

College of Osteopathic Medicine Course Syllabus

Course Details & Information:

Course Name	Microbiology - Immunology
Course Number	Course # MICR*1103
Graduating Class Year	D.O. Class of 2017
Discipline	Basic Sciences
Course Option Type	Required

Course Administration & Duration:

Department	Microbiology	Method	Lecture
Chief Coordinator	Tim Steele, Ph.D.	Co-Coordinator	
Credit Hours	6.0 Credit Hours	Dates	11/21/13 – 3/7/14

Text or Required Readings:

<p>I. REQUIRED</p> <p>Murphy, Kenneth, Janeway's <i>Immunobiology</i>, 8th Edition, Taylor & Francis Inc. Publishing, 2012.</p> <p>In addition to the above immunology book, choose <u>one</u> of the required resources below:</p> <p>Murray, P.R., Rosenthal, K.S., and M.A. Pfaller, <i>Medical Microbiology</i>, 7th edition, Mosby, St. Louis, 2013. (Also available as an ebook through the Library catalog)</p> <p>OR</p> <p>Sherris Medical Microbiology: Kenneth J. Ryan and C. George Ray. 5th edition 2010 Can be located online at: http://www.accessmedicine.com.ezproxy.dmu.edu:2048/resourceTOC.aspx?resourceID=656</p>
<p>II. RECOMMENDED (on reserve in the library)</p> <p>Coico, <i>Immunology: A Short Course</i>, 6th edition, Wiley, 2009.</p> <p><i>Epidemiology & Prevention of Vaccine-Preventable Diseases</i> ("The Pink Book"), 12th Edition, 2011, Centers for Disease Control and Prevention, National Immunization Program http://www.cdc.gov/vaccines/pubs/pinkbook/default.htm</p> <p><i>Sexually Transmitted Diseases Treatment Guidelines</i>, 2006, Centers for Disease Control and Prevention - http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5511a1.htm</p> <p>Despommier, D., et al., <i>Parasitic Diseases</i>, 5th edition, Apple Tree Publ., New York, 2005.</p>

Description:

This course is an introduction to medical microbiology and its various sub-disciplines, with emphasis on facts and principles pertinent to understanding infectious disease processes. Bacterial, viral, mycotic and parasitic pathogens are considered, with concentration on host-pathogen interactions and pathogenic mechanisms. Basic principles and clinical relevance of immune mechanisms are also emphasized. A single laboratory session focuses on techniques likely to be performed in the clinician's setting that are useful in the diagnosis of infectious diseases.

The Microbiology and Immunology course begins with the fundamentals of the immune system and transitions into the normal functioning of the immune response and the mechanisms behind immunopathologic conditions. Following immunology, the course consists of an organ-based approach whereby relevant pathogenic microorganisms and their associated diseases are presented. The organ systems that compose the course include the respiratory tract, gastrointestinal tract, urogenital tract, central nervous system, and the circulatory, reticuloendothelial, and lymphatic systems. While the major emphasis is on the basic science of the major groups of microbes and their infectious disease processes, clinical correlations will be discussed as appropriate. Each organ system will conclude with an integrated lecture drawing together clinical concepts and microorganisms found within that organ system. It is felt that this type of educational approach to learning microbiology will facilitate the future physician's ability to diagnose patient infections and will lead to a better understanding of infectious disease processes.

Course Goals & Objectives:

The goals of this course are to impart an understanding of infectious disease processes, knowledge of the microorganisms involved in human diseases, and an understanding of host processes involved in the resistance to, and elimination of, infectious diseases.

Specific objectives for each lecture are found in the lecture handout.

