

## **MMG 532 – Medical Microbiology**

Fall Semester 2 - 2022

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**Notice to Students:** Although course syllabi at MSUCOM have a consistent format, important details differ by course. For this reason, you must read the syllabus thoroughly at the onset of each course to know what the course will provide and what is expected of you.

## Section 1 – Course Information

### Course Description

Medical Microbiology (MMG 532) is a 2 credit course that addresses the basic principles of microbiology (including bacteriology, virology, mycology and parasitology) and their relationship to human health and diseases. One 2-hr live laboratory session and a set of virtual lab exercises are included in this course.

### Course Goals

The student shall understand:

- biology of bacteria, viruses, fungi and parasites
- pathogen/host interactions that can affect the maintenance of health or result in infectious disease.

The understanding gained in this class will prepare the student for additional study of specific pathogens and specific infectious diseases. Detailed instructional objectives will be provided in the Course Pack.

### Measurable Course Objectives

The American Osteopathic Association has identified osteopathic core competencies (OCC) essential for practice as a future osteopathic physician (reference). These are embedded throughout programmatic objectives and curriculum. The curricular structure also encourages proficiency in the Core Entrustable Professional Activities (EPAs) for Entering Residency as defined by the Association of American Medical Colleges to help build toward that future phase of the journey toward medical practice (reference). By the end of this specific course, learners should be able to achieve the following objectives within each competency domain indicated:

#### Medical Knowledge

1. Specify pathogen/host interactions that can affect the maintenance of health along with immune responses with focus on the cellular and molecular levels. (*Biomedical Science - Microbiology/Immunology*)
2. Examine the pathophysiologic basis of disease with an emphasis on host/pathogen interactions through selected clinical presentation. (*Biomedical Science - Pathology/Pathophysiology*)

#### Patient Care and Procedural Skills

1. Itemize common laboratory tests intended to detect pathogens and infectious diseases (Gram stain, stool O&P, wet mount, skin testing, cultures, rapid diagnostic testing, sputum smears, X-rays, etc.) using evidence-based and cost-effective principles. (*Diagnostic Testing - EPA 3*)
2. Discuss evidence-based, cost-effective, patient-centered treatment/management plans for common pathogens and infectious diseases. (*Treatment/Management - EPA 4*)

### Professional Development and Reflection Skills

Additionally, the American Osteopathic Association indicates several other competencies on which professional development and reflection across time will foster effective medical practice. These include the ability to work collaboratively as part of an interprofessional team; the maintenance of an inquisitive

and scientific approach to learning and medical practice; and the adoption of self-direction in lifelong learning and clinical decision-making. This course will contribute to the development of these longitudinal competencies or skills as indicated:

### Self-Directed and Lifelong Learning

Self-directed learning is a 4-step process that occurs within an encapsulated timeframe. The goal of self-directed learning is to help foster self-direction in your lifelong learning and clinical decision-making. In the second portion of this course (beginning 11/07/22), one way you will see the 4 steps of self-directed learning take shape is through an optional activity as follows:

1. **Self-Assessment of Learning Needs** – Students reflect on medical microbiology session learning objectives to isolate a microbiology learning objective that warrants their own additional study, clarification, or emphasis.
2. **Identification, Analysis, & Synthesis of Information** – Students locate and engage with relevant medical microbiology learning materials and/or supplemental resources as necessary to author a related board style question.
3. **Appraisal of Information Credibility** – Students submit their medical microbiology board style question for peer review, providing feedback on the products of peers during this time.
4. **Feedback on Information-Seeking Skills** – Based upon peer review, students submit revisions on their medical microbiology board style question, with faculty providing additional review and comment as is warranted.

Instructions for this optional activity will be posted before the second part of the course begins. Students will be able to earn up to two bonus points by successfully completing two rounds of this activity (one point for each separate round).

