SYLLABU

SPRING 2012

Course: Microbiology in Health and Disease

BIPIN PATEL

Office Hours: Before or after Class or by appointment

Semester Begins JANUARY 09 TO MAY 04 2012	
2900 D 4.00	Microbiology in Health/Disease

2. Students are advised to consult the VSU Student Handbook, Undergraduate Catalog, Semester Calendar, Schedule of Classes, & Registration Guide for information about VSU policies and procedures regarding registration, drop/add, and withdrawal. Students are not permitted to withdraw after midterm except in cases of hardship.
3. Students requesting classroom accommodations or modifications because of a documented disability should

GRADING SCALE:

Grade A = 90 -100% or between 540 and 600 points
Grade B = 80 - 89% or between 480 and 539 points
Grade C = 70 79% or between 420 and 479 points
Grade D = 60 69% or between 360 and 419 points
Grade F = Less than 60% or 359 or less points

Week 1	
Subject(s)	Learning Objectives
General course information Introduction to Microbial World Introduction to Microscopy Personal and patient safety in healthcare environment Safety in microbiology laboratory	History of Microbiology, role of microbes in nature, well-being of other living things, science, health and diseases. Introduction to Microbiology Laboratory Safety, hand hygiene Proper handling and use of microscope
Week 2	
The Molecules of Life Microscopy and Cell Structure Use of Microscope, Practice of focusing on human blood components Practice of using oil immersion lens	Characteristics of prokaryotic and eukaryotic cells Principles of microscopy, use of microscopes Distinction of various groups of bacteria
Week 3	
Microbial Metabolism, Physiology and Genetics Examination of microscopic life in pond water - Protozoa, Algae, Cyanobacteria Culture of normal environmental and body flora	How microbes live and multiply Study of higher forms of microbial life What grows where?
Week 4	
Host Defense Mechanisms Role of normal flora and physical barriers to infections Natural and Acquired Immunity Study of growth acquired from environmental and body flora Colony characteristics and simple stain of recovered bacteria	How physical make-up of human body defend against infections What are natural, acquired and artificial means of combating infections Are our counters, keyboards, drains, toilet seats, door handles AND our mouths, skin and noses STERILE? What do they grow?
Week 5	
FIRST TEST Infectious Disease Process How Microbes survive host defenses and cause infection Importance of Gram Stain Gram Stain of bacteria recovered from previous exercise	Organism mutation, virulence, drug resistance, avoidance of phagocytosis Gram Stain as an important diagnostic tool

Week 6

Control of Microbial Growth Disinfection and Sterilization
Demonstration of Steam sterilization and Sterility Check
Gram Stain of common pathogenic bacteria

Levels of sanitization, disinfection, and sterilization under various situations

Week 7

Diagnosis of Infectious Diseases in clinical Laboratory - Methods for the direct and indirect, rapid and slow techniques employed in a clinical Microbiology laboratory
Demonstration of rapid diagnostic techniques used in a POC or ED laboratory

What is available at

Week 12

Antimicrobial Susceptibility Results Their Interpretation and Applicability to patient care
Clinically significant aerobic Non-Enteric Gram Negative bacteria Pseudomonas, Acinetobacter, Haemophilus

How the results from a Microbiology laboratory may be applied in patient treatment
Introduction to non-enteric aerobic bacteria, and their impact on humans

Week 13

Clinically significant:
Gram Negative diplococci Neisseria, Moraxella
Gram Positive Bacilli - Bacillus, Listeria
Spiral bacteria Treponema, Leptospira

Introduction to Neisseria, Bacillus, and Spirochaetes, and their impact on humans

Week 14

SECOND TEST
Clinically significant anaerobic bacteria