Texas A&M University-Kingsville
Department of Biological and Health Sciences

Syllabus for BIOL 4410 Human Ecology and Health

Fall 2017

Lectures: TR 9:30 A.M-10:45 A.M. KLBH 120 (Kleberg Hall Taxonomy Teaching Lab)
Labs: R 1:00-3:50 P.M. KLBH 120 (Kleberg Hall Taxonomy Teaching Lab)

Instructor: Dr. Weimin Xi, PhD, Associate Professor, Certified Senior Ecologist
Email: weimin.xi@tamuk.edu (preferred)
Office: Kleberg Hall 118C; Phone: 361-593-2758
Office Hours: Wed. 8:30 A.M.-11:30 A.M.; Thurs. 3:00-5:00 P. M. or by appointment


Required Lab Book: None. Related handouts and instruction materials will be available during the labs or field trips.

Course Description: BIOL 4410 Human Ecology and Health is a four-credit course in the Science of Human Ecology and Health with both lecture and laboratory components. Human Ecology is the interdisciplinary study of the relationships between the human community and its environment. It crosses traditional academic and scientific boundaries and represents attempts to integrate scientific, behavioral, sociological, political, economic, and ethical functions in human relationships to the environment. We will examine the roles humans play as integral components of the biosphere and address relevant scientific, socio-economic, and health issues in connection to current events such as climate change, energy policy, and land use change/urban planning. We will learn the basic concepts underlying health issues in the context of ecological studies and some of the methods used in human ecology and health studies. You will also be introduced to some elementary statistical methods as we analyze data collected in the lab exercises. We will examine many of these aspects in the local area.

Core Course Requirements: This course is an upper division elective for undergraduate students to fulfill upper division degree requirements for the B.S. in Biology, BioMed, Human Science or for the minor in Sustainability, or to fulfill the more noble purpose of actually learning something that will enrich their mind their life and possibly the world.

Catalog Description: 4410. Topics in Biology. 4(3-3). Lectures, literature investigation and research in selected topics. May be repeated for credit once under different topic.

Course Prerequisites: Prerequisite: 12 semester hours of biology or equivalent.
Course Objectives: This course will meet the following core objectives: Critical Thinking Skills; Communication Skills; Empirical and Quantitative Skills; Teamwork. The primary objective of this course is to learn the concepts and applications of human ecology and health. The course emphasizes the relevance of and related health issues to contemporary society by relating ecological principles to high profile human health issues including sustainable resource use, human population growth, public health, environmental and social determinants of health, and large-scale and global environmental hazards to human health.

Learner Outcomes: As a result of taking this course, students should appreciate and understand:
1) The importance of human ecology to contemporary human society.
2) Vital ecological services provided by various ecosystems to human society.
3) The effects of human-environment interactions and how they shape human adaptation and distribution.
4) Human population growth patterns in contrasting environment.
5) Patterns and characteristics of major human health issue of South Texas.

More specifically:
1) Define human ecology and explain its development as a scientific discipline.
2) Understand the interrelationships between human and the environment.
3) Understand the patterns and processes that determine the human distribution.
4) Understand the interactions and linkages of health and environment
5) Understand the difference between pure and applied science and how each contributes to our understanding.
6) Understand the concept of spatial and temporal scales and how patterns may vary based on the scale at which it is examined.
7) Understand the roles and limitations of observation, field and laboratory experiments and mathematical models.
8) Understand the role of scientific evidence, methods and statistics in human ecology and related health issues.
9) Develop analytical and critical thinking skills.
10) Develop communication skills in scientific writing, speaking and presentation of information.

