# PVAMU Course Syllabus -- Summer 2022

**Independent Study/AGRO 4362 Environmental Science**

<table>
<thead>
<tr>
<th>Department of</th>
<th>Agriculture, Nutrition &amp; Human Ecology</th>
<th>College of</th>
<th>Agriculture and Human Sciences</th>
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</thead>
</table>

**Instructor Name:** Richard W. Griffin, PhD  
**Office Location:** AGBUS, Room 419  
**Office Phone:** (936) 261-5039  
**Fax:** (936) 261-9975  
**Email Address:** rwgriffin@pvamu.edu  
**Snail Mail (U.S. Postal Service) Address:** Prairie View A&M University  
- P.O. Box 519  
- Mail Stop 2008  
- Prairie View, TX 77446-0519

**Office Hours:** Mon, Wed: 2:00 - 3:30 PM  
**Virtual Office Hours:**

**Course Location:** TBD  
**Class Meeting Days & Times:** M-Sa 7:00 - 7:50 AM  
**Course Abbreviation and Number:** AGHR 4399; Independent Study/AGRO 4362 P01

**Catalog Description:** Environmental Science. (2-2) Credit 3 semester hours. Physical, chemical, biological, and agricultural components of the environment and their interaction and effects on pollution and the maintenance and utilization of varied ecosystem areas.

**Prerequisites:** None  
**Co-requisites:** None

**Required Text:**  
**Title:** Environmental Science: Earth As A Living Planet  
**Authors:** Daniel B. Botkin and Edward A. Keller  
**Edition:** 9th; Copyright 2014  
**Publisher:** Wiley, Hoboken, NJ 07030  
**ISBN:** 13: 978-1-118-42732-3

**Recommended Text:** None

**Access to Learning Resources:** PVAMU Library:  
phone: (936) 261-1500:  
web: [http://www.tamu.edu/pvamu/library/](http://www.tamu.edu/pvamu/library/)  
University Bookstore:  
phone: (936) 261-1990:  
web: [https://www.bkstr.com/Home/10001-19734-1?demoKey=d](https://www.bkstr.com/Home/10001-19734-1?demoKey=d)

**Course Goals or Overview:**  
To learn the basic and applied principles and concepts of environmental science as related to the wide variety of ecosystems that exist on the earth in their natural and human altered settings.
**Course Objectives/Accrediting Body** (NCATE, ABET, NAIIB, etc...) **Standards Met:** (standards will depend on the course)

1. To provide students with the knowledge about physical, chemical, biological, and agricultural components of the environment.

2. To provide students with the knowledge to understand the principles and concepts of environmental science and factors affecting the wide variety of ecosystems.

3. To provide students with the knowledge to list and understand environmental components and the specific types of major and minor ecosystems.

4. To provide students with the knowledge to recognize the importance of sustainability, balance, and adaptation to change in environmental systems.

5. To provide students with the knowledge to determine the significance of human population growth and the impact of population problems on food production and distribution systems.

6. To provide students with the knowledge to describe the significance of water quality and pollution, soil pollution, and the factors contributing to management in the context of ecosystem management.

<table>
<thead>
<tr>
<th>At the end of this course, the student will</th>
<th>Alignment with Academic Program</th>
<th>Alignment with Core Curriculum</th>
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</thead>
<tbody>
<tr>
<td>1  Gain a better understanding of the physical, chemical, biological, and agricultural components of the environment.</td>
<td></td>
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<tr>
<td>2  Acquire knowledge of the principles and concepts of environmental science and factors affecting the wide variety of ecosystems</td>
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<tr>
<td>3  Identify the environmental components and the specific types of major and minor ecosystems.</td>
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<tr>
<td>4  Know and describe the importance of sustainability, balance, and adaptation to change in environmental systems.</td>
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<tr>
<td>5  Possess the knowledge acquired in environmental science that will enhance the students' competency in the performance of their duties as future employees in the fields of Agronomy/Soil and Natural Sciences</td>
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Course Evaluation Methods

This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course. *Note: See Program Outcomes in True Outcomes*

- **Exams** – written tests designed to measure knowledge of presented course material
- **Exercises** – written assignments designed to supplement and reinforce course material
- **Projects** – web development assignments designed to measure ability to apply presented course material
- **Class Participation** – daily attendance and participation in class discussions

(*instruments will vary slightly depending on the course*)

