

## Term Information

Effective Term Autumn 2021

## General Information

Course Bulletin Listing/Subject Area Microbiology  
Fiscal Unit/Academic Org Microbiology - D0350  
College/Academic Group Arts and Sciences  
Level/Career Graduate, Undergraduate  
Course Number/Catalog 5001  
Course Title Microbiology Teaching Assistant  
Transcript Abbreviation Micro TA  
Course Description The course aims to facilitate the learning process of becoming a proficient and successful TA of an introductory microbiology lab for undergraduate students.  
Semester Credit Hours/Units Fixed: 1

## Offering Information

Length Of Course 14 Week, 12 Week  
Flexibly Scheduled Course Never  
Does any section of this course have a distance education component? No  
Grading Basis Satisfactory/Unsatisfactory  
Repeatable Yes  
Allow Multiple Enrollments in Term Yes  
Max Credit Hours/Units Allowed 10  
Max Completions Allowed 10  
Course Components Laboratory  
Grade Roster Component Laboratory  
Credit Available by Exam No  
Admission Condition Course No  
Off Campus Never  
Campus of Offering Columbus

## Prerequisites and Exclusions

Prerequisites/Corequisites Completion of Graduate Teaching Orientation at Michael V. Drake Institute for Teaching and Learning. Must be assigned a TA slot by the Department of Microbiology.  
Exclusions None  
Electronically Enforced Yes

## Cross-Listings

Cross-Listings None

## Subject/CIP Code

Subject/CIP Code 26.0502  
Subsidy Level Doctoral Course  
Intended Rank Senior, Masters, Doctoral

## Requirement/Elective Designation

The course is an elective (for this or other units) or is a service course for other units

## Course Details

### Course goals or learning objectives/outcomes

- Become familiar with creating teaching materials for students attending a microbiology lab
- Develop experience in offering clear and informative pre-laboratory lectures
- Become proficient in guiding students through microbiology lab exercises
- Show understanding and knowledge of the many different concept and aspects involved teaching a science lab
- Become a knowledgeable TA with skilled classroom management
- Understanding the broad background and experiences of the students being taught and apply this knowledge to their teaching strategies
- Reflect on different areas of teaching lab for undergraduates and compose short reflection papers
- Participate in Journal Club and learn to present publications on pedagogy
- Be familiar with and understand how to relate to policies, rule and regulations

### Content Topic List

- Orientation
- Planning course content
- Creating course content
- Innovations in course content
- Understanding FERPA and classroom management
- Peer evaluation and reflection

### Sought Concurrence

No

## Attachments

- Microbiology\_5001\_syllabus\_submit.pdf: Syllabus  
*(Syllabus. Owner: Kwiek,Jesse John)*
- 5001\_Cover\_letter.pdf: Cover Letter  
*(Cover Letter. Owner: Kwiek,Jesse John)*
- Mapping2LG\_revised\_5001.pdf: LO Mapping to PLG  
*(Other Supporting Documentation. Owner: Kwiek,Jesse John)*

## Comments

## Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Kwiek,Jesse John	01/11/2021 07:39 AM	Submitted for Approval
Approved	Kwiek,Jesse John	01/11/2021 07:39 AM	Unit Approval
Approved	Haddad,Deborah Moore	01/11/2021 09:13 AM	College Approval
Pending Approval	Jenkins,Mary Ellen Bigler Hanlin,Deborah Kay Oldroyd,Shelby Quinn Hilty,Michael Vankeerbergen,Bernadette Chantal	01/11/2021 09:13 AM	ASCCAO Approval





11 January 2021

**RE: Microbiology 5001: Microbiology TA Training**

Dear Colleagues,

We propose a new undergraduate/graduate level course, Microbiology 5001, which aims to formalize the teaching assistant (TA) training that we conduct with our graduate students who TA for Microbiology 4000. This course is primarily intended for Masters or PhD students, but we list it as a 5000-level class to keep it accessible to undergraduates who might serve as a TA (uncommon, but possible). This course reinforces our commitment to graduate student training, in to ensure that our undergraduates have an outstanding learning experience. The course ensures that the TAs understand the know the regulations associated with laboratory instruction, that they can effectively communicate course material to undergraduates through the written and spoken word, and it gives the students time to reflect on their own development as teachers. This course will be taught by Dr. Mette Ibba (Microbiology), who has been running the Microbiology 4000 labs (or their quarter semester equivalents) for more than a decade.

We thank you for your consideration.

