This course syllabus is intended as a set of guidelines for BIOL 1406-Hybrid. Both North Lake College and the instructor reserves the right to make modifications in content, schedule, and requirements as necessary to promote the best education possible within prevailing conditions affecting this course.

COURSE SYLLABUS

SPRING 2019

BIOLOGY 1406-Hybrid, Section 73461

Lecture on MW 8-9:20 am at NLC-North Campus
Hands-on labs from home with a kit, Tests in NLC-Testing Center

INSTRUCTOR: Dr. Vaishali Khamankar
Email: vkhamankar@dcccd.edu
Telephone: 972-860-3910
Office: C-303-D

OPEN OFFICE HOURS: As per request
Division of Math and Science, P330
Monday –Thursday 8 a.m. - 8:30 p.m., Friday 8 a.m. - 4:30 p.m.

Withdrawal date: April 17, 2019

COURSE INFORMATION:

- Biology for Science Majors I (Biology 1406)
- Section numbers: 73461
- Credit hours: 4
- Class meeting time:
  - Lecture: MW 8-9:20am at NLC-North campus, Assignments on ecampus, tests at NLC Testing Center
  - Hands-on Labs: with a kit at home/online, comprehensive lab practical at NLC Testing Center

COURSE DESCRIPTION: An introductory survey of contemporary biology for students majoring in the sciences. Topics emphasized will include the chemical basis of life, structure and function of cells, energy transformations, and molecular biology and genetics. (3 Lecture, 3 Lab.). Coordinating Board Academic Approval Number 2601015103

COURSE PREREQUISITES:

One of the following must be met: (1) Developmental Reading 0093 AND Developmental Writing 0093; (2) English as a Second Language (ESOL) 0044 AND 0054; or (3) have met Texas Success Initiative (TSI) Reading and Writing standards AND DCCCD Writing score prerequisite requirement.
REQUIRED TEXTBOOKS, MATERIALS AND SKILLS:

Textbook: 2 options below

<table>
<thead>
<tr>
<th>Textbook Information</th>
<th>Option 1: From Follett Bookstore</th>
<th>Option 2: From Elsewhere</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campbell Biology, Volume 1 PACKAGE for North Lake College 2014 10/e. (This book is customized for the course BIOL1406 taught at the North Lake College and has chapters 1-17)</td>
<td>Students who don’t want to buy from the Follett bookstore may buy the textbook elsewhere. Common book sellers with sell the complete book. Picture below. ISBN-10:0321775651 ISBN-13: 9780321775658 with access to “Modified Mastering Biology”, Publisher: Benjamin Cummings</td>
<td></td>
</tr>
</tbody>
</table>

Lab Material: General Biology 3 Volume 1 with Photosynthesis from eScience Labs.  
SKU: 1626 (When buying from Follett bookstore) Follett bookstore will sell a code that has to be entered on eScience website to have your kit mailed to you.)  
SKU: NLC1626 (When buying directly from eScience)  

Computer with a camera and Internet access: To complete this class students do require a computer and internet Pearson’s Modified Mastering Biology website for assignments and eScience for some lab activities.  

Digital Camera: A simple digital camera required to document set-up and results of the laboratory experiments. Smart phone camera will work.  

Skills: Typing for lab reports, internet surfing, reading, comprehension and following directions, appropriate communication via email, attaching files to an email attaching pictures to a document, submitting assignments on ecampus
### COURSE OBJECTIVES and OUTLINE:

