**Biol 251 General Microbiology Syllabus**  
Kurt M. Regner, Ph.D.

**Office Hours Location:** WHI 212  
**Office Hours:** Thurs 12:00 - 2:00 PM  
**Office Phone:** 702-895-1071  
**Office Fax:** 702-895-3956

**Lecture Time:** T/Th 2:30 - 3:45 PM  
**Lecture Location:** White Hall Auditorium  
**Email:** WebCampus Course Message

**Skype:** kurt.regner

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**COURSE INFORMATION**

**Instructor Contact Information:**

The most reliable means of communication is course messaging via the WebCampus system.

1. WebCampus Course Messaging is the only method of email communications used for this course. The Instructor is unable to respond to messages sent to any other UNLV email system.
2. WebCampus email is intended for class logistics and/or issues (NOT questions about lecture/exam materials).
3. Laboratory concerns should be directed to your laboratory TA or lab coordinator, Shyama Malwane.
4. For questions related to lecture material or exams, please first visit with the microbiology lab instructors available through Biology Learning Center (WHI 126). If these resources are not sufficient, please see the Instructor during office hours.
5. Appointments outside of office hours are not possible during the Spring 2015 semester.
6. Contact biology.help@unlv.edu for all questions / concerns regarding registration for biology courses.

**Course Description/Purpose:**

**Biol 251 General Microbiology** is a survey of general microbiology including microbiological prokaryotic cell structure and function with an emphasis on microorganisms that associate with humans. The course is comprised of two lectures (2.5 hr) and one laboratory session (3 hr) per week providing four semester course credits. This course may not be applied toward the requirements for a baccalaureate degree in Biology. Prerequisites: BIOL 189, CHEM 110 or CHEM 121.

**Learning Objectives:**

- Gain a broad knowledge of microbiology, including microbial cell structure, molecular biology, genetics, and physiology of major groups of microorganisms and the roles of microorganisms in ecology and human health
- Be able to describe the unique aspects microorganisms particularly Bacteria, Archaea and viruses
- Master basic language and concepts pertaining to microbiology and molecular biology with the general goal of being able to communicate (reading, writing and speaking) with both scientists and lay people
- Demonstrate knowledge of the principles of public health, disease control and prevention
- Build a foundation in microbiology that can serve students’ future academic and career aspirations

BIOL 251 is an intensive course in which students must acquire a firm conceptual understanding of basic microbiological principles. The content is standardized and set by the Curriculum Committee in the School of Life Sciences. The course material is straight forward, but because of the breath of material covered, the pace is demanding. It is essential that students arrive adequately prepared for class and allot sufficient time for study. This is a 4-credit course; attendance is required for two lectures and one laboratory session per week. Unexcused absence from 3 or more laboratory sessions automatically results in a zero for the lab portion (30%) of the course.

It is essential that students be adequately prepared for this class and that they allot sufficient time for study. Students should complete the relevant text readings prior to attending class. When preparing for lectures/exams and allocating study time, consider the following:

- Student-faculty contact in and out of class is an important factor in student motivation/ involvement/success. In other words, students are encouraged to ask questions in class and during office hours.
• According to education research, students learn only about 50% of what they read, hear, and see (equivalent to reading the textbook and attending lecture). The most effective learning strategy involves talking to classmates about what was presented from the lecture and the text, writing about it, continually reviewing, relating information to past experiences, and applying it to daily life.

• A full-time course-load is equivalent to a full-time job that requires 40 or more hours per week. This class represents about 1/3 of a full course load. **(139,390),(839,409) In addition to time spent in lecture and lab, students should set aside about 12-15 hours per week to read the text, meet with study groups, transcribe class notes, and proactively STUDY.

**Assessment of Course Learning Objectives:**
Assessment of these learning objectives will be based on iclicker™ quizzes, lecture exams, a comprehensive final exam, laboratory assignments and quizzes.

**Required Materials:**
1. Access to a networked computer for accessing WebCampus is required. Computer access is available in the library.
4. iclicker™ remote for classroom participation: available at UNLV bookstore. Note that UNLV IT does not support the i-clicker system for smartphones or laptops.
5. A full-length lab coat is required for the laboratory portion of the course.

**Reading Assignments:**
Each lecture topic is covered in depth by specific sections of the assigned textbook. These sections are indicated on the lecture schedule. Occasionally, students may also need to visit a science website for additional material.

**Class Materials and WebCampus:**
This course utilizes UNLV’s WebCampus system. Login instructions are available at [http://webcampus.nevada.edu](http://webcampus.nevada.edu). Students who have problems using WebCampus need to call the Student Computing Support Center (702-895-0761) to immediately report problems. WebCampus will be used in this course to list the syllabus, lecture schedule, announcements, lecture materials, and exam seating assignments. It will also be used to administer assignments, report grades, and for email correspondence between students and the instructor. WebCampus provides a confidential means of communicating with your instructor and for viewing grades. **Please note that communication must occur through UNLV systems in order for the instructor to respond.**

It is important to remember that the Professor Regner wants students to be successful in this class and students should use all available resources to learn the course material. **Any challenges/struggles must be addressed immediately.** When challenges are addressed early in the semester, the instructor can often help the student avoid receiving a grade that does not reflect his/her efforts and expectations for the class.

