

BIOMEDICAL SCIENCES (BMS)

Biomedical Sciences Courses

BMS 101 Introduction to Clinical Laboratory Sciences

2 cr. Undergraduate.

Lecture and laboratory instruction to introduce the student to the profession of clinical laboratory sciences with special emphasis in medical technology and cytotechnology.

Prerequisites: none.

Last Taught: Spring 2025, Fall 2024, Spring 2024, Fall 2023.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 201 Sexually Transmitted Diseases and AIDS

3 cr. Undergraduate.

Introductory course examining epidemiology, physiology, and microbiology of sexually transmitted infectious diseases. Information on reproductive physiology, pathophysiology and clinical disease, prevention and current treatment strategies.

Prerequisites: none.

General Education Requirements: NS

Last Taught: Spring 2025, Spring 2024, Spring 2023, Spring 2022.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 202 Learning for Success

1 cr. Undergraduate.

Collaborative course between academic and student affairs. Students develop and refine behaviors and skills necessary for achieving academic self-confidence and scholastic success. Fulfills a requirement for restoring academic good standing.

Prerequisites: none.

Course Rules: Counts as a repeat of BMS 290 with similar topic.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 204 Plagues, Pandemics, and Epidemics

3 cr. Undergraduate.

Basic principles and concepts of infectious diseases recognized to be of major worldwide importance in terms of mortality and morbidity.

Prerequisites: none.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 205 Foundations of Diagnostic Science: Exploring Health, Technology, and Ethics

3 cr. Undergraduate.

Explores the science, ethics, and applications of diagnostic medicine while developing critical thinking, ethical reasoning, and information literacy through interdisciplinary connections in biology, physiology, and natural science.

Prerequisites: none.

General Education Requirements: NS

Last Taught: Fall 2024, Fall 2023.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 205X Foundations of Diagnostic Science: Exploring Health, Technology, and Ethics

3 cr. Undergraduate.

Explores the science, ethics, and applications of diagnostic medicine while developing critical thinking, ethical reasoning, and information literacy through interdisciplinary connections in biology, physiology, and natural science.

Prerequisites: none.

General Education Requirements: NS

Last Taught: Fall 2024, Fall 2023.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 232 Introduction to Nutrition

3 cr. Undergraduate.

Fundamentals of human nutrition, functions and requirements of nutrients, nutritional needs throughout the life cycle.

Prerequisites: none.

Course Rules: Not open for cr to students with cr in BMS 332.

General Education Requirements: NS

Last Taught: Summer 2025, Spring 2025, Fall 2024, Summer 2024.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 260 Introduction to Complementary and Integrative Health Approaches

3 cr. Undergraduate.

Introduction to the philosophy, evidence and applications of diverse medical and health care systems, practices, and products that are not generally considered part of conventional western biomedicine.

Prerequisites: none.

General Education Requirements: SS

Last Taught: Spring 2025, Fall 2024.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 260X Introduction to Complementary and Integrative Health Approaches

3 cr. Undergraduate.

Introduction to the philosophy, evidence and applications of diverse medical and health care systems, practices, and products that are not generally considered part of conventional western biomedicine.

Prerequisites: none.

General Education Requirements: SS

Last Taught: Spring 2025, Fall 2024.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 281 Dead Men Do Tell Tales: An Introduction to Forensic Science

3 cr. Undergraduate.

A multidisciplinary view of how forensic scientists contribute to the many ways that physical evidence is collected, analyzed, and evaluated.

Prerequisites: none.

Course Rules: ANTHRO 281, BMS 281, CHEM 281, and CRM JST 281 are jointly offered and count as repeats of one another.

Last Taught: Fall 2024, Fall 2023, Fall 2022, Spring 2022.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 285 Medicolegal Death Investigation

3 cr. Undergraduate.

Lectures on the fundamentals of death investigation as outlined by national guidelines for death investigators.

Prerequisites: none.

Course Rules: Jointly-offered with & counts as repeat of Anthro/Chem/ Crm Jst 285.

Last Taught: Fall 2023, Fall 2022, Fall 2021, Fall 2019.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 290 Topics in Health Sciences:

1-3 cr. Undergraduate.

Topics of current interest in the field of health sciences.