Upon completion of this course, students should be able to

- * recognize the general properties of immune responses, as well as the structure and function of the immune system;
- * identify the process leading to the activation of the immune system and its effector mechanisms;
- * identify the fundamental mechanisms of immunity as they relate to defense mechanisms, as well as the development of disease;
- * list important distinctions between prokaryotic and eukaryotic cells and differentiate between bacteria, viruses, fungi, and protozoa;
- * differentiate viruses from other disease-causing entities and to differentiate among viruses in terms of structure and multiplication strategies;
- * identify the basis for viral diseases in man, prevention of these diseases and appropriate means of intervention;
- * relate the key elements of viral diseases to specific viruses and viral families;
- * specify the mechanisms of action of physical and chemical methods used to control microbial growth;
- * recognize the methodology used for the isolation and identification of microbial pathogens;
- * identify the physiological and epidemiological aspects, methods of transmission, clinical manifestations, and treatment and prevention protocols for the specific pathogenic microorganisms discussed;
- * compare and contrast the following aspects of diseases caused by specific eukaryotic pathogens:
 - * method of entry,
 - * epidemiological variables of import to dissemination,
 - * unique structural and life cycle characteristics of each pathogen,
 - * mechanisms of pathogenesis,
 - * primary disease manifestations, and
 - * diagnostic methodology.

Requirements:

Lectures – SEC Lecture Halls and Auditorium Exams – Auditorium Laboratory – Ryan Hall 229A
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Resources:

Chief Coordinator	Tim Steele, Ph.D. Chair, Department of Microbiology and Immunology Professor of Microbiology and Immunology	Phone	271-1728
Office	Ryan Hall, Room 271	E-mail	timothy.steele@dmu.edu
Office Hours	By appointment		
Co-Coordinator		Phone	
Office		E-mail	
Office Hours			
Academic Assistant	M.J. Caswell	Phone	271-1509
Office	Ryan Hall, Room 266	E-mail	mj.caswell@dmu.edu
Office Hours	7:30 am – 4:00 pm		

Attributes & Core Competencies:

<p>The course objectives reflect the AOA "Core Competencies of the Osteopathic Student and Physician" under the categories of "Medical Knowledge*" and "Professionalism". Students are expected to demonstrate and apply knowledge relevant to medical microbiology and immunology to the practice of clinical medicine.</p> <p>* The asterisk denotes the competency that is assessed during the course.</p>

Course Policies:

<p>Lecture attendance</p> <p>ATTENDANCE</p> <ul style="list-style-type: none"> Lecture: Lecture attendance is strongly encouraged. Often times, information may be given which expands upon or clarifies the information in the lecture handout or any assigned readings. Lectures are held in the SEC auditorium. Laboratory: The course has one required, 3-hour lab that is worth up to 10 points. Unexcused absence from your scheduled lab session will result in the failure to earn these points. Labs are held in room 229A in Ryan Hall. <p>HANDOUT AND POWERPOINTS</p> <ul style="list-style-type: none"> Handouts and PowerPoint files will be posted on the Microbiology and Immunology Course Angel site. <p>EXCUSED ABSENCES / UNEXCUSED ABSENCES</p> <ul style="list-style-type: none"> Excused absences will be granted if a student is hospitalized or has a written statement from a physician regarding his/her illness, or for family emergencies. Excused absences for other reasons must be approved by the course faculty. Appropriate documentation will be required. All other absences will be considered unexcused absences. <p>ACCOMMODATIONS POLICY</p> <ul style="list-style-type: none"> If you have a disability and need accommodations, you must request them by contacting the Accommodations Officer in Educational Support Services (accommodations@dmu.edu) and submitting
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an application with necessary documentation. Faculty members cannot provide accommodations directly. Please note that accommodations should be submitted well in advance of the date accommodations are needed.

Evaluation:

Grading:

The course grading policy/scheme is as follows:

%	Grade	%	Grade	%	Grade
97-100	A+	87-89	B+	77-79	C+
93-96	A	83-86	B	70-76	C
90-92	A-	80-82	B-	≤69	F

Final grades will be rounded up for percentage grades of .50 or higher. For instance, a final grade of 79.50 would be rounded up to an 80% (B-) but a 79.49 would remain at 79% (C+).

A total of 370 points are available in the course (360 points from exams and 10 points from the required laboratory).