### COURSE POLICIES

**Classroom Conduct:**
**Lectures will begin promptly at 2:30 and will conclude at 3:45 AM.** Students are encouraged to take notes and ask questions during lecture. The University requires that all students comport themselves in a manner that does not interfere with the right of other students to learn or of instructors to teach. Behaviors such as talking, reading newspapers or magazines during lecture, late and/or disruptive arrival, early and/or disruptive departure, having a cell phone ring, viewing materials on electronic devices that are not directly related to the course, or any other actions that compromise the classroom learning environment are extremely rude. **The instructor maintains a zero-tolerance policy on these activities and will single out the student(s) if they occur.** First-time offenders may be embarrassed, but serial offenders face stiffer consequences, which may include administrative removal from the course. Students should be aware that they are not anonymous in this class and that inappropriate behavior will not be tolerated.
Recording Lectures:
The content of lecture is the intellectual property of the instructor and UNLV. Students may take audio recordings of lecture for their PERSONAL study use. The instructor DOES NOT authorize the distribution of these recordings in any format; they may not be shared with others or distributed via the Internet or any other medium. PHOTOGRAPHY AND VIDEO RECORDINGS OF LECTURES ARE NEVER ALLOWED. If unauthorized course content is distributed in any form, all privileges of lecture recording and availability of lecture slides will be terminated for the entire class.

Exams:
Attendance is mandatory at all exams, and all exams contribute to the course grade. Four lecture exams consisting of 60 multiple-choice questions each will be administered throughout the semester. These exams will be based primarily upon the lecture material presented in class. The exams are not generally cumulative; however, terminology and concepts from all previous lectures may appear in exam questions and questions may reflect previous material discussed in subsequent lectures. The 3 highest scores from the 4 lecture exams will be used in the calculation of the final grade. Attendance at lecture exams is mandatory and an absence will result in a zero. Regardless of circumstances, missing more than 1 exam during the semester will result in a failing grade for the course, unless the student has opted to drop the course.

Students may use a single instructor supplied note card for each exam. Students may write on both sides of the note card. However, all notes must be handwritten. Mechanical printed and photocopied material on the note card is prohibited and will be considered academic misconduct. Each note card must be clearly identified with the student’s name and NSHE number. Note cards must be turned in with the exam. Any deviation from the above rules will result in the student receiving a zero for that particular exam. Note cards will ONLY be distributed the lecture before the exam and not at any other time or place. Students absent the lecture before the exam will not receive a note card.

The instructor may excuse absence from an exam if the absence was due to observance of a religious holiday, due to an official UNLV extracurricular activity (must be sanctioned by a college/school dean, and/or the Executive Vice President and Provost), due to military service, or due to a personal medical or legal emergency. If the absence is due to religious observances or university-sanctioned events, you must notify the instructor via WebCampus email by January 30, 2015. If the absence is due to a personal emergency, within 3 business days of the missed exam you must provide original documentation (NOT A COPY) on official letterhead, signed by a physician or legal authority justifying the absence. In the case of an appropriately documented excused absence, a make up exam may be administered. Make up exams may consist entirely of essay questions administered on Friday May 8, 2015. Unexcused absence from an exam will result in a score of ZERO.

A comprehensive final will be given at the designated time for this course. The mandatory final exam will consist of 100 questions. All students MUST take the final exam. The final exam time is different from the lecture time. A student who misses the final exam will earn a failing grade or an incomplete (see below). Students may only use one note card for the final exam.

Exam Policies:
All Biol 251 students must comply with the following policies to provide a reasonable and unbiased testing environment.

- All students must present a valid photo ID when handing in their exam.
- All students will be assigned a specific exam seat. Seating assignments will be available on WebCampus prior to each exam. Students who do not sit in their assigned seat will receive a score of ZERO.
- Each student will be allowed 1 note card (distributed in-class during lecture prior to each exam) as reference during the exam. The note card used must be issued by the instructor. Student-provided cards will not be allowed.
- The note card must be hand-written by each student and will be checked prior to start of exam.
- Students are not allowed to write or otherwise modify note cards during the exam.
- Electronic dictionaries, translators and calculators are prohibited during all exams.
- Cell phones and all other electronic devices must be turned off and put away during all examinations.
- All course materials (notes, books, etc.) must be placed underneath the desk seat during the exam.
- Hats, dark glasses, and anything else that obscures a student’s face must be removed during the exam.
- Students may not hum, speak, sing or eat during the exam.
- Students may not leave and return to the room during the exam without consent of the instructor.
- Exams will not be distributed 20 minutes after exam has started.
• The instructor and proctors will not answer questions or have discussions during the exam. If students are concerned about a particular question, they may submit a typed written statement to the instructor after the exam.
• Lab instructors will proctor the exams. Proctors will inform the instructor if they suspect students are attempting to cheat. The UNLV Office of Student Conduct regards observations and statements from proctors as valid evidence.
• Students must notify either the instructor or a proctor during the exam period if an exam is missing questions or pages. No compensation will be given if the instructor is notified after the exam has ended.
• After the exams are graded, students will receive a copy of the graded scantron form during lab. The instructor keeps all exam books and original scantron forms; exam books and original scantrons might not be returned to students.
• If a mathematical grading error occurred, please bring it to my attention immediately. Points will not be awarded any other reason. Please do not email or call with requests for grades as I will not reply.

