OSU MICROBIOLOGY GRADUATE PROGRAM HANDBOOK

Programs, Degree(s), Year:
Microbiology, Ph.D., M.S., A.M.S., N.T.M. 2021

Table of Contents

OSU MICROBIOLOGY GRADUATE PROGRAM HANDBOOK .................................................. 1

I. Introduction ......................................................................................................................... 3
II. COVID-19 .......................................................................................................................... 3
III. General Contact Information ......................................................................................... 3
IV. Arrival checklist ................................................................................................................ 4
V. Academic and Support Resources ..................................................................................... 4
VI. Course loads, continuous enrollment, leave, breaks, grades ........................................ 5
   1. Minimum Course Loads ................................................................................................. 5
   2. Continuous Graduate Enrollment ................................................................................. 5
   3. Leave of Absence .......................................................................................................... 6
   4. Unauthorized Break in Registration ............................................................................ 6
   5. Grade Requirements .................................................................................................... 6
VII. Grievance Procedures .................................................................................................... 7
VIII. Student Conduct and Community Standards ............................................................... 7
IX. Office of Equal Opportunity and Access ......................................................................... 7
X. Program Information and Policies for Ph.D., M.S., and A.M.S. degrees ....................... 8
   1. Overview/background of program ................................................................................ 8
   2. Appointment types ....................................................................................................... 8
   3. Degree options and times to completion .................................................................... 9
   4. Learning outcomes/competencies .............................................................................. 9
   5. Concentrations: .......................................................................................................... 10
   6. Coursework .................................................................................................................. 10
   7. Program of Study ........................................................................................................ 11
   8. Research Requirements .............................................................................................. 12
   9. Major professor .......................................................................................................... 13
  10. Thesis committee ......................................................................................................... 13
  11. Graduate Council Representative .............................................................................. 14
  12. Program meeting ......................................................................................................... 14
  13. Annual meeting with your graduate adviser and submitting your annual report ........ 14
  14. Teaching requirement ................................................................................................. 15
  15. Public Presentation Requirement ................................................................................ 15
  16. Microbiology Seminar Series ..................................................................................... 15
17. Other Components of your Graduate Experience .................................................................15
18. Ph.D. Qualifying Examination (Preliminary Exam): Ph.D. students only .................................15
19. Final Oral Examination ...........................................................................................................17
20. Proposed timeline to degree completion ..............................................................................17
22. Value and Cost of Graduate Education ..................................................................................19
23. Program/department specific funding opportunities (GTA, GRA, fellowships, awards, travel grants, etc.) .........................................................................................................................20
24. Fellowships outside the department ......................................................................................21

Xl. Program Information and Policies for N.T.M. Degree: THIS SECTION IN PREPARATION ......22
  1. Overview/background of program ..........................................................................................22
  2. Learning outcomes/competencies ..........................................................................................22
  3. Concentrations .......................................................................................................................22
  4. Coursework ............................................................................................................................22
  5. Program of Study ....................................................................................................................22
  6. Adviser ....................................................................................................................................22
  7. Capstone Project .....................................................................................................................22
  8. Annual Meeting with graduate adviser and submission of progress report .........................22
  9. Microbiology Seminar Series ...............................................................................................22
10. Other components of your graduate experience ...................................................................22
11. Proposed timeline to degree completion ..............................................................................22

Addendum I: Scoring rubrics for Ph.D. preliminary examination, M.S. and Ph.D. thesis defenses .........................................................................................................................................................23
Addendum II: Annual progress reports for M.S. and Ph.D. ..........................................................26
I. Introduction
This guide contains information on graduate study in the Department of Microbiology at Oregon State University. Pertinent material from the Graduate School is also included. Although this handbook is updated regularly, rules, regulations, and deadlines may change at any time. Students should refer to the Head Advisor, Department Head, or department web site for current departmental policies, and to the Graduate School for policies administered by the Graduate School.

The Microbiology Department offers the Ph.D., Master’s of Science (M.S.), Accelerated Master’s of Science (A.M.S.), and Non-Thesis Masters (N.T.M.) degrees. Sections I through IX of this handbook apply to graduate students in all of these degree programs. Program/academic requirements for the Ph.D., M.S., and A.M.S. start in section X. Program/academic requirements for the N.T.M. start in Section XI.

II. COVID-19
Graduate students can find information about the evolving COVID-19 situation on the website of OSU’s Graduate School:

https://gradschool.oregonstate.edu/coronavirus-info-graduate-students

The Department of Microbiology has a Research Resumption Plan in place that all Graduate students should know and adhere to. In addition, each laboratory has guidelines for their specific research environment. It is important that students communicate with their PI/lab head and stay current on the rapidly developing situation.

III. General Contact Information

a. Program-specific contacts:
   i. The academic point people for the program:
      Dr. Stephen Giovannoni, Head of the Microbiology Department,
      Dr. Jerri Bartholomew, Graduate Affairs Committee Chair, Jerri.Bartholomew@oregonstate.edu
      Dr. Rebecca Vega Thurber, Graduate Adviser, Rebecca.Vega-Thurber@oregonstate.edu
      Dr. Rick Colwell, Admissions Committee Chair rcolwell@coas.oregonstate.edu
   ii. The administrative person for the program:
      Amy Timshel, Department Head Assistant; Nash 228, amytimshel@oregonstate.edu
   iii. The person for scheduling classes for GTA assignments:
      Dr. Linda Bruslind, Senior Instructor, bruslindl@oregonstate.edu
   iv. The person for reimbursement (travel and other expenses):
      Ryan King, Accountant, Arts and Sciences Business Center, ryan.king@oregonstate.edu
   v. The person for course overrides, afterhours permits, shipping and mailing, physical keys to building offices and labs:
      Sally Tatala, Microbiology Office Assistant, Nash 226, sally.tatala@oregonstate.edu
   vi. The person to contact for all web information, updates, flyer, corrections, design
      Bonne Johnson, Web Design, Nash 225, bonnie.johnson@oregonstate.edu
   vii. Teaching labs technician/assistant:
      Valerie Elias, Microbiologist, Nash 324 Valerie.Elias@oregonstate.edu

b. Program website address: https://microbiology.edu/
c. Internal Links: https://microbiology.oregonstate.edu/content/internal-links
   
   i. Room and equipment reservations
   ii. Safety information and training
   iii. Departmental policies and procedures

d. Graduate School
   
   • The Graduate School at OSU
   • (1) assures quality and consistent interpretation of Graduate Council policies related to graduate education across all programs. The OSU Catalog is the official source for information regarding OSU graduate education policy and procedures. It is the student's responsibility to refer to the catalog for this information.
   • (2) supports students throughout the academic life cycle, from admissions to degree completion.
   • (3) offers an array of professional development opportunities specific to the success of graduate students. Topics covered in these offerings include research and ethics, teaching and facilitation, writing and communication, leadership and management, career skills, grad life and wellness. Please visit the Graduate School links to browse the student success offerings.

e. University Emergency Contacts

OSU is dedicated to providing a safe and secure learning and living environment for its community members. The Department of Public Safety provides resources, information, emergency phone numbers, and protocols for maintaining personal safety. Sign up for OSU Alerts to get timely messages delivered right to your phone or inbox regarding university closures and other emergency situations.

IV. Arrival checklist

A few things to do when you first arrive at OSU:

• Get a University ID Card. The OSU ID Card is the official identification card for students, faculty and staff. It functions as a meal card, library card and more. The ID Center is located in Memorial Union room 103. Part of the process can be completed online.
• Sign Up for Your Email Account. Set up your ONID (OSU) email as soon as possible. Instructions are available at https://onid.oregonstate.edu/
• ONID is the university’s official email addressing system and you will miss crucial emails if you do not activate this account.
• Meet with your Major Professor or new student graduate advisor. It is important to meet with an advisor before registering for your classes and to discuss objectives for your first year in the program.
• Register for Classes. You should register after conferring with your Major Professor or new student graduate advisor. Check the Academic Calendar deadline dates for registering for classes and to avoid late fees.
• Get a desk assignment
• Pick up your keys and have your ID card activated for after-hours access to Nash Hall.
• Get an after hours permit and keys to your lab.