Exams will consist of 5 questions per lecture and 4 questions per reading assignment.

For the 10 laboratory points, 5 points are earned for participation in the lab exercises; the remaining points are earned from a short 5-point quiz at the end of the lab covering the lab exercises and handout.

Your final grade will be determined by dividing the points you have earned by the total points available. A final grade of 70% (258/370 points) is required to pass the course.

Written Examinations

The course will have 8 written examinations. Question format will be objective, i.e., multiple choice, matching, etc. Students should choose the best answer on each exam question. Points will not be given back based on rare exceptions to the material presented in class. All examinations will be retained by the department. If Scantron forms are used, they will serve as the final authority for exam answers.

Students are required to be present and in their seats at the start of all examinations and must stay in the examination room for at least 15 minutes after the start of the exam. Students who arrive after the start of the exam will be sent to speak with the department chair (Dr. Steele) or, if the chair is not present, a course coordinator. The following procedures will be followed based on whether the student has an acceptable or unacceptable reason for being late:

If the student has an acceptable reason (as judged by the chair) for being late, and it is still within 15 minutes of the start of the exam, the student will take the exam in the Microbiology and Immunology conference room. No additional time will be added to compensate for the late start, i.e. the exam will end at the normally scheduled time.

If the student has an excused absence, but arrives more than 15 minutes after the start of the exam, the student will be scheduled for a normal make-up exam to be taken at a future date.

If no acceptable reason (as judged by the chair) is given for being late, even within the first 15 minutes of the start of the exam, the student will be considered to have had an unexcused absence and will be required to take the comprehensive exam as detailed under the "Make-up Policy" section below.

Habitual offenders of this policy will not be granted excused absences.

The examination protocol, as detailed in the student handbook, will be used during this course. A brief summary follows:

1. Personal belongings will not be allowed in the testing site, except for two pencils.
2. If a student must take a break during an examination, the test booklet and answer sheet will be turned in to the proctor and returned to the examinee when he or she is ready to resume testing. Students will also be expected to sign an examination log before leaving and upon returning to the examination site.
3. Proctors will not answer questions regarding examination content. If an examinee thinks there is an error in a test question, proctors will instruct the examinee to answer the question to the best of his/her ability with the information provided.

Test Question Review

Exam review sessions will be scheduled shortly after the exams in which students may come and review the exam and their answers. During these sessions, copying of exam questions or answers will not be allowed. No electronic devices will be allowed in the room during the review times.

Make Up Examination

Make-up examinations or a make-up laboratory will be granted for excused absences. Written petitions for a make-up exam must be submitted to Dr. Steele within three school days or as soon as possible after the date of the absence.

Make-up examinations will be scheduled in consultation with Dr. Steele. The faculty coordinator of the laboratory, Dr. Nguyen, will schedule a make-up laboratory.

The make-up examination for an unexcused absence will cover all material from the first half of the course if the missed exam is Exam #1-4, and the second half of the course if the missed exam is Exam #5-8, and must be completed by March 14, 2014. It will be scheduled in consultation with Dr. Steele. The percentage score achieved on the unexcused make-up exam will replace the missed regular exam (which will be used to calculate the points for the missed exam).

Any additional unexcused absences will result in the student receiving zero points for the missed exam.

Exceptional Circumstances: In the case of exceptional circumstances not covered by these policies, the student should contact Dr. Steele at 271-1728.

Remediation

Remediation Policy: A re-evaluation exam for any student who fails the course will be given during the summer re-evaluation period as determined by the Registrar.

Policy Exceptions

The course faculty in accordance with the policies and statements in the student handbook must approve any exceptions to the policies stated in this syllabus.

Course Schedule & Examinations:

Notices of changes in lectures or exams will be e-mailed to the class and announced in lecture.

