## LABORATORY SYLLABUS Microbiology BIOL 210 Spring 2020 Prof. Lester's Version

Syllabus, Lab regulations and safety rules; Environmental plate;   Microscope; Survey: algae, protozoa, yeast, etc, Lab Basics (HW)   3-1, 2-1	DATE	TOPIC	EXERCISE #	
Microscope; Survey: algae, protozoa, yeast, etc, Lab Basics (HW) Sterile technique; preparation of smears; simple stains Transmission of microorganisms  1-4, 3-1, 3-3, 3-4  February 3	January			
Sterile technique; preparation of smears; simple stains Transmission of microorganisms  1-4, 3-1, 3-3, 3-4  February  3	27			
Transmission of microorganisms  1-4, 3-1, 3-3, 3-4  February 3			cs (HW) 3-1, 2-1	
Go over environmental plate; micropipettor training; Begin Gram stain  Gram stain continued  Acid-fast, spore stains  Negative stains; Motility  Lab Quiz 1  Respiration (nitrate, catalase), Growth Patterns; micropipettor training; Practice staining.  2-3, 2-4  Morphological unknown ***Due Same Day***  3-12; (Grade Sheet)  Bacterial Transformation  ***Due Same Day***  4-1, 4-3, 4-4, 4-5; 2-7, 2-8  Acid-fast, spore stains 3-7, 3-9  12 Negative stains; Motility  Lab Quiz 1  5-4,5-6  19 Growth Patterns; micropipettor training; Practice staining. 2-3, 2-4  24 Morphological unknown ***Due Same Day***  3-12; (Grade Sheet)  Bacterial Transformation  8-3  March  Media: Selective, differential; Temperature, oxygen requirements 4-1, 4-3, 4-4, 4-5; 2-7, 2-8  4 Fungi; UV  9 Complete all labs above; Study for practical PRACTICAL #1  16-18 SPRING BREAK  PRACTICAL #1  16-18 SPRING BREAK  SPRING BREAK	29			
Go over environmental plate; micropipettor training; Begin Gram stain 5 Gram stain continued 3-6 (Grade Sheet) 10 Acid-fast, spore stains 10 Acid-fast, spore stains 10 Acid-fast, spore stains; Motility 11 Acid-fast, spore stains; Motility 12 Negative stains; Motility 13 Acid-fast, spore stains 14 Negative stains; Motility 15 Lab Quiz 1 16 Acid-fast, spore stains 16 Acid-fast, spore stains 17 Respiration (nitrate, catalase), 18 Growth Patterns; micropipettor training; Practice staining. 19 Growth Patterns; micropipettor training; Practice staining. 2-3, 2-4 24 Morphological unknown 24 Morphological unknown 25 Bacterial Transformation 26 Bacterial Transformation 27 Acid Sheet) 28 Acid Selective, differential; Temperature, oxygen requirements 4-1, 4-3, 4-4, 4-5; 2-7, 2-8 4 Fungi; UV 16 Acid Selective, differential; Temperature, oxygen requirements 4-1, 4-3, 4-4, 4-5; 2-7, 2-8 4 Fungi; UV 17 Acid Selective, Description Selective, Complete all labs above; Study for practical Lab Quiz 2 19 Complete all labs above; Study for practical Lab Quiz 2 10 PRACTICAL #1 10 Strak plates (Grade sheet) / Biochemicals I: starch, lipid, protein 1-5, 5-10, 12, 14 25 Biochemicals II: indole, MR/VP, citrate, CHO, H <sub>2</sub> S, urease 5-2,3,7,12, 15,18  17 March / April 18 Ocomplete biochemicals; Standard Plate Count Web Handout; 6-1 19 Start unknown #2 (staining/streaking); I will provide the Handout (9-1,2,3,4=general idea) 10 Continue unknown. Lab Quiz 3 10 Chemotherapeutics: disinfectants/antiseptics; Antibiotics 2-13,7-2		Transmission of microorganisms	1-4, 3-1, 3-3, 3-4	
5 Gram stain continued 3-6 (Grade Sheet) 10 Acid-fast, spore stains 10 Acid-fast, spore stains 11 Negative stains; Motility 12 Negative stains; Motility 13 Acid-fast, spore stains 13 Acid-fast, spore stains 14 Negative stains; Motility 15 Lab Quiz 1 Acid-fast, 3-5; 3-8, 3-10, 11; 5-24 16 Respiration (nitrate, catalase), 17 Growth Patterns; micropipettor training; Practice staining. 2-3, 2-4 24 Morphological unknown 24 Morphological unknown 25 Bacterial Transformation 26 Bacterial Transformation 27 Media: Selective, differential; Temperature, oxygen requirements 28 4-1, 4-3, 4-4, 4-5; 2-7, 2-8 29 Complete all labs above; Study for practical 29 Complete all labs above; Study for practical 29 PRACTICAL #1 20 SPRING BREAK 20 © 21 Biochemicals II: indole, MR/VP, citrate, CHO, H₂S, urease 29 Streak plates (Grade sheet) / Biochemicals I: starch, lipid, protein 29 Biochemicals II: indole, MR/VP, citrate, CHO, H₂S, urease 30 Complete biochemicals; Standard Plate Count 30 Web Handout; 6-1 31 Start unknown #2 (staining/streaking); I will provide the Handout (9-1,2,3,4=general idea) 30 Continue unknown. 30 Continue unknown. 30 Chemotherapeutics: disinfectants/antiseptics; Antibiotics	1			
