Lab is a **separate class** from the lecture. The timing of lab and lecture topics **will not always align depending on schedules**. Even though they are less credit hours, **labs will require the same amount of study time**! You are required to print out the syllabus and the supplemental packet. You may bring a tablet or laptop to lab if you do not want to print the pages

TENTATIVE SCHEDULE for

**MCB 2010L – Microbiology Laboratory for Health Sciences**

Spring 2018

Course Reference #:\_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_ \_\_\_

|  |  |  |  |
| --- | --- | --- | --- |
| Week Of | Exercises in Lab Manual | Exercise Topic  | Lab Manual Pages |
| Jan 8 -12 | 1 | Introduction, Safety  | p. v-viii |
|  | 1 | Brightfield Microscopy | p. 1-12 |
|  | 2 | Bacterial Shapes | p. 13-16 |
| Jan 15 -19 | 3 | Dark Field Microscopy  | p. 17-22 |
|  | 3 | Phase-Contrast | p. 17-22 |
|  | 4 | Motility | p. 23-28 |
| Jan 22 - 26 | 5 |  Pure Culture Technique | p. 29-34 |
|  | 6 | Smear Preparation  | p. 35-44 |
|  | 6 | Simple Staining | p. 35-44 |
| Jan 29 - Feb 2 | 7 | Gram Staining  | p. 45-50 |
|  | 8 | Acid-Fast Staining | p. 51-54 |
| Feb 5 - 9 |  | **Practical Exam 1** |  |
|  | 9 | Protists, Fungi and Helminths | p. 55-60 |
| Feb 12 - 16 | 10 | Effects of Radiation on Growth | p. 61-66 |
|  | 11 | Evaluation of Antiseptics | p. 67-72 |
|  | 12 | Importance of Handwashing | p. 73-78 |
| Feb 26 - Mar 2 | 13 | Effects of Temperature on Growth | p. 79-86 |
|  | 14 | Transformation in Bacteria | p. 87-92 |
| Mar 5 - 9 |  | **Practical Exam 2** |  |
| Mar 12 - 16 |  | **No Classes – Spring Break** |  |
| Mar 19 - 23 | 15 | EnteroPluri System (set up only)  | p. 93-100 |
|  | 16 | Antibiotic Sensitivity (set up only) | p. 101-106 |
|  |  | Infection Control DVD |  |
| Mar 26 - 30 | 15 | EnteroPluri System | p. 93-100 |
|  | 16 | Antibiotic Sensitivity | p. 101-106 |
| Apr 2 - 6 | 17 | Staplylococci | p. 107-112 |
|  | 18 | Streptococci | p. 113-118 |
| Apr 9 - 13 | 19 | Antibiotic Resistant Bacteria | p. 119-122 |
|  | 20 | Transmission of Infection | p. 123-126 |
| Apr 16 - 20 |  | **Practical Exam 3** *(Make-Up Exams 1 & 2)* |  |

**COURSE DESCRIPTION:** This is the lab component for MCB 2010. Lab experiences include the following topic areas of viruses, bacteria, protozoans, and multicellular parasites.

**PREREQUISITE:** BSC 2010 & BSC 2010L

**COREQUISITE:** MCB 2010

**CONTACT INFORMATION**:

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| **Instructor of Record, IOR: Dr. Jennifer Capers** |
|  |
| **Email:** jcapers@irsc.edu |
| **Office:** N212 |
| **Phone: 772-462-7556** |

The **Instructor of Record** **(IOR)** for this course is listed above. The IOR is responsible for the selection of experiments and exams developed and approved by Biology Department Faculty, approves all assignments, and assigns the student’s grade for the course. In addition to the IOR, a **Technical Lab Specialist (TLS)** may also be assigned to this course. The role of the **TLS** is to facilitate the performance of the assigned experiments within the laboratory setting. The **TLS** also assists with the grading of assessments under the direction of the course instructor and other biology faculty. If you have any questions or concerns, please first try to work with the course **TLS if one has been assigned to your class**. If the issue cannot be resolved with the TLS, contact your Instructor of Record listed above whom is also available to assist. Any correspondence must include the **student’s name** and **course reference number**. The IOR/TLS will generally respond to the student within 2 business days *(note: failure to include* ***name*** *and* ***reference number*** *in initial correspondence, may result in delayed to no response)*.The IOR reports the grade the student earns over the course of the semester and will issue any incompletes (I) or withdrawals (W) that are needed.