V. Academic and Support Resources

OSU offers a wide array of academic and support resources designed to meet graduate student needs. Some of the more commonly used resources are included below. For a more complete list, please visit the Graduate School’s Student Resources web page. Note that some services are campus-specific (OSU Cascades Campus Life and Ecampus Student Services provide services to graduate students pursuing degrees or certificates via those specific venues).

Campus Safety – Emergency phone numbers, university alerts
Career Development Center – Resume/CV, networking, job search strategies
Childcare and Family Resources – University child care centers, child care assistance
Counseling and Psychological Services (CAPS) – Individual and group counseling
Cultural Resource Centers – Cultural based community centers, social support
VI. Course loads, continuous enrollment, leave, breaks, grades

The OSU Schedule of Classes is available online and contains academic regulations and registration procedures that apply to all students in the university, as well as the final examination week schedule. The online catalog is the source for up-to-date changes for the current and immediately upcoming term. It is your responsibility to register for the appropriate number of credits that may be required for any funding eligibility and/or to meet the requirements of the continuous enrollment policy. Problems arising from registration procedures, such as late registration, adding or withdrawing from courses after deadlines, or late changes from letter or S/U grading are resolved through the petition for change in registration filed with the Graduate School. A late registration fee may be applied.

1. Minimum Course Loads

Course load requirements for graduate students are established by the Registrar and the Graduate School. You are considered a “full-time” graduate student if you are registered for 12 credits in a given academic term, but we require all students to enroll in 16. All graduate students in Microbiology are generally full-time students. You are considered a “part-time” graduate student if you have less than nine credits. If you are a degree-seeking student, you must be registered for a minimum of three graduate credits in any term you wish to be enrolled and access university resources, including the term of the final defense.

Students are responsible for staying current on course load requirements that may supersede the Graduate School requirements (i.e., international, financial aid, veterans).

2. Continuous Graduate Enrollment

All graduate students enrolled in a degree program must register continuously for a minimum of 3 graduate credits each term (fall, winter, and spring terms) until all degree requirements are met, regardless of student’s location. Students on approved leave are exempt from the continuous enrollment policy for the term(s) they are on leave.

Graduate students who use facilities or faculty/staff time during summer session are required to register for a minimum of 5 credits during the summer session. Students defending in the summer term are required to register for a minimum of 5 graduate credits.
Students may appeal the provisions of the continuous graduate enrollment policy if extraordinary circumstances arise, by submitting a detailed request in writing to the Dean of the Graduate School. Scheduling difficulties related to the preliminary oral exam or the final oral exam are not considered an extraordinary circumstance.

Graduate assistantship eligibility requires enrollment levels that supersede those contained in this continuous enrollment policy. Various agencies and offices maintain their own registration requirements that also may exceed those specified by this continuous enrollment policy (e.g., those of the Veterans Administration, Immigration and Naturalization Service for international students, and those required for federal financial aid programs.) Therefore, it is the student’s responsibility to register for the appropriate number of credits that may be required for funding eligibility and/or compliance as outlined by specific agency regulations under which they are governed.

3. Leave of Absence

Leave of Absence status is available to eligible students who need to suspend their program of study for good cause. The time the student spends on approved leave will be included in any time limits prescribed by the university relevant to degree completion. Students on approved leave may not a) use any university facilities, b) make demands upon faculty time, c) receive a fellowship or financial aid, or d) take course work of any kind at Oregon State University. Leave of Absence/Intent to Resume Graduate Study Forms must be received by the Graduate School at least 15 working days prior to the first day of the term involved. Family Medical Leave Act (FMLA) may be granted at any point during a term.

4. Unauthorized Break in Registration

Degree seeking graduate students who take an unauthorized break in registration relinquish graduate standing at the University.

To have graduate standing reinstated after an unauthorized break, students are required to reapply to their program (complete the online graduate admission application, pay the application fee, and may be required to register for three graduate credits for each term of unauthorized break in registration). It is advisable that students in this situation state that they are applying for readmission in the application packet. A reapplication does not ensure admittance to the program.

5. Other Requirements

A grade-point average of 3.00 is required: 1) for all courses taken as a degree-seeking graduate student, and 2) for courses included in the graduate degree or graduate certificate program of study. Grades below C (2.00) cannot be used on a graduate program of study. A grade-point average of 3.00 is required before the final oral or written exam may be undertaken. Enforced graduate-level prerequisite courses must be completed with a minimum grade of C. Programs may have more stringent grade requirements than those prescribed by the Graduate School.

Incomplete Grades

An “I” (incomplete) grade is granted only at the discretion of the instructor. The incomplete that is filed by the instructor at the end of the term must include an alternate/default grade to which the incomplete grade defaults at the end of the specified time period. The time allocated to complete the required tasks for the course may be extended by petition to the University Academic Requirements Committee. You can obtain the form from the Registrar’s Office. It is the student’s responsibility to see that “I” grades are removed within the allotted time.

Student Records

Both federal and state laws permit Oregon State University staff to release directory information (e.g. name, address, degree program, birth date) to the general public without your consent. You can prohibit the release of directory information to the public by signing the Confidentiality Restriction form available from the Registrar’s Office. It will not prohibit the release of directory information to entities of Oregon State University that have a “need to know” to accomplish their required tasks. It further will not prohibit Oregon State University
departments from including your name on mailing lists for distribution of materials that are essential to your enrollment at Oregon State University.

VII. Grievance Procedures

All students desiring to appeal matters relating to their graduate degree should follow the Grievance Procedures for Graduate Students. Graduate assistants, whose terms and conditions of employment are prescribed by the collective bargaining agreement between OSU and the Coalition of Graduate Employees, American Federation of Teachers Local 6069, should also refer to that document and seek guidance from OSU’s Office of Human Resources.

VIII. Student Conduct and Community Standards

Graduate students enrolled at Oregon State University are expected to conform to basic regulations and policies developed to govern the behavior of students as members of the university community. The Office of Student Conduct and Community Standards (SCCS) is the central coordinating office for student conduct-related matters at Oregon State University.

Choosing to join the Oregon State University community obligates each member to a code of responsible behavior which is outlined in the Student Conduct Code. The assumption upon which this Code is based is that all persons must treat one another with dignity and respect in order for scholarship to thrive.

Violations of the regulations subject a student to appropriate disciplinary action.

Academic Dishonesty

Academic Dishonesty is defined as an act of deception in which a student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the Student’s own efforts or the efforts of another. It includes:

- **CHEATING** — use or attempted use of unauthorized materials, information or study aids, or an act of deceit by which a Student attempts to misrepresent mastery of academic effort or information. This includes but is not limited to unauthorized copying or collaboration on a test or assignment, using prohibited materials and texts, any misuse of an electronic device, or using any deceptive means to gain academic credit.
- **FABRICATION** — falsification or invention of any information including but not limited to falsifying research, inventing or exaggerating data, or listing incorrect or fictitious references.
- **ASSISTING** — helping another commit an act of academic dishonesty. This includes but is not limited to paying or bribing someone to acquire a test or assignment, changing someone's grades or academic records, taking a test/doing an assignment for someone else by any means, including misuse of an electronic device. It is a violation of Oregon state law to create and offer to sell part or all of an educational assignment to another person (ORS 165.114).
- **TAMPERING** — altering or interfering with evaluation instruments or documents
- **PLAGIARISM** — representing the words or ideas of another person or presenting someone else's words, ideas, artistry or data as one's own, or using one's own previously submitted work. Plagiarism includes but is not limited to copying another person's work (including unpublished material) without appropriate referencing, presenting someone else's opinions and theories as one's own, or working jointly on a project and then submitting it as one's own.

Academic Dishonesty cases are handled initially by the academic units, following the process outlined in the University’s Academic Dishonesty Report Form, and will also be referred to SCCS for action under these rules.