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12Negative stains; MotilityLab Quiz 13-5; 3-8, 3-10, 11; 5-2417Respiration (nitrate, catalase),5-4,5-619Growth Patterns; micropipettor training; Practice staining.2-3, 2-424Morphological unknown Bacterial Transformation***Due Same Day***3-12; (Grade Sheet)26Bacterial Transformation8-3March2Media: Selective, differential; Temperature, oxygen requirements4-1, 4-3, 4-4, 4-5; 2-7, 2-84Fungi; UV3-3, 2-12, 8-29Complete all labs above; Study for practical PRACTICAL #1Lab Quiz 211PRACTICAL #116-18SPRING BREAK② ⑤23Streak plates (Grade sheet) / Biochemicals I: starch, lipid, protein 251-5, 5-10, 12, 1425Biochemicals II: indole, MR/VP, citrate, CHO, H₂S, urease5-2,3,7,12, 15,18March / April30Complete biochemicals; Standard Plate Count Start unknown #2 (staining/streaking);I will provide the Handout (9-1,2,3,4=general idea)6Continue unknown.Lab Quiz 36Continue unknown.Lab Quiz 36Chemotherapeutics: disinfectants/antiseptics; Antibiotics2-13,7-2		,		
17 Respiration (nitrate, catalase), 19 Growth Patterns; micropipettor training; Practice staining. 2-3, 2-4  24 Morphological unknown 26 Bacterial Transformation 27 Media: Selective, differential; Temperature, oxygen requirements 4-1, 4-3, 4-4, 4-5; 2-7, 2-8 4 Fungi; UV 3-3, 2-12, 8-2  9 Complete all labs above; Study for practical Lab Quiz 2 11 PRACTICAL #1  16-18 SPRING BREAK ⑤ ⑥ ⑥ 23 Streak plates (Grade sheet) / Biochemicals I: starch, lipid, protein 1-5, 5-10, 12, 14 25 Biochemicals II: indole, MR/VP, citrate, CHO, H₂S, urease 5-2,3,7,12, 15,18  March / April 30 Complete biochemicals; Standard Plate Count Web Handout; 6-1 1 Start unknown #2 (staining/streaking); will provide the Handout (9-1,2,3,4=general idea) 6 Continue unknown. Lab Quiz 3 6 Chemotherapeutics: disinfectants/antiseptics; Antibiotics 2-13,7-2				
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6 Continue unknown.  8 Chemotherapeutics: disinfectants/antiseptics; Antibiotics 2-13,7-2	30			
8 Chemotherapeutics: disinfectants/antiseptics; Antibiotics 2-13,7-2	1	, <u> </u>		
	6	Continue unknown. Lab Quiz	z 3	
13 Water-Membrane Filter: Regin Throat/Skin microhe: 7-5-5-21-5-23	8	Chemotherapeutics: disinfectants/antiseptics; Antibiotics	2-13,7-2	
Water-Membrane Filter, Degiri Tilloavokii Tillolobe, 7-3, 3-21, 3-23	13	Water-Membrane Filter; Begin Throat/Skin microbe;	7-5, 5-21, 5-23	
15 Genetics: Gradient Plate; Viruses: Plaque Assay; Snyder Test Web Handout; 6-3;7-1	15	Genetics: Gradient Plate; Viruses: Plaque Assay; Snyder 1	Test Web Handout; 6-3;7-1	
20 Finish water; continue Throat/Skin: coagulase, novobiocin; Parasitic & Live Protozoa	20	Finish water; continue Throat/Skin: coagulase, novobiocin;	Parasitic & Live Protozoa	
22 Sequencing-Unknown#3 pt.1 (PCR); Finish Throat, skin microbes; Handout provided	22	Sequencing-Unknown#3 pt.1 (PCR); Finish Throat, skin mi		
Unknown # 2 (Biochemical Unknown) DUE				
27 Sequencing-Unknown #3 pt.2 (Electrophoresis) <b>ELISA</b> 8-6, Web handout	27	Sequencing-Unknown #3 pt.2 (Electrophoresis) ELISA	8-6, Web handout	
29 Sequencing-Unknown #3 pt.3- (Bioinformatics) Lab Quiz 4	29	Sequencing-Unknown #3 pt.3- (Bioinformatics) Lab Quiz	z 4	
May	May			
4 CLEAN OUT DRAWERS. Study for practical; Activity	4	CLEAN OUT DRAWERS. Study for practical; Activity		
6 PRACTICAL #2 (Not comprehensive)	6			

## Lab Requirements:

You must learn and follow all lab rules and safety regulations any time you are in the lab. Not following lab rules can result in the following consequences:

- Your instructor can deduct points from your lab session grade or overall lab grade.
- Your instructor can remove you from the lab and give you a zero for the day.
- Your instructor can fail you for the course.