**LAB MANUAL**: *MCB 2010L Health Care Microbiology Lab* Manual– 1st Edition for IRSC

**LECTURE TEXT**: Microbiology, 4rd edition by Bauman

**Additional Resources Available:** [http://biology-irsc.weebly.com](http://biology-irsc.weebly.com/)

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| The **Miley** **Library** serves as IRSC's main library.  The library is an information place providing professional assistance, library books and media, and access to the library's electronic resources. There is an extensive online database system also available through IRSC’s website [www.irsc.edu](http://www.irsc.edu)  |

**GRADES:** Grades are based on three lab practical examinations (300 points total). There are not dropped tests. Final grades are based on the percent of 300 possible points earned. \*\*\***See ATTENDANCE policy below that may affect the grade\*\*\***

The grades are assigned on the following basis:

 A: 90 - 100 B: 80 - 89 C: 70 - 79 D: 60 - 69 F: below 60

The student’s test grades can be viewed at any time on Blackboard, thus the student has continual access to their current academic standing in the course. It is the student’s responsibility to monitor their grade and also to approach the instructor for academic support/suggestions if the student is not earning the grade they desire. **Instructor contact must be administered in a timely manner**, as last minute concerns cannot be addressed or remedied, nor can they positively impact final grades.

**\*\*\*No extra credit projects will be granted and there are no homework points for this course; your grade is entirely made up of the three 100 point exams.\*\*\***

W = student withdraw by Mon., March 26, 2018 I = incomplete for passing students only in EXTREME cases

 which *must be approved by the IOR*

If a student withdraws from the course, the student must email both the TLS and IOR. **The IOR will respond with a confirmatory email that the student has been withdrawn.** This is to minimize the number of Instructor Withdrawals (WI) that are requested after final grades are posted. Requests for Instructor Withdrawal (WI) after the student has taken the final exam will not be considered for students whom were failing prior to the final exam and did not speak with their TLS/IOR about possible solutions to pass the course.

**EXAMS:** Students are responsible for knowing their exact dates and times of their Exams based off the schedule

above. You will NOT be permitted late, even if it’s 30 seconds, so plan accordingly. This is to ensure all students have a fair and equal testing experience. Exams will be **timed** rotational station-based practical’s in which the students will view parts of the experiments they conducted in the weeks prior and will be expected to answer questions pertaining to that specific lab. Like all lab class periods, the students will be physically required to participate by walking and standing at each station during the test. Students will not be able to return to a station; only one rotation of the stations is allowed. Due to increased number of students in the Biology program, you will NOT be able to attend another instructor’s lab for an Exam if you have missed yours. Make-up dates are available for this course ONLY if the absence is approved by the IOR (see “Make-up Policy” below) and will be administered directly after the third practical.

**OPEN LAB POLICY:** Refer to General Lab Rules handout

**ATTENDANCE:** All students (including DUAL Enrollment students) are expected to be present and punctual in lab in order to accomplish the learning goals for the lab practical examinations. It is solely the students responsibility to sign into class ON TIME in order to be counted present; TLS/IOR’s are not expected to remember students attendance nor will be held liable for a student failing to sign in. **Three percentage points (3%) will be taken off for *EACH lab class missed*; absences will be assessed at the end of the course.  Students will receive 1 free absence *per semester*.** For example, if you miss two lab classes duringthe semester and you ended up with an 80 average, then your final average would be a 77 and you would receive a C in the course.

If you happen to know you will be missing a lab class, contact your TLS/IOR immediately to discuss possible options to participate in another instructor’s lab so you will not miss that week’s experiment. You can find other lab times and locations at [http://biology-irsc.weebly.com.](http://biology-irsc.weebly.com/) It is the student’s responsibility to initiate finding a time and day that works with their schedule; the TLS/IOR is available to help facilitate once an appropriate lab time/date/day is selected by the student.