	LECTURER	LECTURE TITLE	KEYWORDS
1.	Steele	Innate Immunity	Physical barriers, innate immunity, cell-mediated, humoral, macrophages, dendritic cells, lymphocytes, granulocytes
2.	Steele	Inflammation	Cardinal signs, acute inflammation, chronic inflammation, neutrophil extravasation, wound healing, fever, neutrophilia, acute phase response, autoinflammatory disease
3.	Steele	Antigens and Antibodies	Immunogenicity, hapten, polyclonal, monoclonal, antiserum, titer, antibody structure, immunoglobulin classes, IgG, IgM, IgA, IgD, IgE
4.	Steele	Antigen Presentation and the MHC	Major histocompatibility complex, MHC, haplotype, polygenic, polymorphic, codominant, class I, class II, MHC restriction, antigen processing
5.	Steele	T Cells / Cell-mediated Immunity	T lymphocyte, ontogeny of T lymphocytes, T cell antigen receptor, CD4, CD8, Th1, Th2, Th3, cytotoxic T lymphocyte
6.	Steele	B Cells / Humoral Immunity	B lymphocyte, ontogeny, antigen presentation, immunoglobulin gene rearrangement, isotype switching, affinity maturation
7.	Steele	Lymphoid Tissues	Bone marrow, thymus, lymph node, spleen, Peyer's patches, lymphocyte recirculation, tertiary lymphoid tissue
8.	Steele	Immunoregulation	T suppressor cells, idiotypic regulation, tolerance, thymic selection, cytokines
		EXAM #1 – LECTURES 1-8	
9.	Steele	Host Defense	Innate immunity, adaptive immunity, microbial evasion, deleterious effects of the immune system, bacteria, virus, fungi, parasites
10.	Steele	Hypersensitivity Reactions	Type I hypersensitivity, anaphylaxis, allergy, type II hypersensitivity, type III hypersensitivity, immune complex disease, type IV hypersensitivity
11.	Steele	Transplantation	Transplantation terms, types of rejection, alloreactivity, immunoprivileged sites, immunosuppressive drugs, bone marrow transplantation, graft-vs-host disease

12.	Steele	Autoimmunity	Organ-specific autoimmune disease, systemic autoimmune disease, rheumatoid arthritis, systemic lupus erythematosus, Grave's disease, diabetes
13.	Steele	Tumor Immunology	Immunosurveillance, tumor-specific antigens, tumor evasion strategies, tumor immunotherapy
14.	Steele	Immunodeficiencies	Primary immunodeficiency, Secondary immunodeficiency, x-linked agammaglobulinemia, common variable immunodeficiency, DiGeorge syndrome, severe combined immunodeficiency disease
15.	Steele	Immunology of HIV Infection	AIDS, CD4, mechanisms of immunosuppression, HIV vaccine approaches, laboratory testings, therapy
16.	Steele	Vaccines	Attenuated, inactivated, toxoid, conjugates, adjuvants, bacterial vaccines, viral vaccines
EXAM #2 – LECTURES 9-16			
RA1	Bohlson	Reading Assignment: Sterilization, Disinfection, & Antisepsis (located under <i>Lessons on Angel</i>)	Sterilization; disinfection; antisepsis; pasteurization; agents of sterilization and their effectiveness; most effective skin antisepsis methods for blood culture; most effective treatments for disinfection
17.	Bohlson	Introduction to Microbiology / Classification and Identification	Prokaryotes vs Eukaryotes; Bacterial cell wall; Gram Positive vs Gram Negative bacteria; Cell envelope; Peptidoglycan, LPS; capsule; flagella; pili; Sporulation
18.	Bohlson	Microbial Structures and Functions / Microbial Metabolism	Bacterial growth curve; bacterial metabolism; aerobic vs anaerobic respiration; fermentation; nucleic acid biosynthesis; folic acid biosynthesis; DNA replication; transcription; protein synthesis; bacterial cell wall biosynthesis
19.	Steele	Microbial Genetics	Bacterial vs human genome; regulation of bacterial gene expression; DNA mutations and repair mechanisms; plasmids; bacteriophage; prophage; temperate phage; transposon; bacteriocin; R-factor; integron; bacterial transformation; bacterial conjugation; bacterial transduction; specialized transduction; generalized transduction
RA2	Nguyen	Reading Assignment: Major Groups of Disease-causing Bacteria (located under <i>Lessons on Angel</i>)	Gram-positive bacteria, Gram-negative bacteria, Bacteria not usually Gram-stained