Methods of Evaluation and Grading Procedures: There will be three exams. Grades will be based on grades accumulated on two hourly exams (each worth 150 points) during the semester and a final exam (worth 200 points) at the end of the term. The final exam will cover the new material from the last section of the course, and will also have a second, comprehensive problem solving section that will cover the entire course. A lab grade will be worth a total of 100 points. The cumulative lab points will consist of presentations, project assignments, and lab or field reports. That cumulative set of points is converted to a percentage out of the total maximum points (100 points). Make up exams will not be given but the grade on the final exam may substitute for missed exams with acceptable excuse. Verified illness, family emergencies, university sponsored trips or other extenuating circumstances as determined by the instructor are acceptable excuses. Poor planning or failure to study are not acceptable excuses. If more than one hourly exam is missed, a grade of zero for the second missed exam will be recorded. Students that take all three exams may replace the lowest grade with the grade earned on the final exam.
Overall grades will be based on a percentage of the total 1000 points: A=100-90%; B=89-80%; C=79-70%; D=69-60%; F=<60%.

Notes on Exams, Projects, Labs, and Assignments: Test material will primarily be taken from material presented in lecture. Test format will most likely be multiple choices, terms, short answer essay, graph or reading interpretations, with usually one or two long essay. Other types of test questions may be used. The essay portion of the exam will be based upon assigned reading/discussion material provided by the instructor. Bring a calculator, pencil and pen to all tests. Be on time for exams - you will not be given extra time.

Class Project: A term class project focusing on a human ecological question will be carried out, analyzed with proper statistical methods and written up in the format of a Scientific Report, including Introduction, Methods, Results, Discussion, and Conclusions. A class presentation will also be made. Further details of the class project and grading will be given in class.

Proper writing skills are required. Spelling, grammar and sentence construction of all written material, including tests, is expected to be at the college level. Failure to meet an acceptable level of these writing skills may result in grade reductions. Unless specifically allowed, all outside of class written assignments must be typed or computer printed. Any handwritten material (mainly in class essay questions) that is illegible will be marked as incorrect.

Late reports and assignments receive 20% off for each day late. Assignments must be turned in during class or via email to my email address by 5pm on the due date. Please DO NOT leave assignments outside or under my office door.

Student participating in group projects and assignments are expected to contribute an equal amount to the final product, including reviewing, editing and/or correcting the work of other group members, and as such, each individual will normally receive the same grade. All members of the group must personally sign the title page affirming they have contributed fairly and equally to the effort, have received a copy of the final work and agree to take equal responsibility for any/all mistakes, errors, plagiarism or any other scientific or academic misconduct discovered. Please consult the instructor if equal participation is not taking place, preferably before the final product is turned in. A group may, with instructor approval, elect to expel a non-participating member or to request that the grades of individuals be adjusted up or down to better reflect actual contributions.

Policies for Attendance, Excused Absences, Make-up Exams, Early Final Exams, and Cell Phones: Attendance for all class meetings is reflective of your success in class and is very important. Reliance on others notes is not an adequate substitute for being in classes and
participating in discussion. Failure to attend class is a strong predictor of eventual class failure. Makeup exams will not be permitted under any circumstances but the final exam grade will substitute in place of a single missed exam. Suitable arrangements must be made with the instructor to account for any anticipated missed exams, labs or assignments. If you know you must be absent on an exam day (e.g. school sanctioned athletic event) you will be expected to take the exam at a mutually agreeable time before you leave. Students that take all of the exams will be able to substitute their lowest test grade with the final exam grade.

Some labs and field trips will take place off campus. Because of the unique nature of labs and assignments, it will not be normally possible to make up missed labs. Missed labs cannot be made up and will not be substituted by any other grade. Missing lab grades may be dropped or substitute assignments may be assigned on a case-by-case basis for students with acceptable reasons (documented illness, official university events, etc).

Disruptive behavior such as the use of cell phones should be curtailed by turning them off during class.

