

SUFFOLK COUNTY COMMUNITY COLLEGE
Division of Science, Engineering, and Technology
Biology Department

Course Outline

- Instructor: Staff
- Course Title: BY 44 – General Microbiology
- Semester: Summer, 2003
- Textbook: Microbiology by Jacquelyn G. Black; John Wiley & Sons Inc., Publishing Co.; New York, New York, 2002; 5th Edition
- Laboratory Manual: Microbiology in Practice by Lois Beishir; Harper & Row Publishing Co.; New York, 1996 6th Edition
- Optional: Microbiology: A Photographic Atlas for the Laboratory; S. Alexander & D. Strete, Benjamin Cummings Publ. Co. New York, 2001.
- Objectives: By the end of the semester the successful student will have:
1. acquired knowledge of prokaryotic anatomy and physiology, and its similarities and differences when compared to that of eukaryotic organisms.
 2. gained a greater understanding of intermediate metabolism.
 3. gained an understanding of the basics of microbial genetics.
 4. acquired knowledge pertaining to the relationship of microorganisms to health and disease.

5. acquired an understanding of the basic mechanisms of physical and chemical control.
6. attained a basic familiarity with the main groups of bacteria and other types of microorganisms.
7. gained an understanding of basic laboratory techniques for observation, isolation, and identification.

Student requirements and evaluation:

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| Lecture examinations | 1/3 |
| Laboratory - unknowns, laboratory practicals, aseptic technique | 1/3 |
| Final examination | 1/3 |

Attendance policy:

- A. Lecture: All students are expected to attend every session of each course for which they are registered. Students are responsible for all that transpires in class whether or not they are in attendance. Two or more consecutive absences may lead to failure in this course or removal from the class roster.
- B. Laboratory: Students must attend all laboratory sessions. A student who misses a session must contact the laboratory instructor before the next laboratory meeting to make up missed work. Failure to comply with this policy will result in being dropped from this course.

Miscellaneous:

1. Students must supply protective gloves for certain laboratory procedures.
2. The use of beepers and telephones during class time is considered a distraction.

Lecture Schedule

| | <u>Chapters</u> |
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| The Microbial World and You | 1 |
| Chemical Principles | 2 (review thoroughly) |
| Kingdoms, Classification, Taxonomy | *10, *11 |
| Helminthology | 12, Index |
| Protozoology | 12, Index |
| Dyes, Stains, Procedures | 3 |
| Prokaryote/Eukaryote Anatomy | 4 |
| Physical and Chemical Requirements for Growth | 6 |
| Enzymes | 5 187, 440, 220-225 (C8), 783 |
| Metabolism | 5 |
| DNA/RNA/Protein Synthesis | 2, 6 |
| Genetics | 8, *9 |
| Control: Physical, Chemical Methods | 7 |
| Antimicrobial Drugs Source, Spectrum, Structures, Mode of Action, Survey (select) | 20 |
| Virology | 13 *Systems – Index |
| Disease/Resistance/Immunity *Select Readings | T.B.A. |
| BY44 Lab Schedule – Summer 2003 | |
| Week 1 | 5/27 4,5 Introduction Microscope, Oil Immersion |

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| | 5/28 | 19,20 | Platyhelminthes, Nematodes |
| | 5/29 | 17,18 | Protozoa |
| Week 2 | 6/2 | 6,7 | Ubiquity, Aseptic technique and transfers |
| | 6/3 | 21,22 | Bacterial smears, Simple stain |
| | 6/4 | 23,24 | Gram stain, Capsule stain |
| | 6/5 | 25,27 | Endospores, Acid Fast stain Discussion |
| Week 3 | 6/9 | | Morphological Unk., Aseptic Technique Test |
| | 6/10 | | <u>Lab Exam 1</u> |
| | 6/11 | 12,33,34 | Streaking, Exoenzymes, Carbohydrate fermentation |
| | 6/12 | 36,38,40 | Urea, H ₂ S, S&D Media |
| Week 4 | 6/16 | 39,49 | IMVIC, Intes, Pathogens |
| | 6/17 | 49,50,51 | Int. Pathogens, Staph, Strep. |
| | 6/18 | 50,51 | Staph, Strep. |
| | 6/19 | 54,55 | Urine, Throat culture |
| Week 5 | 6/23 | 54,55 | Urine, Throat culture (unknown discussion) |
| | 6/24 | | <u>Lab Exam 2</u> , Unknown Inoculation |
| | 6/25 | | Unknown Biochemicals |
| | 6/26 | | Unknown Confirmation/Conclusion/ TBA |
| Week 6 | 6/30 | 9,42,37 | Pour Plate, Milk Assay |
| | 7/1 | 29,30 | Temp., U.V. Light |

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| | 7/2 | 28,35,53 | Anaerobes, NO ₃ Dental Caries |
| | 7/3 | 31,32 | Antiseptics, Disinfectants (Fungi, Yeast, Mold-Set Up) |
| Week 7 | 7/7 | 15,16 | Fungi, Yeast, Molds (Papers Due) |
| | 7/8 | | Review |
| | 7/9 | | Clean up |
| | 7/10 | | <u>Lab Exam 3</u> |
| Week 8 | 7/14 | | Final |
| | 7/15 | | Conclusions |
| | 7/16 | | Film Discussion/TBA |