**Department:** Life Sciences (Biology)

| **BIOLOGY 1406** |  |
| **SPRING 2015** |  |
| **CRN # 51580** |  |

**Instructor**  
Vaishali Chaubal, Ph.D

**Email address**  
vaishali.chaubal@hccs.edu

| **Course location and times:** | Missouri City Campus  
Monday: 2:00 pm – 5:45 pm; Room 213  
Wednesday: 2:00 pm – 5:45 pm; Room 217 |
| **Course semester credit hours:** | 4 Semester Credit hours |
| **Course contact hours:** | 96 total hours; 48 hrs lecture, 48 hrs laboratory |
| **Course length:** | 12 weeks [February 14th – May 17th 2015] |
| **Instruction type:** | In-person, Lecture – Lab; Web-enhanced |

**Course Description**  
Discussion focuses on biological chemistry, biological processes, cellular morphology, metabolism and molecular biology. Core curriculum course cannot be used in conjunction with 1308.

**Course prerequisites**  
One year of high school biology/high school chemistry recommended. College level reading and writing

**Course goals**  
1. To establish an understanding of the major historical events in biology and their impact on science.  
2. To describe basic cell structure, biochemistry, metabolism, nutrition, reproduction and genetics.  
3. To demonstrate knowledge of the basic principles of molecular genetic technology.  
4. To demonstrate knowledge of the basic principles of cellular inheritance.  
5. To demonstrate skill in basic laboratory methodology, such as microscopy and careful analysis of laboratory data and results.

**Program Student Learning Outcomes (PSLO) for BIOL 1406**  
**PSLO#1:** To recognize, identify and describe the basic structures and their associated functions in most life forms.  
**PSLO#2:** Will demonstrate proficiency and safe practices in the use of laboratory equipment and basic laboratory techniques.  
**PSLO#3:** Will apply principles of the scientific method to problems in biology in the collection, recording, quantitative measurement, analysis and reporting of scientific data.  
**PSLO#4:** To develop study skills and habits appropriate for pre-professional students interested in health-related fields.
The following SLOs with their associated assessment criteria are not meant to be all inclusive, and are meant to be used along with all other course learning outcomes and assessment devices listed under Course Objectives, in the determination of the student’s final course grade.

**SLO#1:** The student will be able to recognize the basic structure and describe the function of eukaryotic cellular organelles and cell systems.

**SLO#2:** Given a DNA or RNA base sequence, the student will be able to deduce:
- The sequence of the complementary DNA strand
- The sequence of the complementary mRNA strand
- Complementary codons and/or anticodons
- The proper amino acid sequence in a peptide by using a supplied table of genetic code.

**SLO#3:** The student will be able to explain synthesis and properties of:
- Carbohydrates
- Lipids
- Proteins
- Nucleic acids

**SLO#4:** The student will be able to devise an experiment containing the correct experimental test points along with correct positive and negative controls

**SLO#5:** The student will exhibit competence with bringing the brightfield microscope into focus

**SLO#6:** The student will develop the habit of reliable attendance by being absent from class no more than four times per semester.

**SLO#7:** The student will demonstrate punctuality in the submission of class assignments on their due dates.

**Course Expectations:**

You are spending a good deal of time, energy and money on this course – please make the most of your investment. It takes approximately 2 – 3 hours of study time for each hour of class time to master the material. This class will have over 96 contact hours. **The class and study time necessary to succeed in this class will be close to 300 hours (20 hours/week)**

**Instructor Requirements:**

1. Students should be on time for class and be prepared (having read and studied the assignments) with required materials including textbook and lab manual. Breaks will be given; any abuse of break time will be noted and disciplined as noted below.
2. You are expected to be in attendance throughout the entire period of instruction.
3. Students require prior permission to leave the class early (lecture or lab) and will be permitted only in emergencies or extenuating circumstances.
4. No eating or drinking or smoking in labs or classrooms (water bottles or closed containers are permitted in the classroom only).
5. No electronic devices are permitted to be on and in use. If family/personal situations require you to be available via phone, place it on vibrate and wait until break to respond or quietly exit to take the call outside. Taking calls, texting, etc. during class is disruptive and discourteous to instructor and classmates.
6. Any student interfering with or disrupting the class will be subject to dismissal for the day.
7. **The Instructor reserves the right to discipline students by deducting 5 – 10 points from the tests.**

