Biology II – Biol 1407.870
Department of Life Sciences
Spring 2019

A. COURSE INFORMATION

Course number/section: Biol 1407.870, 871, 890 and 891
Class meeting time: Lecture: MWF 11:00-11:50 am;
(Labs: multiple times; must attend assigned labs)
Class location: Lecture: EN-104; Lab: CI-206, 207 or 208
Course Website: (Island Online/Blackboard Portal): https://bb9.tamucc.edu/

B. INSTRUCTOR INFORMATION

Instructor: Dr. Fabio Moretzsohn
Office location: EN-314C
Office hours: T 1-2 pm; W 3-5 pm; F 3-5 pm
Telephone: (361) 825-3477
e-mail: Fabio.moretzsohn@tamucc.edu
Appointments: A student may make an appointment to see me at times other than the scheduled office hours. I am available for consultation and extra help, but it is the student’s responsibility to request such help. If I am unavailable during office hours, I will post a note on my office door. I prefer communication via email; please include class section in email subject line.

C. COURSE DESCRIPTION

Catalog Course Description
This course is an overview of the major concepts in biological diversity and plant and animal biology. Laboratory work will include individual/team activities as well as technology-related assignments.

Semester Credit Hours (SCH) from this course may count toward the 6 SCH in the Life and Physical Sciences Foundational Component Area and/or the 6 SCH in the Component Area Option of the University Core Curriculum.

Extended Course Description
Specifically, we will cover fundamental concepts regarding population divergence and speciation, evolutionary relationships among the major limbs of the ‘tree of life’, biodiversity, physiological adaptations to deal with different environmental conditions, and global patterns of ecology and conservation.

D. PREREQUISITES AND COREQUISITES

Prerequisites
BIOL 1406 - Biology I.
Corequisites
Safety training given in SMTE 0091-Biological Laboratory Safety Seminar is required for continued participation in this course.

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required Textbook:

The TAMUCC bookstore sells a loose-leaf edition that comes bundled with access to MasteringBiology and the e-book. Access to MasteringBiology is required for homework. Important: If purchasing the text from another source, be sure that you purchase a valid (i.e., unused) access code for MasteringBiology. Note that many online sellers of used books falsely advertise that the used copy comes with a valid access code, but often the code has already been used, and you may end up having to buy the access code.

MasteringBiology is required to do homework. Make sure to access MasteringBiology from the link on Blackboard. You do not need a Course ID if you follow the link from Blackboard. You can sign up for a free trial period (14 days) but note that points earned during the trial can only be transferred once (i.e., you can’t sign up for multiple trial accounts and keep the points).

Laboratory Manual for Biology 1406. The lab manual will be available on Blackboard. You do NOT have to purchase the lab manual at the University Bookstore.

Required App: Top Hat
We will be using the Top Hat (www.tophat.com) classroom response system in class. You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or through text message.

You can visit the Top Hat Overview (https://success.tophat.com/s/article/Student-Top-Hat-Overview-and-Getting-Started-Guide) within the Top Hat Success Center which outlines how you will register for a Top Hat account, as well as providing a brief overview to get you up and running on the system.

An email invitation will be sent to you by email, but if don’t receive this email, you can register by simply visiting our course website: https://app.tophat.com/e/551653. Note: our Course Join Code is 551653. Please use your TAMUCC email and the same name as registered in the class. Top Hat will require a paid subscription, and a full breakdown of all subscription options available can be found here: www.tophat.com/pricing. Points will only be accepted from a single Top Hat account per student (i.e., you can’t sign up for multiple free trials).

Should you require assistance with Top Hat at any time, due to the fact that they require specific user information to troubleshoot these issues, please contact their Support Team directly by way of email (support@tophat.com), the in-app support button, or by calling 1-888-663-5491.
Supplies and Equipment:
- All students are required to have a lab coat when entering the labs for any reason. In addition, to the lab coat, students must be wearing long pants and closed-toe, closed-heel shoes to enter the labs at any time (refer to lab syllabus for more details)
- Students must bring their school ID to exams. A calculator will be needed.

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT
Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

By the end of this course, students should be able to:

SLO 1. Describe the major factors driving evolution in populations and support this with evidence from nature/literature
SLO 2. Summarize the diversity across major lineages of the ‘tree of life’
SLO 3. Formulate hypotheses regarding how different organisms may have evolved to take advantage of environmental conditions while maintaining homeostasis
SLO 4. Generate informed hypotheses regarding evolutionary relationships of species or groups of species based on shared derived characters
SLO 5. Explain to others the importance of biological evolution in shaping the physical world around us and in governing the interactions of living organisms with each other and their environments.