### Course Director

*(Note - Preferred method of contact is shown in italics)*

Name: Dennis N. Arvidson, PhD

Phone: 517-884-5001

Email: *arvidso4@msu.edu* (preferred, add “MMG 532” to the subject line)

Address: 567 Wilson Rd, room 5192 East Lansing, MI 48824 (Biomed Phys Sci building)

### Course Faculty

Name	Email	Phone	Site
Robert Abramovitch, PhD	<a href="mailto:abramov5@msu.edu">abramov5@msu.edu</a>	517-884-5416	EL
Cindy Arvidson, PhD	<a href="mailto:arvidso3@msu.edu">arvidso3@msu.edu</a>	517-884-1854	EL
Dennis N. Arvidson, PhD	<a href="mailto:arvidso4@msu.edu">arvidso4@msu.edu</a>	517-884-5001	EL
Karl Seydel, MD, PhD	<a href="mailto:seydel@msu.edu">seydel@msu.edu</a>	517-353-3211	EL
Carol Wilkins, PhD	<a href="mailto:mindockc@msu.edu">mindockc@msu.edu</a>	517-353-4927	EL
Yong-Hui Zheng, PhD	<a href="mailto:zhengyo@msu.edu">zhengyo@msu.edu</a>	517-884-5314	EL

## Curriculum Assistants

Site	Name	Email	Phone
East Lansing	Betsy Raleigh	<a href="mailto:raleig10@msu.edu">raleig10@msu.edu</a>	517-432-7295
DMC	Smita Deb	<a href="mailto:debssmita@msu.edu">debssmita@msu.edu</a>	517-884-9629
MUC	Beata Rodriguez	<a href="mailto:rodri583@msu.edu">rodri583@msu.edu</a>	586-263-6799

## Lines of Communication

- For administrative aspects of the Course: contact the course director.
- For content questions relating to a specific lecture or topic: contact the faculty presenter for that specific portion of the course or your SE MI on-site instructor.
- For absences/missed exams (see excused absence information below)
- Please set your notifications in D2L to immediate to receive posted News announcements. You may choose to receive notifications by email or SMS.

## Office Hours

Questions/concerns may be discussed individually by making an appointment with the Course Director, Dr. Dennis Arvidson, 567 Wilson Rd, Room 4180, or via e-mail: [arvidso4@msu.edu](mailto:arvidso4@msu.edu) The course director is generally available Monday 4pm or by appointment.

## Course Web Site

The URL for the Course website is: <https://d2l.msu.edu>

## Textbooks and Reference Materials

### Required

- MMG 532 Course Pack
- *Medical Microbiology*, 9th Ed., 2020, Murray, Rosenthal, Pfaller, (Mosby/Elsevier)  
ISBN:9780323673228 (Digital Copy of Murray)

### Recommended

- *Sherris & Ryan's Medical Microbiology*, 8th ed. 2022, Ryan et al. (McGraw Hill) ISBN: 978-1-260-46428-3 (Digital Copy of Sherris)
- *Schaechter's Mechanisms of Microbial Disease*. 6th ed. 2021, Engleberg, DiRita and Dermody (Wolters Kluwer Health/Lippincott Williams & Wilkins) ISBN: 9781975151485 (Digital Copy of 5th ed.)

## Course-based Academic Support

The course faculty are here to facilitate your learning. Please feel free to contact the Course Director with any personal issues you may have involving this course. Additional academic support resources can be accessed through MSUCOM Academic and Career Guidance and MSUCOM Personal Counseling.

## Course Begin and End Dates

MMG 532 begins on 8/29/22 and ends on 12/13/22. See addendum for detailed daily course schedule.

## Exams/Assessments

The successful achievement of learning objectives will require knowledge and skills acquired in other portions of the overall MSUCOM educational program. Students will be expected to apply concepts and vocabulary learned in other courses to problem-solving for exams/assessments in this course. To maintain security of assessments, you may NOT post questions on the discussion board regarding exam questions or quiz questions. Kindly email your questions to the course director.