8. **Lab Policy:**
   a. Lab safety is stated in lab manual. Lab rules and regulations will be discussed during the first lab and will be adhered to at all times. Each student is responsible for cleaning up after labs, this includes glassware, utensils, specimens/models and other material used during lab time (no, clean up is not covered by your lab fees).
   b. Each student should arrive at the laboratory on time, with his or her laboratory manual. Student should review the lab schedule sheet, read the lab exercise scheduled and prepared to start the experiment. Experiments may be performed in groups. Each student is responsible for completing the lab reports at the end of each lab.

9. **All exams and scantrons are to be returned to the instructor at the end of testing.** After grading, scantrons will be given to you to record your grade and should be returned to the Instructor.

10. No writing will be permitted on the exam papers. Please do your scratch work (if needed) on papers provided by instructor.

11. It is important you keep a record of grades as they are given out. This helps you assess your progress in class.

12. **All rules of the college apply.** Know the safety rules as applied to the lab component of this course. Repeat violations of safety rules endanger the entire class and will result in a deduction of points from your grade.

13. The use of recording devices, including camera phones and tape recorders, is prohibited in classrooms, laboratories, faculty offices, and other locations where instruction, tutoring or testing occurs. Students with disabilities who need to use a recording device as a reasonable accommodation should contact the Office for Students with Disabilities for information regarding reasonable accommodations.

**• Testing procedures:**
   a. Examination format: Lecture exams will consist of multiple choice, true/false, matching, diagrams and/or short answer. Lecture exams may include extra credit in the form of bonus questions.
   b. Lab exams will cover the material we cover in labs (but information sometimes overlaps with lecture) and may have a written as well as practical component.
   c. **Final exams are comprehensive**
   d. Come prepared to take the test. You will need a scantron for most exams, a #2 pencil, and a smudge-proof eraser.
   e. Be sure to arrive early for your examinations. There are time limits for exams and if you arrive late, you will not be given additional time. Once the exam has begun you will not be allowed to leave the room, so take care of restroom needs before we begin.

**Do not plan to leave after a test or schedule appointments, as we will continue with class or lab.**

**• Grading Criteria**
Students must adhere to testing schedule. Failure to take a test (lab or lecture) will result in a “0” for the missed exam. No makeup exams will be arranged except for work, family, or personal (health) emergency, **only if documented.** Online homework, quizzes would not be reset if you were not able to complete them or miss them.

**FINAL GRADE OF FX:** Students who stop attending class and do not withdraw themselves prior to the withdrawal deadline will be assigned the final grade of "FX" at the end of the semester, compared to an earned grade of "F" which is due to poor performance. Please note that HCC will not disperse financial aid funding for students who have never attended class. Students who receive financial aid but fail to attend class will be reported to the Department of Education and may have to
pay back their aid. A grade of "FX" is treated exactly the same as a grade of "F" in terms of GPA, probation, suspension, and satisfactory academic progress.

| HCC Grading Scale | A = 90-100%  
|                   | B = 80-89%  
|                   | C = 70-79%  
|                   | D = 60-69%  
|                   | F = less than 60%  

| HCC Policy Statement: ADA | Any student with a documented disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the Disability Services Office at the respective college at the beginning of each semester. Instructors are authorized to provide only the accommodations requested by the Disability Support Services Office. If you have any special needs or disabilities that may affect your ability to succeed in college classes or participate in any college programs or activities, please contact the DSS office for assistance. 
Southwest College, contact:  
Dr. Becky Hauri  
5407 Gulfton Houston, Texas 77081 Phone: 713-718-7909 Fax: 713-718-7781 TTY: 713-718-7909  

| HCC Policy Statement: Academic honesty | Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. Disciplinary proceedings may be initiated by the college system against a student accused of scholastic dishonesty. Penalties can include a grade of "0" or "F" on the particular assignment, failure in the course, academic probation, or even dismissal from the college. Scholastic dishonesty includes, but is not limited to, cheating on a test, plagiarism, and collusion.  