IX. Office of Equal Opportunity and Access

The OSU Office of Equal Opportunity and Access (EOA) is responsible for overseeing compliance with civil rights and affirmative action laws, regulations, and policies, to ensure equitable and inclusive environments for all Oregon State University community members. EOA serves as the University's Title IX and Americans with Disabilities Act/Section 504 coordinating office.
EOA defines sexual harassment as the following:

- Unwelcome* sexual advances, requests for sexual favors and other verbal or physical conduct of a sexual nature when:
- Submission to such conduct is made either explicitly or implicitly a term or condition of an individual’s employment or education;
- Submission to or rejection of such conduct by an individual is used as the basis for employment of education – related decisions affecting such an individual; or
- Such conduct is sufficiently severe or pervasive that it has the effect, intended or unintended, of unreasonably interfering with an individual’s work or academic performance because it has created an intimidating, hostile, or offensive environment and would have such an effect on a reasonable person of that individual’s status.

*Employee conduct directed towards a student – whether unwelcome or welcome – can constitute sexual harassment under OAR.

There are two confidential resources to discuss reporting options: Center Against Rape and Domestic Violence (CARDV) provides 24/7 confidential crisis response at 541-754-0110 or 800-927-0197, and OSU Sexual Assault Support Services is available weekdays at 541-737-7604.

X. Program Information and Policies for Ph.D., M.S., and A.M.S. degrees

1. Overview/background of program

The Microbiology Program provides graduate training leading towards Ph.D., M.S., and A.M.S. degrees. The Program supports broad interests in microbiology, including environmental and pathogenic microbiology, with studies that encompass a spectrum of approaches from the ecological and organismal to the molecular genetic and biochemical. Faculty from several colleges and departments participate as major advisors.

We train about 30-35 graduate students earning Ph.D. and master’s degrees. Our research covers a broad range of subjects involving viruses, bacteria, parasites, and eukaryotic microbes, and their roles in the health of the environment and humans, animals and plants. Microbiology faculty are strongly multidisciplinary and also train graduate students enrolled in related programs such as Pharmacology, Molecular & Cellular Biology, Comparative Health Sciences, Crop and Soil Sciences, Botany and Plant Pathology, Food Science and Technology, Fisheries & Wildlife, and the College of Earth Ocean and Atmospheric Sciences (CEOAS). Graduate students are major contributors to the research output of the department.

2. Appointment types

Ph.D. and M.S. students are appointed as Graduate Assistants (GA). GA appointments pay salary and tuition (see below). There are two types of GA appointments: Graduate Teaching Assistants (GTA) and Graduate Research Assistants (GRA). The typical appointment is at 0.49 FTE (full-time equivalents), or 255 hours per 13-week academic term, or 19.6 hours per week. The expectation is, therefore, that students devote approximately half of a full-time workweek to their assigned duties as GTA or GRA.

Some A.M.S students may receive GRA support from their adviser’s funds; others are self-supporting.

GTA duties include the following: Under direction of the faculty member in charge, GTAs provide teaching assistance in various ways, such as setting up and taking down laboratory equipment and supplies, orally presenting lecture material, demonstrating microbiological techniques and supervising undergraduate students in laboratory classes and recitations, holding office hours, proctoring exams, grading assignments, maintaining records, and preparing for these activities as necessary. The student’s educational goals to fulfill the degree of Ph.D. or M.S. are independent of GTA duties and
require substantial additional time. The GTA salary is intended to offset educational expenses. GTAs must adhere to essential instructional policies conveyed during graduate student orientation.

GTA duties include the following: Under direction of the faculty member in charge (major professor), GRAs conduct research related to the faculty member’s grant that pays the student’s salary and tuition. Tasks include designing and conducting experiments, developing methods, maintaining a functional work environment, analyzing and interpreting data, maintaining lab notes, writing manuscripts, presenting results at scientific meetings, and cooperating with other group members. GRAs are available only through grants to individual faculty members. The student’s education, including coursework and thesis research, requires substantial additional time that is separate from the assigned GRA duties. The GRA salary is intended to offset educational expenses. Research conducted as a GRA may be applied towards thesis research, but is not sufficient by itself to fulfill the thesis requirement. Students must adhere to responsible and ethical conduct of research (RCR), and are required to complete RCR training if funded by federal agencies (NSF, NIH, and USDA).

3. Degree options and times to completion

Regardless of appointment type, it is primarily the student’s motivation and dedication that determines productivity and progress in the program. Students are normally expected to complete their graduate programs within the following time limits, beginning with their first quarter at Oregon State University:

- Doctor of Philosophy (Ph.D.) – 4-6 years
- Master of Science (M.S.) – 2-3 years
- Accelerated Master of Science (A.M.S.) – 1-2 years

4. Learning outcomes/competencies

Students completing a Microbiology graduate degree will be able to:

1. Conduct original research and contribute to the advancement of knowledge in microbiology
2. Demonstrate proficiency at using current methods and techniques in microbiological research
3. Communicate research findings to a scientific audience
4. Exhibit basic skills in teaching microbiology to undergraduate students
5. Concentrations:

No concentrations offered

6. Coursework

Course registration. The online Academic Catalog contains academic regulations and registration procedures that apply to all students at OSU, and also contains the final examination week schedule. In addition, it has up-to-date information for the current and immediately upcoming term. It is your responsibility to register for the appropriate number of credits each term as required by the Microbiology Department, OSU or any relevant funding agencies. Problems arising from registration procedures, including late registration, adding or withdrawing from courses after deadlines, or late changes from letter or S/U grading are resolved by submitting a formal petition to the Registrar’s Office. International students who are concerned with regulations surrounding registration should also see the “International Students Registration Requirements”. Registration requirements for graduate students are established by the Registrar and the Graduate School. “Full-time” status means you have registered for 12-16 credits in a term; “part-time” status means you have registered for less than 12 credits in a term. The Microbiology Department requires all graduate students, except in very special circumstances, to register for 16 credits every term, except summer, when students register for only 5 credits. In part, this helps avoid loss of an assistantship if you withdraw from a course during the term. You must pay additional fees if granted an exception to register for more than 16 credits.

Students register online, following the instructions on the OSU Registrar’s website.

‘Variable’ credit hour classes are courses in which you can register for a range of credits. These courses include MB 501, 503, 601, and 603. At times you may be required to get departmental approval before you can register for these. This is primarily for winter term registrations, where you are required to complete your annual review and meeting with Dr. Vega Thurber prior to getting registration approval (see section 16 on annual report).

Before you begin registration, know which courses you plan to take. If you do not know, please contact your research lab rotational professor or major professor for advice on registering for classes. For MB 503 (Master’s) and 603 (PhD), this is your thesis advisor. Always use 503 and 603 unless conducting a rotation. MB 501 (Master’s) and 601 (PhD) are only to be used for rotations under various advisors.

Courses. The Schedule of Classes is posted online. Graduate Teaching Assistant (GTAs) should select no more than 2 lecture courses. Graduate Research Assistants (GRAs) may choose 3 lecture courses per term.

All Microbiology Ph.D., M.S., and A.M.S. students are required to take a seven-credit sequence of core courses during their first year:

**MB 511. SCIENTIFIC SKILLS** (1 cr, Fall). Foundational skills for success in graduate school. Students will also become familiar with ongoing microbiology research programs through attending Microbiology Seminar.

**MB 512. HIGHLIGHTS OF MICROBIOLOGY** (1 cr, Winter). Designed for students to gain familiarity with the history of microbiology through reading, reviewing and writing about notable papers in the field.

**MB 513. MICROBIAL SYSTEMS** (3 cr, Fall). Presentation of a modern view of microbiology through the lens of microbes’ influences on our planet's habitats and inhabitants. Discusses current research and the use of advanced techniques to illustrate how microbiology is contributing to many cross-disciplinary problems that can involve engineering, public health, sociology, ecology, geology, etc.

**GRAD 520. RESPONSIBLE CONDUCT OF RESEARCH** (2 cr, any term). Covers 10 topics in responsible conduct of research: ethical decision making, human subjects, animal welfare, data acquisition, sharing and ownership, research misconduct, conflicts of interest, authorship, peer review, mentor/trainee responsibilities, and collaborative science. Useful to all students who conduct scholarly activity.