Prerequisites: specified in sem schedule whenever req'd for a topic.

Course Rules: May be repeated with change in topic.

Last Taught: Spring 2022, Spring 2021, Spring 2020, Spring 2018.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 297 Study Abroad:

1-12 cr. Undergraduate.

Designed to enroll students in UWM sponsored program before course work level, content and credits are determined and/or in specially prepared program course work.

Prerequisites: acceptance to Study Abroad Prog.

Course Rules: May be retaken w/chg in topic.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 301 Human Pathophysiology: Fundamentals

1 cr. Undergraduate.

Pathological mechanisms underlying disease states, diagnosis and treatment of these disorders; topics cover cell injury, inflammation, immunopathology, repair, regeneration and fibrosis.

Prerequisites: Bio Sci 203(P) or consent of instructor.

Last Taught: Summer 2025, Spring 2025.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 301X Human Pathophysiology: Fundamentals

1 cr. Undergraduate.

Pathological mechanisms underlying disease states, diagnosis and treatment of these disorders; topics cover cell injury, inflammation, immunopathology, repair, regeneration and fibrosis.

Prerequisites: Bio Sci 203(P) or consent of instructor.

Last Taught: Summer 2025, Spring 2025.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 302 Human Pathophysiology: Organ Systems I

1 cr. Undergraduate.

Pathological mechanisms underlying disease states, diagnosis and treatment of these disorders; topics cover developmental and genetic disorders, neoplasms, nervous system, bones, joints, skeletal muscle.

Prerequisites: BMS 301(C) or cons instr.

Last Taught: Summer 2025, Fall 2024.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 302X Human Pathophysiology: Organ Systems I

1 cr. Undergraduate.

Pathological mechanisms underlying disease states, diagnosis and treatment of these disorders; topics cover developmental and genetic disorders, neoplasms, nervous system, bones, joints, skeletal muscle.

Prerequisites: BMS 301(C) or cons instr.

Last Taught: Summer 2025, Fall 2024.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 303 Human Pathophysiology: Organ Systems II

1 cr. Undergraduate.

Pathological mechanisms underlying disease states, diagnosis and treatment of these disorders; topics cover cardiovascular, respiratory, blood and lymphoid systems, diabetes.

Prerequisites: BMS 301(C) or consent of instructor.

Last Taught: Summer 2025, Fall 2024.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 303X Human Pathophysiology: Organ Systems II

1 cr. Undergraduate.

Pathological mechanisms underlying disease states, diagnosis and treatment of these disorders; topics cover cardiovascular, respiratory, blood and lymphoid systems, diabetes.

Prerequisites: BMS 301(C) or consent of instructor.

Last Taught: Summer 2025, Fall 2024.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 304 Human Pathophysiology: Organ Systems III

1 cr. Undergraduate.

Pathological mechanisms underlying disease states, diagnosis and treatment of these disorders; topics cover gastrointestinal tract, pancreas, kidney, liver/biliary system, female and male reproductive systems.

Prerequisites: BMS 301(C) or consent of instructor.

Last Taught: Summer 2025, Spring 2025.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 304X Human Pathophysiology: Organ Systems III

1 cr. Undergraduate.

Pathological mechanisms underlying disease states, diagnosis and treatment of these disorders; topics cover gastrointestinal tract, pancreas, kidney, liver/biliary system, female and male reproductive systems.

Prerequisites: BMS 301(C) or consent of instructor.

Last Taught: Summer 2025, Spring 2025.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 305 Human Pathophysiology: Organ Systems IV

1 cr. Undergraduate.

Pathological mechanisms underlying disease states, diagnosis/treatment of these disorders. Topics: endocrine system, infectious and parasitic diseases, environmental and nutritional factors related to morbidity/mortality.

Prerequisites: BMS 301(C) or consent of instructor.

Last Taught: Summer 2025, Spring 2025.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 305X Human Pathophysiology: Organ Systems IV

1 cr. Undergraduate.

Pathological mechanisms underlying disease states, diagnosis/treatment of these disorders. Topics: endocrine system, infectious and parasitic diseases, environmental and nutritional factors related to morbidity/mortality.

Prerequisites: BMS 301(C) or consent of instructor.

