COURSE SYLLABUS

**BIOL 715 Microbial Physiology**

# Spring 2020

##### 203 Colgan Hall, SciTech campus

##### Tuesdays 4:30-7:10 pm

**George Mason University**

**College Of Science**

**School Of Systems Biology**

**PROFESSOR: Dr. Monique van Hoek.**

Office location: Discovery Hall, Room 156

Office hours: By appointment, 10 a.m. to 6 p.m.

Email address: [mvanhoek@gmu.edu](mailto:mvanhoek@gmu.edu)

**Adjunct Professor: Dr. Ryan Blower**

Office hours: TBD, by email.

Email address: [rblower@gmu.edu](mailto:rblower@gmu.edu)

**COURSE DESCRIPTION**

1. **Prerequisites:** An undergraduate lecture/lab course in microbiology, and a course in biochemistry.
2. **Course description from the university catalog:** Comprehensive study of the functioning of microbial cells, with emphasis on bacterial pathogens. Growth, transport, cell-to-cell signaling, biofilm formation, antibiotic resistance, and secondary metabolites will be stressed. Viral surface structures will also be explored.

**C. Course objectives:** To introduce the student to more advanced concepts of the functioning of bacteria, with a focus on pathogenic bacteria. The relationship of cell structure to function and the role of that function in pathogenicity will be emphasized. Lectures will cover a topic to give students an understanding of the particular topic. Assigned readings and summaries are a requirement for this class. A timely, pertinent paper will be discussed following each lecture topic, emphasizing to the student current research in that particular area of microbial physiology. Additional activities for grades may include a class blog and other projects.

**REQUIRED ASSIGNEMNTS:**1. Presentations: Students are expected to read the assigned papers before class and be prepared to discuss them following the lecture. Each paper will be presented by a pair students (30 minutes long).

2. Summaries: Each student will prepare a summary of the paper presented and two written questions to the presenter on the subject of the paper, and submit it to the professor before class. Summaries must not exceed 100 words.

3. Other Homework: Blog posts, etc.

**EXAMS:**

1. Midterm Exam

2. Final Exam.

**GRADING:**

**OVERALL GRADE:**

**Midterm 20%**

**Final Exam 30%**

**Class Presentation 20%**

**Participation/Summaries 20%**

**Homework 10%**

**TOTAL POINTS= 100%**

**A+ ≥95%, A = 94-90%, A- = 89-85%, B+ = 84-80%, B = 79-75%, B- = 74-70%, C = 69-65, F = <65%**

**REQUIRED TEXTS:** none, but there is required reading of papers and as much background material as needed for student’s level of knowledge.

**SUGGESTED TEXTS**

**Bacterial Pathogenesis: A Molecular Approach, Fourth Edition,** 2019.

Brenda A. Wilson, Malcolm E. Winkler, Brian T. Ho.

White, D. 2006. **The Physiology and Biochemistry of Prokaryotes**. 3rd edition. Oxford University Press. New York, NY.

**GMU Honor Code:** *The integrity of the University community is affected by the individual choices made by each of us. Mason has an Honor Code with clear guidelines regarding academic integrity. Three fundamental and rather simple principles to follow at all times are that: (1) all work submitted be your own; (2) when using the work or ideas of others, including fellow students, give full credit through accurate citations; and (3) if you are uncertain about the ground rules on a particular assignment, ask for clarification. No grade is important enough to justify academic misconduct. Plagiarism means using the exact words, opinions, or factual information from another person without giving the person credit. Writers give credit through accepted documentation styles, such as parenthetical citation, footnotes, or endnotes. Paraphrased material must also be cited, using MLA or APA format. A simple listing of books or articles is not sufficient. Plagiarism is the equivalent of intellectual robbery and cannot be tolerated in the academic setting. If you have any doubts about what constitutes plagiarism, please see me.*

**TENTATIVE CLASS LECTURE AND PRESENTATION SCHEDULE - TBA**

**Note Special Lecture dates with invited speakers.**

The number of presentations and homework assignments will be adjusted according to the class size.