**Proposed schedule (Subject to change as needed and due to weather conditions)**

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic(s)</th>
<th>Text Reading</th>
<th>Lab or Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug 21-25</td>
<td><em>Introduction to Human Ecology and Health</em></td>
<td>CH 1</td>
<td>No lab</td>
</tr>
<tr>
<td>Aug 28-Sep 1</td>
<td><em>Foundations of human disease ecology: Human-ecosystem interactions</em></td>
<td>CH 2</td>
<td>Lab1. Lab and field trip safety; Introduction and expectations; Visit the Library for Human Ecology reference and Journals</td>
</tr>
<tr>
<td>Sep 4-8</td>
<td><em>Overpopulation – global issues of health risks</em></td>
<td>CH 3</td>
<td>Class project (1)</td>
</tr>
<tr>
<td>Sep 11-15</td>
<td><em>Human population related environmental disease and health risks</em></td>
<td>CH 4</td>
<td>Lab2. Human ecology methods; Nature of human ecological data; Excel sheet use</td>
</tr>
<tr>
<td>Sep 18-22</td>
<td><em>Disease ecology: ecological principles of disease system</em></td>
<td>CH 5</td>
<td>Class project (2)</td>
</tr>
<tr>
<td>Sep 25-29</td>
<td><em>The ecology of emerging infectious diseases</em></td>
<td>CH 6</td>
<td>Lab3. Trip to the Conner Museum and (South Texas Archives) - historical human ecology aspects of South Texas</td>
</tr>
<tr>
<td>Oct 3</td>
<td>Exam I CH 1-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oct 2-6</td>
<td><em>Seasonality, climate change and transmission dynamics</em></td>
<td>CH 7</td>
<td>Class project (3)</td>
</tr>
<tr>
<td>Date</td>
<td>Topic</td>
<td>Chapter</td>
<td>Lab/Project</td>
</tr>
<tr>
<td>------------</td>
<td>----------------------------------------------------------------------</td>
<td>---------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>Oct 16-20</td>
<td>Disease impacts on populations and ecosystems</td>
<td>CH 9</td>
<td>Class project (4)</td>
</tr>
<tr>
<td>Oct 23-27</td>
<td>Disease impacts on populations and ecosystems</td>
<td>CH 10</td>
<td>Lab5. How Diseases Spread - Epidemiology Explored (Ecology Module from SimBio)</td>
</tr>
<tr>
<td>Oct 30-Nov 3</td>
<td>Case studies of human disease in global sustainable context</td>
<td>CH 11</td>
<td>Class project (5)</td>
</tr>
</tbody>
</table>

**Nov 7 Exam 2 CH 6-10**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Chapter</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov 6-10</td>
<td>Case study of infectious disease: epidemiology of scrub typhus (Tsutsugamushi disease)</td>
<td>CH 12</td>
<td>No lab</td>
</tr>
<tr>
<td>Nov 13-17</td>
<td>Integrated approaches to disease prevention and control</td>
<td>CH 13</td>
<td>Class project discussions</td>
</tr>
<tr>
<td>Nov 20-22</td>
<td>Global change and emerging human diseases and health challenges, environmental sustainability</td>
<td>CH 14</td>
<td>Class project presentations</td>
</tr>
</tbody>
</table>

**Nov. 23-24 Holiday Break**
Happy Thanksgiving!

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov 31-Dec 2</td>
<td>Class review</td>
</tr>
<tr>
<td>Dec 2 –Dec 7</td>
<td>Dead Week</td>
</tr>
</tbody>
</table>

**Final Exam Dec 8 Friday 8:00 A.M-10:30 A.M**
The final exam will cover the new material from the last section (CH 11-14), and will also have a second, comprehensive problem solving section that will cover the entire course!! You should NOT make plans to leave campus before the final exam – see the conflict final exam policy above

**Important Dates:**

- Thursday, November 23, Thanksgiving Holiday Break, NO CLASS
- Tuesday, December 8, 8:00 A.M Final Exam


Study Hints:
1) Rework your lecture and reading notes to provide a coherent narrative for each topic;
2) Form a study group or study with a partner and “teach” each other the material. One sure way to test your knowledge of the material is to present it verbally to someone else. If you find yourself stumbling and becoming confused, you know you have more work to do;
3) Finally, don’t wait until the last minute before an exam to come see me with problems. Come see me if you have any questions or don’t understand something. If you do badly on a test, come talk to me and we can discuss ways to improve your performance. I will be happy to discuss any questions you might have. If you think you need an extended help session, it would probably be best to set up an appointment to reserve a time slot. I do take improved performance into consideration when I determine final grades.