Students must comply with the following guidelines in order for an exam to be graded:
• The test book and your note card must be turned in with the scantron answer sheet.
• The student must fill out and sign the exam and academic misconduct policy certification form.
• The student's NSHE ID number must be correctly entered on the scantron form.
• The student’s lab section must be clearly indicated on the scantron form.

Using a Scantron Form:
The following guidelines must be followed to ensure the correct grading of a scantron answer sheet. (1) Pencil must be used to record answers. (2) No stray marks may appear on the scantron form. (3) All erasures must be complete and clean. (4) The correct KEY ID “bubble” for a particular version of the exam must be filled in. Failure to adhere to these guidelines will result in an inaccurate grade.

Under all circumstances, the following situations will result in an incorrect answer. (1) Filling in more than one answer “bubble” for a particular question. (2) Erasure marks that obscure or make it difficult to determine the intended answer. (3) Folding, tearing, or otherwise damaging the scantron form in a manner that makes it difficult to determine the intended answer. (4) Not answering a question.

Participation in In-Class iclicker Quizzes:
All students must purchase and keep maintained (have extra batteries on hand) an i-clicker remote. The remote will be used to monitor lecture attendance and informally poll student comprehension of the material. I-clicker participation data will be used to award credit for participation and the percentage of points awarded will be in direct proportion to the number of classes attended. It is important to note that the i-clicker system is not intended to penalize students or force them to come to class. The i-clicker quizzes provide students with sample questions that test their comprehension of the lecture material, and allow them to anticipate the level of study that is necessary to do well in the class.

The i-clicker remote system is highly sensitive and accurate. If more participants are answering questions than are attending class, it usually indicates that students are using more than one clicker. If this occurs, the offending students (both the individuals not attending class and those using more than one clicker) will be turned over to the Office of Student Conduct. This action often leads to a student receiving a failing grade or being ejected from the class. Students are advised to understand that the i-clicker point is awarded as a privilege for good-faith efforts. Systematic abuse of i-clickers by academically dishonest individuals may result in a discontinuation of the system so that all students will lose the opportunity for in-class participation point.

In order to receive credit for class participation, students must register their clickers in class during the first 14 days of lecture, following instructions on the UNLV OIT website http://oit.unlv.edu/clickers/registering-your-iclicker/responsecard. Clickers are not interchangeable, and the same registered remote is needed for each class. If a student must purchase or replace a defective remote, he/she must notify the instructor as soon as possible so that the attendance record can be transferred. It is the responsibility of the student to alert the instructor if a clicker is not registered. In most cases, the problem can be fixed and the student will not lose the credit point.
Course Grades:
Final grades are based on the combined numerical scores from the three highest lecture exams, iclicker quizzes, laboratory assignments and a comprehensive final exam.

<table>
<thead>
<tr>
<th>Item</th>
<th>Points</th>
<th>Percentage</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 highest of the 4 lecture exams</td>
<td>180</td>
<td>40</td>
<td>72</td>
</tr>
<tr>
<td>iclicker quizzes</td>
<td>100</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Lab score</td>
<td>500</td>
<td>30</td>
<td>150</td>
</tr>
<tr>
<td>Comprehensive Final Exam</td>
<td>100</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>252.0</strong></td>
<td></td>
</tr>
</tbody>
</table>

GRADE FORMULA

\[
\text{(3 highest exam scores x 0.4) + (lab total x 0.3) + (iclicker total x 0.05) + (final exam score x 0.25)} = 252.0
\]

Course grades will be based on the following scale:

<table>
<thead>
<tr>
<th>%</th>
<th>100.0 - 90.0</th>
<th>89.9 - 80.0</th>
<th>79.9 - 70.0</th>
<th>69.9 - 60.0</th>
<th>59.9 - 0.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>F</td>
</tr>
</tbody>
</table>

Letter grades will not be assigned to individual examinations. Note that these cutoffs are based on past performances of the class and are subject to change at the discretion of the instructor. In the past, final grades have not differed from these cutoffs. Students should not expect the grades to be CURVED!

Finally, students are reminded that it is their responsibility to fill out the necessary forms to drop this class. Failure to attend classes/exams does not result in an administrative drop. Failure to drop a class usually results in an “F” being recorded on the student’s transcript.

Laboratory:
Attendance is required at all laboratories and will be taken during every lab session by the lab instructor within the first two hours of lab. Students who have unexcused absences in THREE or more labs will receive a zero for the lab portion of the course. Excused absences are granted only for medical/legal reasons that are validated in writing by a physician/legal authority on official letterhead and approved by the lab instructor. Additional laboratory policies will be provided by the laboratory coordinator, Shyama Malwane.

Tutoring:
The School of Life Sciences operates a Biology Learning Center in White Hall, Room 126. Any questions concerning content of lectures should addressed with microbiology lab instructors at the BLC first. Only in the case that a question cannot be resolved at the BLC, should a student come to office hours. To be seen, the student should bring the name of the tutor that they worked with at the Learning Center. The Learning Center schedule will be announced in class and via WebCampus.