Assessments	Projected Points	Material to be Covered
Unit Exam #1 9/12/2022	18	Lectures 1-6
Unit Exam #2 9/26/22	21	Lectures 7-13
Unit Exam #6 11/21/22	27	Lectures 14-20 and lab
Unit Exam #7 12/13/22	30	Lectures 21-30
VIBL quiz Open 11/9/22 on-line <sup>1</sup>	2.5 pts (0.5 pt/Q)	VIBL (Virtual Interactive Bacteriology Laboratory)
Lab report <sup>2</sup> 11/11/22 or 11/14/22	1.5 pts (0.5 pt/case)	Bacteriology Wet Lab Cases

Each exam item is worth 1 point; 18 + 21 + 27 + 30 + 2.5 + 1.5 = **100 pts total possible.**

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<sup>1</sup> Administered through Desire2Learn. Open for almost 24 hours, from 12AM 11/9/22 to 11:55PM on 11/9/2022. You will have 1 hour permitted once quiz has begun.

<sup>2</sup> There is **no make-up for the bacteriology wet lab cases.**

## Course Grades

The course faculty determine the threshold for satisfactory performance in each preclerkship course. Your course grade will be determined by the following formula:

$$\frac{(\text{Exam \#1} + \text{Exam \#2} + \text{Exam \#6} + \text{Exam \#7} + \text{VIBL quiz} + \text{Lab Report})}{(\text{total points possible})} \times 100\% \\ = \text{Final Percent Score}$$

- **P-Pass**—means that you have achieved a satisfactory level of performance and will receive credit for this course. To obtain a “P” grade for this course, you must earn a final percent scores of 70% or a final point total of 70.
- **N-No Grade**—means that you have not achieved a satisfactory level of performance and no credit will be granted for this course. If you earn a final percent score below 70% or a final point total of 70, you will receive an “N” grade.

- **Remediation** – If you receive an “N” grade and meet the criteria below, you will be eligible to attempt remediation:
  - Earn a final percent score in the course of 60% or greater,

The remediation opportunity for this course will be by examination. Passing is 70%.

All remediation exams for semester 2 – FS22 are scheduled for January 3rd and/or 4th, 2023. Refer to the remediation policy information provided in Section 2 of this syllabus for more information.

## Student Evaluation of the Course

We want your feedback on how to improve this course.

- Informal Feedback: Feel free to approach the Course director, Dr. Dennis Arvidson or any of the other course faculty with your reactions and suggestions.
- Formal Evaluation: In addition to the above, we ask every student in the class to complete formal on-line course evaluation upon conclusion of the course. Student feedback provides Course Directors with valuable information regarding their performance, the performance of their colleagues, and the quality of the course. The information gained from these evaluations is used to continuously improve future offerings of this course. Students in the Class of 2026 can access the evaluation system at: <https://msucom.medtricslab.com/users/login/>

## Section 2 – Policies

Please refer to the Student Handbook at <https://com.msu.edu/current-students/student-handbook-course-catalog> for these and other policies.

## Academic Honesty and Professionalism

Every student is responsible for their behavior and is expected to adhere to all MSU and MSUCOM policies of academic honesty and professionalism, as outlined in the MSUCOM Student Handbook and the MSU Medical Student Rights and Responsibilities. These documents may be found on the MSUCOM website. Additional guidance on academic integrity may be found on the MSU Ombudsperson’s website at <https://ombud.msu.edu/sites/default/files/content/Academic-Integrity-at-MSU-updated-August-2017.pdf>

Incidents of academic dishonesty or professional misconduct will be addressed by the faculty, administration, or staff; such action may include, but is not limited to: giving a failing grade, referring a student for judicial review, directing the student to the Associate Dean of Medical Education, evaluation by the Committee on Student Evaluation, and other actions outlined in the Medical Student Rights and Responsibilities document.