Computer Skills: No matter what your career goals are, computer skills will be a necessity. Therefore, I will expect you to develop some basic skills as part of this course. Don’t let this scare you! I realize many of you will have different levels of experience, and I’ll provide each of you as much assistance as you require. At a basic computer literacy level, we’ll be using Word, Excel, and Power Point, plus some simulation software. I’ll expect you to have an email account. You will find it a valuable communication tool for working on group projects, and for asking me questions regarding course materials.

Drop Policy: It is the students responsibility to make sure all adds and drops are accomplished by University deadlines and that all paperwork is completed. After the Q-drop date all drops are at the instructor’s prerogative. To receive a Q if the grades do not warrant, the student must made a true good faith effort at the class by taking all exams and turning in all lab reports and assignments up to the last day to drop. Students may be dropped for non-attendance or non-participation.

Six-drop policy: The following provision does not apply to students with Texas public college or university credits prior to Fall 2007. The Texas Senate Bill 1231 specifies the number of course drops allowed to a student without penalty. After a student has dropped six courses, a grade of QF will normally be recorded for each subsequent drop. Additional information on Senate Bill 1231 is available at the Registrar’s Office at (361) 593-2811 and at http://www.tamuk.edu/registrar/drop_policy.html.

The official last day to drop with an automatic “Q” is 5:00 P.M. Nov. 1, 2017. It is the student’s responsibility to find the instructor in time to submit all relevant documentation to the Registrar. Senate Bill 1231, passed by the Texas legislature 2007, limits the number of drops (six) that undergraduate students may accrue without a punitive grade.

Disability statement: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disability. If you believe you have a disability requiring an accommodation please contact the Disability Resource Center (DRC) as early as possible in the term at (361) 593-2904. DRC is located in the Life Service and Wellness building at 1210 Retama Drive.
Academic misconduct statement:
You are expected to adhere to the highest academic standards of behavior and personal conduct in this course and all other courses. Students who engage in academic misconduct are subject to university disciplinary procedures. Make sure you are familiar with your Student Handbook, especially the section on academic misconduct, which discusses conduct expectations and academic dishonesty rules.

Forms of academic dishonesty:
1) Cheating: Using unauthorized notes or study aids, allowing another party to do one’s work/exam and turning in that work/exam as one’s own; submitting the same or similar work in more than one course without permission from the course instructors; 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) Aid of academic dishonesty: Intentionally facilitating any act of academic dishonesty. Tampering with grades or taking part in obtaining or distributing any part of a scheduled test.
3) Fabrication: Falsification or creation of data, research or resources, or altering a graded work without the prior consent of the course instructor.
4) Plagiarism: Portrayal of another’s work or ideas as one’s own. Examples include 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.
5) Lying: Deliberate falsification with the intent to deceive in written or verbal form as it applies to an academic submission.
6) Bribery: Providing, offering or taking rewards in exchange for a grade, an assignment, or the aid of academic dishonesty.
7) Threat: An attempt to intimidate a student, staff or faculty member for the purpose of receiving an unearned grade or in an effort to prevent reporting of an Honor Code violation.

Please be aware that the University subscribes to the Turnitin plagiarism detection service. Your paper may be submitted to this service at the discretion of the instructor.

