

Microbes in Our Environment **MBIO 4480** **OUTLINE FOR FINAL LAB EXAM**

Date: Thursday December 1, 2011
Time: 2:30 pm (all students)
Duration: 1.5 h
Location: 207 Buller

Policy:

The lab exam is part of the final course examination. Department of Microbiology appeal procedures will be followed.

Format:

- write in PEN
- bring a non-programmable calculator
- short answer questions - space provided on exam paper
- answer in point form wherever possible
- sample lab exam in back of lab manual -same basic format

Information responsible for:

- All information in lab manual unless otherwise stated (introduction, procedure and appendix).
- All information in lab reports - basic results and analysis, questions. Not responsible for Excel software operation. However, you are responsible for all information and calculations that pertain to your experiments that you did using Excel (not standard deviation calculation but must understand what it means).
- Procedure
 - able to outline
 - function of each important step
 - function of any solution used in the lab
- Must know basic bacteria group information - what defines the group. However, specific details are not required, eg. colony characteristics of a particular species unless it is an identifying feature.
- Must be able to analyse data.
- All calculations done in the lab – e.g., functional activity, hemocytometer, bacteria/ml...
- Do not need to know all the carbon sources available in the Biolog plate but should know the carbon group distribution.

Not responsible for information given in lab introductions listed below:

- Lab 1 Table 1, must know groups of nitrogen fixing organisms but not all the individual microorganisms listed unless mentioned in lab 1 report or another experiment in the lab manual.
- Lab 1 Table 3, need to know that characteristics used to differentiate Azotobacter species but not characteristic of individual species.
- Lab 1 Table 4, understand the importance of the table and one relevant example (plant species for plant used in your lab to write your report).
- Lab 2 Table 1, need to know carbon group distribution but not the individual carbon sources available on the Biolog EcoPlate.
- Lab 3, Table 1, must know the absorption maxima for bacteriochlorophylls used in your lab (lab report), ie BChl a and BChl c (most likely), that is, one for each sulphur bacteria, purple and green.
- Lab 4 only need to know about the carotenoids found in Table 2 not the names and properties of all the carotenoids.
- Not responsible for spec3100 operation.

Projects

- You are responsible only for information that overlaps with lab manual or appendix information. This includes all methods used to analyse data.
- You are not responsible for any specific project experiment design, data or results obtained.

Solutions and Media

- Not responsible for the exact composition of reagents, media, and solutions. That is, you do not need to know the gram weight or concentration.
- Must know the function of each media component as relates to a particular experiment
Must know what media component supplies basics nutrients and requirements with respect to explanations given in appendix media and solution section.
- Must know the function of each solution.
- In particular must know the main media components that select for a particular group of bacteria especially the carbon, nitrogen, energy source and any particular minerals specific to bacteria selection. In some cases, what is missing from the medium.

Any questions? My office is 414B Buller.