BIOMEDICAL SCIENCES, BS: PUBLIC HEALTH MICROBIOLOGY

Students in the Biomedical Sciences major are awarded a Bachelor of Science degree upon completion of all requirements. Students choose from one of the following seven areas or submajors:

- Medical Laboratory Science
- Biomedical Science
- Radiologic Technology
- Cytotechnology
- Diagnostic Medical Sonography
- Diagnostic Imaging (degree completion program)
- Health Science (degree completion program)
- Public Health Microbiology

All students, with the exception of students in the Diagnostic Imaging or Health Sciences degree completion program, will be required to comply with a background check and maintain health insurance during the professional training experience.

Public Health Microbiology

Public health microbiology prepares students for a career in the laboratory disciplines of public health. Specifically, students will be educated in a broad range of sciences in order to perform investigatory and laboratory-based analyses of environmental samples for microbial contaminants of interest. Emphasis is placed on pathogenic disease and the human populations that they affect. Students successfully completing this program may sit for the American Society for Clinical Pathology (ASCP-BOC) Technologist in Microbiology national certification exam.

Requirements

Students must achieve the satisfactory completion of 130 credits.

Biomedical Science Requirements

Students in the Biomedical Sciences major are awarded a Bachelor of Science degree upon completion of all requirements. All students, with the exception of students in the Diagnostic Imaging or Health Sciences degree completion program, will be required to comply with a background check and maintain health insurance during the professional training experience.

The process of application to the professional training occurs at the end of the first semester of the junior year.

Entry into professional training or internship is competitive and dependent upon:

1. Completion of UWM’s General Education Requirements (GER) ([http://catalog.uwm.edu/policies/undergraduate-policies/#generaleducationtext](http://catalog.uwm.edu/policies/undergraduate-policies/#generaleducationtext));
2. A cumulative UWM minimum grade point average of 2.5;
3. A cumulative minimum grade point average of 2.5 in specific, required science courses;
4. Completion of:
   a. all required courses and electives (87 credits) through the second semester of junior year for students pursuing or Biomedical Sciences, Cytotechnology, or Medical Laboratory Science;
   b. all required courses and electives (114 credits) through the first semester of senior year for students pursuing Public Health Microbiology; and
5. A grade of C or better in all junior-level courses.

Students who meet these minimum requirements for entry into professional training will be evaluated on the basis of their science GPA for placement at one of the training sites.

To remain eligible to continue in the professional training, students must earn a grade of C or better in all senior-level courses.

Degree Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BIO SCI 150</td>
<td>Foundations of Biological Sciences I ¹</td>
<td>4</td>
</tr>
<tr>
<td>BIO SCI 202</td>
<td>Anatomy and Physiology I ¹</td>
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<td>BIO SCI 203</td>
<td>Anatomy and Physiology II ¹</td>
<td>4</td>
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<tr>
<td>BIO SCI 325</td>
<td>Genetics ¹</td>
<td>4</td>
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<td>BIO SCI 383</td>
<td>General Microbiology ¹</td>
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<tr>
<td>BMS 205</td>
<td>Introduction to Diagnostic Medicine</td>
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<tr>
<td>BMS 301</td>
<td>Human Pathophysiology: Fundamentals</td>
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<tr>
<td>&amp; BMS 302</td>
<td>Human Pathophysiology: Organ and Systems I</td>
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<tr>
<td>&amp; BMS 303</td>
<td>Human Pathophysiology: Organ and Systems II</td>
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<tr>
<td>&amp; BMS 304</td>
<td>Human Pathophysiology: Organ and Systems III</td>
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<td>&amp; BMS 305</td>
<td>Human Pathophysiology: Organ and Systems IV</td>
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<td>BMS 427</td>
<td>Clinical Immunology ¹</td>
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<td>BMS 428</td>
<td>Clinical Immunology Laboratory ¹</td>
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<tr>
<td>BMS 534</td>
<td>Medical Microbiology</td>
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<td>BMS 535</td>
<td>Medical Microbiology Laboratory</td>
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<td>BMS 536</td>
<td>Applied Clinical Microbiology</td>
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<tr>
<td>BMS 537</td>
<td>Medical Parasitology and Mycology</td>
<td>2</td>
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<tr>
<td>BMS 560</td>
<td>Molecular and Genetic Diagnostics</td>
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<tr>
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<td>CHEM 102</td>
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<tr>
<td>CHEM 104</td>
<td>General Chemistry and Qualitative Analysis ¹</td>
<td>5</td>
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</tbody>
</table>
Semester 1

BIO SCI 202 Anatomy and Physiology I 4
CHEM 102 General Chemistry 5
HS 101 Introduction to Health and Disease 2

Semester 2

BIO SCI 350 General Microbiology 4
BMS 535 Medical Microbiology Laboratory 2
BMS 560 Molecular and Genetic Diagnostics 2
BMS 561 Molecular Diagnostics Laboratory 1
HCA 307 Epidemiology for the Health Sciences 3
HS 311 Law for Healthcare Consumers and Professionals 3

ENGLISH 205 Business Writing (OWCB) 3

Credits 17

Summer

BMS 536 Applied Clinical Microbiology 2
BMS 537 Medical Parasitology and Mycology 2
Electives 4

Credits 8

Year 4

Semester 1

BMS 539 Public Health Microbiology 2
BMS 540 Public Health Microbiology Lab 2
BMS 555 Toxicology and Therapeutic Drug Monitoring 1
BMS 599 Independent Study 2
BIO SCI 350 Human Parasitology 4
BIO SCI 405 General Virology 3
GER Elective: Humanities 3

Credits 17

Semester 2

BMS 531 Advanced Lectures in the Clinical Laboratory Sciences 1

Course Title Credits

CHEM 341 Introductory Survey of Organic Chemistry 3
CHEM 342 Introductory Organic Chemistry Laboratory 2
CHEM 501 Introduction to Biochemistry 3
HS 224 Computational Tools for Healthcare Professionals 3
KIN 270 Statistics in the Health Professions: Theory and Practice 3

1 Course counts towards a student’s science GPA.

Public Health Microbiology Requirements

Students in the Public Health Microbiology submajor complete an eight-week internship with the City of Milwaukee Health Department. The process of application to the professional training occurs at the end of the first semester of the junior year.