20.	Steele	Antibiotics	Penicillins, Cephalosporins, Vancomycin, Cycloserine, Isoniazid, Bacitracin, Aminoglycosides, Tetracycline, Chloramphenicol, Macrolides, Fluoroquinolones, Rifampin, Metronidazole, Sulfonamides/ trimethoprim, Antimicrobial Resistance, Antimicrobial synergism, Antimicrobial antagonism
21.	Johnson	Host-Parasite Relationships/Normal Flora/Oppportunistic Infections	Adherence ,adhesion, attachment, Carrier , Infection , Invasion, Nonpathogen, Opportunistic pathogen, Pathogen, Pathogenicity
22.	Nguyen	Introduction to Virology	virus structure, virus classification, virus life cycle, viral infection patterns, viral pathogenesis, viral genetics, virus diagnosis
RA3	Brittingham	Reading Assignment: Introduction to Clinical Parasitology (located under <i>Lessons on Angel</i>)	protozoa; helminths; nematodes; cestodes; trematodes
23.	Brittingham	Introduction to Clinical Mycology	yeast; molds; fungi
---	Nguyen	Laboratory Lecture: Diagnostic Microbiology	Diagnostic Microbiology Techniques
		EXAM #3 - LECTURES 17-23, AND READING ASSIGNMENTS RA1, RA2, AND RA3 ***NO QUESTIONS FROM LABORATORY LECTURE	
24.	Gray	Bacterial Infections of the Upper Respiratory Tract I	<i>Streptococcus</i> , <i>Streptococcus mutans</i> , <i>Streptococcus mitis</i> , <i>Streptococcus milleri</i> , <i>Streptococcus salivarius</i> , <i>Moraxella catarrhalis</i> , <i>Streptococcus pyogenes</i> , <i>Streptococcus agalactiae</i> , <i>Streptococcus bovis</i> , <i>Enterococcus faecalis</i> , <i>Corynebacterium diphtheriae</i> , <i>Haemophilus influenzae</i> , <i>Streptococcus pneumoniae</i> , <i>Moraxella lacunata</i> , <i>Chlamydia trachomatis</i> , <i>Chlamydia psittaci</i> , <i>Chlamydia pneumoniae</i> , Anaerobic Gram neg bacilli
25.	Gray	Bacterial Infections of the Upper Respiratory Tract II	Same as Lecture# 24.
26.	Nguyen	Viral Respiratory Tract Infections I	Rhinovirus, Adenovirus, Coxsackievirus, Parainfluenzavirus Non-SARS coronavirus
27.	Nguyen	Viral Respiratory Tract Infections II	Influenza virus, Respiratory Syncytial virus, SARS coronavirus