Sincerely,

Jesse J. Kwiek  
Associate Professor  
Vice Chair for Teaching & Undergraduate Affairs  
Department of Microbiology  
476 Biological Sciences Building  
484 West 12th Avenue, Columbus, OH 43210  
[kwiek.2@osu.edu](mailto:kwiek.2@osu.edu); Phone: 614-292-3256; Fax: 614-292-8120

## **Syllabus for TA training course Microbiology 5001**

### **Course Description**

The course, Microbiology 5001, is designated for undergraduate and graduate students, who wish to enroll as a laboratory teaching assistants (TAs) in a microbiology course offered by the Department of Microbiology. The course aims to facilitate the learning process of becoming a proficient and successful TA of an introductory microbiology lab for undergraduate students (i.e. Microbiology 4000). Aside from working as a TA, students will have the opportunities to create and practice pre-laboratory PowerPoint presentations while receiving constructive feedback from peers and the Instructor, discuss teaching strategies with Mentor TAs including how to achieve respectable relationships with their students. The training also involves drafting of short papers reflecting on particular areas of their acquired semester-long teaching experiences, and there will be opportunity to discuss laboratory management, generate ideas of how to innovate the experience of their students' lab practices. Students will also participate in Journal Club events, where each student will present one publication on pedagogy and teaching strategies. Towards the end of the term, students will complete a comprehensive quiz covering topics of their acquired knowledge regarding OSU policies, lab-related policies and related statements. The term will conclude with a self-evaluation paper, and an evaluation by the instructor that aims on specifying students' growth and gained knowledge on how to successfully teaching a science lab for undergraduate students.

### **Prerequisite**

Graduate Teaching Orientation at Michael V. Drake Institute for Teaching and Learning.

### **Concurrent enrollment**

Undergraduate and graduate students currently enrolled as TAs in a microbiology lab, such as the lab component of the introductory/general microbiology courses Microbiology 4000, 4100 or Microbiology 4140.

Instructor: **Dr. Mette Ibba**  
Email: [ibba.2@osu.edu](mailto:ibba.2@osu.edu)  
Phone: 614-292-0509  
Office: 310 Biological Sciences Building, 484 W 12<sup>th</sup> Ave  
Office Hours: As needed

### **Time and Location:**

Class will meet each Monday at 2 pm – 3:30 pm in room 367 of the Biological Sciences Building.

### **Credit Hours:**

Semester long 1 credit hour course

### **Contact hours and work expectations:**

Students should expect 1 - 1.5 hour spent in class, and 2 - 3 hours spent on preparation for teaching Microbiology 4000, homework and activities such as write-ups, reflections, and evaluation of peers.

### **Grading breakdown:**

This course is Satisfactory/Unsatisfactory (S/U) graded. Out of 100 points, 0 - 69.9% equals an unsatisfactory grade, and 70% and above (105 points and above) equals a satisfactory grade.

**Required and supplemental material:**

Basic and Practical Microbiology Lab Manual will be provided as will relevant documents and related links to websites.

**Learning objectives**

- Become familiar with creating teaching materials for students attending a microbiology lab
- Develop experience in offering clear and informative pre-laboratory lectures
- Become proficient in guiding students through microbiology lab exercises
- Show understanding and knowledge of the many different concept and aspects involved teaching a science lab
- Become a knowledgeable TA with skilled classroom management
- Understanding the broad background and experiences of the students being taught and apply this knowledge to their teaching strategies
- Reflect on different areas of teaching lab for undergraduates and compose short reflection papers
- Participate in Journal Club and learn to present publications on pedagogy
- Be familiar with and understand how to relate to policies, rule and regulations

<b>Course Schedule</b>		
<b>TASKS</b>	<b>DESCRIPTION OF TASKS</b>	<b>POINTS</b>
<b>Week 1</b> <b>Introduction to your role as TA</b> <b>(This meeting will take place</b> <b>alongside with all M4000 TAs)</b>	<b>PreLab orientation:</b> Introduction to Carmen, Departmental expectations Lab-specific expectations Lab Safety Resources	5
<b>Week 1</b> <b>Make plans for semester with Dr.</b> <b>lbba individually</b>	Write an outline of plan agreed and submit to Carmen	5
<b>Weeks 2 to 4</b> <b>CREATE</b>	Redesign a provided PreLab PowerPoint presentation by adding add 3 informative slides. Record the PowerPoint presentation on Zoom for Instructor and Peers to pre-view and evaluate prior to presenting for your students. Develop 3 exit questions relating to the specific lab period for students to answer	20
<b>Weeks 5 to 7</b> <b>INNOVATE</b>	Create an online make-up lab for students who missed the lab period. Write an outline and submit to Instructor on Carmen	20
<b>Weeks 1 to 12</b> <b>PARTICIPATE</b>	Attend weekly TA meetings  Attend an online FERPA training course  Topics for discussion with peers on Carmen: 1) Classroom management 2) Innovate your teaching	20
<b>Weeks 8 to 10</b> <b>REFLECT</b>	Evaluate one of your peers' PowerPoint presentation (Zoom recordings and in-lab presentation). Submit completed TA Evaluation Form and write a short reflection paper about your peer's presentation	20

