

**Rutgers School of Dental Medicine
COURSE SYLLABUS**

COURSE#: OBIO7103_OBIO1002
OFFICIAL COURSE NAME: Microbiology
COURSE DIRECTOR: Scott Kachlany
CONTACT INFORMATION: kachlasc@sdm.rutgers.edu

ADDITIONAL COURSE FACULTY: Daniel Kadouri
Carla Cugini

ACADEMIC YEAR: D1
GRADING PERIOD/(s): 3

DAYS & TIME: Refer to Academic Schedule
ROOM#: Refer to Academic Schedule

COURSE DESCRIPTION:

This course will provide knowledge of common human oral pathogenic and commensal flora. Using examples of *S. mutans*, *P. gingivalis*, *A. actinomycetemcomitans*, and other significant oral pathogens, students will learn in detail about the life cycle of these organisms inside the mouth, their biochemistry, genetics, and strategies for manipulating and circumventing the host immune response. The nature and course of the diseases associated with each of these bacteria will be presented in detail, including animal models and vaccination strategies. The course will also cover basic medical microbiology, virology, and mycology.

COURSE GOALS & OBJECTIVES

Goal:

To teach the basic principles of oral microbiology to future dentists so they better understand the etiologies of diseases and how prevention and treatment strategies are effective. Students will learn about microbial diseases and the effects on the body, the microorganisms that cause disease and the virulence factors that are involved and required for pathogenesis, oral diseases and their relationship to microorganisms and how dental treatment should be directed at eradicating the causative agents and how microbial diseases are studied and how the causative agents are identified.

Objectives:

At the end of this course, students will be able to:

1. List and define the microbial diseases.
2. Describe the effects of microbial diseases on the body
3. List and define the microorganisms that cause disease
4. Recognize the virulence factors that are involved and required for pathogenesis
5. Differentiate between oral diseases and their relationship to microorganisms
6. Select the proper dental treatment to eradicate causative agents of oral disease
7. Describe how microbial diseases are studied
8. Differentiate between the methods used to identify causative agents
9. Apply critical thinking and problem-solving skills to microbiology.

COURSE REQUIREMENTS:

2 Exams and adherence to the Attendance Policy

REQUIRED TEXTS

Medical Microbiology, 8th edition. Murray, et al. Mosby, Inc. ISBN: 978-0-323-29956-5

RECOMMENDED TEXTS

Brock Biology of Microorganisms, Eleventh edition. 2006. Michael T. Madigan and John M. Martinko. ISBN: 0-13- 144329-1

Infectious Diseases of the Mouth, 2007. Scott C. Kachlany. ISBN: 978-0-7910-9242-2

EXAMS/ASSIGNMENTS

Each exam is worth 50%. The course will be graded on a curve, where a mean and standard deviation are calculated. The mean grade will be set at a B. A standard deviation above the mean will be an A, and below will be a C, and so forth. The total number of points in the class will be 500 and the final grade will be based on the overall average of the class. Scores will be adjusted so that grades conform with the RSDM grading policy. Letter grade equivalents will be noted after each exam during class.

In the event of an honor code violation, any assignment, quiz, or examination involved in the honor code violation may not be dropped from course grade calculations; if this instance is the lowest score, the second lowest score would be dropped instead.

EXAMINATION CONDITIONS:

A midterm and final exam will be given. Two quizzes will be given and will take 30 minutes each. No multiple choice exams will be given. All quizzes and exams will be essay and short-answer based. You must know how to write to do well on the exams and quizzes. Extraneous, irrelevant answers will be counted against you. Only correct, concise answers will be given full credit.

COURSE GRADING POLICY

Letter Grade	Description	Grade Points	Numerical Scores
A	Excellent	4	90 to 100
B+		3.5	85 to 89
B	Average	3	80 to 84
C+		2.5	75 to 79
C	Fair	2	70 to 74
D	Failure: Unacceptable	1	65 to 69
F	Failure: Poor	0	60 to 64
FR	Failure: Repeat	0	59 and below
For calculation of final course grades, decimal values are rounded to the nearest whole number. For example, 89.45 would be a B+, while 89.55 would be an A.			

EXAMINATION POLICIES:

Please review the Exam Entry/Exit Policy in the RSDM Student Handbook for guidelines regarding exam arrival and departure.

MAKEUP EXAMINATION POLICY

Students must contact Academic Affairs to report an absence to an exam at least 1 hour before the exam, 973-972-4440. If an exam is missed for valid reasons as determined by the Academic Affairs Office, a make-up exam will be given. If the student misses an exam for an invalid reason, they will not be allowed to take a make-up exam and will receive a 0 for the missed exam. Students must follow the instructions regarding absences in Canvas on the class home page.

Except for legitimate and confirmed excuses (illness, death in family, etc.), students must take examinations on the dates and times scheduled. See the RSDM student handbook for a full explanation of grades.

EXAMINATION REVIEW POLICY

The course director will ensure exams are vetted by at least one departmental faculty prior to the exam. Course director will review the exam item analysis following the exam and rescore any questions determined to be invalid, not reliable based, or otherwise inappropriate on the item analysis. Students may not request specific questions be rescored by the course director.

We will grade the exams in a timely manner and hand them back to you. The exams are yours to keep and cherish.

Examinations in this course will be available for review by

- release the examination in full to the students via ExamSoft

REMEDIATION

Students who do not pass the course must follow procedures stipulated by the RSDM Student Academic Performance Policy.