Other Forms of Academic Misconduct:
1) Failure to follow published departmental guidelines, professor’s syllabi, and other posted academic policies in place for the orderly and efficient instruction of classes, including laboratories, and use of academic resources or equipment.
2) Unauthorized possession of examinations, reserved library materials, laboratory materials or other course related materials.
3) Failure to follow the instructor or proctor's test-taking instructions, including but not limited to not setting aside notes, books or study guides while the test is in progress, failing to sit in designated locations and/or leaving the classroom/ test site without permission during a test.
4) Prevention of the convening, continuation or orderly conduct of any class, lab or class activity. Engaging in conduct that interferes with or disrupts university teaching, research or class activities such as making loud and distracting noises, repeatedly answering cell phones/text messaging or allowing pagers to beep, exhibiting erratic or irrational behavior, persisting in speaking without being recognized, repeatedly
leaving and entering the classroom or test site without authorization, and making
physical threats or verbal insults to the faculty member, or other students and staff.
5) Falsification of student transcript or other academic records; or unauthorized access
to academic computer records.
6) Nondisclosure or misrepresentation in filling out applications or other university
records.
7) Any action which may be deemed as unprofessional or inappropriate in the
professional community of the discipline being studied.

Non-academic misconduct:
The university respects the rights of instructors to teach and of students to learn. Maintenance of
these rights requires campus conditions that do not impede their exercise. Campus behavior that
interferes with these rights will not be tolerated; examples include
1) interfering with the instructor's ability to conduct the class,
2) causing inability of other students to profit from the instructional program, or
3) any interference with the rights of others.
An individual engaging in such disruptive behavior may be subject to disciplinary action. Such
incidents will be adjudicated by the Dean of Students under non-academic procedures.
Ongoing behaviors or single behaviors considered distracting (e.g., coming late to class,
performing a repetitive act that is annoying, sleeping or reading a newspaper in class, etc.) will
be addressed by the faculty member initially either generally or individually. Cases in which
such annoying behavior becomes excessive and the student refuses to respond to the faculty
member's efforts can be referred to the Dean of Students. In the case of serious disruptive
behavior in a classroom the instructor may first request compliance from the student and if it is
not received, an instructor has the authority to ask the student to leave the classroom. If the
student fails to leave after being directed to do so, assistance may be obtained from other
university personnel, including University Police Department. An individual engaging in such
disruptive behavior is subject to disciplinary action. Such incidents will be adjudicated by the
Dean of Students under non-academic procedures to determine if the student should be allowed
to return to the classroom.

Harassment /Discrimination:
Texas A&M University-Kingsville does not tolerate discrimination on the basis of race, color,
religion, national origin, age, disability, genetic information, gender, gender identity or sexual
orientation (or any other illegal basis) and will investigate all complaints that indicate sexual
harassment, harassment, or discrimination may have occurred. Sexual harassment and sexual
assault are types of sex discrimination. Such sexual misconduct is unacceptable and will not be
tolerated. Any member of the university community violating this policy will be subject to
disciplinary action. A person who believes he/she has been the victim of sexual misconduct
harassment, harassment, or discrimination may pursue either the informal or the formal
complaint resolution procedure. A complaint may be initially made to the Office of Compliance
at (361) 593-4758, complainant’s immediate supervisor, a department head, a supervisory
employee, or the Dean of Students at (361)-593-3606 or the Office of Compliance at (361) 593-
4758. Regardless of who the complaint is filed with, the Compliance Office will be notified of
the complaint so it can be investigated.

Any pregnant students, or students planning to become pregnant, should consult their health care
provider to determine what, if any, additional precautions are needed, based on their individual
situation. It is the responsibility of the student to communicate their needs to the faculty member or Office of Compliance as soon as possible in order for risk-reduction to begin when it can be most effective, and to determine if additional modifications are necessary. While the university cannot mandate that the student notify it that she is pregnant or is planning to become pregnant, the university strongly recommends that students do provide notification, so appropriate steps can be taken to ensure the health of both parent and child. To communicate health circumstances or to request additional information, please contact Karen Royal, Director of Compliance at (361) 593-4758 or karen.royal@tamuk.edu.