In addition to the required core sequence above, students choose among a broad selection of courses offered by the Department of Microbiology and other relevant programs on campus. If appropriate, these additional course credits may come from other relevant programs. Students’ graduate committees will have final approval on the choice of courses (see Program of Study below). Please consult with your major professor/rotational advisor on which courses to take. Microbiology courses have the prefix “MB”. During fall term, our department offers
You are required to register every term for rotation/research credits (MB 501 or 601) or thesis credits (MB 503 or 603). Ph.D. students register for MB 601 or 603. M.S. and A.M.S. students register for MB 501 or 503. These are variable credit courses. You should register for the number of credits of MB 501, 503, 601, or 603 that brings your total number of credits to 16 credits per term. For example, if your lecture courses equal 12 credits, please register for 4 credits of research or thesis. Register for research (MB 501 or 601) if you are in a rotation, and for thesis research (MB 503 or 603) once you have committed to a lab in which you plan to do your thesis. Students who have completed their lecture course requirement should register for 16 credits of either MB 503 or 603. An important distinction between MB501/601 and MB603/603 is that MB501/601 is graded whereas MB503/603 can be either graded or pass/no pass (S/U).

7. Program of Study

Taken together, the number of courses and research credits required to complete the degree is termed the “Program of Study”. It consists of the following components:

M.S.: 45 graduate credits total (i.e., 500 or 600 level)
- The required core sequence of 4 courses (7 credits) during Year 1
- Thesis credits (MB 503): minimum of 6, maximum of 16 (16 cr. recommended).
- 22 to 32 additional credits from MB listings, or courses relevant to the thesis research offered by other programs IF agreed to by the thesis committee, for a total of 45 credits.
  - Note: No more that 9 credits can be "Blanket" credits (course numbers with a zero in the middle). This includes MB 501 Research, MB 505 Reading and Conference, and MB 507 Seminar/Colloquium, but excludes MB 503.
  - Note: The Graduate School considers full time enrollment to be 12 credits per term in the academic year and 5 in the summer. However, the Microbiology Department requires all graduate students, except in very special circumstances, to register for 16 credits every term, except summer, when students register for only 5 credits.

A.M.S.: 45 graduate credits total (i.e., 500 or 600 level)
- 12 graduate coursework credits taken as an undergraduate
- The required core sequence of 4 courses (7 credits) during the first year as a graduate student (second year in program)
- 12 Thesis credits (MB 503)
- 14 additional coursework credits taken in the first year of graduate school (second year in program), consisting of MB listings, or courses offered by other programs and relevant to the thesis research, IF agreed to by the thesis committee
  - Note: No more that 9 credits can be "Blanket" credits (course numbers with a zero in the middle). This includes MB 501 Research, MB 505 Reading and Conference, and MB 507 Seminar/Colloquium, but excludes MB 503.
  - Note: Enrollment in MB 501 Research is appropriate before thesis project has been decided.
  - Note: The Graduate School considers full time enrollment to be 12 credits per term in the academic year and 5 in the summer. However, the Microbiology Department requires all graduate students, except in very special circumstances, to register for 16 credits every term, except summer, when students register for only 5 credits.

Ph.D.: 108 graduate credits total (i.e., 500 or 600 level):
- At least 36 coursework credits consisting of:
  - The required core sequence of 4 courses (7 credits) during Year 1
- 29 or more credits from MB listings, or courses relevant to the thesis research offered by other programs IF agreed to by the thesis committee.
- At least 36 Thesis credits (MB 603)
- No more than 15 credits can be "Blanket" courses: (course numbers with a zero in the middle). This includes MB 601 Research, MB 605 Reading and Conference, and MB 607 Seminar/Colloquium, but excludes MB 603.
- Sufficient additional Thesis MB 603 credits to reach 108 total credits.
  - Note: 54 of the 108 credits must be graduate stand-alone courses (500 or 600 level) that are not derived from the 500 component of 400/500 slash courses. This will typically be satisfied by the 7 credits of the required first year core sequence and MB 603 Thesis credits.
  - Note: Enrollment in MB 601 Research is appropriate while rotating.
  - Note: The 108 credit requirement is for credits beyond the bachelor's degree; thus coursework credits from a recent MS degree may be counted.
  - Note: The Graduate School considers full time enrollment to be 12 credits per term in the academic year and 5 in the summer. However, the Microbiology Department requires all graduate students, except in very special circumstances, to register for 16 credits every term, except summer, when students register for only 5 credits. Maximum permitted load per term is 16 credits.

8. Research Requirements

M.S., Ph.D., and A.M.S. students must satisfactorily complete a thesis based on their laboratory research. Satisfactory completion of a degree is based on the performance and contribution of the student, as judged by the major professor and the thesis committee, and not on any specific length of time. However, M.S. students usually require about 2-3 years, and Ph.D. students 4-6 years.

Ph.D., M.S., and A.M.S. students are required to perform laboratory research each term. Your thesis research is the most important, and probably the most challenging, part of your educational program. It is to your advantage to commence work on your thesis research as soon as possible. Research projects take time to develop, and it is often surprising to students how much time and effort it takes to make progress on a lab research project. During your first year, you should work to secure a commitment from one of our faculty members to support you both scientifically and financially (if you don’t already have this commitment). The sooner you get started on your thesis research, the sooner you will be finished with the most important part of your educational program.

Lab Rotations:
Some Ph.D. students enter the program as GRAs and remain associated with a specific laboratory throughout their studies. Others enter the program as GTAs and move to a different lab each term during their first year. This is called "lab rotation", and is done by students that have not yet decided on a specific laboratory. The benefits of lab rotations are: 1) it exposes you to different projects, which may help you decide which lab to choose for your thesis lab; and 2) it exposes you to different techniques and scientific strategies. Consult with your rotational advisor(s) about their opinions on doing rotations.

For a Ph.D. student who expects to be here 4 to 6 years, lab rotations probably have little impact on the length of time it takes to complete their thesis research. However, for a Master’s student, spending a whole year in rotation could significantly lengthen their stay. Because rotations do generally delay the start of thesis research, they are usually not advised for students planning on completing their graduate work at OSU with a Master’s degree.

Accelerated Masters (A.M.S.) students will be affiliated with a specific laboratory and research project when they begin their graduate program; they will not do rotations.

Rotation Expectations:
If you are doing rotations, it is your responsibility to arrange with one of the graduate faculty to work on a laboratory research project. To do this, familiarize yourself with the research interests of our faculty: access information on our Microbiology Department web site and speak with the faculty directly. When you have narrowed your search for a lab, make appointments with the faculty members and discuss your interests. You
are expected to find a lab in which you will do lab research each term. Make arrangements as far in advance as possible. Some labs may require at least 1 term advance notice before a rotation is possible.

Before a rotation agreement is made, student and advisor should discuss each other’s intentions and perspectives. Does the student consider the rotation lab as a potential dissertation lab, or is the student primarily interested in acquiring a new skill, with the ultimate goal of joining a different lab for dissertation research? On the other hand, is the advisor interested in taking on another student and does he/she have the funding to do so?

Students on rotation are generally supported by GTA positions during that period, so you will need to carefully balance the demands of research, classes and teaching. You should discuss expectations for research time in the lab and participation in lab activities with your rotational professor. It would be reasonable to expect 10-15 hours of research time per week, and for this you should register for 3-4 credits of MB 601 Research credits (MB 501 for Masters students). These credits are generally taken for a grade.

A research project will be decided through discussion between you and the rotational advisor and others in the lab (e.g. postdoctoral researchers) who will provide mentorship during your term in their lab.

During the laboratory rotation, you should participate in the normal activities of that lab, which could include regular lab meetings, individual meetings with your rotational advisor and social activities of the lab. It is important to learn what it would be like to work in that lab so that you can make the right decision about where to spend your next 4-6 years.

The outcomes of your rotation should be discussed between you and your rotational advisor. At minimum, a wrap-up discussion towards the end of the term is important to help you reflect upon the overall experience, provide each other with feedback, and learn about other considerations that may play a role in your decision to complete your Ph.D. in that lab. Highly motivated rotation students may end up using their research results in their thesis or become co-authors on manuscripts if another lab is chosen for thesis work.

It is recommended that you print out these expectations and discuss them with your rotational advisor.