**Grading Matrix** (*points will vary according to instructor’s grading system*)

<table>
<thead>
<tr>
<th>Instruments</th>
<th>Value (points or percentages)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three Major Exams</td>
<td>15 each</td>
<td>45</td>
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<tr>
<td>Assignment/Quizzes</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>PowerPoint Presentation</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Class Participation/Attendance</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

**Grade Determination:**

- A = 90 – 100 pts;
- B = 80 – 89 pts;
- C = 70 – 79 pts;
- D = 60 – 69 pts;
- F = 0 – 59 pts or below

**COURSE CONTENTS (TOPICS)**

1. **Introduction: Environmental Science and Sustainability**
   - Environmentalism
   - The Global Environmental Picture
   - Sustainable Development

2. **Ecosystems: Units of Sustainability**
   - What are Ecosystems?
   - The Structure of Ecosystems
   - Why Do Different Regions Support Different Ecosystems?

3. **Ecosystems: How They Work**
   - Elements, Life, Organization, and Energy
   - Principles of Ecosystem Function
   - Implications for Humans

4. **Ecosystems In and Out of Balance**
   - Ecosystem Balance is Population Balance
   - Mechanisms of Population Balance
   - Two Kinds of Population Growth Curve

5. **Ecosystems: Adapting To Change – Or Not**
   - Selection By the Environment
   - Selection of Traits and Genes
   - Changes in Species and Ecosystems
6. The Global Human Explosion: Causes and Consequences
   - The Population Explosion and Its Cause
   - Different Worlds
   - Environmental and Social Impacts of Growing

7. Addressing the Population Problem
   - Population and Development
   - Reassessing the Demographic Transition
   - A New Direction for Development

8. The Production and Distribution of Food
   - Crops and Animals: Major Patterns of Food Production
   - Food Distribution and Trade
   - Hunger, Malnutrition, and Famine

9. Soil and the Soil Ecosystem
   - Plants and Soil
   - Losing Ground
   - Thinking

10. Pests and Pest Control
    - The Need for Pest Control
    - Promises and Problems of the Chemical Approach
    - Alternative Pest Control Methods

11. Water, the Water Cycle, and Water Management
    - The Water Cycle
    - Human Impacts of the Water Cycle
    - Sources and Uses of Fresh Water

12. Sediments, Nutrients, and Eutrophication
    - The Process of Eutrophication
    - Combating the Symptoms of Eutrophication
    - Long-Term Strategies for Correction

13. Sewage Pollution and Rediscovering the Nutrient Cycle
    - Sewage Hazards and Potential
    - Sewage Management and Treatment
    - Impediments to Recycling Sewage Products

14. Pollution from Hazardous Chemicals
    - The Nature of Chemical Risks: HAZMATS
    - A History of Mismanagement
    - Cleaning Up the Mess
Submission of Assignments:
Observe deadlines for submitting assignments and term papers to avoid a 10% penalty for each.

Formatting Documents:
Microsoft Word is the standard word processing tool used at PVAMU. If you're using other word processors, be sure to use the “save as” tool and save the document in either the Microsoft Word, Rich-Text, or plain text format.

Exam Policy
Exams should be taken as scheduled. No makeup examinations will be allowed except under documented emergencies (See Student Handbook).

Anyone caught cheating during an examination will get a ZERO for that examination.
University Rules and Procedures

Disability statement (See Student Handbook):
Students with disabilities, including learning disabilities, who wish to request accommodations in class should register with the Services for Students with Disabilities (SSD) early in the semester so that appropriate arrangements may be made. In accordance with federal laws, a student requesting special accommodations must provide documentation of their disability to the SSD coordinator.

Academic misconduct (See Student Handbook):
You are expected to practice academic honesty in every aspect of this course and all other courses. Make sure you are familiar with your Student Handbook, especially the section on academic misconduct. Students who engage in academic misconduct are subject to university disciplinary procedures.

Forms of academic dishonesty:
1. Cheating: deception in which a student misrepresents that he/she has mastered information on an academic exercise that he/she has not mastered; giving or receiving aid unauthorized by the instructor on assignments or examinations.
2. Academic misconduct: tampering with grades or taking part in obtaining or distributing any part of a scheduled test.
3. Fabrication: use of invented information or falsified research.
4. Plagiarism: unacknowledged quotation and/or paraphrase of someone else’s words, ideas, or data as one’s own in work submitted for credit. Failure to identify information or essays from the Internet and submitting them as one’s own work also constitutes plagiarism.

