Course Syllabus
WFSC 420/630 Ecology and Society

Instructor:
Clark E. Adams, 113 Nagle Hall, 979-845-8824, ce-adams@tamu.edu

Course Prerequisites:
U3 or higher student classification

Course Description:
This course was designed to: (1) establish a learning environment that awakens students' curiosity about the world they live in, (2) stimulate students' desire to expand their knowledge about how the world works, (3) give students the opportunity to measure their growth in knowledge (content) and understanding (application of content) and (4) challenge students to translate their new knowledge and understanding into personal actions and self-realizations. Students are given the opportunity to: (1) use the symbolic tools of thinking, communicating and inquiring about ecology; (2) synthesize and interpret basic facts about the human and natural ecosystems using a diversity, interrelationships, cycles and energy (DICE) conceptual framework; (3) organize information about ecosystems based on the conceptual framework, principles of ecology, past cultural development, the existing social order and economics, and (4) evaluate consistency and reasonableness in their decisions and judgments about hypothetical or simulated conflict situations between humans and natural ecosystems.

Course Materials:
3. Power point lecture notes for each textbook chapter (online).
4. Streaming videos of all lectures (online).
5. Six exams: (online)

Blackboard Vista Web Site: http://elearning.tamu.edu/
Course Text

Course Text Outline

Part One: Framework for a Sustainable Future

1 Science and the Environment *
2. Economic, Politics, and Public Policy

Part Two: Ecology: The Science of Organisms and Their Environment

3. Basic Needs of Living Things
4. Populations and Communities
5. Ecosystems: Energy Patterns, and Disturbance
6. Wild Species and Biodiversity
7. The Use and Restoration of Ecosystems

Part Three: The Human Populations and Essential Resources

8. The Human Population
9. Population and Development
10. Water: Hydrologic Cycle and Human Use
11. Soil: Foundation for Land Ecosystems
12. The Production and Distribution of Food
13. Pests and Pest Control

**Part Four: Harnessing Energy for Human Societies**

14. Energy from Fossil Fuels
   *
15. Nuclear Power
16. Renewable Energy

**Part Five: Pollution and Prevention**

17. Environmental Hazards and Human Health
   *
18. Global Climate and Change
19. Atmospheric Pollution
20. Water Pollution and Its Prevention
21. Municipal Solid Waste: Disposal and Recovery
22. Hazardous Chemicals: Pollution and Prevention

**Part Six: Stewardship for a Sustainable Future**

23. Sustainable Communities and Lifestyles

* Chapters that are not covered in this course.

**Course Grade:**

The average of six online exams based on the total of the highest student scores on each exam (called “curving”). Exams consist of a blend of MC, T/F, Matching, and Short Answer types of questions patterned after those used in the course study guide.

1. Grading Distribution for Undergraduate will be based their average score on six exams:

   \[
   \begin{align*}
   & \geq 90 \% \text{ of } 600 = A \\
   & 80\% \text{ to } 89\% \text{ of } 600 = B \\
   & 70\% \text{ to } 79\% \text{ of } 600 = C \\
   & 60\% \text{ to } 69\% \text{ of } 600 = D \\
   & < 60\% \text{ of } 600 = F
   \end{align*}
   \]

2. Additional Course Work for Graduate Students enrolled in WFSC 630 ONLY!!

   **Professional Paper**

   **Directions:** Each paper will consist of an in depth study of one of the topics listed below. The listed topics are only general descriptions of the subject to be addressed. All can be broadened to provide a full and detailed examination. This is a professional paper! Please find some sort of guide to the technical writing style, e.g., [http://www.as.ua.edu/ant/bindon/ant570/pap_rule.htm](http://www.as.ua.edu/ant/bindon/ant570/pap_rule.htm)
if you have never done this before. Choose one of the topics from the list (not in any ranked order). The length of your paper will depend on how diligently you research the topic of your choice. However, I would expect your paper to be at least ten (10) pages in length (11pt, double spaced, 1 inch margins, Times Roman font).

Your final paper should include a title page with your name, table of contents, an abstract, and then the body of the paper: Introduction, Areas of Investigation, Results and Discussion, Conclusions, and Literature Cited. This is just one way of organizing the paper. Find an accepted form of referencing citations, e.g.,

[http://www.as.ua.edu/ant/bindon/ant570/pap_rule.htm](http://www.as.ua.edu/ant/bindon/ant570/pap_rule.htm) Do not make up a reference citation system!

Each paper will be graded in terms of the inclusion of relevant ecological, political, economic, and cultural ramifications; grammar, spelling, and syntax. Be sure to contact me if you need additional clarification on how to pursue this assignment.

**December 5, 2013: ALL grad students complete and submit final copy of paper to Dr. Adams attached to ce-adams@tamu.edu**

**Professional Paper Topics**

1. Present and future implications of a mandatory one child family in China, or any other country.
2. Adaptations for human survival in Siberia, or other seemingly uninhabitable places on the Earth.
3. Out-sourcing American industry to avoid environmental regulations.
4. Impacts of the 2010 British Petroleum oil spill in the Gulf of Mexico.
5. Success stories in ecosystem restoration.
6. Case studies in the utilization of renewable energy sources.
7. Chernobyl, Russia nearly three decades later.
8. Siting a new landfill.
10. Case studies of sustainable urban development.
11. Factors that need to be addressed in order to achieve human fertility rates < 2 and expected outcomes.
12. Waste management options that are not one-way trips.
13. Case studies of “pest” species (e.g., invertebrates, vertebrates, and plants) that have negatively impacted human health and economics.
14. Case studies of EPA programs to clean up superfund sites.
15. Case studies of major air or hazardous chemical pollution episodes in developed or developing countries.
16. The Dust Bowl: Causes, Repercussions, and Final Outcomes.
17. Grasshopper Plagues: Causes, Repercussions, and Final Outcomes.
18. Comparison of those factors that contribute to or detract from food quality, production, distribution, and utilization.
19. Climate change: Fact or Fiction
20. Case studies of major water pollution episodes in developed or developing countries.
21. Student chooses topic

3. Grading Distribution for Graduate Students

   A. Two-thirds of the course grade will be determined by total points earned over the six course exams.
B. One-third of the course grade will be determined by total points earned on the professional paper.