28.	Johnson	Bacterial Infections of the Lower Respiratory Tract I	Streptococcus pneumoniae, Legionella pneumophila, Staphylococcus aureus, Enteric Gram-negative bacilli, Chlamydia pneumoniae, Haemophilus influenzae, E. coli, Enterobacter, Proteus, Serratia, Pseudomonas, Acinetobacter, Klebsiella, Mycoplasma pneumoniae, Bordetella pertussis, Mycobacterium tuberculosis, Legionella pneumophila
29.	Johnson	Bacterial Infections of the Lower Respiratory Tract II	Same as Lecture #28
30.	Johnson	Bacterial Infections of the Lower Respiratory Tract III	Same as Lecture #28
31.	Brittingham	Fungal Infections of the Respiratory Tract	systemic mycosis; dimorphic fungi; histoplasmosis; blastomycosis; cryptococcosis; coccidiomycosis; paracoccidioidomycosis; aspergillosis, zygomycoses; mucormycosis; PCP; Pneumocystis carinii; P. jiroveci
32.	Bohson Brittingham Johnson Nguyen	Respiratory Tract Infections: Case Discussions	
EXAM #4 – LECTURES 24-32			
33.	Johnson	Bacterial Infections of the GI Tract I	Clostridium botulinum, Clostridium perfringens, Clostridium difficile, Listeria monocytogenes, Shigella dysenteriae, Salmonella spp, Escherichia coli, Vibrio cholera, Campylobacter jejuni, Helicobacter pylori,
34.	Johnson	Bacterial Infections of the GI Tract II	Same as Lecture #33.
35.	Johnson	Bacterial Infections of the GI Tract III	Same as Lecture #33
36.	Brittingham	Parasitic Protozoan Infections of the GI Tract	amebiasis; giardiasis; cryptosporidiosis; Entamoeba; Giardia; Cryptosporidium; Cyclospora; Isospora; Balantidium; Microsporidium
37.	Brittingham	Parasitic Roundworm Infections of the GI Tract	nematodes; Ascaris; pinworm; Enterobius; whipworm; Trichuris; hookworm; Necator; Ancylostoma; Strongyloides;
38.	Brittingham	Tapeworm and Fluke Infections of the GI Tract	cestodes; trematodes; tapeworms; flukes; Taenia; Diphyllbothrium; Echinococcus; Fasciolopsis; Fasciola; Opisthorchis; Clonorchis; hydatid cyst; cysticercus; cysticercosis; neurocysticercosis
39.	Nguyen	Viral Infections of the GI Tract I	Norovirus, Astrovirus, Rotavirus, Adenovirus, Polio virus
40.	Nguyen	Viral Infections of the GI Tract II	Hepatitis A virus, Hepatitis B virus, Hepatitis C virus, Hepatitis D virus, Hepatitis E virus

41.	Nguyen Steele	Liver Infections: Case Discussions	Liver infections
42.	Bohlon Brittingham Nguyen	GI infections: Case Discussions	
		EXAM #5 – LECTURES 33-42	
RA4	Bohlon	Reading Assignment: Sexually Transmitted Diseases-General Guiding Principles (located under <i>Lessons</i> in Angel)	Sexually Transmitted Infection, Centers for Disease Control and Prevention, Contact tracing, MSM (men having sex with men), CSW (commercial sex workers), Vaccine-preventable disease, Condoms, GUD (genital ulcer disease), Epidemiologic synergy, Rape, Adolescent STD, WSW (women having sex with women), IVDU (intravenous drug use), STD Treatment Guidelines
43.	Bohlon	Sexually Transmitted Bacterial Infections I	Chlamydia, Gonorrhea,
44.	Bohlon	Sexually Transmitted Bacterial Infections II	Syphilis, Non-gonococcal urethritis, Chancroid, Granuloma inguinale (Donovanosis).
45.	Bohlon	Other genitourinary tract infection	Normal vaginal flora, Bacterial Vaginosis, Vulvovaginal Candidiasis, Trichomoniasis, Menstrual Toxic Shock Syndrome
46.	Nguyen	Sexually Transmitted Viral infections I	Human Immunodeficiency virus
47.	Nguyen	Sexually Transmitted Viral infections II	Human Papillomavirus, Herpes simplex virus
48.	Bohlon	Bacterial Urinary Tract Infections	Urinary tract infections, Urethritis, Cystitis, Pyelonephritis, Uropathogenic <i>E. coli</i> , <i>Proteus mirabilis</i> , Asymptomatic Bacteriuria
49.	Bohlon Nguyen	Sexually Transmitted Infections: Case Discussions	
		EXAM #6 – LECTURES 43-49 AND READING ASSIGNMENT RA4	
50.	Brittingham	Bacterial Infections of the CNS I	meningitis; encephalitis; Group B strep; Streptococcus agalactia; meningococcus; Neisseria meningitidis; Streptococcus pneumoniae;
51.	Brittingham	Bacterial Infections of the CNS II	Haemophilus influenzae type B; Hib; Clostridium botulinum; botulism; Clostridium tetani; tetanus; Listeria monocytogenes
52.	Brittingham	Fungal and Parasitic Infections of the CNS	cryptococcosis; coccidiomycosis; Acanthamoeba; Naegleria; Balamuthia; toxoplasmosis; Toxoplasma gondii; Toxocara; visceral larval migrans; Taenia; neurocysticercosis