Student’s abilities to complete these tasks will be evaluated through:
1. Four exams (three regular exams and one final)
2. Laboratory activities (see separate syllabus)
3. Homework assignments administered through the Pearson MasteringBiology website (you need to access it through BlackBoard)
4. Additional activities which may include: quizzes, group in-class or other activities.

G. INSTRUCTIONAL METHODS AND ACTIVITIES
Instructional methods may include PowerPoint lectures, videos, group activities, quizzes, supplemental questions and homework, daily quizzes on Top Hat, and weekly review sessions via supplemental instruction.

H. MAJOR COURSE REQUIREMENTS AND GRADING
Student learning outcomes are assessed by in-class activities and questions, assignments on
MasteringBiology and questions on exams. The above student learning outcomes will be assessed as described below:

**SLO 1.** On the 1st exam, students are given a diagram of an animal or plant cell and asked to label the organelles

**SLO 2.** Questions during class and on the 2nd exam require students to diagram the processes of cellular respiration and photosynthesis and compare and contrast the processes of cellular respiration and photosynthesis

**SLO 3.** On the 3rd exam, students are given a diagram of a cell with two pair of chromosomes and asked to diagram the process of meiosis with a crossover event between two loci. Also, students are asked to develop a hypothesis for a chi square test to determine if two traits are linked or unlinked.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
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<tbody>
<tr>
<td>3 Exams</td>
<td>10% (each)</td>
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<tr>
<td>Final Exam</td>
<td>10%</td>
</tr>
<tr>
<td>Quizzes and Case Studies</td>
<td>10%</td>
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<tr>
<td>MasteringBiology</td>
<td>10%</td>
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<tr>
<td>Lecture Attendance</td>
<td>5%</td>
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<tr>
<td>Shared Project (LC)</td>
<td>10%</td>
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<tr>
<td>Lab grade</td>
<td>25%</td>
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<td><strong>TOTAL</strong></td>
<td>100%</td>
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**Letter Grades:** Your final letter grade will be based on your average in lecture. Statistical manipulations (e.g., curving) may be performed once—at the end of the semester—not for each examination. The final grading scale will also be determined at the end of the semester, but the cut-off for each grade will be **no higher** than the following:

\[
A \geq 90\% > B \geq 80\% > C \geq 70\% > D \geq 60\% > F
\]

- I will rectify any clerical, mathematical, and/or other errors. However, you have **one (1) week** to notify me of such errors after an assignment, quiz or examination is returned.
- I will not change a legitimate course grade just because you “need” it (for financial aid, to get into professional school, etc.). The grading section of this syllabus describes how I assign grades. Please be sure you earn enough points to get the grade you want. There will always be someone who just missed a D, or a C, or a B, or an A. Although I reserve the right to curve, doing so is usually not necessary. (Curves are based on statistical analysis of the entire class’s performance, not on the needs of individual students). I have to draw lines between grades, and no matter where I draw them, someone is on the wrong side. Don’t let that someone be you. You have plenty of help in my class. Take advantage of the
resources I offer. The reasons for receiving a grade of “I” (incomplete) are clearly defined in the University Catalog; this “grade” cannot be used simply to prevent a student from receiving an unwanted grade in a class.

- I only discuss grades in person (i.e., I do not discuss grades or matters relating to grades over the telephone or by e-mail). If you wish to know your final grade before the official grade report is mailed to you, please see me in person or provide me with a self-addressed, stamped envelope.

Lecture Examinations: There will be four examinations (three lecture exams plus the final exam, each worth 100 points), taking questions for these tests primarily from material covered in the lectures, from handouts and other assignments, and from readings in the textbook and MasteringBiology. Examinations may consist of essay, short-answer, compare-contrast, fill-in-the-blank, multiple-choice, matching, making and/or labeling drawings, and/or various types of “flex” questions (i.e., anything is fair game). The first three examinations are sequential (i.e., each examination covers material from one specific section of the course). The final examination is comprehensive (i.e., covers material from the entire course), accounts for 10% of your overall grade and is redemptive (i.e., it can replace single examination; or it can be your entire Lecture examination grade). Thus, your examination grade can come from a percentage derived from:

\begin{itemize}
  \item 1) the final examination alone…
  \item or 2) the average of the four examinations…
  \item or 3) the average of the two highest examinations with the final used to replace the lowest examination…
\end{itemize}

… whichever method gives you the highest percentage.