| HCC Policy Statement: Tutoring | Tutoring  
The college will provide tutoring for the students. More information will be available later. You can check the tutoring and open lab. Schedule at http://learning.swc.hccs.edu  
Early Alert process  
To help students avoid having to drop/withdraw from any class, HCC has instituted an Early Alert process by which your professor will “alert” you that you might fail a class because of excessive absences and/or poor academic performance. The counselors with work with you to learn about what, if any, HCC interventions might be available to assist you – online tutoring, child care, financial aid, job placement, etc. – to stay in class and improve your academic performance.  

| HCC Policy Statement: Student attendance, repeaters, withdrawal deadline | Attendance:  
Students are expected to attend classes regularly. Students are responsible for materials covered during their absences, and it is the student’s responsibility to consult with instructors for make-up assignments.  
Instructors check class attendance daily. A student may be dropped from a course for excessive absences after the student has accumulated absences in excess of 12.5% of the hours of instruction (including lecture and laboratory time). Note that 12.5% is
approximately 4 classes or labs for a 4-semester hour course. Habitual tardiness will not be tolerated. Students are expected to be in attendance for the entirety of the scheduled class and are responsible for completing assignments scheduled during their absence/s. It is the responsibility of each student to amend his or her professional/personal schedule to meet the class schedule.

**Repeaters:**
Students who repeat a course for a third or more times may soon face significant tuition/fee increases at HCC and other Texas public colleges and universities. Please ask your instructor / counselor about opportunities for tutoring / other assistance prior to considering course withdrawal or if you are not receiving passing grades. Beginning in fall 2007, the Texas Legislature passed a law limiting first time entering freshmen to no more than SIX total course withdrawals throughout their educational career in obtaining a certificate and/or degree.

**Withdrawals:**
Withdrawal from the course after the official day of record (see current catalog) will result in a final grade of “W” on the student transcript and no credit will be awarded. It is the student’s responsibility to initiate and complete a request for withdrawal from any course. Students will be required to formally request a drop from their instructors prior to the administrative drop date deadline. Abandoning the course or failing to formally drop, will result in a grade being given based on the work completed for the entire course (including missed exams).

The State of Texas has begun to impose penalties on students who drop courses excessively. For example, if you repeat the same course more than twice, you have to pay extra tuition. Beginning in fall 2007, the Texas Legislature passed a law limiting first time entering freshmen to no more than SIX total course withdrawals throughout their educational career in obtaining a certificate and/or degree.

**International Students:**
Receiving a "W" in a course may affect the status of your student Visa. Once a W is given for the course, it will not be changed to an F because of the visa consideration. Please contact the International Student Office at 713-718-8520 if you have any questions about your visa status and other transfer issues.

### HCC Policy Statement: Statement on EGLS3 (Evaluation for Greater Learning Student Survey System)
At Houston Community College, professors believe that thoughtful student feedback is necessary to improve teaching and learning. During a designated time near the end of the term, you will be asked to answer a short online survey of research-based questions related to instruction. The anonymous results of the survey will be made available to your professors and department chairs for continual improvement of instruction. Go to www.hccs.edu/egls3 for more information.

### Instruction Methods:
The primary focus of the course will be on instructor lectures including illustrations, PowerPoint presentations, animations, group activities and assigned textbook readings.
Lecture material will correspond to the topics covered in the required textbook; instructor may include more detail on certain topics. Lecture may be included during lab sessions to clarify or detail concepts. Topics and concepts covered during lecture or included in the assigned reading will be included in exams. Laboratory sessions will include exercises from laboratory manual.

