

# Applied and Environmental Microbiology, M.S.

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## Degree Offered

- Master of Science

\*For Ph.D. option, see Applied and Environmental Microbiology area of emphasis under Ph.D. in Plant and Soil Sciences

## Nature of the Program

From plants to animals to air, microorganisms inhabit every facet of the world. Both beneficial and harmful, microorganisms play important roles in the areas of public health, plant disease, pollution and ecology. This program is ideal for students who want to have a career at the forefront of these industries. Gain professional development and research experience as you further your education in our graduate program.

## Admissions

### M.S. APPLIED AND ENVIRONMENTAL MICROBIOLOGY

In order for a student to be admitted to the program, the applicant normally must fulfill the following admission criteria to be considered:

- Possess a baccalaureate degree.
- Have a minimum undergraduate grade point average of 3.0.
- Have an adequate academic aptitude at the graduate level as measured by the Graduate Record Examination (GRE) or other tests/evidence.
- Provide three letters of reference from persons acquainted with the applicant's professional work, experience, or academic background.
- Submit a written statement of approximately 500 words indicating the applicant's goals and objectives relative to receiving a graduate degree.

International students must meet WVU's minimum score requirement for English language proficiency. (<https://graduateadmissions.wvu.edu/information-for/international-students/>)

Major Code: 0772

A candidate for the M.S. degree in Applied and Environmental Microbiology must meet all University, College, Division, and Program requirements as outlined in the WVU Graduate Catalog.

## Program Requirements

All M.S. degree candidates are required to follow a planned program of study. The student develops the plan of study during their first year in the program in conjunction with the graduate committee. The plan must be approved by the Director of the Division and the Associate Dean for Academic Affairs of the Davis College.

Code	Title	Hours
<b>Thesis Option:</b>		
A minimum cumulative GPA of 3.0 is required in all courses applied toward degree requirements.		
<b>Select one of the following:</b>		<b>3</b>
STAT 511	Statistical Methods 1	
BIOS 501	Applied Biostatistics 1	
<b>Select one of the following:</b>		<b>3</b>
STAT 512	Statistical Methods 2	
BIOS 503	Applied Biostatistics 2	
<b>Seminar</b>		<b>3</b>
PPTH 796	Graduate Seminar	
<b>Research</b>		<b>6</b>
AEM 797	Research	
<b>Discipline-Oriented Coursework</b> *		<b>15</b>
(AEM, AGBI, AGRN, BIOL, ENTO, GEN, HORT, IMMB, MICB, PLSC, PPTH)		

Plan of Study

Thesis	
Total Hours	30

Code	Title	Hours
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**Non-Thesis Option:**

A minimum cumulative GPA of 3.0 is required in all courses applied toward degree requirements.

<b>Select one of the following:</b>	<b>3</b>
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STAT 511	Statistical Methods 1	
STAT 512	Statistical Methods 2	
BIOS 501	Applied Biostatistics 1	
BIOS 503	Applied Biostatistics 2	

<b>Graduate Chemistry/Biochemistry Course</b>	<b>3</b>
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AGBI 512	Nutritional Biochemistry	
AGBI 610	General Biochemistry	
AGBI 612	General Biochemistry	
ESWS 516	Soil Chemistry	
PLSC 560	Plant Biochemistry	

<b>Seminar</b>	<b>3</b>
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PPTH 796	Graduate Seminar	
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<b>Teaching Practicum</b>	<b>2</b>
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AEM 790	Teaching Practicum	
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<b>Discipline-Oriented Coursework *</b>	<b>15</b>
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(AEM, AGBI, AGRN, BIOL, ENTO, GEN, HORT, IMMB, MICB, PLSC, PPTH)

<b>Independent Study</b>	<b>3</b>
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AEM 795	Independent Study	
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<b>Electives</b>	<b>7</b>
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Plan of Study	
Total Hours	36

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Excludes 797 and limit 590, 690, and 790 to no more than 3 credit hours

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Students must complete a minimum of 30 total hours, of which at least 24 hours must be coursework other than research, thesis, project, internship, etc. credits.

## Major Learning Outcomes

### APPLIED AND ENVIRONMENTAL MICROBIOLOGY

- Students will acquire fundamental knowledge of applied and environmental microbiology and associated fields such as biochemistry, genetics, and biology.
- Students will acquire detailed knowledge of their particular subdiscipline or research area, including the scientific literature fundamental to their discipline and the ability to stay current on scientific literature.
- Students will acquire technical skills in the laboratory.
- Students will develop the ability to communicate in writing and orally about scientific concepts and the results of their research.