- If you leave an examination room—for any reason—you must turn in your exam and answer sheet and you will not be allowed to resume the examination. Attend to personal matters (e.g., restroom visits) before the examination.
- Be on time! Anyone arriving after someone has completed an examination and left the room will not be allowed to take that examination.
- Cheating and plagiarism are unacceptable behaviors.

Quizzes: Quizzes may be given at any time, announced or unannounced, in the beginning of class, middle of class, end of class, online, or take-home. These may be short multiple-choice questions, short answer questions, a short writing activity or simply a “minute paper” in which students provide anonymous feedback regarding the course content. If you miss a quiz, it will count as a 0. Overall quiz and assignment points will not exceed that of a regular exam (100 pts). Daily questions on Top Hat will count points toward the Quiz category.

There will be no makeups. Other homework or assignments may be given in class. These may include data interpretation, experimental design, seminar attendance, etc. They may be due at the start of the next lecture class, but some assignments may be in-class only and makeups are not possible. You are encouraged to get together and work on case studies as a group. However, unless specified otherwise, the assignments must be turned in individually and be written in your own words, NOT COPIED. An assignment grade of ZERO will be given if the work is not in your own
words. All assignments and examination answers must be legible to the Instructor. Illegible answers will receive a 0.

I. COURSE CONTENT/SCHEDULE

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Chapter</th>
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<tbody>
<tr>
<td>1</td>
<td>Course Introduction; Syllabus</td>
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<tr>
<td>1, 2</td>
<td>Population ecology</td>
<td>40</td>
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<tr>
<td>2, 3</td>
<td>Species interactions</td>
<td>41</td>
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<tr>
<td>3, 4</td>
<td>Global Ecology and Conservation Biology; Case Study 1</td>
<td>43</td>
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<td>4</td>
<td>Review; EXAM 1 (Ch. 40, 41, 43)</td>
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<td>5</td>
<td>Descent with modification</td>
<td>19</td>
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<td>5, 6</td>
<td>Phylogeny</td>
<td>20</td>
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<tr>
<td>6, 7</td>
<td>Evolution of populations; Case Study 2</td>
<td>21</td>
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<td>7</td>
<td>The origin of species (Speciation)</td>
<td>22</td>
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<td>8</td>
<td>Early life and diversification of Prokaryotes</td>
<td>24</td>
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<td>8</td>
<td>Review; EXAM 2 (Ch. 19–21, 22, 24)</td>
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<td>9</td>
<td>SPRING BREAK: no classes or labs</td>
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<td>10</td>
<td>The origin and diversification of Eukaryotes</td>
<td>25</td>
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<td>10, 11</td>
<td>Animal diversity</td>
<td>27</td>
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<td>11, 12</td>
<td>Homeostasis and endocrine signaling</td>
<td>32</td>
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<tr>
<td>12</td>
<td>Animal nutrition</td>
<td>33</td>
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<tr>
<td>12, 13</td>
<td>Circulation and gas exchange</td>
<td>34</td>
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<tr>
<td></td>
<td>Review; EXAM 3 (Ch. (Ch. 25, 27, 32-36)</td>
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<tr>
<td>14</td>
<td>The immune system</td>
<td>35</td>
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<tr>
<td>14, 15</td>
<td>Reproduction and development; Case Study 3</td>
<td>36</td>
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<tr>
<td>16</td>
<td>Review</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>FINAL EXAM (Ch. 35, 36 + comprehensive)</td>
<td></td>
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Exam dates:
- Exam 1, Fri, Feb. 8
- Exam 2, Fri, Mar. 8
- Exam 3, Fri, Apr. 12
- Final Exam: Fri, May 3, 11:00 am–1:30 pm

http://registrar.tamucc.edu/Register%20for%20Classes/Final_Exams.html
Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

The time and point schedule may require adjustment. Additional assignments may or may not be provided at the Instructor’s discretion. Such assignments might include homework, group projects, reading assignments, quizzes, etc. Every attempt will be made to follow the time and evaluation schedules shown here. **It is the student’s duty to attend each class session, and regularly visit BlackBoard to be aware of all assignments, deadlines, and changes to such.**

J. **COURSE POLICIES**

Attendance/Tardiness
My attendance policy is the same as that stated in the University Catalog. Attendance is the student’s responsibility, and students are expected to attend, be on time for and remain the entire period in every class. Note that I may choose to have “pop” quizzes, and/or “attendance” quizzes as part of the points. Coming to lecture on a regular basis should result in a higher grade, and if you come to class often, it will help you do well in this course.