Last Taught: Summer 2025, Spring 2025.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 314X Human Pathophysiology I

3 cr. Undergraduate.

Study of human pathological processes. Emphasis is on interrelationships among organ systems and deviations from homeostasis.

Prerequisites: Bio Sci 202(P) & 203(P).**Course Rules:** Counts as repeat of BMS 301 or BMS 302 or BMS 303.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 315X Human Pathophysiology II**

2 cr. Undergraduate.

Study of human pathological processes. Emphasis is on interrelationships among organ systems and deviations from homeostasis.

Prerequisites: Bio Sci 202(P) & 203(P).**Course Rules:** Counts as repeat of BMS 304 or BMS 305.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 332 Clinical Nutrition**

2 cr. Undergraduate.

Nutritional needs throughout life; relationships between food habits and health problems; evaluating dietary information for deficiencies and imbalances.

Prerequisites: Chem 103(P), Bio Sci 202(P) & 203(P), or BMS 232(P) or HlthSci 232(P).**Last Taught:** Summer 2025, Spring 2025, UWinterIM 2025, Fall 2024.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 335 Echocardiography I**

3 cr. Undergraduate.

Introduction to normal cardiovascular anatomy, the normal ultrasound exam and protocol for an echocardiogram.

Prerequisites: jr st in BioMed Sci prog or cons instr.**Last Taught:** Fall 2009, Fall 2008, Fall 2007.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 350 Histotechnology I**

3 cr. Undergraduate.

Fundamental theory and aspects of histotechnology techniques including fixation, processing, embedding, microtomy and staining. Laboratory operation topics are also covered such laboratory math, quality control and compliance related to histology laboratories.

Prerequisites: junior standing or consent of instructor.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 351 Histotechnology II**

3 cr. Undergraduate.

Continuation of Histotechnology I. Introduction to fundamental histotechniques such as special stains, immunohistochemistry, cytology staining, enzyme histochemistry and in situ hybridization.

Prerequisites: BMS 350(P) or consent of instructor.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 403 Sonographic Physics I**

1 cr. Undergraduate.

Study of the basic principles of acoustic transmission, reflection in tissues and transducer design in pulse echo systems.

Prerequisites: jr st in BioMed Sci prog or cons instr.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 404 Sonographic Physics II**

1 cr. Undergraduate.

Study of the basic principles of near zone, far zone, beam profiles, beam focusing, transducer arrays.

Prerequisites: jr st in BioMed Sci prog) or cons instr.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 405 Sonographic Physics III**

1 cr. Undergraduate.

Study of the basic principles of Doppler, acoustical exposure measurements, QA, bioeffects and the ALARA principle.

Prerequisites: jr st in BioMed Sci prog or cons instr.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 406 Diagnostic Medical Sonography (DMS) Abdomen I**

4 cr. Undergraduate.

Study of normal and abnormal sonograms of the peritoneal space, pre-vertebral vessels, liver, biliary, pancreas and kidneys will be discussed.

Prerequisites: jr st in BioMed Sci prog or cons instr.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 407 Diagnostic Medical Sonography (DMS) Abdomen II**

4 cr. Undergraduate.

Study of normal and abnormal sonograms of the spleen, transplant imaging, GI imaging and dedicated pediatric imaging will be discussed.

Prerequisites: jr st in BioMed Sci prog or cons instr.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 408 Vascular Sonography: CV & PV-Arterial**

5 cr. Undergraduate.

Study of cerebrovascular anatomy, normal and abnormal, and ultrasound imaging, upper arterial ultrasound exams, anatomy and pathology and lower extremity arterial ultrasound.

Prerequisites: jr st in BioMed Sci prog or cons instr.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 409 Vascular Technology: Advanced**

4 cr. Undergraduate.

Study of peripheral vascular direct and indirect arterial and venous, normal and abnormal and abdominal Doppler.

Prerequisites: jr st in BioMed Sci prog or cons instr.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 410 Sonography Clinical Internship I**

5 cr. Undergraduate.

Students will successfully complete sonography clinical competency examinations, under the supervision of the clinical instructors.

Prerequisites: jr st in BioMed Sci prog or cons instr.**Last Taught:** Fall 2014, Fall 2013.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 411 Sonography Clinical Internship II**

5 cr. Undergraduate.