9. Major professor

After a student is accepted into a research lab, the professor in charge of the research lab is designated the major professor (also referred to as the thesis advisor). This becomes official when you submit your signed program form to the graduate school (after the Program Meeting; see below). The major professor helps the student decide which courses should be taken, and helps the student get started with a research project. The major professor advises the student on academic matters, such as the selection of thesis committee members, and is responsible for evaluating the student's performance.

Process for changing major professor

Students have the right to change major professors for several reasons, such as making changes in educational or career direction, or finding that their major professor is consistently unable or unwilling to abide by the responsibilities and obligations as a mentor and advisor. The Graduate School provides a description of the functions and behaviors of faculty mentors. Students who choose to pursue a change in their major professor are responsible for identifying a new faculty member willing to serve in this role, as well as potentially reconstituting the thesis committee. Students must inform the graduate school of these changes.

10. Thesis committee

After a major professor is selected, the student, in consultation with the major professor, must choose other faculty members to serve on the thesis committee, also called the graduate committee.

For Master’s students, 3 additional committee members are selected. For M.S. students, this should be done in the student’s first or second term, but no later than before the completion of 18 credit hours. For A.M.S. students, this should be done by the end of their first term as a graduate student.
For Ph.D. students, 4 additional committee members are selected, usually in the second or third term, but no later than the end of one calendar year after starting their study (or the fifth term of study if the student has no MS).

The thesis committee helps you plan and approve your educational program and conducts and evaluates your final thesis defense. The committee members act as your advisors, and will meet with you to review your progress. For Ph.D. students, the committee is also charged with approving your preliminary exam proposal topic, evaluating your preliminary exam proposal, and conducting and evaluating your oral preliminary exam.

Committee members must be members of the Graduate Faculty. If the faculty member is not a member of the Graduate Faculty or is not approved for the role proposed, your major department/program will need to nominate the proposed member to act in those roles using the Nomination to Graduate Faculty form. This process will take at least several weeks and should be initiated accordingly. Committee structure is evaluated when your program of study is received by the Graduate School and when you schedule your formal examination(s).

**Policy on remote participation**

It is generally expected that all committee members or approved substitutes must be present for all formal meetings with the student (e.g. final oral exams). If you have a special case in which a committee member may need to participate remotely, you and your committee must assure that all the conditions for remote participation are met.

11. **Graduate Council Representative**

One of your committee members must be a Graduate Council Representative (known as a GCR or Grad Rep), required for all doctoral committees, and all Master's degrees involving a thesis. Your GCR represents the OSU Graduate Council and ensures that all rules governing committee procedures are followed. Your GCR must be present at your formal exam(s), and will be responsible for some of the paperwork that the Graduate School requires. Per Graduate School guidelines, the GCR will also lead your committee’s roundtable discussion following your final oral exam. Your GCR must be a graduate faculty member outside your major and minor area.

The GCR is a full voting member of your graduate committee. Many students select a GCR who can also add disciplinary expertise. Select your GCR using the online GCR list generation tool and be sure to allow ample time for this selection process. If you run into difficulty finding a GCR to serve on your committee, you can regenerate the list until you find someone who is willing to serve.

12. **Program meeting**

You are required to convene a thesis committee meeting to plan the courses that you will take for fulfillment of your degree requirements. This is called a program meeting. The Microbiology Department requires that M.S. students and Ph.D. students with an M.S. hold their first committee meetings and file their approved programs by the end of their second term. Ph.D. students without an M.S. must hold their first committee meetings and file a program of study by the end of their first year. A.M.S. students must hold their program meeting by the end of their first term as a graduate student. The meeting also includes an outline and discussion of your proposed thesis project.

The Program Meeting will cover two areas: the proposed coursework (Program of Study) and the proposed research (Thesis Outline). A Program of Study form will be completed during the meeting. When the student’s committee approves the Program of Study, they will sign the form and submit it to the Graduate School. If the student later wishes to change the approved Program of Study, they will need to hold another committee meeting and obtain committee member signatures on the revised program.

Students also prepare and submit to their committee an outline of the thesis project. This outline must be sufficiently detailed to enable the committee to evaluate the progress of the student on a yearly basis.

13. **Annual meeting with your graduate adviser and submitting your annual report**

Starting in their second year, every student is required to meet at least once per year with their graduate adviser to discuss their training and academic progress, submit a progress report approved by their major professor, and meet with Dr. Vega Thurber, Lead Graduate Adviser. This must be done in the fall before you can register for winter term classes. Download the MS Annual Progress Report form or PhD Annual Progress Report form.

14. Teaching requirement

Ph.D. and M.S. (but not A.M.S.) students are required to be teaching assistants for one term. This requirement may be fulfilled anytime during their graduate program, with the approval of the Graduate Committee Chairperson. Because it is often difficult to place GRAs in a GTA position, students are advised to make arrangements well in advance (as much as one year).

15. Public Presentation Requirement

Ph.D. students are required to present the results of their research on two occasions. One presentation may be at a national meeting, and the other must be a departmental seminar (this may be the final thesis defense). Master’s students fulfill their one required presentation at their public defense of their thesis. All students are encouraged to present their work more than the minimum requirement. Opportunities for poster presentations occur annually at the departmental winter term recruitment and fall CQLS conference.

16. Microbiology Seminar Series

Offered once a month (time and day TBA) in LPSC 402. Announcements will be sent by e-mail and posted on the bulletin board outside the departmental office. All graduate students are expected to attend.

17. Other Components of your Graduate Experience

- **PRIPS**: This optional series of presentations is given by a group of labs with interests in infectious diseases and medically-related research. The group meets on alternate Thursdays at noon-1:00 PM, Dryden Hall 213. Members from each lab take turns presenting their data that is hot-off-the-bench. The presentations and discussions are informal, and attendance is encouraged for those with interest. PRIPS is organized by Dr. Mahfuz Sarker (541-737-6918).

- **Other Seminars**: Other departments and graduate programs also sponsor seminars, and you are encouraged to attend those that interest you. Contacting the departments and programs of interest and having your e-mail address included in their contact list will help you know when there is a seminar that interests you.

- **CQLS conferences**: Each year the Center for Quantitative Life Sciences (CQLS) at OSU hosts two conferences, one in the fall and one in the spring. Seminars are presented by both OSU faculty and scientists from outside OSU. Graduate students and faculty present posters of their work. More info: [http://CQLS.oregonstate.edu/](http://CQLS.oregonstate.edu/)

- **Grad MSA**: The Graduate section of our Microbiology Student Association (MSA) organizes a journal club and offers a variety of social events, including excursions and weekend trips.

18. Ph.D. Qualifying Examination (Preliminary Exam): Ph.D. students only

**Overview.** As outlined by the Graduate School, to be admitted for the doctoral degree, Ph.D. students must pass a comprehensive Preliminary Examination conducted by their Graduate Committee. The purpose of this exam is to determine the students’ understanding of their major and minor fields and to assess their capability for research. This exam must comply with the policies and requirements of the Graduate School.

The exam for the Microbiology Ph.D. degree includes two parts: (1) a written research proposal on a topic that is distinct from the student's thesis research, followed by (2) an oral examination that features a presentation and
then questions on the proposal topic. There will also be questions on more general topics drawn from the student's coursework and/or general area of thesis research. The Preliminary Examination is best taken after about two years, near the completion of the coursework on the Program of Study.

