

BIOL 438: Microbiology for Optometry

Course Syllabus, Fall 2017



In order to optimize student learning, the standards and requirements set forth in this syllabus may be modified during the semester. Notice of any such changes will be announced in class and posted on our Blackboard course welcome page.

Class location and meeting time

Lectures will be held on Mondays and Thursdays from **8:00 to 8:50 am** and Fridays from **8:00 to 9:50 am** in **MCO-212**. You are responsible for all announcements, handouts, etc., even if you are late or absent (see the attendance policy for more details).

Contact information

Instructor name: Dr. Clifton Franklund
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Contacting Dr. Franklund

Office hours: [M | T | W | R] from 9:00 to 10:00 am

I will maintain official office hours as indicated above. These are first come, first served – you are encouraged to make appointments but walk-ins are welcome and will be accommodated whenever possible. You can sign up times online at <http://cliftonfranklund.youcanbook.me>. In addition, I have posted my schedule outside of my office door. **All** of my “free” time is available to you as office hours. Simply find the day that works for you and sign up for a meeting (in 15-minute increments).

Email: You can expect me to reply to your email questions within 24 hours during the work week and within 48 hours on weekends and holidays.

Prerequisites

Optometry students only.

Course description

Medical microbiology and immunology with an emphasis on microbial diseases of the eye and ocular immunology.

Required texts and materials

Textbooks: *Microbiology*, 2017. Free online at:

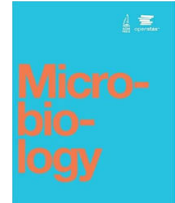
<https://openstax.org/details/books/microbiology>

Medical Microbiology. 4th edition.

<https://www.ncbi.nlm.nih.gov/books/NBK7627/?term=virology>

Immunobiology: The Immune System in Health and Disease. 5th edition.

<https://www.ncbi.nlm.nih.gov/books/NBK10757/?term=immunology>



Learning outcomes

I have several specific learning objectives for you in this course and they are listed below. By the conclusion of this course, you should be able to:

- A. Microbial Diversity** - Give examples of and compare and contrast different types of microbial cells (including viruses, bacteria, fungi, and protozoa). Identify cell structures and define their functions. *Assessed via lecture exam one and the comprehensive final exam.*
- B. Immunology** - Differentiate between the innate, humoral, and cellular defenses and identify points of interaction. Explain how inappropriate immune responses can result in host damage. *Assessed via lecture exam two and the comprehensive final exam.*
- C. Microbial Pathogenesis** – Compare and contrast the different strategies that microbes use to colonize, infect, and damage host tissues in human diseases. *Assessed via lecture exam three and the comprehensive final exam.*
- D. Ocular Applications** – Apply concepts of microbial structure and function, immunity, and molecular mechanisms of microbial disease to ocular case studies. *Assessed via the comprehensive final exam.*

Graded assignments

Lecture exams – There will be three 150-point lecture exams (see the lecture schedule for dates). They will consist of multiple choice, multiple-multiple choice and essay questions. They may be based upon diagrams, problems, data sets, or material drawn from the textbook or assigned readings. The 150-point comprehensive final exam will have a similar structure.

Grading policies

I use an objective point-based system to grade all assigned work. This course consists of a total of **600 points**. Mid-term grades will be posted by **October 16, 2017** so that you may assess your class standing. Final grades for the course will be assigned based upon your total earned score as indicated

Breakpoints are not negotiable.

Any bonus points should give you more than adequate buffer against any poor assignment performances.

Point Range	Grade	Percent
558 to 600 points	A	93-100%
540 to 557 points	A-	90-92.9%
522 to 539 points	B+	87-89.9%
498 to 521 points	B	83-86.9%
480 to 497 points	B-	80-82.9%
462 to 479 points	C+	77-79.9%
438 to 461 points	C	73-76.9%
420 to 437 points	C-	70-72.9%
402 to 419 points	D+	67-69.9%
378 to 401 points	D	63-66.9%
360 to 377 points	D-	60-62.9%
0 to 359 points	F	0-59.9%

Class attendance, late assignments, and make-up policies

You are expected to attend class regularly. I have noted a direct correlation in my prior classes between student attendance and class performance. However, it is ultimately up to you to show up for class. You will be responsible for all reading, discussions, and lecture materials.

All graded materials must be completed on time. Make up exams will be provided only in the case of an excused absence. You must contact me within one week of the missed exam and provide written evidence to explain your absence. If you know in advance that you will be absent for an exam, please contact me immediately. I will attempt to arrange to accommodate you (within reason) with no penalty.