You are responsible for the material covered and assignments made in every lecture regardless of whether you attend it. “I came in late and didn’t hear about the assignment,” is **never** an acceptable excuse. It is **always** your responsibility to determine what happened in class during your absence. If you are absent, tardy, or leave early, I will provide you with copies of assignments (including “bonus point” assignments) and handouts if—and only if—you ask for them. (In other words, I will **not**, “track down” absentees to make sure that they know about assignments.) You must obtain class notes from other students.

Points missed because of an unexcused absence (including tardiness and leaving early) **cannot** be recovered. An excused absence allows us to make alternative arrangements for completing assignments; an excused absence is not waiver of assignments, knowledge, skills or experiences necessary to complete a course. The documentation required for an absence to be excused **must** be:

- from an appropriate source (doctor, dentist, funeral director) who states the nature and dates of the event
- in writing, on official letterhead, and signed (it will not be returned)
- presented **prior to** the absence for a scheduled event (e.g., university-sponsored activity, recognized religious holiday, military service); and
- presented **no** more than **one week** after the date of an unexpected absence.

Late Work and Make-up Exams
You may always turn in assignments early. Except for excused absences, late assignments will **not** be accepted. If you know in advance that you will have an excused absence when an assignment is due, you must turn in that assignment before its due date. You should turn in assignments that were missed because of an unexpected, excused absence as soon as possible.
For some scheduled events (athletics, military duty, etc.), you may arrange to take a lecture examination before (but not after) its scheduled date. (You should take a test as close to its originally scheduled time as possible, but you may not take a test more than one week before its originally scheduled time. You must obtain your instructor’s approval at least one week before you wish to take the test.) If you arrange to take any test at an alternate time and do not show for that appointment, then you forfeit the opportunity to take the test except at its originally scheduled time. Students who do not arrange to take examinations in advance will not be eligible for this special consideration. A written excuse from the university department involved or from the Office of Student Engagement and Success is required.

In general, there are NO individual make-up examinations. The grading formulas above give you three chances to earn points from lecture examinations: method 1 or 3 if you miss one lecture examination; method 1 if you miss more than one lecture examination; method 2 if you miss the final examination. The instructor will determine if circumstances warrant giving an individual a make-up test after the original test. A make-up test given after the original test will be all written (i.e., no multiple choice or matching), and it will be administered on the “Reading Day” for the semester.

**Extra Credit**
There is no individual extra credit. There will be a few extra credit opportunities available to the entire class. Such opportunities will be announced in class and on Blackboard.

**Cell Phone Use**
Cell/smart phones and computers: If a student is found to be using a cell phone, smart phone, or computer for activities unrelated to the class, the device will be taken and put on the desk up front, so the student can pick up their device after class. Cellular phones, pagers, and other “beepers” must be silenced BEFORE you enter the classroom. Cell phone or other internet-ready devices may be used for quizzes to access apps such as Socrative, Top Hat or other apps.

**Laptop Use**
Students are encouraged to use laptop computers or tablets if they feel that use of their laptop will be helpful to them.

**Food in Class**
Please respect other students and limit your eating food in the class.

**Missed Exam**
I will follow University policy should you miss an exam due to a University-related event or religious obligations. For students missing exams for other reasons such as family events or illness, please contact me. See above under Late Work and Make-up Exams.

**Participation**
All students are expected to attend the full class, complete all learning assignments, complete
reading assignments fully and carefully, and to participate in class discussions. A portion of your grade is earned by participation.

K. COLLEGE AND UNIVERSITY POLICIES

- **Academic Integrity (University)**
  University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.

- **Classroom/Professional Behavior**
  Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

- **Statement of Civility**
  Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

- **Deadline for Dropping a Course with a Grade of W (University)**
  I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with your academic advisor, the Financial Aid Office, and me, before you decide to drop this course. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Please consult the Academic Calendar ([http://www.tamucc.edu/academics/calendar/](http://www.tamucc.edu/academics/calendar/)) for the last day to drop a course.

- **Grade Appeals (College of Science and Engineering)**
As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at http://www.tamucc.edu/provost/university_rules/index.html, and the College of Science and Engineering Grade Appeals webpage at http://sci.tamucc.edu/students/GradeAppeal.html. For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

- **Disability Services**
  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 disabilities. If you believe you have a disability requiring an accommodation, please call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.

If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816. http://disabilityservices.tamucc.edu/

- **Statement of Academic Continuity**
  In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

**L. OTHER INFORMATION**

- **Academic Advising**
  The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department
chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

GENERAL DISCLAIMER

I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.