**Scheduling the Preliminary Exam.** The student must contact the committee for:

1) Agreement on the research proposal topic
2) Setting the target date for completion of the written proposal
3) Acceptance of written proposal
4) Arrangement of a date, time, and place for the exam

**Written Proposal.** Students must write a proposal on an approved topic.

- To select a topic, the student will provide the committee with up to 3 titles and brief summaries of each.
- The topic may be on anything except the student's thesis project and is at the discretion of the committee.
- The committee must approve the topic with no more than 1 dissenting vote (email votes are acceptable).
- Unless otherwise specified by the committee, the proposal will be based on the format of an NSF postdoctoral proposal. The format and length should be discussed with the committee; a general guideline follows.
- The length will be a minimum of 5 pages (single-spaced, not including references).
- The proposal should include the following sections:
  - Specific aims
  - Background and Significance
  - Research Design and Methods
  - Literature cited (not included in the page limit)
- Within these sections, the committee will be looking for the following components:
  - Clearly stated research problem
  - Clearly developed, testable hypothesis
  - Focused experimental aims
  - Contingency plans for aims/objectives
  - Appropriate experimental design
  - Appropriate data analysis methods
  - Justification for, and impact of, the proposed research
  - A realistic project timeline
- The proposal should be submitted to the committee within the specified period after the committee has approved the topic (typically 4-6 weeks). The individual committee members must review the proposal and determine if the written proposal is acceptable for an oral exam defense. This review should take place within 1 week of submission.
- In the event revisions are required (i.e., the proposal is judged as being insufficiently developed to proceed with the oral exam), the student will have 4 weeks to modify and re-submit the proposal to the committee for a second decision.
- The student must schedule the oral exam within one week of the decision to accept the proposal.

**Oral Examination.** The exam is scheduled with the Graduate School using the Exam Scheduling Form.

- The oral exam must be at least 2 hours in length and is typically up to 3 hours long. The oral exam covering the thesis proposal should constitute about half of the exam time.
- All members of the graduate committee should be physically present at the required graduate exam (for exceptions, see Remote Participation requirements).
- The defense of the proposal should include a presentation of the proposal by the student (20-30 minutes), followed by questions from the committee members that are answered by the student.
- The second half of the exam will be devoted to open questions
  - (a) The open questions may include anything related to science or the training of the student that the committee members deem relevant.
  - (b) It is recommended that the candidate practice answering questions with their advisor, committee members and/or other students.
- The decision to pass the individual is subject to the rules of the Graduate School, which gives the committee the options (i) to pass, (ii) not to pass and to terminate the student's work, (iii) not to pass and to allow a re-examination, or (iv) to recess and re-convene within two weeks.
The decision will be based on the Scoring Guide/Rubric form for the Ph.D. Preliminary Exam. The scoring includes these criteria:

1. Problem Definition and relationship to previous research in the literature: Stated the research problem, and its impact, clearly in the context of existing literature, providing justification for undertaking the research.
2. Solution Plan: Provided a sound plan for applying appropriate research methods/tools to solving the defined problem. This should include well-developed research aims/objectives, hypotheses, hypothesis testing, and a sound plan for analyzing and interpreting research results/data.
3. Broader Impact: Demonstrated awareness of broader implications of the proposed research. Broader implications may include social, economic, technical, ethical, business, etc. aspects.
4. Quality of Written Communication: Communicated research proposal clearly and professionally in written form.
5. Quality of Oral Communication: Communicated research proposal clearly and professionally in oral form.
6. Critical Thinking and Mastery of General Knowledge: Demonstrated capability for independent research in microbiology and preparedness in core disciplines relevant to student’s own research.

It is the responsibility of the student and major professor to provide the Scoring Guide for each graduate committee member and of the major professor to explain its use in documenting the assessment of the student. The committee will discuss the student’s performance (with specific reference to rubric items) with the student at the conclusion of the exam. The major professor will collect the completed forms for filing in the Microbiology office.

19. Final Oral Examination

- Ph.D., M.S., and A.M.S. candidates must pass a final oral exam (also called a thesis defense). This exam must comply with the policies and requirements of the Graduate School. The student’s Thesis Committee will conduct the final oral examination. For Ph.D. candidates, the examination committee will consist of the same members as for the Preliminary Examination, although substitutions may be made if approved by the Program and the Graduate School. These guidelines will help you through the process. As described above, Master’s students do not take a preliminary oral exam.

- The student must contact members of the committee to arrange the date, time and place, then schedule the exam with the Graduate School no fewer than two weeks before the examination. One copy of the pre-text pages of the thesis must be submitted to the Graduate School when scheduling the exam. Examination copies must be distributed to all committee members two weeks prior to the examination. All members of the graduate committee should be physically present at all required graduate exam (for exceptions, see the Remote Participation requirements).

- The first part of the exam is the thesis presentation portion, which is open to all interested parties. After the thesis seminar and questions from the general audience, the committee and student will continue in closed session to examine the thesis and its broader relationship to microbiology.

- The decision on the outcome of the exam will be based on a Scoring Guide/Rubric Sheet provided by the student and the major professor for the Ph.D. thesis defense. After the major professor explains how the guide will be used, each graduate committee member will be asked to use the form in documenting their assessment of the student. At the conclusion of the exam the committee will discuss the student's performance (per the Scoring Guide). The major professor will collect the completed forms for filing in the Microbiology Office.

20. Proposed timeline to degree completion

Ph.D.
1. End of first year: Form a dissertation committee (Graduate committee) and have program of study approved.
2. Meet yearly with your Graduate Committee to evaluate your progress. Typically, the meeting begins with a summary presentation of the student’s research findings.
3. Starting in Year 2, submit a signed Annual Progress Report to the Graduate Adviser each year by the end of December.
4. By the end of second or third year: Fulfill the one-term GTA requirement
5. End of second year: Complete preliminary written and oral exam and advance to candidacy
6. Third, fourth, and fifth year: Conduct dissertation research and fulfill public presentation requirement
7. Fifth year: Write dissertation and pass final oral examination to complete degree

M.S.
1. End of second term: Form a thesis committee (graduate committee) and have program of study approved
2. Meet yearly with your Graduate Committee to evaluate your progress. Typically, the meeting begins with a summary presentation of the student’s research findings.
3. Starting in Year 2, submit a signed Annual Progress Report to the Graduate Adviser each year by the end of December.
4. By the end of second year: Fulfill the one-term GTA requirement
5. Second-third year: Conduct thesis research and write thesis document
6. End of second or third year: Pass final oral examination to complete degree
A.M.S.
1. **Junior year:** approach and get approval from a faculty member to conduct research in their lab as part of your A.M.S. program.
2. **Senior Year:** as an undergraduate, **conduct research** under advising faculty on topic that will form the basis of your thesis.
3. **Senior Year:** take 12 credits of course work at graduate level (500 level).
4. First year as a graduate student: take required **MB core series** and **additional graduate core courses germane to your work (500 and 600)** and approved by your thesis committee.
5. End of first term as a graduate student: form a **thesis committee** (graduate committee) and have **program of study** approved.
7. End of first year as a graduate student pass final oral examination to complete degree.

**Deadlines related to Program of Study, Exam Paperwork, etc.**
Please access the following [link](#) for the minimum deadlines as defined by the Graduate School. Programs can require a more rigorous set of deadlines. Students are expected to check with their program and the Graduate School regarding specific deadlines unique to the term and academic year they plan to complete their degree requirements, and follow the Microbiology guidelines.


Satisfactory progress toward completing a graduate degree in the Microbiology Graduate Program requires:

- An annual assessment showing adequate progress in coursework and thesis research as evaluated by the major professor and the rest of the student’s graduate committee.
- Maintaining a GPA of 3.00 or better for all courses taken as a graduate student.
- Successfully passing relevant exams as required by the Graduate School and as outlined in the Microbiology program guidelines online. This includes a preliminary exam at the end of the second academic year for Ph.D. candidates, and a final oral examination for A.M.S., M.S. and Ph.D. candidates.
- Completion of one term of service as a Graduate Teaching Assistant.
- For Ph.D. students, presentation of two public research seminars (one may be the final defense, and the other must be a poster presentation or talk at a conference).
- For A.M.S. and M.S. students, presentation of one public research seminar (can be the final defense).
- Timely compliance with all Graduate School and Departmental requirements for thesis committee formation, annual committee meetings, annual progress report completion, and other activities expected of a student, scholar and citizen.

Microbiology Graduate Program Plan for Assessment of Graduate Student Satisfactory Academic Progress:

- Following the deadlines outlined above, students must form a thesis committee, hold a program meeting, submit an approved/signed program of study to the Graduate School, hold graduate committee meetings at least once yearly, and submit a signed annual Progress Report each year. This form must be returned to the Microbiology Graduate Student Advisor by the end of December each year. Registration for winter term classes requires departmental approval, which will be given upon receipt of the completed progress report. Satisfactory academic progress will be judged based on both timely completion of courses on the Program of Study, and progress in completing research objectives.