UNLV UNIVERSITY POLICIES

Academic Misconduct:
Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility and professionalism. By choosing to join the UNLV community, students accept the expectations of the Academic Misconduct Policy and are encouraged when faced with choices to always take the ethical path. Students enrolling in UNLV assume the obligation to conduct themselves in a manner compatible with UNLV’s function as an educational institution.
An example of academic misconduct is plagiarism. Plagiarism is using the words or ideas of another, from the Internet or any source, without proper citation of the sources. See the Student Academic Misconduct Policy (approved December 9, 2005) located at: http://studentconduct.unlv.edu/misconduct/policy.html.

Copyright:
The University requires all members of the University Community to familiarize themselves with and to follow copyright and fair use requirements. You are individually and solely responsible for violations of copyright and fair use laws. The university will neither protect nor defend you nor assume any responsibility for employee or student violations of fair use laws. Violations of copyright laws could subject you to federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. Additional information can be found at: http://provost.unlv.edu/copyright/statements.html.

Dangerous Weapons:
Dangerous weapons are not permitted on campus without the express written approval of the Director of the Office of Public Safety. This policy applies to all persons on the UNLV campus, except law enforcement officers in pursuit of their duties. Facsimile weapons are also banned.

Disability Resource Center (DRC):
The Disability Resource Center (DRC) determines accommodations that are “reasonable” in promoting the equal access of a student reporting a disability to the general UNLV learning experience. In so doing, the DRC also balances instructor and departmental interests in maintaining curricular standards so as to best achieve a fair evaluation standard amongst students being assisted. In order for the DRC to be effective it must be considered in the dialog between the faculty and the student who is requesting accommodations. For this reason faculty should only provide students course adjustment after having received an “Academic Accommodation Plan.”

If you are registered with the UNLV Disability Resource Center, bring your Academic Accommodation Plan from the DRC to me during office hours so that we may work together to develop strategies for implementing the accommodations to meet both your needs and the requirements of the course. Any information you provide is private and will be treated as such. To maintain the confidentiality of your request, please do not approach me before or after class to discuss your accommodation needs.

UNLV complies with the provisions set forth in Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. The DRC is located in the Student Services Complex (SSC-A), Room 143, phone (702) 895-0866, fax (702) 895-0651. For additional information, please visit: http://drc.unlv.edu/.

Religious Holidays Policy:
Any student missing class quizzes, examinations, or any other class or lab work because of observance of religious holidays shall be given an opportunity during that semester to make up missed work. The make-up will apply to the religious holiday absence only. It shall be the responsibility of the student to notify the instructor no later than the end of the first two weeks of classes, January 30, 2015, of his or her intention to participate in religious holidays which do not fall on state holidays or periods of class recess. This policy shall not apply in the event that administering the test or examination at an alternate time would impose an undue hardship on the instructor or the university that could not reasonably been avoided. For additional information, please visit: http://catalog.unlv.edu/content.php?catoid=4&navoid=164.

Incomplete Grades:
The grade of I – Incomplete – can be granted when a student has satisfactorily completed all course work up to the withdrawal date of that semester/session but for reason(s) beyond the student’s control, and acceptable to the instructor, cannot complete the last part of the course, and the instructor believes that the student can finish the course without repeating it. A student who receives an “I” is responsible for making up whatever work was lacking at the end of the semester. If course requirements are not completed within the time indicated, a grade of F will be recorded and the GPA will be adjusted accordingly. Students who are fulfilling an Incomplete do not register for the course but make individual arrangements with the instructor who assigned the I grade.

Tutoring:
The Academic Success Center (ASC) provides tutoring and academic assistance for all UNLV students taking UNLV courses. Students are encouraged to stop by the ASC to learn more about subjects offered, tutoring times and other
academic resources. The ASC is located across from the Student Services Complex (SSC). Students may learn more about tutoring services by calling (702) 895-3177 or visiting the tutoring web site at: http://academicsuccess.unlv.edu/tutoring/.

UNLV Writing Center:
One-on-one or small group assistance with writing is available free of charge to UNLV students at the Writing Center, located in CDC-3-301. Although walk-in consultations are sometimes available, students with appointments will receive priority assistance. Appointments may be made in person or by calling 895-3908. The student’s Rebel ID Card, a copy of the assignment (if possible), and two copies of any writing to be reviewed are requested for the consultation. More information can be found at: http://writingcenter.unlv.edu/

Rebelmail:
Rebelmail is UNLV’s official e-mail system for students. It is one of the primary ways students receive official university communication such as information about deadlines, major campus events, and announcements. All UNLV students receive a Rebelmail account after they have been admitted to the university. Students’ e-mail prefixes are listed on class rosters. The suffix is always @unlv.nevada.edu. Email communication through WebCampus Course Messaging system is the only method for this course.