Students will successfully complete sonography clinical competency examinations, under the supervision of the clinical instructors.

Prerequisites: jr st in BioMed Sci prog or cons instr.**Last Taught:** Spring 2015, Spring 2014.**Current Offerings:** <https://catalog.uwm.edu/course-search/>

BMS 420 Clinical Hematology

3 cr. Undergraduate/Graduate.

Lectures in the production, regulation, function, and cytomorphology of normal hematopoietic elements. Introduction to hemostasis theory.

Prerequisites: jr st or cons instr.**Last Taught:** Spring 2025, Spring 2024.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 420G Clinical Hematology**

3 cr. Undergraduate/Graduate.

Lectures in the production, regulation, function, and cytomorphology of normal hematopoietic elements. Introduction to hemostasis theory.

Prerequisites: jr st or cons instr.**Last Taught:** Spring 2025, Spring 2024.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 421 Introduction To Hematology Laboratory**

1 cr. Undergraduate.

Clinical laboratory experiences in basic hematology techniques and instrumentation to evaluate hematopoietic elements. 3 hr lab.

Prerequisites: jr st in BioMed Sci prog or cons instr; BMS 420(C).**Last Taught:** Spring 2025, Spring 2024, Spring 2023, Spring 2022.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 427 Clinical Immunology**

3 cr. Undergraduate/Graduate.

Fundamentals of Clinical Immunology, including cellular, humoral and molecular aspects. Correlation of laboratory test results with clinical disease states.

Prerequisites: jr st.**Last Taught:** Fall 2024.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 427G Clinical Immunology**

3 cr. Undergraduate/Graduate.

Fundamentals of Clinical Immunology, including cellular, humoral and molecular aspects. Correlation of laboratory test results with clinical disease states.

Prerequisites: jr st.**Last Taught:** Fall 2024.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 428 Clinical Immunology Laboratory**

1 cr. Undergraduate.

Laboratory experiments in clinical immunology and theories of testing concepts. 3 hr lab.

Prerequisites: jr st in BioMed Sci prog or cons instr; BMS 427(C).**Last Taught:** Fall 2024, Fall 2023, Fall 2022, Fall 2021.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 431 Clinical Chemistry**

3 cr. Undergraduate/Graduate.

Correlation of clinical chemistry with the pathophysiology of human disease.

Prerequisites: jr st; Chem 501(P) or cons instr; or grad st.**Last Taught:** Spring 2025, Spring 2024.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 431G Clinical Chemistry**

3 cr. Undergraduate/Graduate.

Correlation of clinical chemistry with the pathophysiology of human disease.

Prerequisites: jr st; Chem 501(P) or cons instr; or grad st.**Last Taught:** Spring 2025, Spring 2024.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 432 Clinical Chemistry Laboratory Theory & Operations**

1 cr. Undergraduate.

Theory and application of Clinical Chemistry laboratory principles. Focus on laboratory principles, quality assurance, theory of instrumentation, and laboratory problem solving.

Prerequisites: jr st in BioMed Sci prog or cons instr; Chem 501(P); BMS 431(C).**Last Taught:** Spring 2025, Spring 2024, Spring 2023, Spring 2022.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 433 Teamwork in the Health Professions**

3 cr. Undergraduate.

Develop and demonstrate competency in best practices for professionalism, roles, responsibilities, teamwork, communication, ethics, and collaboration to improve the quality and safety of patient care.

Prerequisites: sr st or cons instr.**Last Taught:** Spring 2025, Fall 2024.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 433X Teamwork in the Health Professions**

3 cr. Undergraduate.

Develop and demonstrate competency in best practices for professionalism, roles, responsibilities, teamwork, communication, ethics, and collaboration to improve the quality and safety of patient care.

Prerequisites: sr st or cons instr.**Last Taught:** Spring 2025, Fall 2024.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 434 Professional Development in the Health Sciences**

3 cr. Undergraduate.

Knowledge and understanding about professional volunteerism, leadership, legislative, and advocacy efforts, certification and licensure, career pathways, growth, and advancement.