<table>
<thead>
<tr>
<th>Course Outline- corresponding Chapters</th>
<th>Course Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction to Biology</td>
<td>Recognize the characteristics that distinguish living things from nonliving. Identify the tools used in biological studies such as the microscope, experimental design, scientific problem solving and interrelations between science, technology and society.</td>
</tr>
<tr>
<td>2. Basic Chemistry</td>
<td>Define the basic characteristics of matter, the atom, atomic theory and chemical bonding as it relates to the formation of the molecules of life.</td>
</tr>
<tr>
<td>3. Chemistry of Water</td>
<td>Describe the unique characteristics of water that make it essential to life on earth.</td>
</tr>
<tr>
<td>4. Chemistry of Carbon</td>
<td>Recognize the properties of carbon that make it central to the molecules of life and the role of functional groups in the characteristics of carbon compounds.</td>
</tr>
<tr>
<td>5. Biomolecules</td>
<td>Identify the four major groups of biomolecules, their chemical characteristics, the roles they play in life and their basic structural characteristics.</td>
</tr>
<tr>
<td>6. The Cell</td>
<td>Recognize the cell as the structural and functional unit of life while reviewing the cell theory, structure and function, Prokaryotic vs. Eukaryotic and the endosymbiotic theory.</td>
</tr>
<tr>
<td>8. Introduction to Metabolism</td>
<td>Define energy, its role in chemical reaction and reaction mechanisms and the role of enzymes in biological reactions.</td>
</tr>
<tr>
<td>9. Cellular Respiration</td>
<td>Review the process of cellular respiration and alternative respiratory pathways.</td>
</tr>
<tr>
<td>10. Photosynthesis</td>
<td>Recognize the nature of photosynthesis to life on earth, identify the major steps in the process and environmental factors that impact photosynthetic efficiency.</td>
</tr>
<tr>
<td>11. Cell Communication</td>
<td>Explain the concept of cell communications at the molecular level</td>
</tr>
<tr>
<td>12. Cell Cycle-Cell Division-Mitosis</td>
<td>Review the role of mitosis and meiosis in the lifecycles of eukaryotes, recognizing the basic steps in each process and identifying how they differ</td>
</tr>
<tr>
<td>13. Meiosis</td>
<td>Review the role of meiosis in the lifecycles of eukaryotes and sexual reproduction</td>
</tr>
<tr>
<td>14. Mendelian Genetics</td>
<td>Identify the basic mechanisms of classical genetics and how genes are passed on.</td>
</tr>
<tr>
<td>15. Human Genetics</td>
<td>Identify behavior of various human genes in heredity.</td>
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<tr>
<td>16. DNA structure and function</td>
<td>Explain how DNA was determined to be the genetic material, its molecular structure and how the structure of DNA relates to its role in genetic continuity and expression.</td>
</tr>
<tr>
<td>17. DNA to Protein</td>
<td>Identify the process of protein synthesis and the expression of the genetic code.</td>
</tr>
</tbody>
</table>

### SPECIFIC COURSE LEARNING OUTCOMES:
Students will master the
- concept of the cell as the structural and functional unit of life.
- basic concepts of chemistry and atomic theory.
- understanding of the role of biological molecules in the chemistry of life.
- basic concepts of cellular physiology such as cellular respiration and photosynthesis.
- basic principles of heredity and concepts of molecular genetics including the structure and functions of DNA and RNA in relation to the production of proteins.

### ATTENDANCE POLICY:
Attendance for lecture is mandatory. Quizzes/assignments given in class cannot be made up if absent. Work required for both-lecture and laboratory- should be done in a timely manner. Each assignment should be submitted on or before the deadline. You may work ahead but any work submitted after the deadline will not be considered. LECTURE powerpoints: are online in eCampus. LABORATORY experiments to be done from home. All responsibility of the work is that of the student. Proctored tests should be completed during designated week. Since, enough time will be given to complete assignments, quizzes, reports and tests, extensions will not be given. Extenuating circumstances will be considered case by case.
MEANS OF ASSESSMENT OF COURSE LEARNING OUTCOMES:
Learning outcomes will be assessed by examinations, quizzes and graded assignments in lecture. Additionally each of the units completed in lab will be assessed by quizzes and a lab practical.

EVALUATION PROCEDURES: Final grade is 70% lecture and 30% laboratory grades.

LECTURE: Lecture grade is based on a combination of tests, and assignments and/or quizzes. Lecture tests count to 60% and quizzes/assignments count to 10%.

LECTURE TESTS: Students will take six lecture tests (Tests 1-6)
- Lecture Test 1: Chapters 1, 2, 3, 4
- Lecture Test 2: Chapters 5, 6, 7
- Lecture Test 3: Chapters 8, 9, 10
- Lecture Test 4: Chapters 11, 12, 13
- Lecture Test 5: Chapters 14, 15
- Lecture Test 6: Chapters 16, 17

If you are given two attempts for any of these tests, average of the two grades will be considered. Tests may be given group/open-book tests/quizzes in class or from the North Lake College Testing Center. The lowest grade of the tests 1-5 will be dropped. Grade earned on Test 6 cannot be dropped.

ASSIGNMENTS AND QUIZZES FOR LECTURE: All assignments, quizzes and extra credit will be given on eCampus or in class. After each chapter, students need to complete graded activities (quizzes or tutorials). Graded assignments will count 10% of the total lecture grade. Extra credit assignments, if given, will not exceed 2% of the total grade.