**22. Value and Cost of Graduate Education**

- The standard Microbiology Program stipend for the 2021/2022 academic year for first year students is $25,200. GTA and GRA appointments include 100% of the tuition, 90% of health insurance, and most student fees (total value of $44260). Students get a 2% raise each year. Students are responsible for the following costs: $350 (one time matriculation fee due in the first term of enrollment); approximately $70 miscellaneous
fees per term (the remaining $620 is paid through the GTA/GRA appointment); and $51. per month for health insurance (10% of health insurance is covered by students). Note: Costs may change annually.

- **Graduate Teaching Assistantships (GTAs):** We offer a limited number of GTA positions each year based on need. GTA funding is based on acceptable performance. The GTA appointment involves teaching in laboratory classes, helping with lab prep, and grading tests.

- **Graduate Research Assistantships (GRAs):** Students may receive GRA support directly from the grant of their major professor. Students may enter the program with a GRA, and are typically supported by a GRA after their first year.

**Benefits: Health insurance, sick leave, and Leave of Absence**

Graduate Assistants with an appointment 0.30 to 0.49 FTE will be automatically enrolled in employee-only coverage. Dependents can be enrolled for additional cost. OSU contributes 88% to the monthly premium. GRAs on external grants are generally covered in full. Students are also eligible for sick leave with pay. At 0.49 FTE, sick leave accrues at a rate of 10 hours per 13-week appointment period (equivalent to 255 hours). Students are not eligible for paid vacation. Further details can be found in the [Collective Bargaining Agreement](#) between the CGE and OSU.

In addition, Leave of Absence status is available to eligible students who need to suspend their program of study for good cause. See VI, above.

**23. Program/department specific funding opportunities (GTA, GRA, fellowships, awards, travel grants, etc.)**

**Graduate Scholarships and Fellowships:** the student is responsible for checking for eligibility, as some of these are limited and specific. Specifically, A.M.S. students may not be eligible for most awards.

- Application for Department of Microbiology scholarships/fellowships requires the submission of two letters of recommendation in addition to the [Microbiology Graduate Scholarship/Fellowship Application](#).
- Scholarships are awarded annually on a competitive basis, with typical awards of $500-$2,000. Eligibility varies depending on the particular award, and the number of awards given each year is dependent upon funding.
- Fellowships are awarded on a competitive and/or a needs basis. Typical awards cover a stipend for one to three terms with tuition remission. Department of Microbiology scholarships and fellowships are made possible by donations provided by alumni, faculty members, and other donors.
- [APPLICATION DEADLINES – January-March, 2022](#)

**Individual departmental scholarship fellowships**

- **Margaret & Charles Black Scholarship:** The Margaret and Charles Black Scholarship Fund provides an annual scholarship award to an Oregon State University graduate student in microbiology who has demonstrated excellence in their graduate studies. Nominees must be Microbiology graduate students with a distinguished record of academic performance. (Cash award given when available.)
- **John L. Fryer Fellowship:** The friends and family of John L. Fryer have established the John L. Fryer Fellowship Fund to honor and recognize Dr. Fryer’s scholarship and the years he dedicated to the study of infectious diseases of fish. The purpose of the John L. Fryer Fellowship will be to provide support to graduate student(s) at OSU involved in research on the infectious diseases of fish (finfish or shellfish) (Stipend & tuition or cash award). January 2022 date to be determined
- **Dick & Toshi Morita Scholarship:** Nominees must be Microbiology graduate students. Recipients must meet the following criteria: graduate student; microbiology major/focus; and demonstrates financial need. The nomination should document the student's academic record and other scholarly accomplishments. The application should include at least two letters of recommendation from faculty. (Cash award given when available.)
- **Joan Countryman Suit Scholarship:** Established by Joan Countryman Suit. Covers summer fellowships for Microbiology Graduate students. (when available).
- **Sheila van Zandt Scholarship:** Deadline March 1. The intent of this award is to promote collaboration
between a graduate student and undergraduate student. Application is by a graduate/undergraduate pair separate from other Department of Microbiology scholarships. This scholarship is for an undergraduate/graduate student pair with one proposal submitted between the two of them. The award is for $1800 (with a requirement of matching funds from the lab). The students give a presentation at the spring symposium (or an acceptable alternative)

- **Harriet M. Winton Scholarship**: This scholarship was established by Mrs. Harriet Winton in appreciation to Dr. J.L. Fryer for assisting in graduating her son, Dr. James R. Winton, in the study of Diseases of Pacific Salmon from the Department of Microbiology. This award will go to a microbiology graduate student in the study of diseases of fish. Financial need will be considered. (Cash award).

**Departmental fellowships requiring faculty nomination**

- **Oregon Department of Fish & Wildlife Fish Health Graduate Research Fellowship**: Provides graduate level training on a project that is relevant to the health of non-aquarium fish. This fellowship will support a graduate student conducting research towards an MS or Ph.D. in Microbiology or under the mentorship of a Microbiology professor at Oregon State University, with the intention of training towards and encouraging a career in fish health studies relevant to the wild fish popularities of Oregon.

- **Middlekauf Outstanding Graduate Teaching & Service in Microbiology**: Established by Ruth M. Tyson to honor the memory of her brother and to aid students in bacteriology. Mark Middlekauf received his degree in bacteriology from OSU in 1916, served in the Army during World War I and lost his life in France during that conflict.

- **Middlekauf Graduate Achievement in Microbiology**: Established by Ruth M. Tyson to honor the memory of her brother and to aid students in bacteriology. Mark Middlekauf received his degree in bacteriology from OSU in 1916, served in the Army during World War I and lost his life in France during that conflict.

- **Nicholas R. Tartar Graduate Student Fellowship**: Established by N.R. Tartar, M.D., a long-time friend of the early faculty in Microbiology. Awards are to go to qualified graduate students that meet residency requirements and are majors in the Department of Microbiology.

**24. Fellowships outside the department**

- **Charles Eckelman Scholarship**: Established by Mrs. Clara Marie Eckelman at the time of her husband’s death. This is used to help students at OSU who are in a science beneficial to the dairy industry. Scholarship recipients must be enrolled in the College of Agricultural Sciences or in the Department of Microbiology with an emphasis on dairy industry. Qualified applicants in the following majors will be considered: Animal Sciences, Agricultural Business Management, Agricultural and Resource Economics, Food Science and Technology and Microbiology (through the Agriculture Research Foundation). (Nominated by the department).

- **MacVicar Animal Health Scholar Award**: The College of Veterinary Medicine, Biochemistry and Biophysics, and Microbiology Dean/Chair are serving as members of a committee to select a senior graduate student whose research is primarily concerned with animal health and welfare in its broadest sense and is interdisciplinary in approach, or a veterinarian in a residency program at OSU that includes research at the master’s or doctoral level as part of the training program. Robert MacVicar was a past president of Oregon State University, and he and his wife, Clarice, had a strong interest in the health and welfare of animals. As a result, they established a fund to support research at OSU that impacts animal health and welfare in its broadest sense, that is interdisciplinary in its approach and represented by the areas of microbiology, biochemistry, and veterinary medicine. The award will be made as a $5000 stipend, with an additional $1000 for laboratory supplies and/or travel. Nominations of candidates should be made by faculty through their department chairs/heads. (Nominated by the department).

- In addition to departmental awards, scholarships, fellowships and assistantships are available through:
  - [College of Agricultural Sciences Scholarships/Fellowships](#)
  - [College of Science Scholarships/Fellowships](#)
  - [Graduate School Scholarships/Fellowships](#)
  - [Student Financial Aid office](#) provides information on general OSU scholarships and other financial assistance.
1. Overview/background of program

This program aims to train students in critical aspects of microbiology including exposure to modern thinking and techniques in microbiology and virology. The curriculum is based on coursework and the completion of a capstone synthesis project. It does not require the completion of a research-based Master's thesis. We offer two distinct specialty "tracks" to better prepare individuals for today's in-demand workforce: "Microbiome Analytics" and "Biohealth Sciences."