<b>Weeks 10 &amp; 11</b> <b>Discuss teaching strategies with Mentor TA</b>	Create 3 questions for Mentor TA to answer that will help enrich your teaching. Arrange a time to discuss with Mentor TA. Write a short reflection paper focusing on your Mentor TAs' answers.	10
<b>Week 3 to 14</b> <b>Pedagogy and Teaching Strategy Journal Club</b>	Attend all Journal Club event and Present one publication	20
<b>Weeks 2 to 13</b> <b>Read documents and access link to OSU Policies, Rules and Regulation etc.</b>	Complete and submit Carmen quiz covering Policies, Rules and Regulations, Diversity and Inclusion, implicit bias, harassment, Mental Health, Classroom Management, and accessibility accommodations	20
<b>Weeks 13 &amp; 14</b> <b>Self-evaluation Evaluation by Dr. Ibba and peers</b>	Self-evaluation. End of semester discussing with Dr. Ibba	10
<b>TOTAL POINTS</b>		<b>150</b>

### Summary of Tasks:

#### Oral Presentations:

1. Give a total of 12 PreLab Presentations to students in the microbiology lab (max 20 min -30 min)
2. Present your modified PreLab PowerPoint to Instructor and peers for review and comments. (Record on Zoom and share your screen). Present the modified PreLab PowerPoint to your students (max 20-30 min)

#### Write-ups:

1. Outline course tasks agreed in first meeting with Dr. Ibba (1 page)
2. Create an online make-up lab (1- 2 pages)
3. Self-evaluation incl. assessment of growth and accomplishment of learning objectives (1 page)

#### Reflection papers:

1. Peer's PreLab PowerPoint presentations (1 page)
2. Discussion with Mentor TA (1 page)

#### Discussions on Carmen with peers

1. Classroom management (15 min)
2. Innovate your teaching (15 min)

#### Pedagogy Journal club

1. Attend all Journal Club events
2. Present one publication for peers and Instructor

#### Exit questions:

1. Create questions relating to a specific lab period for students to answer before exiting the lab. Can be administered as students check-out from lab. Answers can be verbally or as a short answer write-up. Your students will earn 1 bonus point.

#### Quiz:



1. Complete and submit 1 quiz consisting of 20 question on Carmen. The questions cover general OSU and Lab policies, Diversity and Inclusion, implicit bias, harassment, mental health, classroom management, lab safety and academic misconduct. Documents and relevant website links will be provided and should be studied before completing the quiz.

## **Accessibility Accommodations**

The University strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let Dr. Mette Ibba know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: [slds@osu.edu](mailto:slds@osu.edu); 614-292-3307; [slds.osu.edu](http://slds.osu.edu); 098 Baker Hall, 113 W. 12<sup>th</sup> Avenue.

**Accessibility of Course Technology:** This course requires use of Carmen (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please contact Dr. Mette Ibba. For more information please access the following links.

- [CarmenCanvas Accessibility](#)
- [CarmenZoom Accessibility](#)

## **Statement on Mental Health**

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting [ccs.osu.edu](http://ccs.osu.edu) or calling 614-292-5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on call counselor when CCS is closed at 614-292-5766 and 24 hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-800-273- TALK or at [suicidepreventionlifeline.org](http://suicidepreventionlifeline.org).

## **Statement on Title IX**

Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories (e.g., race). If you or someone you know has been sexually harassed or assaulted, you may find the appropriate resources at <http://titleix.osu.edu> or by contacting the Ohio State Title IX Coordinator, Kellie Brennan, at [titleix@osu.edu](mailto:titleix@osu.edu) .

## **Statement on Diversity**

The Ohio State University affirms the importance and value of diversity in the student body. Our programs and curricula reflect our multicultural society and global economy and seek to provide

opportunities for students to learn more about persons who are different from them. We are committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among each member of our community; and encourages each individual to strive to reach his or her own potential. Discrimination against any individual based upon protected status, which is defined as age, color, disability, gender identity or expression, national origin, race, religion, sex, sexual orientation, or veteran status, is prohibited.

