1-2015

BIOM 402.01: Medical Bacteriology and Mycology

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Medical Bacteriology & Mycology (BIOM 402)
Spring Semester, 2015

Instructor: Dr. Mike Minnick
Meeting: MWF 9:10 - 10:00 AM in HS 207
Office hours: Open-door policy- *drop in whenever you like*
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Text: *Medical Microbiology* (Murray et al., 7th edition; 2013).

Performance- *550 points are possible* in the course from **three 100-point exams**, **a 150-point final** (100 points comprehensive and 50 points from the last five lectures) and a **100-point term paper**. Make-up exams are available for excused and documented absences only. Course performance will be evaluated by a classical grading system of: A (90-100%); B (80-89%); C (70-79%); D (60-69%) and F (<60%).

Preparation- Reading assigned materials in advance and attending class are highly recommended, as lecture discussions, class notes and Moodle postings are the only source of test questions. ***General Microbiology is a prerequisite for this course***. *If you have not taken General Microbiology you must obtain the instructor's approval.* Immunology is highly recommended, as many concepts require a basic understanding of the immune system.

Accommodations to ensure accessibility of students with disabilities will be gladly made, but to qualify you must be registered with Disability Services for Students (DSS). Arrangements for accommodations on exams must be made in advance *by the student.*

Academic misconduct will be reported and handled as described in UM's Student Conduct Code. *All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by UM. Students need to be familiar with the Student Conduct Code. The Code is available for review at:* http://www.umt.edu/vpsa/policies/student_conduct.php *.* Cheating on exams will result in an automatic "F" for that examination without exception. A second episode of cheating will result in an F for the course, without exception.

Dropping course or changing grading status will strictly follow UM policies and procedures, which are described in the current catalog. Students should note that they cannot change to an audit after the 15th day of instruction. In addition, dropping the course or changing grading status (to CR/NCR) are not automatically approved after the 30th day of the semester; these may be requested by petition, but the petition must be accompanied by documentation of extenuating circumstances. Requests to drop the course or change the grading status to benefit a student's grade point average will not be approved.

Cell phones and similar devices must be turned *off* during class. Disruption of class by ringing cell phones may result in the loss of points by the instructor.

2015 COURSE SCHEDULE- (tentative, flexible and highly optimistic):

Date	Topic(s)	Text chapter(s)
January		
26	Introduction	1
28	Introduction, virulence and pathogenesis	2, 14
30	Immune response against pathogens	7-10
February		
2, 4	Immune response against pathogens	7-10
6, 9, 11	Antimicrobials and resistance	17, 69
13	*Staphylococcus*	18
16	**Holiday- President's Day** ☺	
18	*Staphylococcus*	18
20	*Streptococcus, Enterococcus*	19, 20
23	**EXAM 1 (100 points)**	
25	*Streptococcus, Enterococcus*	19, 20
27	Pneumococcus	19
March		
2, 4	G+ sporeformers- *Clostridium, Bacillus*	21, 36
6, 9, 11	G+ non-sporeformers- *Listeria, Corynebacterium*	22, 23
13, 16	Enterics- *Escherichia, Salmonella*	27
18, 20	Enterics- *Shigella, Yersinia*	27
23	**EXAM 2 (100 points)**	
25, 27	Pseudomonads	30
30	**Holiday- Spring Break** ☺	
April		
1, 3	**Holiday- Spring Break** ☺	
6	*Vibrio*	28
8	*Helicobacter, Campylobacter*	29
10	*Haemophilus* **(Term Paper #1 due at 5 pm)**	31
13, 15	*Mycobacterium*	25
17	*Bordetella*	32
20, 22	*Neisseria*	26
24	*Chlamydia*	43
27	**EXAM 3 (100 points)**	
29	*Mycoplasma*	40
May		
1	Spirochetes	39
4	Pathogenic fungi	66, 67, 70-75
6	Pathogenic fungi	66, 67, 70-75
8	Pathogenic fungi **(Term Paper #2 due at 5 pm)**	66, 67, 70-75
12	**FINAL (150 pts)** (10:10 AM to 12:10 PM)	

Research Term Paper-

Purpose- To fulfill the 1/3 "W" (writing) credit for BIOM 402 and introduce students to current research in medical bacteriology and mycology.

Due dates- **Paper #1**- April 10 - 5:00 pm (**All students**)
Paper #2- May 08 - 5:00 pm (**Grads and undergrad re-writes**)

Assignments- *ALL students must complete Paper #1.* The assignment will be corrected and returned. *For undergrads-* IF you are satisfied with the grade you can ignore the second paper. However, if you are not happy with your grade, you may do a second paper *on another article* and turn it in by the Paper #2 due date. NOTE: Paper #1 must be done to be eligible for a paper #2 submission. The better grade of the two assignments will be used to calculate your final grade. *Graduate students* must do both term papers on two separate articles and each graduate paper is worth 50 points.

Directions- Choose a 2015 research article in medical bacteriology or mycology, read it in depth and write a synopsis. The synopsis is a condensed summary of the article in your own words. Caution- don't write a paper on a review article or a topic of interest.

Articles- Research articles can be found in a variety of journals including *Molecular Microbiology*, *Journal of Bacteriology, Infection and Immunity*, *Journal of Infectious Diseases*, etc. Scan for articles in journals or search the PubMed database at http://www.ncbi.nlm.nih.gov/pubmed/ for topics that interest you (e.g., tuberculosis, antibiotic resistance, candidiasis, MRSA, virulence plasmids, etc.). Articles in journals subscribed to by the library can be downloaded for free on campus computers. IF you have problems downloading an article, see Dr. Minnick for assistance.

Required Format-

1) Font- Use 11-point Arial font. Use 1 inch margins on all sides.

2) Title page with your contact information, title of article, author(s) and full citation

3) Five additional full pages of text, double-spaced and typed with a synopsis as below:

- Give a *brief* introduction of topic and goals of the research, etc. Follow this section with a discussion of the experimental approach and justification, but don't go into excessive detail on methods. Explaining **why** the authors did their experiments to address the hypothesis is more important than **how** the experiment was done.
- Do the results support the authors' hypothesis and conclusions? If you do not agree with the authors, please explain. How might the paper be improved?
- Discuss the significance of the paper to medical bacteriology / mycology. Be specific- phrases like "..markedly improves the overall health of mankind" are vague and not worthwhile.

4) Reference section with full citations.

5) Submit your term paper electronically as an attached, MS Word file along with a PDF file of the corresponding research article.

Grading- 100 pts are possible, based upon writing clarity, grammar, syntax, conforming to instructions and format, overall flow of logic and how well the article is summarized. **A 10% reduction in points per day will be charged for late papers.** *Plagiarism will result in an "F" for the assignment- Don't steal another author's words.*