MICROBIOLOGY (MCB 2010C) LABORATORY EXERCISES and SCHEDULE - Valencia College – *Fall 2013* – Professor LoCascio

Week 1 **Lab Introduction** (August 26th)

- Safety and laboratory Guidelines: students read pp. 1-6

- “Scavenger hunt” (introduce students to location of lab’s safety equipment)

- Exercise 1-1 Glo-Germ™ Hand Wash Education System (optional)

- Exercise 2-1 Ubiquity of Microbes

- Exercise 3-1 Introduction to the Light Microscope

- learn parts, use, care and storage of the microscope; crossed thread and letter “e” prepared slides,

Week 2 **No Lab** – Labor Day

Week 3 **Culturing Bacteria and Using the Microscope** (Sept 9th)

- Analysis of last week’s experiment

- Exercise 1-4 Common Aseptic Transfers and Inoculation Methods

- Exercise 1-5 Streak Plate Methods of Isolation

- Exercise 3-1 Introduction to the Light Microscope (cont.)

Week 4 **Staining I** (Sept 16th)

- Analysis of last week’s experiments

- Exercise 3-4 Simple Stains

- Exercise 3-5 Negative stains

- Exercise 3-10 Wet Mount Preparations – Live protist samples or pond water samples from Lake Pamela (Students read page 143)

Week 5 **Staining II** (Sept 23rd)

- Exercise 3-6 Gram Stain

- Exercise 3-7 Acid-Fast Stain (prepared slides for observation)

- Exercise 3-9 Endospore Stain (prepared slides for observation)

**Selective and Differential Media**

- Exercise 4-3 Mannitol Salt Agar

- Exercise 4-1 Phenylethyl Alcohol Agar

- Exercise 4-2 Columbia CNA with 5% Sheep Blood Agar

- Exercise 4-5 Eosin Methylene Blue Agar

- Exercise 4-6 Hektoen Enteric Agar

- Exercise 4-4 MacConkey Agar

Week 6 **Physical Growth Factors for Bacterial Growth** (Sept 30th)

- Analysis of last week’s experiments

- Exercise 2-6 Fluid Thioglycollate Medium

- Exercise 2-8 The Effect of Temperature on Microbial Growth

**Bacterial Nutrition**

**-**Exercises 5-11; 5-13; 5- 16

Week 7 **Introduction to Biochemical Test Media** (Oct 7th )

- Analysis of week 6 experiments

- Exercises 5-4; 5-5; 5-6; 5-9; 5-10; 5-19; 5-20; 5-21; 5-23

Week 8 MIDTERM LAB PRACTICAL EXAM WEEK (Oct 14th)

- Materials come from laboratory experiments performed during weeks 1-6

**-** Analysis of week 7 experiments

Week 9 **Culture and Sensitivity (C&S)** (Oct 21st)

- Exercises 5-2; 5-3; 5-7; 5-8; 5-12; 5-14; 5-15; 5-18

- Exercise 9-1 Identification of Enterobacteriaceae

- Exercise 7-2 Antibiotic Susceptibility Test (Kirby-Bauer Method)

Week 10 **C&S: Unknown Identification Lab and Antibiotic Selection** (Oct 28th)

- Exercise 9-1 Identification of Enterobacteriaceae (analysis)

- Exercise 7-2 Antibiotic Susceptibility Test (Kirby-Bauer Method) (analysis)

Week 11 **DNA Lab** (Nov 4th)

- Exercises 2-12 and 8-2 The Lethal Effect of Ultraviolet Light on Microbial Growth

- Exercise 8-3 Bacterial Transformation: the pGLO System

Week 12 **Immunology lab** (Nov 11th)

- Analysis of last week’s experiments

- ELISA Test (HIV simulation test)

- Exercise 7-1 Snyder Test

- Exercise 7-4 Epidemic Simulation (Influenza party☺)

Week 13 **Human Microbiology/Epidemiology Simulation Lab** **Analysis** (Nov 18th)

- Analysis of previous lab’s experiment

- Exercise 6-4 Differential Blood Cell Count

**Review**

Week 14 **No Lab** – Thanksgiving Week (Nov 25)

Week 15 **FINAL LAB EXAM** (Dec 2nd)

- Exam on lab experiments performed during weeks 7-13