## Types of Class Sessions

MSUCOM designates lectures and other class sessions by their delivery method. While additional terms may be used in a specific course, the following will provide general guidance to the type of session:

- Live or livestream lecture: broadcast at a designated time; intended to be viewed synchronously
- Online Lecture: recorded content, may be viewed asynchronously
- Webinar: more interactive session where student participation is expected

- Lab: may refer to on-site clinical skills training or online lab session; see details

## **Changes to Course Schedule or Requirements**

Due to external circumstances, the course requirements published in the course syllabus and/or course schedule may be subject to change. Timely notification Communication regarding changes will be provided to enrolled students via the course D2L site and/or email. Any changes made will consider the MSU Code of Teaching Responsibility and the MSU Medical Students Rights and Responsibilities.

## **Mandatory and Optional Class Sessions**

All lectures and other class sessions are considered to be integral to the course, and students are expected to attend, view, or participate in each session. Some sessions are designated as “mandatory” in that attendance at the session on the scheduled date and time is required. Depending on the course, a student may earn points for attending or participating in a mandatory session or may lose points for failing to attend or participate. Availability of make-up points for missed sessions is at the discretion of the course director. Optional class sessions are offered by faculty to assist students in learning or reviewing course content.

## **Absences from Mandatory and Examinations/Assessments**

It is the responsibility of the student to know which class sessions are deemed as mandatory and comply with the MSUCOM policy regarding absences from mandatory sessions and examinations. This policy may be found in the MSUCOM Student Handbook on the MSUCOM website. Requests for an excused absence must be submitted via the [student portal](#).

## **Computer-Based Testing**

It is the responsibility of each student to know and comply with the MSUCOM policy on computer-based testing. This policy may be found in the MSUCOM Student Handbook on the MSUCOM website.

Administration of quizzes, examinations, and other assessments may be self-proctored, virtual proctored, or classroom proctored. Regardless of the proctoring method, you are expected to take the exam in a quiet, private setting. Just like in a proctored exam, you are not to access notes, textbooks, references, your phone, or other materials, and you are not to interact with fellow students or others. Remember that integrity is defined as what you do when no one is looking.

You are also expected to not record, photograph, take screen shots, make notes of, or otherwise attempt to make a copy of any exam item for any purpose, including your personal use. A student who is discovered to have cheated or breached exam security will be subject to formal disciplinary action, up to and including dismissal from MSUCOM.

If you have concerns or evidence of an exam security breach on this or any exam, you may report that to an MSUCOM administrator or through the online concern form.

## **Medical Student Rights and Responsibilities**

If problems arise between instructor and student, both should attempt to resolve them by informal, direct discussions. If the problems remain unsolved, the Associate Dean for Medical Education and/or the MSU Ombudsperson may be consulted. The MSU Medical Student Rights and Responsibilities (MSRR) document defines processes for additional steps, including submission of a formal grievance.

The MSSR may be found in the MSUCOM Student Handbook and online at [splife.studentlife.msu.edu](http://splife.studentlife.msu.edu).

### **iClicker Student Policy**

It is your responsibility to know and comply with the iClicker Student Policy. This policy may be found in the MSUCOM Student Handbook. If you forget your device or if it does not work, for whatever reason, no make-up experiences will be provided, and no points will be given.

If iClicker Student is used to take attendance for an on-campus event, you will be expected to arrive to the physical location on time and to stay for the duration of the assigned activity. If iClicker Student is used to take attendance for an online event, you will be expected to start the session at the scheduled time and participate for the duration of the assigned activity.

As a matter of professionalism, please note that under no circumstances should you provide access to your iClicker Student account to another student by sharing your device and/or account login, nor should you accept another student's device or login credentials to access iClicker Student on their behalf. Answering questions or checking in for attendance on behalf of another student by using their device or account is considered to be academic dishonesty and may result in disciplinary action up to and including dismissal from the college.