Example: If a student has 90% on course tests and 75% on the professional paper, the course grade will be $90\% \times \frac{2}{3} + 75\% \times \frac{1}{3} = 60\% + 25\% = 85\%$ or a B for the course.

**WFSC 420/630 Lecture Topic Sequence for Fall Term 2013**

<table>
<thead>
<tr>
<th>Lecture Number</th>
<th>Date</th>
<th>Lecture Topic</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>August 27</td>
<td>Chapter 1: Science and the Environment</td>
</tr>
<tr>
<td>2</td>
<td>August 29</td>
<td>Chapter 3: Ecology: The Science of Organisms and Their Environment</td>
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<tr>
<td>3</td>
<td>September 3</td>
<td>Chapter 4: Populations and Communities</td>
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<tr>
<td>4</td>
<td>September 5</td>
<td>Chapter 5: Ecosystems: Energy, Patterns, and Disturbance</td>
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<td>September 10</td>
<td><strong>Exam 1: Chapters 1, 3, 4, and 5 (1 AM to 11:30 PM this day only!)</strong></td>
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<tr>
<td>5</td>
<td>September 12</td>
<td>Chapter 8: The Human Population</td>
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<tr>
<td>6</td>
<td>September 17</td>
<td>Chapter 9: Population and Development</td>
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<tr>
<td>7</td>
<td>September 19</td>
<td>Chapter 12: The Production and Distribution of Food</td>
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<td>September 24</td>
<td><strong>Exam 2: Chapters 8, 9, and 12 (1 AM to 11:30 PM this day only!)</strong></td>
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<td>8</td>
<td>September 26</td>
<td>Chapter 10: Water: Hydrologic Cycle and Human Use</td>
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<td>9</td>
<td>October 1</td>
<td>Chapter 11: Soil: The Foundation for Land Ecosystems</td>
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<td>10</td>
<td>October 3</td>
<td>Chapter 20: Water Pollution and Its Prevention</td>
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<td>October 8</td>
<td><strong>Exam 3: Chapters 10, 11, and 20 (1 AM to 11:30 PM this day only!)</strong></td>
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<td>11</td>
<td>October 10</td>
<td>Chapter 6: Wild Species and Biodiversity</td>
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<td>12</td>
<td>October 15</td>
<td>Chapter 7: The Use and Restoration of Ecosystems</td>
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<tr>
<td>13</td>
<td>October 17</td>
<td>Chapter 13: Pests and Pest Control</td>
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<td>October 22</td>
<td><strong>Exam 4: Chapters 6, 7, and 13 (1 AM to 11:30 PM this day only!)</strong></td>
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<td>14</td>
<td>October 24</td>
<td>Chapter 17: Environmental Hazards and Human Health</td>
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<td>15</td>
<td>October 29</td>
<td>Chapter 19: Atmospheric Pollution</td>
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<td>16</td>
<td>October 31</td>
<td>Chapter 21: Municipal Solid Waste: Disposal and Recovery</td>
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<td>17</td>
<td>November 5</td>
<td>Chapter 22: Hazardous Chemicals: Pollution and Prevention</td>
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<td>November 7</td>
<td><strong>Exam 5: Chapters 17, 19, 21, and 22 (1 AM to 11:30 PM this day only!)</strong></td>
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<tr>
<td>17</td>
<td>November 12</td>
<td>Chapter 14: Energy from Fossil Fuels</td>
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<td>19</td>
<td>November 14</td>
<td>Chapter 16: Renewable Energy</td>
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<td>20</td>
<td>November 19</td>
<td>Chapter 23: Sustainable Communities and Lifestyles</td>
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<td>November 26</td>
<td><strong>Exam 6: Chapters 14, 16, and 23 (1 AM to 11:30 PM this day only!)</strong></td>
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<tr>
<td></td>
<td>December 5</td>
<td>Graduate Students’ Professional Papers Due</td>
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</tbody>
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**The Americans with Disabilities Act (ADA)**

The Americans with Disabilities Act is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Service for Students with Disabilities in Room 126 of the Koldus Building or call 845-1637
The Aggie Code of Honor

“An Aggie does not lie, cheat or steal or tolerate those that do.”
Integrity is a core value of a society that offers hope, the promise of security, and meaning to
individuals within that society. Within the university, academic integrity is the most critical core
value of the learning community. Integrity makes trust among people possible. Without trust -
and honesty that breeds trust - our society and our universities cannot flourish.
http://www.tamu.edu/aggiehonor

Texas A&M University student rules Section 20 outlines official policies on scholastic dishonesty
(http://student-rules.tamu.edu/rule20.htm). Section 20 declares, “It is the responsibility of
students and instructors to help maintain scholastic integrity at the University by refusing to
participate in or tolerate scholastic dishonesty.” Further, Section 20 defines various categories of
scholastic dishonesty.

As a professional responsibility, and as an instructor in WFSC 201, I am obligated to follow the
provisions of Section 20, Texas A&M University Student Rules on Academic Dishonesty.

"On my honor, as an Aggie, I have neither given nor received unauthorized aid on this academic
work”

Signature of Student