53.	Brittingham	Zoonotic or Vector Borne Infections of the CNS	arbovirus; viral encephalitis; West Nile Virus; St. Louis encephalitis; Japanese encephalitis; equine encephalitis viruses; rabies; LCMV; Lymphocytic choriomeningitis virus; prions; Creutzfeldt-Jakob Disease;
54.	Steele	Bacterial Infections of the Circulatory, RES, and Lymphatic Systems	Sepsis, Septic shock, Bacteremia, Septicemia, Pericarditis, Myocarditis, Endocarditis, trench fever
55.	Nguyen	Viral Infections of the Circulatory, RES, and Lymphatic Systems I	Epstein Barr virus, Cytomegalovirus
56.	Nguyen	Viral Infections of the Circulatory, RES, and Lymphatic Systems II	Kaposi's Sarcoma Herpesvirus, Adult T-cell Leukemia virus
57.	Brittingham	Parasitic Infections of the Circulatory, RES, and Lymphatic Systems	trypanosomiasis; sleeping-sickness; Trypanosoma brucei; Chagas disease; Trypanosoma cruzi; leishmaniasis; Leishmania; malaria; Plasmodium; babesiosis; Babesia
58.	Brittingham Nguyen	Opportunistic Infections: Case Discussions	Human Immunodeficiency virus, opportunistic infections, HIV; immunosuppression
EXAM #7 - LECTURES 50-58			
59.	Brittingham	Zoonoses - Bacterial Infections I	Zoonoses, Anthrax, Brucellosis, Pasteurellosis, Melioidosis, Leptospirosis, Tularemia, Plague, Relapsing fever, Lyme disease, Rickettsial infections, Rocky Mountain Spotted Fever, Rickettsialpox, Epidemic typhus, Endemic typhus, Scrub typhus, Human monocytic ehrlichiosis, Anaplasmosis, Q fever, Trench fever, Cat scratch fever, Bacillary angiomatosis.
60.	Brittingham	Zoonoses - Bacterial Infections II	Same as Lecture #59.
61.	Brittingham	Zoonoses - Bacterial Infections III	Same as Lecture #59.
RA5	Brittingham	Reading Assignment: Zoonotic Viral Infections (located under <i>Lessons</i> on Angel)	Dengue; Yellow Fever; Hantavirus; reovirus; Colorado tick fever; hemorrhagic fever viruses; arena viruses; Ebola; Marburg; Lassa fever; monkeypox
62.	Bohlson	Bacterial Infections of the Skin, Soft Tissue, Bone, Muscle, Joints I	Folliculitis, Diffuse folliculitis, Acne vulgaris, Impetigo, Ecthyma, Bullous Impetigo, Paronychia, Cellulitis, Erysipelas, Necrotizing fasciitis, Reactive Arthritis, Septic Arthritis, Osteomyelitis, Gingivitis, Periodontitis. <i>Staphylococcus aureus</i> , methicillin-resistant <i>Staphylococcus aureus</i> , MRSA, Vancomycin intermediate <i>Staphylococcus aureus</i> , VISA, Vancomycin resistant <i>Staphylococcus aureus</i> , VRSA, Hospital Acquired MRSA,

			Community Acquired MRSA, Streptococcus pyogenes, <i>Pseudomonas aeruginosa</i> , <i>Clostridium tetani</i> , <i>Clostridium</i> <i>perfringens</i> , Leprosy, Nocardiosis, Actinomycosis, skeletal tuberculosis
63.	Bohlson	Bacterial Infections of the Skin, Soft Tissue, Bone, Muscle, Joints II	Same as Lecture #62