Final Examinations:
The University requires that final exams given at the end of a course occur at the time and on the day specified in the final exam schedule. See the schedule at: http://www.unlv.edu/registrar/calendars

This syllabus and lecture schedule is subject to change at the discretion of the instructor. Any changes will be announced during lecture and via WebCampus.
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Assigned Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>M Jan 19</td>
<td>Martin Luther King Jr. Day Recess</td>
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<tr>
<td>T Jan 20</td>
<td>Course Introduction</td>
<td></td>
</tr>
<tr>
<td>Th Jan 22</td>
<td>History of Microbiology</td>
<td>Chap 1 &amp; 5</td>
</tr>
<tr>
<td>T Jan 27</td>
<td>First Life &amp; Three Domain Tree of Life</td>
<td>p. 71-81, Chap 8</td>
</tr>
<tr>
<td>Th Jan 29</td>
<td>Eukaryotes &amp; Endosymbiosis</td>
<td>p. 62-68, 210-213, 384-385</td>
</tr>
<tr>
<td>T Feb 3</td>
<td>Prokaryotes: Bacteria &amp; Archaea</td>
<td>p. 4-6, 49-61, 75-76, 79-80</td>
</tr>
<tr>
<td>Th Feb 5</td>
<td>Viruses and Prions</td>
<td>p. 6, 89-104, 213-214</td>
</tr>
<tr>
<td>T Feb 10</td>
<td>Exam 1 (60 questions)</td>
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<tr>
<td>Th Feb 12</td>
<td>Generation of ATP - Respiration</td>
<td>p. 169-186</td>
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<tr>
<td>M Feb 16</td>
<td>Washington's Birthday Recess</td>
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<tr>
<td>T Feb 17</td>
<td>Generation of ATP - Fermentation</td>
<td>p. 124, 183-184, 395-398, 401-408</td>
</tr>
<tr>
<td>Th Feb 19</td>
<td>Generation of ATP - Photosynthesis</td>
<td>p. 67, 79, 186-189, 208-210</td>
</tr>
<tr>
<td>T Feb 24</td>
<td>Genetics</td>
<td>p. 40-41, Chap 6,</td>
</tr>
<tr>
<td>Th Feb 26</td>
<td>Genetics</td>
<td>p. 218-220</td>
</tr>
<tr>
<td>Th Mar 3</td>
<td>Exam 2 (60 questions)</td>
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<tr>
<td>Th Mar 5</td>
<td>Pathogens Evade Immune Defenses - Part 1</td>
<td>p. 51, 220-222, Chap 10, Chap 11</td>
</tr>
<tr>
<td>T Mar 10</td>
<td>Pathogens Evade Immune Defenses - Part 2</td>
<td></td>
</tr>
<tr>
<td>Th Mar 12</td>
<td>Pathogens Evade Immune Defenses - Part 3</td>
<td></td>
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<tr>
<td>T Mar 17</td>
<td>Antibiotics</td>
<td>p. 129-130, 322-331, 335-340</td>
</tr>
<tr>
<td>Th Mar 19</td>
<td>Antivirals &amp; Vaccination</td>
<td>p. 128, 304-307, 332-335</td>
</tr>
<tr>
<td>T Mar 24</td>
<td>Exam 3 (60 questions)</td>
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<tr>
<td>Th Mar 26</td>
<td>Unknown Paper Discussion &amp; Public Health</td>
<td>Chap 13</td>
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<tr>
<td>T Mar 31</td>
<td>Spring Break</td>
<td></td>
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<tr>
<td>Th Apr 2</td>
<td>Spring Break</td>
<td></td>
</tr>
<tr>
<td>Fri Apr 3</td>
<td>Final Day to Withdraw</td>
<td></td>
</tr>
<tr>
<td>T Apr 7</td>
<td><em>Neisseria gonorrhoeae</em> &amp; <em>Treponema pallidum</em></td>
<td>p. 271-272, 360</td>
</tr>
<tr>
<td>Th Apr 9</td>
<td>Chlamydia</td>
<td>p. 78-79</td>
</tr>
<tr>
<td>Th Apr 16</td>
<td><em>Escherichia coli</em>, <em>Salmonella</em> and others</td>
<td>p. 260, 262-263, 265-266, 273, 343, 355, 376-378</td>
</tr>
<tr>
<td>T Apr 21</td>
<td>Exam 4 (60 questions)</td>
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<tr>
<td>Th Apr 23</td>
<td>Mycobacterium &amp; Tuberculosis</td>
<td>p. 56-57, 126, 154, 273, 363, 374</td>
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<tr>
<td>M/T Apr 27-28</td>
<td>Lab Exam</td>
<td></td>
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<tr>
<td>Th Apr 30</td>
<td>HIV / AIDS</td>
<td>p. 262-263, 266, 307-311, 334-335</td>
</tr>
<tr>
<td>M May 4</td>
<td>Unknown Report is due</td>
<td></td>
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<tr>
<td>T May 5</td>
<td>Guest Speaker</td>
<td>Southern Nevada Health District</td>
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<tr>
<td>Th May 7</td>
<td>Guest Speaker</td>
<td>Southern Nevada Health District</td>
</tr>
<tr>
<td>Th May 14</td>
<td>Comprehensive Final Exam (100 questions)</td>
<td>3:10 – 5:10 PM</td>
</tr>
</tbody>
</table>

This schedule is subject to change at the discretion of the instructor. Changes will be announced during the lecture and WebCampus.