### **Statement on Academic Misconduct**

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct <http://studentlife.osu.edu/csc/>.

### **Copyright Disclaimer**

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

## Required Prerequisites for the Major

## Learning Goals

Semester Course Number		Course Title	Semester hrs	1	2	3	4	5
BIOL 1113		Biological Sciences: Energy Transfer and Development	4	B			B	
BIOL 1114		Biological Sciences: Form, Function, Diversity, and Ecology	4	B			B	
MATH Req. #1	MATH 1151	Calculus 1 (5 Hrs)	5	B				
	or							
	MATH 1156	Calculus for Biol. Sciences (5 Hrs)						
MATH Req. #2	MATH 1152	Calculus 2 (5 Hrs)	3 - 5	B				
	or							
	MATH 1157	Math. Modeling for Biol. Sciences (5 Hrs)						
	or							
	STATS 1450	Intro. to the Practice of Statistics (3 Hrs)						
	or							
	STATS 2480	Statistics for the Life Sciences (3 Hrs)						
CHEM 1210		General Chemistry 1	5	B				
CHEM 1220		General Chemistry 2	5	B				
CHEM 2510		Organic Chemistry 1	4	B	B			
CHEM 2520		Organic Chemistry 2	4	B	B			
CHEM 2540		Organic Chemistry Lab 1	2	B	B		B	
PHYS 1200		Mechanics, Thermal Physics, Waves	5	B			B	
PHYS 1201		E&M, Optics, Modern Physics	5	B			B	
<b>Total Hrs.</b>			<b>46 - 48</b>					

Goal: B: Beginning; I, Intermediate; A, Advanced

## Required Core for the Major

## Learning Goals

Semester Course Number		Course Title	Semester hrs	1	2	3	4	5
MICRBIOL 4100		General Microbiology	5	I	I	I	I	I
MICRBIOL 4110		Pathogenesis and Immunobiology	3	A	A	A		
MICRBIOL 4120		Microbial Physiology and Diversity	3	A	A	A		
MICRBIOL 4130		Microbial Genetics	3	A	A	I		
MICRBIOL 4140		Molecular Microbiology Laboratory	3	I	I	I	A	A
BIOCHEM 4511		Biochemistry	4	I	A			I
<b>Total Hrs.</b>			<b>21</b>					

Goal: B: Beginning;  
I, Intermediate; A, Advanced

## Electives: Total Required 9 hrs Group 1: 3-9 hrs

## Learning Goals

Semester Course Number		Course Title	Semester hrs	1	2	3	4	5
MICRBIOL 4150		Immunobiology Laboratory	3	I	I	A	A	A
MICRBIOL 4193		Individual Studies	1-3					
MICRBIOL 4194		Group Studies	1-3					
MICRBIOL 4591S		DNA Finger Printing Workshops in Columbus PS	1				A	A
MICRBIOL 4797		Study at a Foreign Institution	1-19					

MICRBIOL 4798		Study Tour Domestic	1-19					
MICRBIOL 4998		Undergrad Research in Microbiology	1-5				A	A
MICRBIOL 4998H		Honors Research	1-5				A	A
MICRBIOL 4999		Undergrad Research in Microbiology- Thesis	1-5				A	A
MICRBIOL 4999H		Honors Research-Thesis	1-5				A	A
MICRBIOL 5122		Immunology	3				A	
MICRBIOL 5129		Cellular and Molecular Biology of Pathogenic Eukaryotes	3			A	A	
MICRBIOL 5147		Eukaryotic Pathogens	3			A	A	A
MICRBIOL 5149		Introductory Virology	3			A	A	
MICRBIOL 5150		Microbial Ecology	3			A	A	A
MICRBIOL 5155		Environmental Microbiology	3			A	A	A
MICRBIOL 5161		Bioinformatics and Molecular Microbiology	3			A	A	A
MICRBIOL 5170		Microbes and Evolution	3				A	
MICRBIOL 5001		Microbiology Teaching Assistant Training	1				A	A
MICRBIOL 5270		Antibiotics and Microbial Natural Products	3			A	A	A
MICRBIOL 5536		Food Microbiology Lecture	3			A	I	A
MICRBIOL 5546		Food Microbiology Laboratory	3			A	I	A
MICRBIOL 6020*		Microbial Physiology and Biochemistry	3			A	A	A
MICRBIOL 6080*		Advanced Microbial Genetics	3			A		A
MICRBIOL 6790		Special Topics: Scientific Writing	1					A
MICRBIOL 7010*		Cellular and Molecular Immunology	3				A	A
MICRBIOL 7020*		Physiology Meets Pathogenesis	2			A	A	A
MICRBIOL 7023*		Molecular Immunology: Lecture	3				A	A
MICRBIOL 7050*		Fermentation Biotechnology	3			A		A
MICRBIOL 7060*		Advanced Topics in Molecular Microbiology	2			A		A
MICRBIOL 7536*		Advanced Food Microbiology	3			A	I	A
MICRBIOL 7724*		Molecular Pathogenesis	3			A	A	A
MICRBIOL 7889*		Host-Pathogen Interactions: Research Seminar	1				A	A
MICRBIOL 7899*		Microbiology Colloquium	1					
		<b>Total Hrs.</b>	<b>3-9</b>					