The following are instances of excused absences:

1. Hospitalization, with documentation from your physician
2. Severe illness, with documentation from your physician
3. Jury duty, with a copy of your court summons
4. Bereavement, with a letter from a family member
5. Ferris-sponsored sporting event, with a letter from your coach

The following are **NOT** instances of excused absences:

1. Oversleeping – get a better alarm clock
2. Work – You agreed to the class schedule when you signed up for the course
3. Appointments – see number two
4. Traveling – see number two

5. Other classes conflict – see number two
6. Jail or prison time – you have bigger problems than a missed deadline
7. Illness without documentation – you must have a physician’s note
8. Forgot deadlines – they are your responsibility
9. Bad weather – if Ferris is open, our classes will meet as scheduled
10. Confusion – ask questions earlier rather than later!
11. Computer problems – there are over 100 computers available in the library alone

Blackboard

This semester, there will be a minimal shell on Blackboard Learn for our course. Our site will contain some materials to supplement, but not replace, class attendance and reading. This semester, the site will contain the following:

1. A PDF copy of this syllabus.
2. All course announcements pertaining to this class.
3. A calendar of all course assignments and deadlines.
4. Online communication tools for you to contact me or your classmates.
5. On-line access to your course grades.
6. Ancillary lecture materials including: 1) suggested online readings, 2) PDF copies of the lecture slides for your note-taking convenience, 3) a link to a Tegrity recording of the lecture (if Tegrity actually works that day).
7. Perhaps some online quizzes for bonus points – these **do count** toward your final grade in the course.
8. Additional information about me, my background, and my interests.

I hope that you find this material to be helpful in preparing for exams and pursuing your interests. Please feel free to offer constructive criticism.

Statement of disability services at FSU

Ferris State University is committed to following the requirements of the Americans with Disabilities Act Amendments Act and Section 504 of the Rehabilitation Act. If you are a student with a disability or think you may have a disability, contact the Disabilities Services office at 231.591.3057 (voice), or email <mailto:ecds@ferris.edu> to discuss your request further. More information can be found on the web at <http://www.ferris.edu/htmls/colleges/university/disability/>.

Any student registered with Disabilities Services should contact the instructor as soon as possible for assistance with classroom accommodations.

Academic misconduct policies at FSU

The university may discipline a student for academic misconduct, which is defined as any activity that tends to undermine the academic integrity of the institution. Academic misconduct includes, but is not limited to, the following:

Cheating - A student may not use unauthorized assistance, materials, information, or study aids in any academic exercise, nor should a student give assistance, materials, information, or study aids to another student in any academic exercise.

Fabrication - A student must not falsify or invent any information or data in an academic exercise including, but not limited to, records or reports, laboratory results, and citations of the sources of information.

Facilitating Academic Dishonesty - A student must not intentionally or knowingly help or attempt to help another student to commit an act of academic misconduct. A student is responsible for taking reasonable precautions to ensure his or her work is not accessed by or transferred to another individual wherein it may then be used to commit an act of academic misconduct.

Interference - A student must not steal, change, destroy, or impede another student's work. Impeding another student's work includes, but is not limited to, the theft, defacement, or mutilation of resources so as to deprive others of the information they contain. A student must not give or offer a bribe, promise favors, or make threats with the intention of affecting a grade or the evaluation of academic performance.

Plagiarism - A student must not adopt or reproduce ideas, words, or statements of another person without appropriate acknowledgment. A student must give credit to the originality of others and acknowledge indebtedness whenever he or she quotes or paraphrases another person's words, either oral or written and whenever he or she borrows facts, statistics, or other illustrative material, unless the information is common knowledge.

Violation of Course Rules - A student must not violate course rules as contained in a course syllabus which are rationally related to the content of the course or to the enhancement of the learning process in the course.

Violation of Professional Standards and Ethics - A student must not violate the professional standards or ethical code related to one's intended profession as defined by the academic program or department.

Lecture Schedule

	Date	Planned Lecture Topic
MICROBIOLOGY REVIEW	Aug 28	Orientation and Pre-test
	Aug 31	Origins of medical microbiology
	Sep 01	Prokaryotic microbes
	Sep 04	LABOR DAY — No class
	Sep 07	Eukaryotic microbes
	Sep 08	Acellular microbes
	Sep 11	Microbial growth and differentiation
	Sep 14	Environmental conditions
	Sep 15	Microbial metabolism
	Sep 18	Microbial genetic expression
	Sep 21	Microbial genetic regulation
	Sep 22	Antispetics, disinfectants, and antibiotics
	Sep 25	Exam 1
IMMUNOLOGY	Sep 28	Innate immunity
	Sep 29	Cytokines and chemokines
	Oct 02	Complement
	Oct 05	Phagocytosis
	Oct 06	Humoral immunity
	Oct 09	Cellular immunity
	Oct 12	Accute inflammatory response
	Oct 13	Chronic inflammatory response
	Oct 16	Hypersensitivity
	Oct 19	Allografts and rejection
	Oct 20	Autoimmunity
	Oct 23	Exam 2
MICROBIAL PATHOGENESIS	Oct 26	Communicable diseases and portals of entry
	Oct 27	Attachment
	Oct 30	Spreading factors
	Nov 02	Biofilms
	Nov 03	Internalization
	Nov 06	Toxins
	Nov 09	Mechanisms of drug resistance
	Nov 10	Immune evasion
	Nov 13	Exam 3
OCULAR MICROBIOLOGY	Nov 16	Defenses of the eye
	Nov 17	Ocular inflammation
	Nov 20	Conjunctivitis
	Nov 23	THANKSGIVING — NO CLASS
	Nov 24	THANKSGIVING — NO CLASS
	Nov 27	Keratitis
	Nov 30	Uveitis
	Dec 01	Retinitis
	Dec 04	Ocular autoimmunity
	Dec 07	Atopic diseases manifesting in the eye
	Dec 08	Systemic diseases manifesting in the eye
Dec 11	Exam 4	