

# BIOL 1560L - Microbiology Laboratory for Health Professions

Fall 2026 Syllabus, Section 02, CRN 40480,

Credit hours: 1

## Public Instructor Information

Jonathan Caguiat

Professional Qualifications:

Postdoctoral, Microbiology, The University of Georgia

Ph. D., Microbiology, The Michigan State University

Bachelor's, Biology – Cell & Molecular Biology, The University of Michigan

Office: Ward Beecher Science Hall

Office Phone: 330-941-2063

## Course Description

1560L. Microbiology Laboratory for Health Professions. Microscopy, cultivation, and identification of bacteria. Microbiology of foods. Disinfection techniques. Not applicable to a biology major. Three hours of laboratory per week. Must be taken concurrent with BIOL 1560. 1 s.h.

## Course Readings

| Group    | Title                                                     | Author                                   | ISBN              |
|----------|-----------------------------------------------------------|------------------------------------------|-------------------|
| Required | Microbiology for the Health Professions Laboratory Manual | Diana Fagan, Jonathan Caguiat and Li Sui | 979-8-3851-5600-9 |

This lab manual is not part of the First Day Program and should be purchased from the YSU Bookstore.

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.

## Tentative Course Schedule

| Day | Date  | Reading(s)                            | Proposed Topic                                                                                                          | Due/To Prepare for Class |
|-----|-------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Fri | 8/28  | No Class                              |                                                                                                                         |                          |
| Fri | 9/4   | Week1: Labs 1-2                       | Check-in, Lab directives, The Use and Care of Microscopes and Microbes in the Environment                               | 9/4/26                   |
| Fri | 9/11  | No Class                              |                                                                                                                         |                          |
| Fri | 9/18  | Week 2: Labs 3-5                      | Simple-Stain, Pour Plate and Streak Plate Techniques<br>Take good notes: you will write a lab report on these exercises | 9/18/26                  |
| Fri | 9/25  | Week 3: Labs 6-8                      | Gram-Stain, Starch Hydrolysis and Gelatin Hydrolysis                                                                    | 9/26/26                  |
| Fri | 10/2  | Week 4: Labs 9-12                     | EMB, MacConkey and Mannitol Salts agar, Hemolysis, Motility and Catalase                                                | 10/2/26                  |
| Fri | 10/9  | Quiz 1<br>Week 5: Labs 13-15          | Labs 1-8<br>Acid Fast Staining, Lactose Fermentation and Triple Sugar Iron                                              | 10/9/26<br>10/9/26       |
| Fri | 10/16 | Labs Report Due<br>Week 6: Labs 16-18 | Week 2 labs 3-5<br>Desiccation, Disinfection and UV light Exposure                                                      | 10/16/26                 |



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|-----|-------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------|----------|
| Fri | 10/23 | Week 7: Labs 19-21            | Effect of Cold on Growth, Hand Washing and Antibiotic Sensitivity                                                     | 10/23/26 |
| Fri | 10/30 | Quiz 2                        | Labs 9-18                                                                                                             | 10/30/26 |
|     |       | Week 8: Labs 22-24            | Effect of Osmotic Pressure, pH and High Temperature on Growth                                                         | 10/30/26 |
| Fri | 11/6  | Week 9: Labs 25-26            | Bacteriological Testing on Water, and Bacteria on Fruits and Vegetables                                               | 11/6/26  |
| Fri | 11/13 | Week 10: Labs 28-30           | Yeast Fermentation (Dough), Yogurt Production by Lactobacillus and Synder's Agar - Lactobacillus detection in saliva  | 11/13/26 |
| Fri | 11/20 | Quiz 3                        | Labs 19-25 (first half)                                                                                               | 11/20/26 |
|     |       | Week 11: Labs 31-32           | Standard Plate and Coliform Counts in Raw Milk Using Nutrient Agar and Violet Red Bile Plates. Also, Phosphatase Test | 11/20/26 |
| Fri | 11/27 | No Class                      |                                                                                                                       |          |
| Fri | 12/4  | Quiz 4                        | Labs 25 (second half), 26, and 28-32                                                                                  | 12/4/26  |
|     |       | Comprehensive Quiz (Optional) | All lab exercises                                                                                                     | 12/4/26  |

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.