\*Indicated graduate-level course. Requires special permission to enroll. **Goal:** B: Beginning; I, Intermediate; A, Advanced

Electives: Total Required 9 hrs  
Group 2: 0-6 hrs

Learning  
Goals

Semester Course Number	Course Title	Semester Hrs.	1	2	3	4	5
BIOCHEM 5621	Intro Biological Chemistry Laboratory	4	I			I	
MOLGEN 4500	General Genetics	3		I			
MOLGEN 4606	Molecular Genetics I	4		I			
MVIMG 5000	Evolution of Emerging Viruses	2			A		

PLPATH 5010		Phytobacteriology	2		I	A		
PLPATH 5020		Introduction to Plant Virology	2		I	A		
PLPATH 5040		Science of Fungi: Mycology Lecture	3	I	I	A		
ANSCI 6090*		Anaerobic Microbiology	3		A			
ENR 5263		Biology of Soil Ecosystems	3	I	A			
ENR 5266		Field Soil Investigations	3	I			A	
		<b>Total Hrs.</b>	<b>0-6</b>					
		<b>Total Hrs. for the Major</b>	<b>30</b>					

\*Indicated graduate-level course. Requires special permission to enroll. **Goal:** B: Beginning; I, Intermediate; A, Advanced

**BS - Program Learning Goals (U-PLG; B, beginning; I, Intermediate; A, Advanced)**

1. Students acquire the ability to interrelate and apply the fundamental concepts of chemistry, physics and mathematics to the functions of living cells.
2. Students understand the chemical properties of biological molecules and how these molecules function in the molecular mechanisms underlying physiological processes in microbial cells.
3. Students understand evolutionary processes, the diversity of microorganisms, and how microorganisms impact their environment, including their roles in human health and disease.
4. Students acquire the ability to design experiments to test hypotheses, perform analyses, interpret and analyze data, and present scientific information in written and oral formats.
5. Students acquire the ability to appraise scientific data presented in the popular press for accuracy and scientific merit and understand issues and ethical conflicts associated with applications of biotechnology.

**Microbiology Ph.D. - Program Learning Goals (P-PLG; B, beginning; I, Intermediate; A, Advanced)**

PhD graduates of Microbiology should be able to:

1. Demonstrate a broad base of knowledge in several areas, including microbial physiology, genetics, biochemistry, and pathogenesis.
2. Demonstrate in-depth knowledge in an area of interest.
3. Make an original and substantial contribution to the field, as indicated by at least one first-author publication.
4. Effectively communicate science through oral and written presentations to both scientific and general audiences.

**Micrbiology 5001 learning Goals (Mapped to Program Learning Goals)**

1. Become familiar with creating teaching materials for students attending a microbiology lab (**U-PLG-U4A, PLG-P1I**)
2. Develop experience in offering clear and informative pre-laboratory lectures (**PLG4A; PLG-P4I**)
3. Become proficient in guiding students through microbiology lab exercises (**PLG4A; PLG-P4I**)
4. Show understanding and knowledge of the many different concept and aspects involved teaching a science lab (**PLG5A; PLG-P4I**)
5. Become a knowledgeable TA with skilled classroom management (**PLG4A; PLG-P4I**)
6. Understanding the broad background and experiences of the students being taught and apply this knowledge to their teaching strategies (**PLG5A; PLG-P4I**)
7. Reflect on different areas of teaching lab for undergraduates and compose short reflection papers (**PLG5A; PLG-P4I**)
8. Participate in Journal Club and learn to present publications on pedagogy (**PLG5A; PLG-P4I**)