\**Note for Friday Labs: Lab experiments are set up by week, so if a student happen to miss their Friday lab class, they will not have any opportunities to sit in a later lab class to participate in the experiment.*

To effectively utilize lab time, preparation is required on the part of the student. The student should

read the assigned laboratory exercises **prior to class** to become familiar with details for lab BEFORE lab starts. (NOTE: The above schedule is only tentative and each student is responsible

for knowing his/her exact lab days.)

**EXTRA CREDIT:** No extra credit is given.

**LAB ATTIRE:** Appropriate attire is required for your protection. In keeping with Federal regulations, **students are required to wear flat closed-toe, close-heel shoes in laboratory**. The attire worn in the laboratory work setting should include full coverage of legs (long pants or skirt), shirt with sleeves (not low cut and no bare midriff), hair restraints for long hair, and no dangling jewelry.

Students are **required** to use lab coats in the Microbiology lab. Disposable coats to be used during one semester are available at the bookstore. The coats will be used and stored in the lab and autoclaved and discarded at the end of the semester. If you wish to supply your own cloth lab coat, you will **not** be allowed to take the lab coat home or at the end of the semester.

 **If you do not come properly dressed for lab, you will NOT will allowed into class or permitted to enter to take your Exam which will result in a score of “0” (zero points) for that Exam. NO EXCEPTIONS.**

**ELECTRONIC DEVICES:** All electronic communication devices are prohibited during exams or quizzes. The use of cell phones is prohibited during class and must be set on *silent* or *off* during the class period.  Any student who uses a cell phone to make or answer a call, or send and/or read text messages or emails during class time may be asked to leave and considered absent for that class. Electronic devices may be used to take pictures of slides or models when permitted by the instructor.

**CHEATING:** Cheating of ANY kind **WILL NOT** be tolerated by this Department or the College. *Anyone caught cheating will automatically receive a minimum of a zero for that assignment/test.* Any further episodes will result in an F in the class. Anyone who witnesses this inexcusable behavior and does not report it is also considered to be guilty of improper conduct.

**MAKE-UP POLICY:** Students must take all exams in the course reference number they are registered in. If a student misses Exam 1 or Exam 2, they must contact the instructor **within 24 hours of the schedule exam time** with a *verifiable emergency*. Students whom miss both first exams, regardless of reason, will be withdrawn from the course. Approved make-up exams are given immediately after the Third Exam and students must confirm via email to the TLS and IOR at minimum one week prior to the final exam date which Make-up Exam 1 or Make-up Exam 2 they will be needing. If a student misses the final/Third exam, they must contact the instructor **within 24 hours of the schedule exam time** with a *verifiable emergency*. Only with an approved verifiable emergency via the IOR, *and only if they are currently passing the course*, will a student be eligible to receive an incomplete (I) for the course. If a student is not passing the course prior to the final exam, the missed final will count as a score of zero “0” as described above and will be used in calculations of the students final earned letter grade in the course.

**LEARNING OUTCOMES:** at the completion of the course, the student will be able to:

* Communicate major microbiology concepts and relate how these are connected within various areas of the biological and physical sciences in a health science laboratory setting.
* Apply problem solving, analytical, and communication skills based on the scientific method that will provide the foundation for lifelong learning and career development.

**STUDENT ACCESSIBILITY SERVICES:** Indian River State College provides reasonable accommodations to students with documented disabilities through the Student Accessibility Services (SAS) Office. The rights of students with disabilities which pertain to post-secondary education are provided under Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) of 1990. Students who wish to request an accommodation for a documented disability may contact Student Accessibility Services at 772-462-7808, 772-462-7782 or e-mail accessibilityservices@irsc.edu.

**NON-DISCRIMINATION AND NON-HARASSMENT POLICY:** Indian River State College (College) is committed to maintaining a fair and respectful employment and educational environment. In accordance with federal, state and local equal opportunity laws, Indian River State College prohibits discrimination on the basis of race, color, national origin, ethnicity, sex, religion, age, disability, sexual orientation, marital status, veteran status, or genetic information.