Nonacademic misconduct (See Student Handbook)
The university respects the rights of instructors to teach and students to learn. Maintenance of these rights requires campus conditions that do not impede their exercise. Campus behavior that interferes with either (1) the instructor’s ability to conduct the class, (2) the ability of other students to profit from the instructional program, or (3) campus behavior that interferes with the rights of others will not be tolerated. An individual engaging in such disruptive behavior may be subject to disciplinary action. Such incidents will be adjudicated by the Dean of Students under nonacademic procedures.

Sexual misconduct (See Student Handbook):
Sexual harassment of students and employees at Prairie View A&M University is unacceptable and will not be tolerated. Any member of the university community violating this policy will be subject to disciplinary action.

Attendance Policy:
Prairie View A&M University requires regular class attendance. Excessive absences will result in lowered grades. Excessive absenteeism, whether excused or unexcused, may result in a student’s course grade being reduced or in assignment of a grade of “F.” Absences are accumulated beginning with the first day of class.

Student Academic Appeals Process
Authority and responsibility for assigning grades to students rests with the faculty. However, in those instances where students believe that miscommunication, errors, or unfairness of any kind may have adversely affected the instructor’s assessment of their academic performance, the student has a right to appeal by the procedure listed in the Undergraduate Catalog and by doing so within thirty days of receiving the grade or experiencing any other problematic academic event that prompted the complaint.
Technical Considerations for Online and Web-Assist Courses

Minimum Hardware and Software Requirements:
- Pentium with Windows XP or PowerMac with OS 9
- 56K modem or network access
- Internet provider with SLIP or PPP
- 8X or greater CD-ROM
- 64MB RAM
- Hard drive with 40MB available space
- 15" monitor, 800x600, color or 16 bit
- Sound card w/speakers
- Microphone and recording software
- Keyboard & mouse
- Netscape Communicator ver. 4.61 or Microsoft Internet Explorer ver. 5.0 / plug-ins

Participants should have a basic proficiency of the following computer skills:
- Sending and receiving email
- A working knowledge of the Internet
- Proficiency in Microsoft Word
- Proficiency in the Acrobat PDF Reader
- Basic knowledge of Windows or Mac OS

Netiquette (online etiquette): students are expected to participate in all discussions and virtual classroom chats when directed to do so. Students are to be respectful and courteous to others in the discussions. Foul or abusive language will not be tolerated. When referring to information from books, websites, or articles, please use APA standards to reference sources.

Technical Support: Students should call the Prairie View A&M University Helpdesk at 936-261-2525 for technical issues with accessing your online course. The helpdesk is available 24 hours a day/7 days a week. For other technical questions regarding your online course, call the Office of Distance Learning at 936-261-3290 or 936-261-3282

Communication Expectations and Standards:
All emails or discussion postings will receive a response from the instructor within 48 hours.
You can send email any time that is convenient to you, but I check my email messages continuously during the day throughout the work-week (Monday through Friday). I will respond to email messages during the work-week by the close of business (5:00 pm) on the day following my receipt of them. Emails that I receive on Friday will be responded to by the close of business on the following Monday.

Submission of Assignments:
Assignments, Papers, Exercises, and Projects will be distributed and submitted through your online course. Directions for accessing your online course will be provided. Additional assistance can be obtained from the Office of Distance Learning.

Discussion Requirement:
Because this is an online course, there will be no required face to face meetings on campus. However, we will participate in conversations about the readings, lectures, materials, and other aspects of the course in a true seminar fashion. We will accomplish this by use of the discussion board.
Students are required to log-on to the course website often to participate in discussion. It is strongly advised that you check the discussion area daily to keep abreast of discussions. When a topic is posted, everyone is required to participate. The exact use of discussion will be determined by the instructor.
It is strongly suggested that students type their discussion postings in a word processing application and save it to their PC or a removable drive before posting to the discussion board. This is important for two reasons: 1) If for some reason your discussion responses are lost in your online course, you will have another copy; 2) Grammatical errors can be greatly minimized by the use of the spell-and-grammar check functions in word processing applications. Once the post(s) have been typed and corrected in the word processing application, it should be copied and pasted to the discussion board.