Professor Regner’s Contact Information

Office          White Hall 212
Mailbox         School of Life Sciences - White Hall 101
Phone           702.895.1071
Skype           kurt.regner
Email           Via WebCampus
Fax             702.895.3956
Office Hours    Thursday 12:00 - 2:00 PM
BIOLOGY 251
MICROBIOLOGY LAB SYLLABUS
Spring 2015

Lab Coordinator
Shyama Malwane. M.S.
Phone: 895-3942
Email: shyama.malwane@unlv.edu
Microbiology website: http://faculty.unlv.edu/shyama

Office Hours
Fri 12.00-1.00pm (Room 317 or 313)
Each lab section is taught under Shyama Malwane’s supervision, but students should contact their lab instructor first regarding either any lab grading or scheduling issues.

Lab Sections:
Daniel Heller L07 8.30 a.m. - 11.20 a.m. M
Chrisabelle Cempron L02 11.30 a.m - 2.20 p.m M
Chrisabelle Cempron L03 2.30 p.m - 5.20 p.m M
Daniel Heller L04 5.30 p.m - 8. 20 p.m M
Sadaf Fakhra L05 8.30 a.m - 11.20 a.m T
Sadaf Fakhra L06 11.30 a.m - 2.20 p.m T

Assessment:
Lab Exam I 150 points
Lab Reports 100 points
Unknown Lab Report 100 points
Lab Quizzes 130 points
Correct microscope use and wearing lab coat 20 points
Total 500 points

Missing 3 labs will result in a failing grade (0) for lab. NO exceptions!

Lab Exam-
A lab exam during lab 11 will contain the following types of questions. Exam will cover material ONLY from lab (TA pre-lab lecture, material covered in lab, UTA demos where applicable, your lab manual and handouts). Study guides will not be provided.
There will be all/some of the following:
• Stations set up from material covered in lab
• Short answers/essays
• Multiple choice questions
• Demonstrating techniques
• Fill-in-the blank
• True/False

**Lab Reports**-
Each student must purchase the lab manual and read each lab before coming to lab. Guidelines for recording experimental results in the lab reports (review questions) will be discussed in lab. Lab reports (posted on web campus) will be collected by the lab TAs at the end of each lab. The students will turn in the complete reports from the previous week. *Each day late will be 5 points off!*

**Lab Quizzes**-
A lab quiz (13 pts) will be administered during the first 5 minutes of each lab. Come prepared to the lab by reading the lab manual. Each quiz will cover that week’s material and/or the previous week’s work if you will be reading results from the previous week. There will be NO MAKE-UP LAB QUIZZES OR EXTRA CREDIT QUIZZES.

**Unknown Lab Report** - Each student will receive a culture of a single bacterium during the fifth lab, and will be required to isolate and identify one to genus. The guidelines for the lab report will be discussed in lab and posted on the microbiology website. *Each day late will be 5 points off!*

**REQUIRED LAB TEXT:**

**General Lab Rules**-
- **NO FOOD OR DRINKS ALLOWED IN THE LAB.**
- **Lab Safety:**
  1. Read, understand and sign the general safety guidelines. Turn it in to the lab instructor by the end of the first week. Do not hesitate to discuss any safety issues with the lab instructor.
  2. A lab coat is mandatory (you can buy a lab coat through a uniform store or bring an old shirt to wear over your clothes).
  3. Gloves will be available in lab.
  4. Microincinerators will be used to sterilize loops/needles. The glass tubes will be brought closer to the red hot area (NOT inserted like the loops and needles) to sterilize the tube tops. CAUTION: Microincinerators reach 816 °C (1500°F) within 10 minutes after the unit is switched on. DO NOT touch any part of the heating guard or end caps when the Microincinerator is in the “on” position or for one hour after being turned off!
  
  The lab bench must be cleaned and all students must wipe down the bench with 10%
bleach before and after each lab.

All your lab supplies will be in a shoe box in front of you. Put all instruments away before leaving the lab.

Microscope lenses must be cleaned and the stage lowered at the end of each lab session. Students that do not care for the microscope will not receive the microscope points for lab.

Students are responsible for comparing their own results with the demonstration results. Results must be initialed by the instructor.

There are NO MAKE-UP labs or lab exams. Excused absences are granted only for medical/legal reasons that are validated in writing by a physician or legal authority on official letterhead and approved by the lab instructor. Students should make every attempt to attend another lab the same week as the absence. Attending another lab is only possible with the permission of the lab instructor. NOTE: Students who represent UNLV at any official extracurricular activity shall have the opportunity to make up assignments, but the student must provide official written notification to the instructor no less than one week prior to the missed class(es). This policy shall not apply in the event that completing the assignment or administering the examination at an alternate time would impose an undue hardship on the instructor or the university that could reasonably have been avoided. For purpose of definition, extracurricular activities may include, but are not limited to; band, drama, intercollegiate athletics, recruitment, and any other activity sanctioned by a college/school dean, and/or the Executive Vice President and Provost.

Academic Misconduct, Copyright laws, Cheating and Plagiarism

Any form of copying is considered academic misconduct and may result in one or all of the consequences as outlined in the UNLV undergraduate catalog.

Academic Misconduct – Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility and professionalism. By choosing to join the UNLV community, students accept the expectations of the Academic Misconduct Policy and are encouraged when faced with choices to always take the ethical path. Students enrolling in UNLV assume the obligation to conduct themselves in a manner compatible with UNLV’s function as an educational institution.