All students are reviewed by the Student Academic Performance Committee (SAPC) at regular intervals; remediation of failed courses is at the discretion of the SAPC and cannot be arranged with the course director without prior approval. All course remediation must be completed during the designated summer remediation period.

TUTORIALS:

Information on tutoring is available in the Student Handbook and from the Office of Student Affairs. Tutoring is available thru the Office of Student Affairs.

ATTENDANCE/ABSENTEE POLICY:

The course adheres to the RSDM policy on attendance which appears in full in the RSDM Student Handbook. Students are expected to be present for all coursework. Attendance implies arriving promptly at the start of the session and remaining until its conclusion.

Students requesting an exam absence must do so in accordance with the Exam Absence policy in the Student Handbook, and should direct associated questions to the Office of Academic Affairs. Course Directors will direct all inquiries regarding exam absences to Academic Affairs.

Students must directly contact didactic course directors if requesting an excused absence from any session other than examinations. Documentation must be presented upon request to the course director in writing within 24 hours to justify any excused absences.

Any unethical/unprofessional actions related to attendance will be considered an unexcused absence and are subject to discipline as per the Code of Professional Conduct and Ethics.

CONDUCT, ETHICS & PROFESSIONALISM POLICY:

This course requires students to uphold the RSDM Honor Code contained in the RSDM Student Handbook. It also adheres to the RSDM policy on professionalism fully described in the RSDM Student Handbook and requires maintenance of acceptable standards of professionalism. When applicable students may be evaluated using the attached "RSDM Professionalism Evaluation Form."

STUDENTS REQUIRING ACCOMMODATIONS:

Any student who feels they need accommodations should discuss this matter with the Associate Dean of Academic Affairs, and must request accommodations through the RBHS Office of Disability Services. Students are not permitted to make arrangements for accommodations directly with the course director. Course directors will direct all student requests to the Associate Dean of Academic Affairs.

LECTURE/SEMINAR SCHEDULE SUMMARY*

Ses sio n #	Hours	Date	Topic or Exam	Lecturer or Seminar Faculty	Method (i.e. lecture, seminar, PBL, computer based)	Reading Assignment (DVD section number for 1 st & 2 nd yr.; text page numbers for 3 rd & 4 th yr.) and/or Special Project
1	9-10:50 AM	1/3	Introduction to microorganisms	Kachlany	Lecture	Ch. 1,2, 4, 5, 6
2	9-10:50 AM	1/4	The bacterial cell envelope- Gram; positive versus Gram-negative	Kachlany	Lecture	Ch. 12
3	9-10:50 AM	1/5	Exopolysaccharides and membrane proteins	Kadouri	Lecture	Ch. 12
4	9-10:50 AM	1/10	Pili, fimbriae and flagella	Kadouri	Lecture	Ch. 12
5	9-10:50 AM	1/11	Prokaryotic Molecular Biology	Kadouri	Lecture	Ch. 13
6	12-1:50 PM	1/12	Gene regulation	Kachlany	Lecture	Ch. 13
7	9-10:50 AM	1/17	Extracellular toxins	Kachlany	Lecture	Ch. 14
8	9-10:50 AM	1/18	Antibiotics I	Kadouri	Lecture	Ch. 17
9	9-10:50 AM	1/19	Antibiotics II	Kadouri	Lecture	Ch. 17
10	9-10:50 AM	1/24	Mechanisms of bacterial pathogenesis	Kachlany	Lecture	Ch. 14, 15, 16
11	9-10:50 AM	1/25	Biofilm I	Kadouri	Lecture	Ch. 12
12	9-10:50 AM	1/26	Biofilm II	Kadouri	Lecture	Ch. 12
13	9-10:50 AM	1/31	MIDTERM Exam		Exam	
14	9-10:50 AM	2/1	Staphylococci and Streptococci	Kadouri	Lecture	Ch. 18, 19
15	11-12:50 PM	2/2	Viridans streptococci and dental caries	Kadouri	Lecture	Ch. 19
16	1-2:50 PM	2/6	Periodontopathogens and periodontitis I	Kachlany	Lecture	
17	9-10:50 AM	2/7	Periodontopathogens and periodontitis II	Kachlany	Lecture	
18	9-10:50 AM	2/14	Other bacteria of medical importance I	Kachlany	Lecture	Ch. 20-35
19	9-10:50 AM	2/15	Other bacteria of medical importance II	Kachlany	Lecture	Ch. 20-35
20	9-10:50 AM	2/16	Other bacteria of medical importance III	Kachlany	Lecture	Ch. 20-35
21	11-12:50 PM	2/21	Mycotic infections I	Cugini	Lecture	Ch. 57-59, 61
22	9-10:50 AM	2/22	Mycotic infections II	Cugini	Lecture	Ch. 60, 62-65, 67
23	9-10:50 AM	2/23	Viral infections I	Cugini	Lecture	Ch. 36-40
24	9-10:50 AM	2/28	Viral infections II	Cugini	Lecture	Ch. 43, 46, 55
25	9-10:50 AM	2/29	Viral infections III	Cugini	Lecture	Ch. 41, 42, 47-49, 54
26	9-10:50 AM	3/1	Review/as needed	Cugini	Lecture	
27	9-10:50 AM	3/8	Final Exam		Exam	