LABORATORY: The lab grade is based on conducting actual experiments on your own, pre- and post-lab quizzes, lab reports and a final comprehensive lab practical. All quizzes may value from 2-20 points. Lab activity submission will require pictures of the student with the set-up and final results. Formal lab reports may be required. Lab activities will be graded within 1-2 weeks after submission. Directions on registration to eScience, conducting experiments and submission of results are given on eCampus will be given under the tab “lab documents” on eCampus. Lab activities count to 20% and lab practical counts to 10% of the total grade. Lab grade is 30% of the total grade in this class. Lab activities, pre-quizzes and post quizzes should be completed by the deadline. Lab practical may be combination of multiple choice and short answers and must be completed from the North Lake College Testing Center.

Important:
- Lab activities submitted within a given time line will be graded, others will not be graded.
- If students would like to work in groups of 2-3, they may do so. Each student must buy their own lab-kit. The results must be submitted by each student separately with their own pictures. Answers of the questions should NOT be exact copies. Students should answer pre- and post-lab questions and the reports in their own words. All participants will get a grade “zero” on the complete assignment for plagiarism.
- Pre and Post-lab quizzes completed will be considered only after submission of the labs.
- To be eligible to take the final lab practical, you must have completed at least 10 labs including labs 4, 5, 6, 7, 8, 10, 15, 11 and 12.
- A student caught opening webpages/browsers other than eCampus while taking a test from the proctored setting will receive a grade “zero” on that test.

GRADING SCALE:

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture 70%</td>
<td>Lecture Tests (1-6 lowest grade dropped)-10% each</td>
<td>60%</td>
</tr>
<tr>
<td></td>
<td>Lecture quizzes and/or assignments</td>
<td>10%</td>
</tr>
<tr>
<td>Laboratory 30%</td>
<td>Comprehensive Lab practical</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>Lab activities and quizzes</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

Final grade: 90-100% for A, 80 to 89% for B, 70 to 79% for C, 60 to 69% for D and below 59% for F.
All students are expected to abide by the college Student Code of Conduct. Students are expected to fully participate in lecture class and laboratory activities.

Cell phones should be turned off or set to silent during class unless an exercise requires the use of device. No inappropriate use of electronic devices will be permitted in class. Whether the use of electronics is proper or not will be determined by the instructor.

**No Children in Class and Unaccompanied Children on campus**
The institution strives to protect an environment most conducive to teaching and learning for all enrolled students. Minor children may not be brought to the laboratory, classrooms, or the Testing Centers.

**COUNSELING SERVICES**
Counseling services for personal issues are provided to all students currently enrolled at North Lake College. These services are provided by licensed professionals who are bound by confidentiality (within ethical parameters) and are at no charge. With the assistance of a counselor, students are able to identify, understand, resolve issues and develop appropriate skills. To make an appointment, call 972-273-3333 or visit A 311

**eCAMPUS/Blackboard**
1. Class notes and announcements are posted on the web on ECAMPUS at ecampus.dcccd.edu
2. You are expected to access "eCAMPUS" on a regular basis to stay up to date with the class information.
3. Make sure you enter your email address. Let me know if you need help with "eCAMPUS".
4. All students can apply for a free email address/internet access at the Computing Center.

**TESTING POLICY FOR MATHEMATICS & SCIENCE DIVISION:**
If you need special accommodations you must submit a request to the Disability Services Office in person (A430) or by phone at 972-273-3165 North Lake Disability Services for more information.

**Testing Center**
Testing Policy for Mathematics & Science Division: Students taking exams in math and science will NOT be allowed to leave the testing center or the classroom during a test and return to complete the test. If you leave, you are through testing. If you require special accommodation, you must submit a request to the Disability Services Office in person (A430) or by phone at 972-273-3165. Click on Disability Services for more information.

- You may not bring personal items into the Test Center. This includes bags, cell phones and pagers. Coin-reimbursable (quarter) lockers are available for student use. Please do not share lockers.
- Please show courteous and cooperative behavior while using the services provided by the Testing Center.
- Do not bring children to the testing center. You must make arrangements for the care of your children prior to your exam date. The police department will be notified of any unattended children.
- Do not take any testing materials with you when you leave the Testing Center. This includes the test, answers, charts, scratch paper. These items will be attached to your test.