An example of academic misconduct is plagiarism. Plagiarism is using the words or ideas of another, from the Internet or any source, without proper citation of the sources. See the Student Academic Misconduct Policy (approved December 9, 2005) located at: http://studentconduct.unlv.edu/misconduct/policy.html

Copyright –

Copyright laws and Fair Use policies protect the rights of those who have produced the material. Whether it be a book, a monograph, a photograph, a sound recording or an Internet web page, the owner/creator of that work has the right to be protected under the laws of copyright and fair use.
Likewise, your work is protected under the law. Just as you cannot use copyrighted material without permission, somebody else cannot use your copyrighted material without your permission.

The University requires all members of the University Community to familiarize themselves and to follow copyright and fair use requirements. **YOU ARE INDIVIDUALLY AND SOLELY RESPONSIBLE FOR VIOLATIONS OF COPYRIGHT AND FAIR USE LAWS. THE UNIVERSITY WILL NEITHER PROTECT NOR DEFEND YOU NOR ASSUME ANY RESPONSIBILITY FOR EMPLOYEE OR STUDENT VIOLATIONS OF COPYRIGHT AND FAIR USE LAWS.** Violations of copyright laws could subject you to federal and state civil penalties and criminal liability as well as disciplinary action under University policies.

To help you familiarize yourself with copyright and fair use policies, the University encourages you to visit its copyright web page at: [http://www.unlv.edu/provost/copyright](http://www.unlv.edu/provost/copyright)

A couple of useful sites which may help:

- Copying for classroom use  
  [http://fairuse.stanford.edu/Copyright_and_Fair_Use_Overview/chapter0/](http://fairuse.stanford.edu/Copyright_and_Fair_Use_Overview/chapter0/)
- Fair use definitions  
- Reproduction of Copyrighted Works by Educators and Librarians  

**Disabilities**

**Disability Resource Center (DRC) –** The UNLV Disability Resource Center (SSC-A 143, [http://drc.unlv.edu/](http://drc.unlv.edu/), 702-895-0866) provides resources for students with disabilities. If you feel that you have a disability, please make an appointment with a Disabilities Specialist at the DRC to discuss what options may be available to you.

If you are registered with the UNLV Disability Resource Center, bring your Academic Accommodation Plan from the DRC to me during office hours so that we may work together to develop strategies for implementing the accommodations to meet both your needs and the requirements of the course. Any information you provide is private and will be treated as such. To maintain the confidentiality of your request, please do not approach me before or after class to discuss your accommodation needs.

**Religious Holidays Policy** – Any student missing class quizzes, examinations, or any other class or lab work because of observance of religious holidays shall be given an opportunity during that semester to make up missed work. The make-up will apply to the religious holiday absence only. It shall be the responsibility of the student to notify the instructor no later than the end of the first two weeks of classes, **Jan 30th**, of his or her intention to participate in religious holidays which do not fall on state holidays or periods of class recess. This policy shall not apply in the event that
administering the test or examination at an alternate time would impose an undue hardship on the instructor or the university that could not have reasonably been avoided. For additional information, please visit: http://catalog.unlv.edu/content.php?catoid=6&navoid=531

Tutoring – The Academic Success Center (ASC) provides tutoring and academic assistance for all UNLV students taking UNLV courses. Students are encouraged to stop by the ASC to learn more about subjects offered, tutoring times and other academic resources. The ASC is located across from the Student Services Complex (SSC). Students may learn more about tutoring services by calling (702) 895-3177 or visiting the tutoring web site at: http://academicsuccess.unlv.edu/tutoring/

Rebelmail – By policy, faculty and staff should e-mail students’ Rebelmail accounts only. Rebelmail is UNLV’s official e-mail system for students. It is one of the primary ways students receive official university communication. All UNLV students receive a Rebelmail account after admission to the university. Students’ e-mail prefixes are listed on class rosters. The suffix is always @unlv.nevada.edu. Non-admitted students should contact the Student Help Desk at (702) 895-0761, in the Student Union Room 231, or by e-mail: studenthelp@unlv.edu. See http://rebelmail.unlv.edu/ for additional information.

UNLV Writing Center –
One-on-one or small group assistance with writing is available free of charge to UNLV students at the Writing Center, located in CDC-3-301. Although walk-in consultations are sometimes available, students with appointments will receive priority assistance. Appointments may be made in person or by calling 895-3908. The student’s Rebel ID Card, a copy of the assignment (if possible), and two copies of any writing to be reviewed are requested for the consultation. More information can be found at: http://writingcenter.unlv.edu/

Lab cancellation policy
Lab sections may only be canceled with the approval of the faculty course coordinator and course instructor after approval from the Director of the School of Life Sciences and any cancellation must comply with all UNLV policies. PTI Lab instructors, Graduate Student Teaching Assistants, and lab coordinators may not cancel lab/discussion sessions without approval from both the course instructor and Director. In the event of a cancellation, students will be notified by either UNLV Rebel Mail or Web Campus. It may not be possible to reschedule canceled lab or discussion sessions and in these cases the formula to calculate the final grade will need to be modified.
## MICROBIOLOGY 251
### Syllabus – 2015 Spring

