**GRANDE PRAIRIE REGIONAL COLLEGE**
**DEPARTMENT OF SCIENCE**
**COURSE OUTLINE - FALL 1992**

**********

**COURSE:** MI 1930 - Introductory Microbiology

**INSTRUCTOR:**
Dr. Joan Snyder
Office: J208
Phones: 539-2846 or 532-0709
Office Hours: MWF 11:00-12:00, W 1:00-3:00

**TEXTS REQUIRED:** Tortora, Funke & Case. 1992. Microbiology: An Introduction, Fourth Ed., Benjamin Cummings Publ. Co., Redwood, Cal.

**NATURE OF THE COURSE:**

This course provides an introduction to the biology and practical significance of micro-organisms. It describes the structure, nutrition and physiology of microbes from a varety of environments. The impact of microbes on humans is discussed with respect to infectious disease, industrial processes and biotechnology.

The laboratory sessions present a series of exercises and demonstrations designed to provide students with experiences in the handling and examination of microorganisms.

**EVALUATION:**

| | |
|---|---|
| Quizzes (4) | 15% |
| Lab reports | 10% |
| Mid-term exam | 20% |
| Lab exam | 25% |
| Final exam | 25% |

The quizzes will be given without advance notice. ALL assignments are to be handed in by the date specified. Late assignments will not be accepted.

Students must attend the laboratory and complete the lab exercise in order to receive credit for a lab report.

## CLASS SCHEDULE

| APPROX. NO. OF HOURS | | TEXT CHPT. |
|---|---|---|
| 1 | Introduction | 1 |
| 2 | Procaryotic and Eucaryotic Cells: A review of cell structures in procaryotes , eucaryotes and viruses. | 4,13 |
| 3 | Bacterial structure and function: Structure and function of bacterial cell walls, membranes and locomotory structures. Differences between bacterial cell components and those of eucaryotic cells. | 4 |
| 1 | Classification of microorganisms: Phylogenetic relationships; criteria for classification and identification of microorganisms. | 10 |
| 4 | Microbial metabolism: Aerobic and anaerobic metabolism, major energy conversion mechanisms, biosynthesis. | 5 |
| 4 | Microbial growth and its control: growth and replication of both individual cells and populations. Conditions which influence growth and their relevance to nature and industry. Specific and non-specific chemical methods of controlling growth; sterilization, disinfection, antisepsis, antibiotics and chemotherapeutic agents. | 6,7 & 20 |
| 4 | Biotechnology: Use of microorganisms for medical and industrial purposes. Introduction to genetic engineering. | (8),9,28 |
| 4 | Microbial ecology: Diversity of microbial habitats and the adaptations of microorganisms for survival in extreme habitats. | 27 |
| 9 | Microbial Associations: Beneficial and harmful associations between microbes and other organisms, illustrating the contributions of both partners; Viruses - replication and latency using selected examples of viral diseases. | 11,12,13, 20-25 |
| 5 | Immunology: Non-specific and specific resistance to infection and the physiological mechanisms involved. | 17,18,19 |

# MICROBIOLOGY 1930
# LABORATORY SCHEDULE - FALL 1992

| | Group A | Group B |
|---|---|---|
| Exercise 1 | Sep. 10 | Sep. 17 |
| Exercise 2 | Sep. 24 | Oct. 1 |
| Exercise 3 | Oct. 8 | Oct. 15 |
| MID-TERM EXAM | WEEK OF OCT. 19-23 | |
| EXERCISE 4 | OCT. 29 | NOV. 5 |
| EXERCISE 5 | NOV.12 | NOV. 19 |
| FINAL LAB EXAM | NOV. 26 | NOV. 26 |