<table>
<thead>
<tr>
<th>Student Assignments:</th>
<th>Students are required to read assigned chapters and complete chapter quizzes posted on <a href="http://www.pearsonmastering.com">www.pearsonmastering.com</a> Additional quizzes during lecture or lab may be conducted throughout the semester.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Assessments:</td>
<td>Students will be assessed via lecture and laboratory examinations, online homework, quizzes, project report, lab manual and comprehensive final lecture examinations.</td>
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</tbody>
</table>

**Course Calendar:** (Refer to the Schedule for a more detailed version)

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture Schedule</th>
<th>Lab Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Chapter 1, 2</td>
<td></td>
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<tr>
<td>2.</td>
<td>Chapter 3, 4</td>
<td>Lab safety, Exercise 1</td>
</tr>
<tr>
<td>3.</td>
<td><strong>Lecture Exam – 1</strong>&lt;br&gt;Chapter 4, 5, 6</td>
<td>Exercise 2,</td>
</tr>
<tr>
<td>4.</td>
<td>Chapter 6, 7</td>
<td>Exercise 3</td>
</tr>
<tr>
<td>5.</td>
<td>Chapter 8</td>
<td>Exercise 6</td>
</tr>
<tr>
<td>6.</td>
<td><strong>Lecture Exam - 2</strong>&lt;br&gt;Chapter 9, 10</td>
<td>Exercise 7, <strong>Lab Exam – 1 (Lab Manuals due)</strong></td>
</tr>
<tr>
<td>7.</td>
<td>Chapter 10, 11, 12</td>
<td>Exercise 8</td>
</tr>
<tr>
<td>8.</td>
<td><strong>Lecture Exam - 3</strong>&lt;br&gt;Chapter 13, 14</td>
<td>Exercise 9, 10</td>
</tr>
<tr>
<td>9.</td>
<td>Chapter 14, 15, 16</td>
<td>Exercise 12</td>
</tr>
<tr>
<td>10.</td>
<td><strong>Lecture Exam - 4</strong>&lt;br&gt;Chapter 16, 17</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Chapter 18, 19, 20</td>
<td><strong>Lab Exam – 2 (Exercise 7 – 12; Lab Manual due)</strong></td>
</tr>
<tr>
<td>12.</td>
<td><strong>Lecture Exam - 5</strong>&lt;br&gt;FINAL EXAMS – COMPREHENSIVE (Chapters 1 – 20)</td>
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</tbody>
</table>
Note: All dates are tentative and subject to changes as per the progress and decision of the Instructor!

Grade Calculation:

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Lecture Exam 1</td>
<td>100</td>
</tr>
<tr>
<td>Lecture Exam 2</td>
<td>100</td>
</tr>
<tr>
<td>Lecture Exam 3</td>
<td>100</td>
</tr>
<tr>
<td>Lecture Exam 4</td>
<td>100</td>
</tr>
<tr>
<td>Lecture Exam 5</td>
<td>100</td>
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<tr>
<td><strong>One lowest lecture exam grade will be dropped</strong></td>
<td></td>
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<tr>
<td>Mastering bio Assignments (HW and quiz)</td>
<td>100</td>
</tr>
<tr>
<td>Lecture Final (Instructor and Department)</td>
<td>200</td>
</tr>
<tr>
<td>Lab Exam 1</td>
<td>100</td>
</tr>
<tr>
<td>Lab Exam 2</td>
<td>100</td>
</tr>
<tr>
<td>Lab Reports/Performance</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total Pts.</strong></td>
<td><strong>1000</strong></td>
</tr>
</tbody>
</table>

Divide your total points by 10 to obtain your final percentage
**ASSESSMENT RUBRIC:**

**BIOL 1406:**

**Performance Factors:**

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>D</th>
<th>C</th>
<th>B</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unable to demonstrate knowledge of shape, structure, or function of most eukaryotic cellular organelles and cell systems.</td>
<td>Occasionally able to demonstrate knowledge of shape, structure, or function of most eukaryotic cellular organelles and cell systems.</td>
<td>Occasionally able to demonstrate knowledge of shape, structure, or function of most eukaryotic cellular organelles and cell systems.</td>
<td>Consistently able to demonstrate knowledge of shape, structure, and function of most eukaryotic cellular organelles and cell systems.</td>
<td>Consistently able to demonstrate knowledge of shape, structure, and function of most eukaryotic cellular organelles and cell systems.</td>
</tr>
</tbody>
</table>

**Performance Factors:**

1. The student will be unable to recognize the basic structure and describe the function of eukaryotic cellular organelles and cell systems. PSLO #1

