

**Grande Prairie Regional College
Department of Science**

Course Outline: MI 1330 Medical Microbiology Fall 2009

MI 1330 *Medical Microbiology and Infectious Diseases 3 (3-0-0)*

This is a general microbiology course dealing with microorganisms, their nature, distribution and role in disease. Particular emphasis is placed on the epidemiology of infection, responsibilities of hospitals, and prevention and control of infection.

Instructor: Dr. Sean Irwin
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Prerequisite: Biology 30

Transfer: University of Alberta MI 133

Required Text : Titora, G.J. et al., Microbiology: An Introduction (10thed.),
Pearson Education, Inc., San Francisco, CA, 2010.

Lectures: Mon. 11 :30 - !:00pm Room J202
 Fri. 10:00- 11:20, Room H211

Evaluation :	Quiz I -	15%
	Midterm Exam -	30%
	Quiz II -	15%
	Online Activities -	5%
	Final Exam -	35%

Office Hours : Monday / Wednesday - 10:00 - 11:20 am
 Friday -1:00 – 2:20 pm
 Also by appointment

Course Objectives:

1. To gain an understanding of microbe structure and function.
2. To gain a knowledge of human infectious diseases and how they are transmitted.
3. To gain an understanding of human infectious disease that will facilitate future work in the medical field.
4. To develop critical thinking skills with respect to infectious diseases of the human body.

MI 1330 YA2 Fall 2009

Sept. 4	Unit 1	Ch. 1: pg. 2-7; 9-19.
Sept. 7	Labour Day	
Sept. 11	Unit 2	Ch. 4: pgs. 77–98; 98–106 (Review).
Sept. 14	Lab	
Sept. 18	Unit 3	Ch. 5: pgs. 114-119 and 124-134.
Sept. 21	Unit 4	Ch. 6: pgs. 157-163; 170-173 and <i>Ch. 7.</i>
Sept. 25	Unit 5	Ch. 8: pgs. 211 - 212; 226; 233 - 240.
Sept. 28	Quiz / Unit 6	Ch. 13
Oct. 2	Unit 7	Ch. 14
Oct. 5	Unit 8	Ch. 15
Oct. 9	Unit 9	Ch. 16: pgs. 449 - 465; 469-472.
Oct. 12	Thanksgiving Day	
Oct. 16	Unit 10	Ch. 17: pgs. 449 - 465; 469-472.
Oct. 19	Unit 11/ Review	Ch. 18: pgs. 501 - 506.
Oct. 23	Midterm	

MI 1330 YA2 Winter 2010

Jan. 8	Unit 12a	Ch. 20: pg. 553 - 566.
Jan. 11	Unit 12b	Ch. 20: pg. 566 – 578.
Jan. 15	Unit 13	Ch. 21
Jan. 18	Unit 14	Ch. 22
Jan. 22	Field Trip	
Jan. 25	Quiz / Unit 15	Ch. 23
Jan. 29	Unit 15	Ch. 23
Feb. 1	Unit 16	Ch. 24
Feb. 5	Unit 17	Ch. 25
Feb. 8	Unit 18	Ch. 26
Feb. 12	Catch-up/ Review	
Feb. 15	Family Day	
Feb. 19	Final Exam	

<u>Alpha Grade</u>	<u>Approximate Percentage</u>
A+	90 – 100
A	85 – 89
A-	80 – 84
B+	76 – 79
B	73 – 75
B-	70 – 72
C+	67 – 69
C	64 – 66
C-	60 – 63
D+	55 – 59
D	50 – 54
F	0 – 49

Course Objectives:

5. To gain an understanding of microbe structure and function.
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OBJECTIVES

1. Understand the system of scientific nomenclature.
2. Know the major groups of organisms studied in microbiology.
3. Define normal microbiota and infectious diseases.
4. Define emerging infectious disease.
5. Describe the basic shapes and structures associated with prokaryotic cells.
6. Identify the differences between gram positive and gram negative bacteria.
7. Review eukaryotic cell structure.
8. Identify the principle differences between eukaryotic and prokaryotic cells.
9. Define the terms related to microbial genetics.
10. Understand bacterial chromosome organisation.
11. Know the mechanisms of gene transfer in bacteria.
12. Discuss the physical and chemical requirements for growth of microorganisms.
13. Explain how microbes are classified on the basis of oxygen requirements.
14. Describe bacterial growth, including binary fission.
15. Define the key terms related to microbial control.
16. Discuss the physical methods of microbial control identified.
17. Describe the chemical disinfectants identified.
18. Define the terms related to microbial genetics.
19. Understand bacterial chromosome organisation.
20. Know the mechanisms of gene transfer in bacteria.
21. Describe the physical structure and morphology of viruses.
22. Describe the multiplication cycle of animal viruses.
23. Differentiate between persistent viral infections and latent viral infections.
24. Define the terms associated with disease.

25. Define normal and transient microbiota.
26. Describe the relationships between normal microbiota and the host.
27. Classify infectious disease as far as occurrence, severity or duration, and extent of host involvement.
28. Describe the factors involved in the spread of infection.
29. Define epidemiology.
30. Identify the principal portals of entry.
31. Explain how microbes adhere to host cells.
32. Explain how bacterial pathogens penetrate host defences.
33. Describe how bacterial pathogens damage host cells.
34. Contrast the nature and effects of exotoxins and endotoxins.
35. Discuss the pathogenic properties of non-bacterial organisms.
36. Differentiate between mechanical and chemical factors of nonspecific resistance.
37. Describe the role of normal microbiota in nonspecific resistance.
38. Identify the formed elements of the blood.
39. Describe the stages of inflammation.
40. Identify the affects of antimicrobial substances.
41. Define the terms associated with the specific defences of the host.
42. Discuss the nature of antigens and the nature of antibodies.
43. Identify the five classes of antibodies.
44. Describe the effects of antigen-antibody binding.
45. Describe the development of the cell-mediated immune response.
46. Describe the development of the humoral immune response.
47. Explain how vaccination work.
48. Understand the role vaccines play in disease control.
49. Know the different types of vaccines and provide an example of each
- 50.