**Questions? Please visit the Testing Center (A425) or call 972-273-3160.**

**North Lake Testing Center Hours:**
- **Monday – Thursday:** 8:30 a.m. – 8:00 p.m.
- No exams will be issued after 7:00 p.m. Other cut-off times may be in effect for specific exams by the instructor's direction. All exams collected at 8:00 p.m.
- **Friday - Saturday:** 8:30 a.m. – 3:30 p.m.
- Other cut-off times may be in effect for specific exams by the instructor's direction.
No exams will be issued after 2:30 p.m. All exams collected at 3:30 p.m.

Sunday: CLOSED

If your instructor requires you to complete an exam in the Testing Center, be sure to have the following information when you request your test.

- Instructor’s name
- Subject and course number (exp: HIST 1301)
- Exam number (1st, 2nd, 3rd, etc.)
- Exam deadline (Get this information from your instructor. The testing staff cannot “look up” this information on computers.)

You should also bring the following supplies.

- A Test Request Form must be completed before entering the Testing center.
- Only battery operated 4 function, non-programmable scientific or TI83/TI 84 calculator are allowed (if permitted by instructor).
- Money for coin-return lockers (quarter). Please do not share lockers.

**Important:** Government- or school-issued photo identification is required & enforced.

**INSTITUTIONAL POLICIES**

**North Lake College Policies:** [https://www.northlakecollege.edu/au/fastfacts/legal/pages/policies-for-syllabi.aspx](https://www.northlakecollege.edu/au/fastfacts/legal/pages/policies-for-syllabi.aspx)

The above link will provide information about institutional policies regarding the following:

**Student Success**

- **Academic Advising and Degree Planning**
  
  At North Lake College, our Advising team works side by side with you in (1) picking the right major/program, (2) enrolling in the right classes and (3) finishing on time. Degree planning is critical as you prepare to be successful in the workforce and/or to transfer to other institutions.

  If you are a first-time-in-college student, you are required to meet with an advisor and are encouraged to file a degree plan. If you are a continuing student, you are also encouraged to meet with available advisors, faculty and program coordinators to ensure your continued success in maintaining a quality educational pathway.

  - Visit the [North Lake College Advising webpage](https://www.northlakecollege.edu/au/fastfacts/legal/pages/policies-for-syllabi.aspx) for more information.
  - Visit the [district website Advising Center page](https://www.northlakecollege.edu/au/fastfacts/legal/pages/policies-for-syllabi.aspx) for contact information for all college advising offices.

- **Tutoring**

  All students are eligible for free, convenient tutoring in a wide range of subjects.

  - Visit the [North Lake College Tutoring webpage](https://www.northlakecollege.edu/au/fastfacts/legal/pages/policies-for-syllabi.aspx) for more information.
  - Visit the [district website Tutoring page](https://www.northlakecollege.edu/au/fastfacts/legal/pages/policies-for-syllabi.aspx) for contact information for all college tutoring services.

- **Students With Disabilities**

  If you are a student with a disability and/or special needs who requires accommodations, please contact the Disability Services Office (DSO) at North Lake College. If you are eligible for accommodations, please contact DSO to send your accommodation request to your instructor, preferably at the start of the semester or program. Please note that all communication with DSO is confidential. Visit the Disability Services webpage for more information about [disability services available across the district](https://www.northlakecollege.edu/au/fastfacts/legal/pages/policies-for-syllabi.aspx) or contact the DCCCD Office of Institutional Equity at 214-378-1633.

- **Cheating, Plagiarism and Collusion**

  - Scholastic dishonesty is a violation of the Code of Student Conduct and Hazing. Scholastic dishonesty includes, but is not limited to, cheating on a test, plagiarism and collusion. **Cheating** includes copying from
another student’s test or homework paper; using materials not authorized; collaborating with or seeking aid from another student during a test; knowingly using, buying, selling, stealing or soliciting (asking for) the contents of an un-administered test; and substituting for another person to take a test. **Plagiarism** is the appropriating (taking in a way that is illegal or unfair), buying, receiving as a gift or obtaining by any means another’s work and the unacknowledged submission or incorporation of it in one’s own written work. **Collusion** is the unauthorized collaboration with another person in preparing written work for fulfillment of course requirements. Academic dishonesty is a serious offense in college. You can be given a failing grade on an assignment or test, can be failed for the class or you can even be suspended from college.

