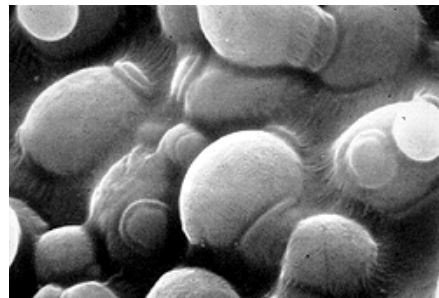


Applied/Industrial Microbiology

MCB336

Spring, 2009
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SECTION I. Industrial Microorganisms.

The diversity of useful microorganisms including obligate aerobes, facultative anaerobes, anaerobes, aerotolerant anaerobes, archaea and fungi. Metabolic pathways including fermentations will be presented in detail, particularly those involved in industrially important processes.

SECTION II. Microbial Products and Processes.

Selection, growth and manipulation of microorganisms. Training microorganisms through mutagenesis and selection, and through environmental control. Using microorganisms for producing feedstock chemicals, alcohol fermentations, primary and secondary metabolites including antibiotics, enzymes, and exotica. Bioconversions of steroids, vitamins, and more.

SECTION III. Current Microbial Biotechnology.

Bioenergetics of degradation of organic material and pollutants in aerobic and anaerobic environments, metal transformations, mining microbiology, biomass conversions. Important agricultural processes and symbioses, and microbial insecticides.

Readings: For background information you should have access to a standard microbiology text: *Brock - Biology of Microorganisms* by Madigan, Martinko, and Parker (Prentice Hall), or Prescott, *Microbiology* (Chapman & Hall). Readings are posted on the Web: <http://web.uconn.edu/mcbstaff/benson/mcb235/index.htm>. Login using the user/password combination of mcb235/pasteur.

Grading: There will be three exams - **February 18, March 30, and a cumulative final exam** that will also include the final third of the course. Final grades will be calculated as an average of the three exams.

Memberships: If you wish, and this is optional, you may become a member of the [American Society for Microbiology](http://www.asm.org/) (http://www.asm.org/) and/or the [Society for Industrial Microbiology](http://www.simhq.org/) (http://www.simhq.org/). Student memberships are relatively inexpensive (\$17.00 for the ASM, \$35.00 for SIM). With a membership, you receive journals with job listings, current biotechnology news, etc.