### **Remediation**

The MSUCOM Policy for Retention, Promotion and Graduation requires successful completion of each required course to progress in the curriculum. If you receive an "N" grade in a course, that grade will be recorded on your official transcript; you must meet the course requirement by successfully remediating or repeating the course.

Eligibility to attempt remediation of the course is determined by criteria described in the "Course Grades" section of the syllabus. If you are not eligible to attempt remediation, or if you fail the remediation, you must retake the course, provided you are eligible to continue in the program as determined by the Committee on Student Evaluation.

### **Student Safety and Well-being**

The MSUCOM website and Student Handbook provide information on student safety, campus security, access to medical care and counseling services, and to policies on injuries and exposures. If you have an injury or acute illness on campus, an incident report should be completed. The form is available on the MSUCOM intranet or from Academic Programs.

### **Academic Support Resources at MSUCOM**

As a way to acclimate you to the curriculum at MSUCOM, we have created a program called On Target: <https://michiganstate.sharepoint.com/sites/OnTargetforAcademicSuccess>

On this site you will find semester roadmaps which gives a general overview of each semester, tools needed to be successful in the curriculum and targeted resources for your unique learning situation. In each semester's road map, you will also find course expectations, tips for success, potential trouble spots, longitudinal course integration, and specific course study guides.



## Requests for Accommodations

Michigan State University is committed to providing equal opportunity for participation in all programs, services and activities. Requests for accommodations by persons with disabilities may be made by contacting the Resource Center for Persons with Disabilities (RCPD) at 517-884-7273 or online at [rcpd.msu.edu](http://rcpd.msu.edu). Once eligibility for an accommodation has been determined, you may be issued a Verified Individualized Services and Accommodation (VISA) form. Each VISA includes an expiration date; to request an accommodation, you must have an active VISA. You may work with RCPD to renew a VISA.

During the preclerkship curriculum, the college will help to coordinate accommodations for additional testing time. Provide your VISA to Nancy Thoma, [thoman@msu.edu](mailto:thoman@msu.edu), A333 East Fee Hall at the start of the term and/or at least two weeks prior to the assessment event (test, project, labs, etc.). Requests for accommodations received with less notice will be honored whenever possible. You may choose whether or not you wish to use accommodations for a particular event. For other accommodations, you may also review your VISA with the course director and curriculum assistant assigned to that course.

## Title IX Notifications

Michigan State University is committed to fostering a culture of caring and respect that is free of relationship violence and sexual misconduct, and to ensuring that all affected individuals have access to services. For information on reporting options, confidential advocacy and support resources, university policies and procedures, or how to make a difference on campus, visit the Title IX website at [titleix.msu.edu](http://titleix.msu.edu).

Limits to confidentiality. Essays, journals, and other materials submitted for this class are generally considered confidential pursuant to the University's student record policies. However, you should be aware that University employees, including instructors, may not be able to maintain confidentiality when it conflicts with their responsibility to report certain issues to protect the health and safety of MSU community members and others. Instructors must report the following information to other University offices (including the Department of Police and Public Safety):

- Suspected child abuse/neglect, even if this maltreatment happened when you were a child;
- Allegations of sexual assault, relationship violence, stalking, or sexual harassment; and
- Credible threats of harm to oneself or to others.

These reports may trigger contact from a campus official who will want to talk with you about the incident that you have shared. In almost all cases, it will be your decision whether you wish to speak with that individual. If you would like to talk about these events in a more confidential setting, you are encouraged to make an appointment with the MSU Counseling and Psychiatric Services.

## Addendum: Course Schedule

Course schedule for the current semester will be posted to D2L. Changes to the course schedule will be noted on the class academic calendar ("Google calendar") and communicated to students via D2L and/or email. The schedule for the most recent offering of this course will be posted on the MSUCOM website under Current Students/Preclerkship Curriculum.