- **Your enrollment indicates acceptance of the DCCCD Code of Student Conduct and Hazing.**

  - **Student Survey of Instruction**
  
    We use the Student Survey of Instruction (SSI) to find out how students perceive the quality of courses, faculty and instruction and to get feedback for improvement. In order to minimize the disruption in the classroom, the SSI is now being given online in some courses through a link in eCampus. If you receive a request to complete the SSI, please do so as soon as possible. By completing this questionnaire, you will help the college and your instructors find out how we might improve your educational experiences. Your identity will remain strictly confidential and anonymous.

  - **Religious and Ethnic Holiday Observance**

    North Lake College honors the right of each student to observe the practices of their belief system. It is your responsibility to provide your instructors a written justification for a religious accommodation promptly after the course begins. It is the responsibility of the instructor and student to negotiate completion of all missed assignments before the absence, if possible.

  - **Harassment, Discrimination and Sexual Misconduct**

    - We are committed to assure all community members learn and work in a welcoming and inclusive environment. Title VII, Title IX and DCCCD policy prohibit harassment, discrimination and sexual misconduct. If you encounter harassment, sexual misconduct (sexual harassment, sexual assault, stalking, relationship violence) or retaliation or discrimination based on race, color, religion, age, national origin, disability, sex, sexual orientation, pregnancy, parenting, gender identity and/or gender expression, please contact your college Title IX coordinator or the Office of Institutional Equity. We treat this information with the greatest degree of confidentiality possible while also ensuring student welfare and college safety.

    - We are concerned about the well-being and development of our students and are available to discuss any concerns. There are both confidential and nonconfidential resources and reporting options available to you. If you wish to keep the information confidential, please contact college Counseling or Student Health Services. As required by DCCCD policy, incidents of discrimination and/or sexual misconduct shared with faculty will be reported to the college Title IX coordinator or district Title IX coordinator. The Title IX coordinator will contact you and determine if further investigation is needed. For more information about policies, resources or reporting options, please contact your college Title IX coordinator or visit dcccd.edu/TitleIX.

    - Each college within DCCCD has a designated **Title IX coordinator**.

    - **North Lake College Title IX Coordinator**: Francyenne Maynard, TitleIX-NLC@dcccd.edu 972-273-3980

  - **Students Receiving Financial Aid**

    - **Attendance and Participation**

      - If you do not attend classes, you could lose your financial aid. You must attend and participate in your on-campus or online course(s) before the course certification date and continue beyond the course withdrawal date.

      - Your instructor is also required by law to validate/certify your attendance in your on-campus or online course(s) in order for you to receive financial aid. To meet this attendance requirement, you must participate in an academic-related activity pertaining to the course such as, but not limited to, the following examples: initiating contact with your instructor to ask a question about the academic subject studied in the course, submitting an academic assignment, taking an exam, completing an interactive tutorial, participating in computer-assisted instruction, attending a study group that is assigned by the instructor, or participating in an online discussion about academic matters relating to the course.
• In an online class, simply logging in is not enough by itself to demonstrate academic attendance. You must show that you are participating in your online class and are engaged in an academically related activity as described above.

  o **Withdrawing From Classes**

If you are receiving any form of financial aid, you should check with the Financial Aid Office before withdrawing from classes. If you withdraw, it may affect your eligibility to receive aid in the future and could cause you to have to repay funds you received for the current semester. If you fail to attend or participate after the drop date, this policy will also affect you. To speak with someone, please contact the Financial Aid Call Center at 972-587-2599 or by email at facc@dcccd.edu, or visit one of our campus Financial Aid Offices (dcccd.edu/FinancialAidOffices).

• **Class Drop and Repeat Options**

  o **Withdrawal Policy**

If you are unable to complete this course, it is your responsibility to officially withdraw by the official drop date for this course. Failure to do so will result in a performance grade, usually an F. If you drop a class or withdraw from the college before the official drop deadline, you will receive a W (withdraw). Students sometimes drop a course when help is available that would enable them to continue. Before you make the decision to drop this course, please contact the instructor by email. If you are receiving any form of financial aid, check with the Financial Aid Office before withdrawing from classes. International students on an F-1 visa cannot withdraw from classes without jeopardizing their official status. For more information, visit the [Dropping or Withdrawing From Classes webpage](dcccd.edu/FinancialAidOffices).

  o **Six Drop Rule**

Under a Texas law (TEC Section 51.907), if you drop too many classes without having an acceptable reason, your GPA could be affected. Be sure you understand how this law may affect you before you drop a class. The law applies to students who enroll in a Texas public institution of higher education (including the colleges of DCCCD) for the first time in fall 2007 or later. You may drop no more than six courses during your entire undergraduate career unless the drop qualifies as an exception. Your campus advising center will give you more information on the allowable exceptions. Remember that once you have accumulated six non-exempt drops, you cannot drop any other courses with a W. For more information, visit [dcccd.edu/SixDrop](dcccd.edu/SixDrop).