2. Given a DNA or RNA base sequence, the student will be able to deduce:
   a. the sequence of the complementary DNA strand
   b. the sequence of the complementary messenger RNA strand
   c. complementary codons and/or anticodons
   d. the proper amino acid sequence in a peptide by using a supplied table of genetic code. PSLO #1

3. The student will be able to explain the synthesis and properties of:
   a. carbohydrates
   b. lipids
   c. proteins
   d. nucleic acids PSLO #1

4. The student will be able to devise an experiment containing the proper experimental test points along with proper positive and negative controls. PSLO #2

5. The student will exhibit competence with bringing the brightfield microscope into focus. PSLO #2

**Performance Factors:**

1. The student will be unable to find the microscope slide, and consistently unable to focus a microscope without the instructor’s help.

2. Occasionally able to find the microscope slide, but consistently unable to focus without the instructor’s help.

3. Occasionally able to find the microscope slide, and occasionally able to focus with the instructor’s help.

4. Consistently able to find the microscope slide, and occasionally able to focus without the instructor’s help.

5. Consistently able to find the microscope slide, and consistently able to focus without the instructor’s help.
<table>
<thead>
<tr>
<th>PSLO #3</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>6)</strong> The student will develop the habit of reliable attendance by being absent from class no more than four times per semester. <strong>PSLO #3</strong></td>
<td><strong>7)</strong> The student will demonstrate punctuality in the submission of class assignments on their due date. <strong>PSLO #3</strong></td>
</tr>
<tr>
<td><strong>IS absent frequently enough to interfere with instruction and the completion of the course objectives, and/or is frequently not where he/she is expected to be.</strong> Infracts the HCC attendance policies.</td>
<td><strong>Is tardy at turn-in frequently enough to interfere with class instruction. Submits assignments two or more weeks late, or ignores assignments.</strong></td>
</tr>
<tr>
<td><strong>When absent, is never aware of the schedule for the day upon return, and must be reminded or encouraged to complete objectives missed during the absence.</strong> Is occasionally not where he/she is expected to be.</td>
<td><strong>Is occasionally a few minutes late for assignment turn-in. Submits assignments no more than one week late.</strong></td>
</tr>
<tr>
<td><strong>When absent, is only occasionally unaware of the schedule for the day upon return. Completes objectives missed during the absence only with the help of the instructor and/or classmates, and is where he/she is expected to be at all times.</strong></td>
<td><strong>Is rarely late for assignment turn-in. Submits assignments late, but on the due date.</strong></td>
</tr>
<tr>
<td><strong>When absent, independently or with little help completes objectives missed during the absence. Always aware of the schedule for the day, and is where he/she is expected to be at all times.</strong></td>
<td><strong>Is never absent, always aware of the schedule for the day, and is where he/she is expected to be at all times. Consistently and willingly follows HCC attendance policies without being reminded.</strong></td>
</tr>
<tr>
<td><strong>When absent, is never aware of the schedule for the day upon return. Completes objectives missed during the absence only with the help of the instructor and/or classmates, and is where he/she is expected to be at all times.</strong></td>
<td><strong>Is consistently on time for assignment turn-in. Always submits assignments on the due date.</strong></td>
</tr>
<tr>
<td><strong>Is never absent, always aware of the schedule for the day, and is where he/she is expected to be at all times.</strong></td>
<td><strong>Is consistently on time for assignment turn-in. Always submits assignments on the due date.</strong></td>
</tr>
</tbody>
</table>
Read these recommendations and get geared up for a smooth run.....

Are You Going to Succeed in College?

Welcome to HCC

This is not the 13th grade!

Life Sciences Department Recommendations and Expectations

Guidelines to take Biology 1406 (1st. year class): high school biology & chemistry with B or better. If not take Biology 1308 first.

Failure to meet these recommended guidelines can result in failing the class. Don’t be impatient! Get the tools you need so you can succeed!