64.	Bohlon	Bacterial Infections of the Skin, Soft Tissue, Bone, Muscle, Joints III	Same as lecture #62
65.	Brittingham	Infections of the Skin, Soft Tissue, and Muscle caused by Parasites and Arthropods	leishmaniasis; Leishmania; Onchocerca; onchocerciasis; river blindness; Mansonella; filariasis; Dracunculus; dracunculiasis; Guinea worm; Ancylostoma; cutaneous larval migrans; scabies; lice; crabs; botfly; Trichinella spiralis; trichinellosis; Loa loa; Loiasis; Paragonimus westermani ; lung fluke
66.	Brittingham	Superficial, Cutaneous, and Subcutaneous Fungal Infections	Pityriasis Versicolor; Malassezia furfur; Tinea Nigra; Exophiala werneckii; piedra; Piedraia hortae; Trichosporon beigellii; dermatophytes; ringworm; jock itch; athletes foot; Microsporum; Trichophyton; Epidermophyton; candida; Candida albicans; sporotrichosis; Sporothrix schenckii; chromoblastomycosis; mycetoma
67.	Nguyen	Viral Infections of the Skin, Soft Tissue, Bone, Muscles and Joints I	Herpes simplex virus, Human papillomavirus, Varicella Zoster virus, B19 Parvovirus
68.	Nguyen	Viral Infections of the Skin, Soft Tissue, Bone, Muscles and Joints II	Human herpesvirus 6, Human herpesvirus 7, Variola virus, Molluscum contagiosum virus, Mumps, Measles, Rubella, Coxsackievirus
EXAM #8 - LECTURES 59-68 AND READING ASSIGNMENT RA5			

EXAM SCHEDULE							
EXAM #	LECTURES	READING ASSIGNMENTS	# OF QUESTIONS	DATE	TIME	LOCATION	
1	1-8		40	12/4	10:00 - 11:50 am	AUD	
2	9-16		40	12/13	8:00 - 9:50 am	AUD	
3	17-23	RA1, RA2, RA3	47	1/14	8:00 - 9:50 am	AUD	
4	24-32		45	1/29	8:00 - 9:50 am	AUD	
5	33-42		50	2/6	8:00 - 9:50 am	AUD	
6	43-49	RA4	39	2/17	8:00 - 9:50 am	AUD	
7	50-58		45	2/25	8:00 - 9:50 am	AUD	
8	59-68	RA5	54	3/7	8:00 - 9:50 am	AUD	

LABORATORY SCHEDULE

Students are assigned to one of the following lab sessions. All labs meet in Room 229A in Ryan Hall.

The lab schedule is to be followed as to date you are assigned. If you have extenuating circumstances that prevent you from attending your assigned lab, you must receive prior approval to switch.

Lab switch requests can be made by emailing course Academic Assistant, M.J. Caswell at mj.caswell@dmu.edu. Requests are not granted until you have received an email approving the switch.

DAY	DATE	TIME	GROUPS TBD
Wednesday	February 5	1:00 - 4:00 pm	
Thursday	February 6	1:00 - 4:00 pm	
Friday	February 7	1:00 - 4:00 pm	
Wednesday	February 12	1:00 - 4:00 pm	
Thursday	February 13	1:00 - 4:00 pm	
Friday	February 14	1:00 - 4:00 pm	
Friday	February 21	1:00 - 4:00 pm	
Wednesday	February 26	1:00 - 4:00 pm	
Friday	February 28	1:00 - 4:00 pm	

Faculty, Guest Faculty, & Guest Lecturers:

Suzanne Bohlon, Ph.D.
Associate Professor
Dept. of Microbiology and Immunology
Ryan Hall, Room 272
271-1559
suzanne.bohlon@dmu.edu

Mary Johnson, Ph.D.
Associate Dean of Academic Affairs
Academic Center, Room 112
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Andrew Brittingham, Ph.D.
Professor
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