  o **Repeating a Course and Third Drop Rule**

Dallas County Community Colleges charge additional tuition to students registering the third or subsequent time for a course taken at any of the DCCCD colleges since the Fall 2002 semester. All third and subsequent attempts of the majority of credit and continuing education/workforce training courses will result in an additional tuition charge. Developmental Education and some other courses will not be charged a higher tuition rate. See Third Attempt to Enroll in a Course at [dcccd.edu/ThirdCourseAttempt](dcccd.edu/ThirdCourseAttempt).

• **In Case of a Campus Emergency**

Sign up for DCCCD Emergency Alerts to receive a text message, email and/or phone call when there is an unscheduled evacuation or closure of a DCCCD campus or office because of weather, utility outages or police or other emergencies. Subscribing is free, but standard text message charges from your cell phone provider will apply. For more information, see [dcccd.edu/Alerts](dcccd.edu/Alerts).

• **Concealed Carry**

Any person who holds a license to carry may carry a concealed handgun on college district property as permitted by law and college district policy. A license holder who carries a handgun on college district property must keep it concealed and on or about their person at all times. The open carry of a handgun (i.e., completely or partially visible) is prohibited on college district property, including any public driveway, street, sidewalk, walkway, parking lot, parking garage or other parking area.

  o **Weapons**

The use, possession or display of a weapon in violation of law and college district policy is strictly prohibited. This prohibition applies to firearms, knives, clubs, fireworks of any kind, incendiary devices, razors, chains, throwing stars and any other device designed to expel a projectile or to inflict bodily harm.

  • Violations may result in disciplinary action and/or criminal penalties.

**Syllabus Change Disclaimer**

Instructors reserve the right to amend a syllabus as necessary.
Exemplary Educational Objectives
This course satisfies all of the Exemplary Educational Objectives for the natural sciences. They are:

1. To understand and apply method and appropriate technology to the study of natural sciences.
2. To recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry and to communicate findings, analyses and interpretation both orally and in writing.
3. To identify and recognize the differences among competing scientific theories.
4. To demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies.
5. To demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture

Learning Activities, Outcomes, and Assessment

<table>
<thead>
<tr>
<th>Learning Activity</th>
<th>Learning Outcomes</th>
<th>Assessment</th>
<th>EEO’s &amp; CCIC’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide a brief description of the learning activity.</td>
<td>Briefly list the specific learning outcomes/ objectives for the activity.</td>
<td>How will the activity be assessed?</td>
<td>Which EEO’s and CCIC’s are addressed by the learning activity?</td>
</tr>
<tr>
<td>1. Demonstrate the knowledge of diffusion of water and other molecules through a semipermeable membrane by performing different experiments in laboratory.</td>
<td>Practical application of the concept of diffusion of water and other molecules through semipermeable membrane.</td>
<td>Timed quiz through eCampus over the concept and its application on 70% of measured items. Evaluation based on a rubric.</td>
<td>EEO 1, 2 and CCIC 1, 2, 4</td>
</tr>
<tr>
<td>2. Describe the unique characteristics of water that make it essential to life on earth.</td>
<td>Assigned readings, lecture and discussion in class, related laboratory activities.</td>
<td>Ten question quiz to be administered after the completion of the topic. The class goal is 70% correct response.</td>
<td>EEO 1, 2, and CCIC 1, 2, 4</td>
</tr>
<tr>
<td>3. Demonstrate an understanding of the significance of cellular respiration and an understanding of the major energy transforming events of the process.</td>
<td>Assigned readings, lecture and discussion in class, play out the major steps of the aerobic respiratory pathway and related laboratory activities.</td>
<td>Ten question quiz to be administered after the completion of the topic. The class goal is 70% correct response.</td>
<td>EEO 1, 2, 3 and CCIC 1, 2, 4</td>
</tr>
</tbody>
</table>

PROGRAM–LEVEL OBJECTIVES FOR BIOL1406
BIOL1406 develops the following objectives from the Texas Higher Education Coordinating Board:

Communications: Written, oral
Communications: Visual
Critical Thinking
Empirical & Quantitative Skills

The program level outcomes are assessed by a questionnaire about the laboratory activities performed by students in a group setting.