be defined and credit will be lost for not following directions or going under or over the page specification. On-line quizzes and exams will not be rescheduled without a valid reason. If Blackboard crashes while you are taking the quiz or exam, that is entirely different and I will reset the quiz or exam for you. Please do not panic if this happens because it is not unusual and you will not be penalized in any way.

Plagiarism
Plagiarism will not be tolerated. Any student who plagiarizes work will receive a zero for the first offence. A second offence will result in referral to the Vice Chancellor for Academic Affairs for dismissal from the university.

Incomplete Grades
Under very unusual circumstances a grade of “incomplete” may be assigned. To be considered for an incomplete in Biology 858 you must:
1. submit the reasons why you cannot complete the assigned work by the end of the term. This must include a copy of your class schedule and a description of your responsibilities outside your coursework. This must be done in writing and include confirmation from your employer or physician when appropriate.
2. specify the assignments you have missed and a schedule of plans to complete them.
3. submit a copy of the above information to the Chair of the Department of Biology and the Dean of the College of Natural and Social Sciences.

Once you have completed this, your request for an incomplete will be considered.
Students with Disabilities
The university is committed to providing support for students with disabilities. Any student with a physical, learning, emotional, and/or psychological disability is encouraged to contact David Brandt, Disabilities Coordinator, at (308) 865-8214 or brandtdl@unk.edu. If you have an accommodation plan please discuss this with me as soon as possible so we can make arrangements necessary for your learning. No accommodations can be provided until a Reasonable Accommodation Plan (RAP) is in place. Please remember that an accommodation plan is not retroactive and cannot be used for assignments prior to the date of my approval.