

BIOMEDICAL SCIENCES, BS: BIOMEDICAL SCIENCE

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

All students will be required to comply with a background check, drug screen, and maintain health insurance during the professional training experience.

Biomedical Science

Students in the Biomedical Sciences major are awarded a Bachelor of Science degree upon completion of all requirements. This submajor provides excellent preparation for medical, physician assistant, dental, veterinary school, research and other related fields that require an advanced degree.

Requirements

This program is intended for students who wish to pursue an education in a laboratory-based program with the intent of working in the healthcare industry or for pursuing graduate health profession study. Sufficient elective credits are included to facilitate custom degree pathways. The minimum number of credits required to complete this degree is 120. Students who need background preparation courses in math, English, foreign language, or chemistry may need additional credits. This program does not lead to certification as a Medical Laboratory Scientist.

The minimum degree requirement for completion is 120 credits including the following. Entry into professional training is dependent upon completing the requirements below.

1. Completion of UWM's General Education Requirements (GER) (<https://catalog.uwm.edu/policies/undergraduate-policies/#bachelorsdegreegeneraleducation>);
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 all required courses and electives (87 credits) through the second semester of junior year (per plan of study);
5. A grade of C or better in all junior-level courses.

Biomedical Science Submajor Requirements

Code	Title	Credits
CHPS 100	New Student Seminar in Health Professions	1

BIO SCI 202	Anatomy and Physiology I ¹	4
CHEM 102	General Chemistry ¹	5
BIO SCI 203	Anatomy and Physiology II ¹	4
CHEM 104	General Chemistry and Qualitative Analysis ¹	5
HCA 224	Computational Tools for Healthcare Professionals	3
THERREC 103	Life Balance: An Understanding of Leisure (or equivalent) ²	3
BIO SCI 150	Foundations of Biological Sciences I ¹	4
BMS 301	Human Pathophysiology: Fundamentals ¹	1
BMS 302	Human Pathophysiology: Organ Systems I ¹	1
BMS 303	Human Pathophysiology: Organ Systems II ¹	1
CHEM 341	Introductory Survey of Organic Chemistry ¹	3
CHEM 342	Introductory Organic Chemistry Laboratory ¹	2
COMSDIS 250	Interprofessional Communication in the Health Sciences (or equivalent) ³	3
BIO SCI 325	Genetics ¹	4
BMS 304	Human Pathophysiology: Organ Systems III ¹	1
BMS 305	Human Pathophysiology: Organ Systems IV ¹	1
CHPS 245	Client Diversity in Health Sciences: An Interdisciplinary Perspective (or equivalent) ⁴	3
ENGLISH 207	Health Science Writing (or equivalent)	3
BIO SCI 383	General Microbiology ¹	4
BMS 427	Clinical Immunology ¹	3
BMS 428	Clinical Immunology Laboratory ¹	1
CHEM 501	Introduction to Biochemistry ¹	3
BMS 420	Clinical Hematology	3
BMS 421	Introduction To Hematology Laboratory	1
BMS 431	Clinical Chemistry	3
BMS 432	Clinical Chemistry Laboratory Theory & Operations	1
BMS 517	Laboratory Technology: Theory and Practice	2
or BMS 717	Laboratory Technology-Theory and Practice	
BMS 518	Experimental Design and Research in Biomedical Sciences	1
or BMS 718	Experimental Design and Research in Biomedical Sciences	
BMS 534	Medical Microbiology	3
BMS 535	Medical Microbiology Laboratory	2
BMS 560	Molecular and Genetic Diagnostics	2
BMS 561	Molecular Diagnostics Laboratory	1
BMS 547	Clinical Laboratory Diagnosis	3
BMS 555	Toxicology and Therapeutic Drug Monitoring	1
Additional Electives and GER Competencies ⁵		31

KIN 270	Statistics in the Health Professions: Theory and Practice ⁶	3
Total Credits		120

- ¹ Required science courses - 2.5 average GPA.
² Fulfills 3 credits of GER Humanities.
³ Fulfills 3 credits of GER Social Science.
⁴ Fulfills 3 credits of both Cultural Diversity and Social Science.
⁵ Electives posted in final year only necessary to complete credit requirement for graduation.
⁶ MTHSTAT 215 may substitute for KIN 270.

BMS 101, BMS 205, BMS 531 and BMS 549 are recommended, but not required.