Prerequisites: sr st or cons instr.**Last Taught:** Spring 2025, Fall 2024.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 434X Professional Development in the Health Sciences**

3 cr. Undergraduate.

Knowledge and understanding about professional volunteerism, leadership, legislative, and advocacy efforts, certification and licensure, career pathways, growth, and advancement.

Prerequisites: sr st or cons instr.**Last Taught:** Spring 2025, Fall 2024.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 435 Foundations of Interprofessional Education and Practice**

3 cr. Undergraduate.

Learning in this course is based on the IPEC Core Competencies for Interprofessional Collaborative Practice and principles of cultural engagement.

Prerequisites: junior standing or greater.**Last Taught:** Spring 2025, Spring 2024.**Current Offerings:** <https://catalog.uwm.edu/course-search/>

BMS 435X Foundations of Interprofessional Education and Practice

3 cr. Undergraduate.

Learning in this course is based on the IPEC Core Competencies for Interprofessional Collaborative Practice and principles of cultural engagement.

Prerequisites: junior standing or greater.**Last Taught:** Spring 2025, Spring 2024.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 459 Introduction to 3D/4D Ultrasound**

3 cr. Undergraduate.

Comparison of normal and pathological anatomy cases utilizing two, three and four dimensional sonography techniques.

Prerequisites: junior standing in BioMedical Science program or consent of instructor.**Last Taught:** Fall 2013, Spring 2010.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 459X Introduction to 3D/4D Ultrasound**

3 cr. Undergraduate.

Comparison of normal and pathological anatomy cases utilizing two, three and four dimensional sonography techniques.

Prerequisites: junior standing in BioMedical Science program or consent of instructor.**Last Taught:** Fall 2013, Spring 2010.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 462 Seminar in Ultrasound Research**

3 cr. Undergraduate.

Student is assigned to a research project and mentor in didactic one-on-one sessions and performing clinical studies.

Prerequisites: jr st in BioMed Sci prog or cons instr.**Last Taught:** Spring 2009.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 472 Radiographic Anatomy and Physiology IV**

3 cr. Undergraduate.

Structure and physiology of the human body as they relate to radiography of the remaining systems. The physicochemical process.

Prerequisites: sr st in BioMed Sci prog or cons instr.**Last Taught:** Fall 2012, Fall 2011, Fall 2010, Fall 2009.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 476 Radiographic Exposure IV**

3 cr. Undergraduate.

Digital imaging concepts and conversion problems, qualities of contrast, density, detail, and distortion.

Prerequisites: sr st in BioMed Sci prog or cons instr.**Last Taught:** Spring 2013, Spring 2012, Spring 2011, Spring 2010.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 481 Criminalistics**

3 cr. Undergraduate.

Instruction on collection, preservation, and analysis of physical evidence from crime scenes. Instruction on the rules of evidence and expert testimony.

Prerequisites: junior standing in Forensic Science certificate program, ANTHRO/BMS/CHEM/CRM JST 281(P), and ANTHRO/BMS/CHEM/CRM JST 480(P).**Course Rules:** ANTHRO 481, CHEM 481, BMS 481, and CRM JST 481 are jointly offered and count as repeats of one another.**Last Taught:** Spring 2016, Spring 2012, Spring 2011, Spring 2010.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 497 Study Abroad:**

1-12 cr. Undergraduate/Graduate.

Designed to enroll students in UWM sponsored program before course work level, content, and credits are determined and/or in specially prepared program course work.

Prerequisites: acceptance to Study Abroad Prog.**Course Rules:** May be retaken w/chg in topic.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 497G Study Abroad:**

1-12 cr. Undergraduate/Graduate.

Designed to enroll students in UWM sponsored program before course work level, content, and credits are determined and/or in specially prepared program course work.

Prerequisites: acceptance to Study Abroad Prog.**Course Rules:** May be retaken w/chg in topic.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 501 Introduction to Cytotechnology**

1 cr. Undergraduate.

Fieldwork to include lecture and laboratory instruction introducing the profession of Cytotechnology with emphasis on the role, responsibility, and ethics of the profession.

Prerequisites: sr st in BioMed Sci prog & cons prog dir.**Last Taught:** Fall 2013, Fall 2012, Fall 2011, Fall 2010.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 517 Laboratory Technology: Theory and Practice**

2 cr. Undergraduate.

