

# Applied Microbiology 11:680:494

## Fall 2021 Lecture Schedule

Tuesday & Friday 1<sup>st</sup> Period (9.00-10.20), CDL 103

### Prof. Max Häggblom

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For notes and information see Applied Microbiology Fall2021 Canvas site

Lec	Date	Topic
1	Fr Sept 3	Introduction to course, Historical perspective
2	Tu Sept 7	Microbial Diversity: physiology, ecology and applications
3	Fr Sept 10	Identification of microorganisms, Culture collections, Industrial microbes
4	Tu Sept 14	Microbial growth and nutrition: environmental conditions
5	Fr Sept 17	Microbial growth: measurement & kinetics; Bioreactors
6	Tu Sept 21	Microbial death and control: physical/chemical methods, preservation
7	Fr Sept 24	Food spoilage and preservation
8	Tu Sept 28	Food borne illnesses: <i>Salmonella</i> , <i>E. coli</i> O157:H7 and others
9	Fr Oct 1	Review
10	Tu Oct 5	<b>EXAM I (Lectures 1-9)</b>
11	Fr Oct 8	Food microbiology, lactic acid fermentations
12	Tu Oct 12	Fermented milk products
13	Fr Oct 15	Yeasts & fermentation: anaerobic metabolism, alcohol
14	Tu Oct 19	Alcoholic fermentations and beverages: beer, wine
15	Fr Oct 22	Production of diverse metabolites
16	Tu Oct 26	Antibiotics
17	Fri Oct 29	Vaccines
18	Tu Nov 2	Metabolic review
19	Fr Nov 5	<b>EXAM II (Lectures 11-18)</b>
20	Tu Nov 9	Enzymes
21	Fr Nov 12	Microbial biomass production, Single cell protein
22	Tu Nov 16	Waterborne pathogens, Sanitation, Water quality testing
23	Fr Nov 19	Microbial aerosols, air quality, sick-building syndrome
24	Tu Nov 23	Wastewater treatment
25	Tu Nov 30	Environmental biotechnology – Biodegradation and bioremediation
26	Fr Dec 3	Microbes and metals - Metal leaching & mining technologies
27	Tu Dec 7	Bioenergy
28	Fr Dec 10	Applied Microbiology and 21 <sup>st</sup> Century Challenges
	Tu Dec 21 9-11 am	<b>EXAM III (Lectures 20-28, and selections from Exams I &amp; II)</b>

**Examinations:** A total of three examinations will be given:

**I.** Covering lectures 1 through 9, **II.** Covering lectures 11 through 18,

**III.** Covering lectures 20 through 28 and selected questions from the first two exams.

It is expected that the exam is taken on the day it is offered.

Exceptions to this rule will be made only for very extraordinary reasons.

**Grading: 65% based on examinations (20, 20 and 25%), 10% on quizzes and assignments, and 25% based on laboratory reports and performance.**