Suggested Elective Certificates

(Please consult advising regarding certificate requirements):

Molecular Diagnostics Certificate (<https://catalog.uwm.edu/health-professions-sciences/biomedical-sciences-health-care-administration/biomedical-sciences/molecular-diagnostics-undergraduate-certificate/>)

Health Care Informatics Certificate (<https://catalog.uwm.edu/health-professions-sciences/biomedical-sciences-health-care-administration/health-care-administration/health-care-informatics-undergraduate-certificate/>) (available online)

Health Care Administration Minor (<https://catalog.uwm.edu/health-professions-sciences/biomedical-sciences-health-care-administration/health-care-administration/health-care-administration-minor/>) (available online)

Biomedical Science Submajor Requirements

Year 1		
Semester 1		Credits
CHPS 100	New Student Seminar in Health Professions	1
BIO SCI 202	Anatomy and Physiology I ¹	4
CHEM 102	General Chemistry ¹	5
BMS 101	Introduction to Clinical Laboratory Sciences (recommended, not required)	
BMS 205	Foundations of Diagnostic Science: Exploring Health, Technology, and Ethics (recommended, not required)	
Arts GER		3
Credits		13
Semester 2		
BIO SCI 203	Anatomy and Physiology II ¹	4
CHEM 104	General Chemistry and Qualitative Analysis ¹	5
HCA 224	Computational Tools for Healthcare Professionals	3
THERREC 103	Life Balance: An Understanding of Leisure (or equivalent)	3
Credits		15
Year 2		
Semester 1		
BIO SCI 150	Foundations of Biological Sciences I ¹	4
BMS 301	Human Pathophysiology: Fundamentals	1
BMS 302	Human Pathophysiology: Organ Systems I ¹	1
BMS 303	Human Pathophysiology: Organ Systems II ¹	1
CHEM 341	Introductory Survey of Organic Chemistry ¹	3
CHEM 342	Introductory Organic Chemistry Laboratory ¹	2

COMSDIS 250	Interprofessional Communication in the Health Sciences (or equivalent)	3
Credits		15
Semester 2		
BIO SCI 325	Genetics	4
CHPS 245	Client Diversity in Health Sciences: An Interdisciplinary Perspective (or equivalent)	3
BMS 304	Human Pathophysiology: Organ Systems III ¹	1
BMS 305	Human Pathophysiology: Organ Systems IV ¹	1
ENGLISH 207	Health Science Writing (OWCB)	3
KIN 270	Statistics in the Health Professions: Theory and Practice	3
Credits		15
Year 3		
Semester 1		
BIO SCI 383	General Microbiology ¹	4
BMS 427	Clinical Immunology ¹	3
BMS 428	Clinical Immunology Laboratory ¹	1
CHEM 501	Introduction to Biochemistry ¹	3
Humanities GER		3
Credits		14
Semester 2		
BMS 420	Clinical Hematology	3
BMS 421	Introduction To Hematology Laboratory	1
BMS 431	Clinical Chemistry	3
BMS 432	Clinical Chemistry Laboratory Theory & Operations	1
BMS 534	Medical Microbiology	3
BMS 535	Medical Microbiology Laboratory	2
BMS 560	Molecular and Genetic Diagnostics	2
BMS 561	Molecular Diagnostics Laboratory	1
Credits		16
Year 4		
Semester 1		
BMS 517 or BMS 717	Laboratory Technology: Theory and Practice or Laboratory Technology-Theory and Practice	2
BMS 518 or BMS 718	Experimental Design and Research in Biomedical Sciences or Experimental Design and Research in Biomedical Sciences	1
BMS 547	Clinical Laboratory Diagnosis	3
BMS 555	Toxicology and Therapeutic Drug Monitoring	1
Electives		9
Credits		16
Semester 2		
BMS 531	Advanced Lectures in the Clinical Laboratory Sciences (Recommended, not required)	
BMS 549 or BMS 434	Professional Development in Clinical Laboratory Sciences (Recommended, not required) or Professional Development in the Health Sciences	
Electives		16
Credits		16
Total Credits		120

¹ Required science courses - 2.5 average GPA.

Biomedical Sciences BS: Biomedical Science Learning Outcomes

Students graduating from the Biomedical Sciences-BMS (BMS-BMS) program will be able to:

- Apply laboratory testing theory and perform laboratory techniques across certain disciplines of diagnostic and research laboratory testing.
- Communicate sufficiently to serve the needs of the public, research peers and healthcare team.
- Analyze principles and practice of research design, implementation and dissemination of results.
- Comply with safety and governmental regulations and standards as applied to laboratory practice.

Accelerated Program Option

This program is offered as part of an accelerated graduate program. For more information, see Accelerated Graduate Degrees (<https://catalog.uwm.edu/opportunities-resources/accelerated-graduate-degrees/>).

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.

College of Health Professions and Sciences Dean's Honor List

GPA of 3.500 or above, earned on a full-time student's GPA on 12 or more graded credits in a given semester.

Honors College Degree and Honors College Degree with Distinction

Granted to graduating seniors who complete Honors College requirements, as listed in the Honors College (<https://catalog.uwm.edu/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. 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.