2. Learning outcomes/competencies

3. Concentrations

4. Coursework

5. Program of Study

6. Adviser

7. Capstone Project

8. Annual Meeting with graduate adviser and submission of progress report

9. Microbiology Seminar Series

10. Other components of your graduate experience

11. Proposed timeline to degree completion
### Scoring Guide (Rubric) for Graduate Learning Outcome Assessment

**Ph.D. PRELIMINARY EXAM in Microbiology**

<table>
<thead>
<tr>
<th>Evaluation/Guidance</th>
<th>Does not meet Expectations</th>
<th>Meets Expectations</th>
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**Overall Assessment:** The assessment of the overall performance of the candidate based on the evidence provided in items 1 – 6 above.

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<tbody>
<tr>
<td>OVERALL, My rating of this preliminary exam indicates that it:</td>
<td>Does NOT PASS Exam</td>
</tr>
<tr>
<td>Does not meet expectations</td>
<td>Meets expectations</td>
</tr>
</tbody>
</table>

Name of the Examining Committee Member: ____________________________________________

Signature of the Examining Committee Member: ________________________________________

*Examiner: Please use the reverse side of this form for written commentary as needed.*  
Attachment 2
Scoring Guide (Rubric) for Graduate Learning Outcome Assessment  
MS DEFENSE EXAM* in *Microbiology*

Candidate Name: ___________________________________________ Date: ____________________________

Title of Thesis: ____________________________________________________________________________________

<table>
<thead>
<tr>
<th>Evaluation/Guidance</th>
<th>Does not meet Expectations</th>
<th>Meets Expectations</th>
<th>Exemplary Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Problem Definition and relationship to previous research in the literature: Stated the research problem, and its impact, clearly in the context of existing literature, providing motivation for undertaking the research</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Solution Plan: Has applied appropriate research methods/tools to solve the defined problem and has described the methods/tools effectively</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3. Results: Analyzed and interpreted research results/data effectively; responded to unforeseen technical problems or unexpected results appropriately.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Quality of Written Communication: Communicated research results clearly and professionally in written form</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Quality of Oral Communication: Communicated research results clearly and professionally in oral form</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Critical Thinking: Has demonstrated capability for independent research in the area of study and expertise in the area</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Conclusion and Broader Impact: Summarized what new information/insight the thesis work produced. Demonstrated awareness of broader implications of the concluded research. Broader implications may include social, economic, technical, ethical, business, etc. aspects.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>8. Publications: Journal or conference publications have resulted (or are anticipated) from this research</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>9. Requirement: Has completed at least one term as GTA</td>
<td>Number of terms as GTA:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Overall Assessment:** The assessment of the overall performance of the candidate based on the evidence provided in items 1 – 9 above.

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>PERFORMANCE RATINGS for THESIS EXAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>OVERALL, My rating of the Thesis indicates that it:</td>
<td></td>
</tr>
<tr>
<td>Does NOT PASS Exam</td>
<td></td>
</tr>
<tr>
<td>Meets expectations</td>
<td></td>
</tr>
<tr>
<td>Exemplary performance</td>
<td></td>
</tr>
</tbody>
</table>

Name of the Examining Committee Member: ____________________________________________________________

Signature of the Examining Committee Member: ________________________________________________________

*Examiner: Please use the reverse side of this form for written commentary as needed.* Note that this form may be used for both THESIS and NON-THESIS MS Defense exams.
Scoring Guide (Rubric) for Graduate Learning Outcome Assessment
Ph.D. THESIS DEFENSE EXAM in Microbiology

Candidate Name: ______________________ Date: ______________________

Title of Research Proposal: ____________________________________________

<table>
<thead>
<tr>
<th>Evaluation/Guidance</th>
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<tr>
<td>1. <strong>Problem Definition and relationship to previous research in the literature:</strong> Stated the research problem, and its impact, clearly in the context of existing literature, providing motivation for undertaking the research</td>
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<tr>
<td>2. <strong>Solution Plan:</strong> Has applied sound state-of-the field research methods/tools to solve the defined problem and has described the methods/tools effectively</td>
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</tr>
<tr>
<td>3. <strong>Results:</strong> Analyzed and interpreted research results/data effectively; responded to unforeseen technical problems or unexpected results appropriately.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>9. <strong>Requirements:</strong> Has completed at least one term as GTA and one public presentation in addition to the defense</td>
<td>Number of terms as GTA:</td>
<td></td>
<td>Number of public presentations:</td>
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**Overall Assessment:** The assessment of the overall performance of the candidate based on the evidence provided in items 1 – 9 above.

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Name of the Examining Committee Member: __________________________________________

Signature of the Examining Committee Member: _______________________________________

Examiner: Please use the reverse side of this form for written commentary as needed.

Attachment
# ANNUAL GRADUATE STUDENT PROGRESS REPORT

## MS PROGRAM IN MICROBIOLOGY, OREGON STATE UNIVERSITY

<table>
<thead>
<tr>
<th>Date</th>
<th>Student ID</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

**Student Name**

Please consult with your major professor and complete this form. Return a signed copy to Dr. Rebecca Vega-Thurber, Graduate Student Advisor.

1. Have you met with your graduate committee and filed the Program of Study with the Graduate School?
   - Yes
   - No

2. Have you met with your committee this year to update your study and research progress and discuss your proposed experiments?
   - Yes
   - No

3. Your research requires a clear hypothesis or goal. Give some thought to how the experiments you are doing and planning will be published. Have you discussed with your major professor and/or committee your plan for your first or next paper? Are you focused on a plan that ends with a publication?
   - Yes
   - No

4. **Teaching Requirement**: There is a Microbiology Program requirement that all graduate students experience on term of teaching by serving as a Graduate Teaching Assistant. Have you fulfilled this requirement?
   - Yes
   - No

**Student Signature**

**Date:**

**Major Professor**

**Date:**
ANNUAL GRADUATE STUDENT PROGRESS REPORT  
PhD PROGRAM IN MICROBIOLOGY, OREGON STATE UNIVERSITY

<table>
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*Consult with your major professor and complete this form. Return a signed copy to Dr. Vega-Thurber, Graduate Student Advisor.*

1. Have you met with your graduate committee and filed the Program of Study with the Graduate School?  
   Yes _______________  No ____________________

2. Have you met with your committee this year to update your study and research progress and discuss your proposed experiments?  
   Yes _______________  No ____________________

3. Preliminary Qualifying Exam: The Prelim Exam should be taken after you have completed most of your courses and before you are involved in your research. Part of the test will cover your general knowledge from lecture courses and if you do not pass you cannot continue. The intent is that you qualify to complete a Ph.D. course of research. Please distribute the “Guide-lines for the Microbiology Program Prelim Exam” to each member of your committee when you provide them with your written proposal. There are two parts to the exam: the written part is in the form of a research proposal. The oral exam will cover the research proposal and general knowledge from the courses you have taken. **Have you completed your preliminary exam?**  
   Yes/Date _______________  No ____________________

4. Your research requires a clear hypothesis or goal. You should give some thought to how the experiments you are doing and planning will be published. Have you discussed with your major professor and/or committee your plan for your first or next paper; are you focused on a plan that ends with a publication?  
   Yes _______________  No ____________________

6. When do you/your major professor anticipate you will finish your degree?  
   Date: ____________________

7. **Teaching Requirement**: There is a Microbiology Program requirement that all graduate students experience one term of teaching by serving as a Graduate Teaching Assistant. Have you fulfilled this requirement?  
   Yes _______________  No ____________________

8. **Presentation Requirement**: All Ph.D. students must give two presentations during their graduate education. One of these may be the thesis defense, but the other must be a public presentation outside of the department. Your goal should be to present at least one poster or talk at a national scientific conference. Have you presented at a national scientific conference?  
   Yes _______________  No ____________________

   **Course requiring Major Professor approval: Winter Term: ________ (Year)**
   MB 601 Research CRM #: ____________  MB 603 Thesis CRN #: __________  Number of Credits: __________

<table>
<thead>
<tr>
<th>Student Signature:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Professor Name  (Please Print)</td>
<td></td>
</tr>
<tr>
<td>Major Professor Signature:</td>
<td>Date:</td>
</tr>
</tbody>
</table>