<table>
<thead>
<tr>
<th>Lab/Date</th>
<th>Topics Covered</th>
<th>Exercises</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (01/26)</td>
<td>Syllabus/lab policies/safety guidelines</td>
<td></td>
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<tr>
<td></td>
<td>Basic Growth Media</td>
<td>1-2</td>
</tr>
<tr>
<td></td>
<td>Common Aseptic Transfers and Inoculation methods</td>
<td>1-3</td>
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<tr>
<td></td>
<td>Streak plate Methods of Isolation</td>
<td>1-4</td>
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<td></td>
<td>Colony Morphology</td>
<td>2-2</td>
</tr>
<tr>
<td></td>
<td>Steam sterilization</td>
<td>2-12</td>
</tr>
<tr>
<td>2 (02/02)</td>
<td>Introduction to Microscopy</td>
<td>3-1</td>
</tr>
<tr>
<td></td>
<td>Examination of Eukaryotic Microbes</td>
<td>3-3</td>
</tr>
<tr>
<td></td>
<td>Simple stains</td>
<td>3-5</td>
</tr>
<tr>
<td></td>
<td>Repeat Streak Plate</td>
<td>1-4</td>
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<tr>
<td></td>
<td><em>Turn in signed Academic dishonesty/safety sheet</em></td>
<td></td>
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<tr>
<td>3 (02/09)</td>
<td>Differential stain- Gram staining</td>
<td>3-7</td>
</tr>
<tr>
<td></td>
<td>Endospore stain</td>
<td>3-10</td>
</tr>
<tr>
<td>(02/16)</td>
<td><strong>NO LABS</strong> (Washington’s B’day Recess)</td>
<td></td>
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<tr>
<td>4 (02/23)</td>
<td><strong>Quiz 3</strong></td>
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<tr>
<td></td>
<td>Repeat Gram stain if necessary</td>
<td></td>
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<td></td>
<td>Demonstration slides: Negative stain</td>
<td>3-6</td>
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<tr>
<td></td>
<td>Capsule stain</td>
<td>3-9</td>
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<td></td>
<td>Acid fast stain</td>
<td>3-8</td>
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<tr>
<td></td>
<td>Flagella stain</td>
<td>3-13</td>
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<tr>
<td></td>
<td><em>DEMOS will be also be available during the following lab</em></td>
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<tr>
<td></td>
<td>Aerotolerance:</td>
<td></td>
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<tr>
<td></td>
<td>Thioglycollate agar deeps</td>
<td>2-6</td>
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<tr>
<td></td>
<td>Anaerobic jar</td>
<td>2-8</td>
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<tr>
<td></td>
<td>Differential tests:</td>
<td></td>
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<tr>
<td></td>
<td>Catalase</td>
<td>5-5</td>
</tr>
<tr>
<td></td>
<td>Oxidase</td>
<td>5-6</td>
</tr>
<tr>
<td></td>
<td>Nitrate Reduction</td>
<td>5-7</td>
</tr>
</tbody>
</table>
5 (03/02)  Quiz 4
Students will receive a single bacterium in liquid broth and will streak for single colonies on TSA, Mannitol salt (4-4) and MacConkey agar (4-5) plates.

6 (03/09)  Unknown Identification
Quiz 5  Students must select and identify one bacterium to genus.
   Colony morphology 2-2
   Gram stain 3-7
   (Describe cell morphology)
   Streak plate for catalase and oxidase tests 5-5, 5-6
   NSM streak plate for endospore staining 3-10
Students should identify tests appropriate for their unknown using the flow charts supplied in lab
Make a TSB culture of unknown for next week
Make two unknown stock slants of the chosen unknown

7 (03/16)  Perform appropriate tests for either a Gram + or Gram - unknown
Quiz 6 & 7  Endospore stain 3-10
   Litmus Milk Medium 5-23
   MR/VP Test (IMViC) 5-4
   Catalase 5-5
   Oxidase 5-6
   Citrate (IMViC) 5-8
   Starch hydrolysis 5-12
   Urease 5-13
   Bacitracin Susceptibility Test 5-24
   Blood Agar Hemolysis 5-25
   Coagulase Test 5-27
   Motility Test 5-28
   Thioglycollate agar deeps/gas pak 2-6
   Indole Test (IMViC)
All students must complete a legible flow chart before leaving the lab.

8 (03/23)  Quiz 8  Work on unknown - Evaluate results from week 7
   (Staley paper & Plagiarism)  Repeat tests from previous week if necessary.
   Note: Availability of all media cannot be guaranteed
   Tutorial on performing a blast search
   Students receive 16S rRNA sequence via Web Campus

(03/30)  SPRING BREAK
9(04/06)  
*Quiz 9*  
Transformation (Part I)  
Disinfectant Effectiveness  
2-14

- **Turn in unknown lab reports-mandatory edit (turnitin)**

10 (04/13)  
*Quiz 10*  
Transformation (Part II)  
Plasmid mini-prep  
Handout

11 (04/20)  
**EXAM REVIEW**

12(04/27)  
**LAB EXAM (Labs 1-9)**  
All previous exercises 1-9 will be covered on the exam

13 (05/04)  
*Quiz 11*  
Gel electrophoresis of plasmid  
Handout

**Turn in unknown lab reports (turnitin)**

The lowest quiz score obtained will be dropped. Each quiz is worth 13 points.

All the handouts provided by each TA will be posted on the common Web Campus site (BIO 251-ALL LABS)