

## Session 5 - Applied and Industrial Microbiology

Text:	Chapter 29, 30, 31
Anticipated time:	1 class period
Basic Objectives:	You should understand the basic purposes and processes of water and sewage treatment, because water and sewage directly affect human health. You should understand the relationships of microorganisms and food. You should develop an understanding of the concept of biotechnology and how it relates to Industrial Microbiology. The rest of these chapters provide an interesting and informative perspective on the role of microorganisms in our world. Hopefully, you will have time to read them casually, on your own, purely for intellectual perspective.
Slides to Copy:	1, 4, 6

### Chapter 29 – Microbial Ecology

Introduction *Read* the Introduction on page 718. *Skip* the rest of the chapter.

### Chapter 30 – Environmental Microbiology

Introduction *Read.*

#### 30.1 Microbiology of Wastewater Treatment

Introduction *Read.*

Oxygen Demand *Read.* Define: BOD.

Municipal Wastewater *Read,* and understand the basic processes (Fig 30.1), involved in treatment). *Review* Figs 30.2 & 30.3.

Individual Systems *Review,* including Fig 30.4.

Perspective 30.1. *Read*

#### 30.2 Drinking Water Treatment and Testing

Introduction *Read.* *Review* Fig 30.5.

Water Treatment *Read carefully* and understand Fig 30.6.

Water Testing *Summarize* for concepts.

#### 30.3 Microbiology of Solid Waste Treatment

*Review* this section quickly for concepts.

#### 30.4 Microbiology of Bioremediation

Introduction *Review* quickly for concepts. Define: Bioremediation.

Future Challenges 30.1 *Review.*

### Chap 31 – Food Microbiology

Introduction *Read.*

#### 31.1 Factors Influencing the Growth of Microorganisms in Foods

*Read* the introduction to this section, and *Review* the rest.

#### 31.2 Microorganisms in Food and Beverage Production

*Read* only the introduction to this section, but *Review* Tabs 31.1, 31.2 & 31.3.

#### 31.3 Food Spoilage

Introduction *Read.* Can you define Spoilage?

Common Bacteria *Read.*

Common Fungi *Read.*

#### 31.4 Foodborne Illness

Introduction *Read carefully.* *Read* Tab 31.4.

Intoxication *Read carefully.* Define: Intoxication.

Infection *Read carefully.*

31.5 Food Preservation *Read.*

Perspective 31.1 *Read.*

Future Challenges 31.1 *Read.* Understand SCP.