Title Credits

Human Parasitology 4
General Virology 3
Sexually Transmitted Diseases and AIDS 3
Client Diversity in Health Sciences: An Interdisciplinary Perspective 3
Advanced Lectures in the Clinical Laboratory Sciences 1
Advanced Clinical Microbiology Practicum 3
Public Health Microbiology 2
Public Health Microbiology Lab 2
Clinical Laboratory Practice 5
Professional Development in Clinical Laboratory Sciences 3
Toxicology and Therapeutic Drug Monitoring 1
Independent Study 2
Business Writing 3
Drugs Used and Abused 3
Epidemiology for the Health Sciences 3
Introduction to Health and Disease 2
Law for Healthcare Consumers and Professionals 3
Language of Medicine 3

Semester 1

Course Title Credits

HI 222 Language of Medicine 3

BIO SCI 203 Anatomy and Physiology II 4
CHEM 104 General Chemistry and Qualitative Analysis 5
HS 224 Computational Tools for Healthcare Professionals 3

Credits 15

Year 2

Semester 1

BIO SCI 150 Foundations of Biological Sciences I 4
BMS 205 Introduction to Diagnostic Medicine 3
BMS 301 Human Pathophysiology: Fundamentals 1
BMS 302 Human Pathophysiology: Organ Systems I 1
BMS 303 Human Pathophysiology: Organ Systems II 1
CHEM 341 Introductory Survey of Organic Chemistry 3
CHEM 342 Introductory Organic Chemistry Laboratory 2

Credits 15

Semester 2

BIO SCI 325 Genetics 4
BMS 201 Sexually Transmitted Diseases and AIDS 3
BMS 245 Client Diversity in Health Sciences: An Interdisciplinary Perspective 3
BMS 304 Human Pathophysiology: Organ Systems III 1
BMS 305 Human Pathophysiology: Organ Systems IV 1
KIN 270 Statistics in the Health Professions: Theory and Practice (QLB) 3

Credits 15

Year 3

Semester 1

BIO SCI 383 General Microbiology 4
BMS 427 Clinical Immunology 3
BMS 428 Clinical Immunology Laboratory 1
CHEM 501 Introduction to Biochemistry 3
HCA 212 Drugs Used and Abused 3

Credits 14

Semester 2

BMS 534 Medical Microbiology 3
BMS 535 Medical Microbiology Laboratory 2
BMS 560 Molecular and Genetic Diagnostics 2
BMS 561 Molecular Diagnostics Laboratory 1
HCA 307 Epidemiology for the Health Sciences 3
HS 311 Law for Healthcare Consumers and Professionals 3

ENGLISH 205 Business Writing (OWCB) 3

Credits 17

Summer

BMS 536 Applied Clinical Microbiology 2
BMS 537 Medical Parasitology and Mycology 2
Electives 4

Credits 8

Year 4

Semester 1

BMS 539 Public Health Microbiology 2
BMS 540 Public Health Microbiology Lab 2
BMS 555 Toxicology and Therapeutic Drug Monitoring 1
BMS 599 Independent Study 2
BIO SCI 350 Human Parasitology 4
BIO SCI 405 General Virology 3
GER Elective: Humanities 3

Credits 17

Semester 2

BMS 531 Advanced Lectures in the Clinical Laboratory Sciences 1

2 During the fall semester of their senior year, students enrolled in the Public Health Microbiology submajor will enroll in BMS 599 with both Cindy Brown and Dr. Anthony Azenabor for two credits, but participate in BMS 547.
Honors in the Major
Honors in the major are granted to students who earn a GPA of 3.500 or above on a minimum of 30 completed credits at UWM following advancement to a Health Sciences major.

Honors in the College of Health Sciences
Dean’s Honor List
GPA of 3.750 or above, earned on a full-time student’s GPA on 12 or more graded credits in a given semester.

Honors Degree and Honors Degree with Thesis
Granted to graduating seniors who complete Honors College requirements, as listed in the Honors College (http://catalog.uwm.edu/opportunities-resources/honors-college) section of this site.

Commencement Honors
Students with a cumulative GPA of 3.500 or above, based on a minimum of 40 graded UWM credits earned prior to the final semester, will receive all-university commencement honors and be awarded the traditional gold cord at the December or May Honors Convocation. In schools and colleges in which fewer than 15% of the traditional students have a 3.500 GPA, all-university honors will be awarded to approximately the top 15% of graduating students. A criterion GPA (not lower than 3.200) for this 15% will be calculated based on statistics from the previous comparable semester. Please note that for honors calculation, the GPA is not rounded and is truncated at the third decimal (e.g., 3.499).

Final Honors
Earned on a minimum of 60 graded UWM credits: Cum Laude - 3.500 or above; Magna Cum Laude - 3.650 or above; Summa Cum Laude - 3.800 or above.