Student/Faculty Orientation Checklist

I. College Level Expectations/Responsibilities

• Be on time for your class. Do not sneak in late and interrupt the class. If you are late wait until the next break to enter the classroom.
• You will be expected to behave as an adult. This includes not talking on cell phones or any use of an electronic device not approved by your instructor during class.
• Do not expect multiple “changes”, such as being able to re-take exams or re-do assignments. Do not ask your instructor for an “extra assignment” to alter your grade.
• You must meet deadlines. Most professors do not accept late assignments or they make significant grade reductions with late submittals.
• Read directions carefully and follow them. Review directions before turning in an assignment to make sure they have all been met.
• Plan to spend about three hours studying outside the classroom for every one hour in the classroom.

Do not take too many classes if you are working or have heavy family/personal responsibilities. DO NOT attempt to take more than one Biology course per semester unless you already have a strong Biology/Science background.
• Set realistic goals and develop a plan to achieve them.
• Stay organized. Use a binder to store your class notes, syllabus and handouts. If your class utilizes the Masteringbio classroom management system, make sure to copy the syllabus, notes and other materials you might need on to your computer desktop or an external storage device to use when an Internet connection is not possible. If you have trouble accessing Masteringbio contact the help desk number listed at the bottom of the Masteringbio home page. Your instructor cannot reset passwords or register students in Masteringbio.
• Contact your professor and/or a counselor when you first begin to experience a problem in a class. Do not wait. Most professors want to help, but it is your responsibility to ask for it. It is your academic career. If you decide to drop a class make sure you go to the registrar and drop the course. DO NOT assume that your instructor will drop you if you abandon the course; doing so may result in an “F”.
• Buy your textbook at the beginning of the semester and begin reading it. If you have financial or other issues that keep you from doing so, talk with your professor immediately. Also purchase your Scantons early. They are sold at the college bookstores, which may not open early enough for an 8:00am class. Make sure you have them before your examinations.
II. Syllabi
• You will receive a different syllabus for each class.
• Read every syllabus carefully, as each professor has different policies and you are responsible for following them. Make sure you do not have any personal or professional appointments that conflict with test dates or times.
• Learn your professor’s name and contact information. They are included in your syllabus.

III. Attendance
• Attend class beginning the first day. This is important for understanding expectations and getting to know your professor and classmates. Lab rules and safety procedures are covered during the first few days.
• You must attend class regularly. You cannot receive credit for a class if more than 12 hours of instruction have been missed.
• You are held responsible for content missed during an absence including announcements, notes, handouts and assignments.
• Get to know your classmates, exchange contact information from at least three classmates at the beginning of the semester so that you have someone to contact if you miss a class.
• Get to class on time, allowing time for traffic, parking. Plan to be on campus at least 15 minutes before your scheduled class.

IV. Tutoring
• Online tutoring is available for free to all HCC Biology students at: http://hccs.askonline.net/
• In-person tutoring is provided at each of our campuses beginning during the third week of the semester. Notices will specific locations and times will be posted in Biology lecture and lab rooms.
• Friday open labs, where students can review Biology models are typically held at the Scarcella building at the Stafford campus, room S118 beginning on the third week of the semester to the week before finals. Look for notices posted in Biology lecture and lab rooms.

V. STATEMENT OF EGLS3:
EGLS3 - Evaluation for Greater Learning Student Survey System
At Houston Community College, professors believe that thoughtful student feedback is necessary to improve teaching and learning. During a designated time, you will be asked to answer a short online survey of research-based questions related to instruction. The anonymous results of the survey will be made available to your professors and division chairs for continual improvement of instruction. Look for the survey as part of the Houston Community College Student System online near the end of the term.

Acknowledgements: Above recommendations are as suggested and compiled by our Department Chair, Dr. Tom Loesch

V. Building Codes
• Scarcella Building – STF2
• Stafford Building – STAF3
• Building B — B
• Temporary buildings — T
• West Loop – WLOP
• Missouri City – MOCC
• GreenBriar Annex – GRNBR
Print the following page, read, sign and submit it on 18th Feb 2015.

Acknowledgement Page
I acknowledge that I have read the syllabus for Biology 1406 (CRN # 51580) and understand the effort and time commitment necessary to succeed in this Science Majors Class.

OVER 300 HOURS OF STUDY!!)

X ____________________________  X ____________________________
STUDENT NAME (PRINT)  STUDENT (SIGN)

Biology 1406