## SYLLABU

## Course: Microbiology in Health and Disease

SPRING 2012 BIPIN PATEL

Office Hours: Before or after Class or by appointment

2900 D 4.00	Microbiology in Health/Disease	

 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

Subject(s)       Learning Objectives         General course information       History of Microbiology, role of microbes in nature, well-being of other living things, science, health and diseases. Introduction to Microbiology laboratory       History of Microbiology and science, health and diseases. Introduction to Microbiology laboratory         Versonal and patient safety in healthcare environment       Week 2       Characteristics of prokaryotic and eukaryotic cells         Microbiolog value of the microbes of Life       Week 2       Characteristics of prokaryotic and eukaryotic cells         Microbial Metabolism, Physiology and Genetics       Week 3       How microbes live and multiply         Examination of microscopic life in pond water - Protozoa, Algae, Cyanobacteria       Week 4       How microbes live and multiply         Study of growth acquired Immunity       Role of normal flora and physical make-up of human body defend against infections       Week 4         Host Defense Mechanisms       Role of normal flora and physical make-up of human body defend against infections       Acquired and antificial means of combining flore and physical make-up of human body defend against infections         Natural and Acquired Irom environmental and body flora       Week 5       Organism mutation, virulence, drug resistance, avoidance of phagocytosis, drains, toilet seats, door handles AND our mouths, skin and noses STERILE? What do they grow?         FIRST TEST       How Microbes survive host defenses and cause infection       Microbios survive host defenses and		Week 1	N
Introduction to Microbial World Introduction to Microbial World Introduction to Microbiology laboratory Weresnal and patient safety in healthcare environment Safety in microbiology laboratory Week 2 The Molecules of Life Microscope, Practice of focusing on human blood components Practice of using oil immersion lens Week 3 Microbial Metabolism, Physiology and Genetics Examination of microscopic life in pond water - Protozoa, Algae, Cyanobacteria Culture of normal environmental and body flora Culture of normal environmental and body flora Study of growth acquired Immunity Natural and Acquired Immunity Natural and Acquired Immunity Microbes survive host defenses and cause infection Importance of Gram Stain		Subject(s)	Learning Objectives
The Molecules of Life Microscopy and Cell Structure Practice of using oil immersion lens Week 3 Microbial Metabolism, Physiology and Genetics Examination of microscopic life in pond water - Protozoa, Algae, Cyanobacteria Culture of normal environmental and body flora Week 4 Host Defense Mechanisms Dariers to infections Natural and Acquired from environmental and body flora Colony characteristics and simple stain of recovered bacteria Microbes survive host defenses Meek 5 FIRST TEST Infectious Disease Process and cause infection Importance of Gram Stain	Introduction to Microbial Wor Introduction to Microscopy Personal and patient safety i	n healthcare environment	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
Microscopy and Cell Structure Use of Microscope, Practice of focusing on human blood components Practice of using oil immersion lens Week 3 Microbial Metabolism, Physiology and Genetics Examination of microscopic life in pond water - Protozoa, Algae, Cyanobacteria Culture of normal environmental and body flora Culture of normal environmental and body flora Culture 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 Week 5 FIRST TEST Infectious Disease Process and cause infection Importance of Gram Stain		Week 2	17 - W.17 - W.17 - W. 19.17 - W. 19.17 - W. 19.17
Microbial Metabolism, Physiology and Genetics Examination of microscopic life in pond water - Protozoa, Algae, Cyanobacteria Culture of normal environmental and body flora Culture of normal environmental and body flora Culture of normal environmental and body flora Culture of normal environmental and body flora Colony characteristics and simple stain of recovered bacteria Colony characteristics and simple stain of recovered bacteria Meek 5 FIRST TEST Infectious Disease Process and cause infection Importance of Gram Stain	Microscopy and Cell Structur Use of Microscope, Practice	of focusing on human blood components	Principles of microscopy, use of microscopes
Microbial Metabolism, Physiology and Genetics Examination of microscopic life in pond water - Protozoa, Algae, Cyanobacteria Culture of normal environmental and body flora Culture of normal environmental and body flora Culture of normal environmental and body flora Culture of normal environmental and body flora Colony characteristics and simple stain of recovered bacteria Colony characteristics and simple stain of recovered bacteria Meek 5 FIRST TEST Infectious Disease Process and cause infection Importance of Gram Stain		Week 3	
Colony characteristics and simple stain of recovered bacteria Are our counters, keyboards, drains, toilet seats, door handles AND our mouths, skin and noses STERILE? What do they grow? FIRST TEST Infectious Disease Process and cause infection Importance of Gram Stain Are our counters, keyboards, drains, toilet seats, door handles AND our mouths, skin and noses STERILE? What do they grow? Organism mutation, virulence, drug resistance, avoidance of phagocytosis Gram Stain as an important diagnostic tool	Examination of microscopic l Cyanobacteria Culture of normal environme Host Defense Mechanisms barriers to infections Natural and Acquired Immur	life in pond water - Protozoa, Algae, ntal and body flora Week 4 Week 4 Role of normal flora and physical	Study of higher forms of microbial life What grows where? How physical make-up of human body defend against infections What are natural, acquired and artificial means of
FIRST TEST Infectious Disease Process and cause infection Importance of Gram Stain		imple stain of recovered bacteria	Are our counters, keyboards, drains, toilet seats, door handles AND our mouths, skin and noses STERILE? What do they grow?
Infectious Disease Process and cause infection Importance of Gram Stain		W VVeek 5	Organiam mutation visulance drug registeres
	Infectious Disease Process and cause infection Importance of Gram Stain		avoidance of phagocytosis Gram Stain as an important diagnostic tool
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	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	
	Diagnosis of Infectious Diseases in clinical Laboratory - Metho the direct and indirect, rapid and slow techniques employed in clinical Microbiology laboratory Demonstration of rapid diagnostic techniques used in a POC o laboratory	а	What is available at	

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	Week 12		M_033	
ntimicrobial Susceptibility Results Their Interpretation a pplicability to patient care linically significant aerobic Non-Enteric Gram Negative ba seudomonas, Acinetobacter, Haemophilus		How the results from a Microbiology laboratory may be applied in patient treatment Introduction to non-enteric aerobic bacteria, ar their impact on humans		
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	Week 13			1 1
linically significant: ram Negative diplococci Neisseria, Moraxella ram Positive Bacilli - Bacillus, Listeria piral bacteria Treponema, Leptospira		Introduction to Neisseria, Bacillus, and Spirochaetes, and their impact on humans		0
	Week 14	5		<u>р</u>
ECOND TEST linically significant anaerobic bacteria				
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