Introduction to common biomedical laboratory techniques and begin development of independent biomedical researchers.

Prerequisites: BMS 427(P), BMS 428(P), BMS 560(P), and BMS 561(P); or consent of instructor.**Last Taught:** Fall 2024, Fall 2023, Fall 2022.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 518 Experimental Design and Research in Biomedical Sciences**

1 cr. Undergraduate.

Introduction to principles of experimental design in the biomedical research setting toward development as independent biomedical researchers.

Prerequisites: BMS 427(P), BMS 428(P), BMS 560(P), and BMS 561(P); or consent of instructor.**Last Taught:** Fall 2024, Fall 2023, Fall 2022.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 521 Applied Clinical Hematology**

2 cr. Undergraduate.

Instruction in hematological laboratory techniques and the pathophysiology of disease of the reticuloendothelial system using case studies as a basis of discussion.

Prerequisites: sr st in BioMed Sci prog or cons instr.**Last Taught:** Summer 2025, Summer 2024, Summer 2023, Summer 2022.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 522 Hemostasis**

1 cr. Undergraduate.

Correlation of basic theories of the hemostatic system with normal and abnormal clinical laboratory results. Introduction to basic methodology employed in differential diagnosis of hemostatic disorders.

Prerequisites: sr st in BioMed Sci prog or cons prog dir.**Last Taught:** Summer 2025, Summer 2024, Summer 2023, Summer 2022.**Current Offerings:** <https://catalog.uwm.edu/course-search/>

BMS 523 Lectures in Advanced Clinical Hematology

1 cr. Undergraduate.

Lectures dealing with abnormalities of hematopoiesis, and the blood dyscrasias, and examination of bone marrow and lymphnodes.

Prerequisites: BMS 420(320)(P) or cons instr.**Last Taught:** Fall 2024, Fall 2023, Fall 2022, Fall 2021.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 524 Advanced Clinical Hematology Practicum**

3 cr. Undergraduate.

Practical experience in the clinical laboratory dealing with both normal and abnormal hematology and body fluids.

Prerequisites: senior standing in biomedical science program or consent of program director.**Last Taught:** Spring 2025, Spring 2024, Spring 2023, Spring 2022.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 529 Introduction to Immunohematology**

3 cr. Undergraduate.

An introduction to the fundamentals of immunohematology and clinical blood banking.

Prerequisites: BMS 427(P) or cons instr.**Last Taught:** Fall 2024, Fall 2023, Fall 2022, Fall 2021.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 530 Immunohematology and Blood Banking Laboratory**

1 cr. Undergraduate.

Fundamental practical instruction in basic blood banking techniques.

Prerequisites: BMS 529(C) or cons instr.**Last Taught:** Fall 2024, Fall 2023, Fall 2022, Fall 2021.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 531 Advanced Lectures in the Clinical Laboratory Sciences**

1 cr. Undergraduate.

Clinical applications and relationships within the various disciplines of clinical laboratory sciences including discussion of current topics of interest in diagnostic medicine.

Prerequisites: senior standing in biomedical science program or consent of program director.**Last Taught:** Spring 2025, Spring 2024, Spring 2023, Spring 2022.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 532 Advanced Clinical Immunohematology and Immunology**

3 cr. Undergraduate.

Practical instruction in clinical serology and immunohematology.

Correlation of test results with disease states.

Prerequisites: senior standing in biomedical science program or consent of program director.**Last Taught:** Spring 2025, Spring 2024, Spring 2023, Spring 2022.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 534 Medical Microbiology**

3 cr. Undergraduate/Graduate.

Advanced comprehensive study of microorganisms that influence human health and disease. Emphasis on identification/diagnosis and microbial attributes and mechanisms that facilitate infectious disease.

Prerequisites: jr st & Bio Sci 383(303)(P); or grad st; or cons instr.**Last Taught:** Spring 2025.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 534G Medical Microbiology**

3 cr. Undergraduate/Graduate.

Advanced comprehensive study of microorganisms that influence human health and disease. Emphasis on identification/diagnosis and microbial attributes and mechanisms that facilitate infectious disease.

Prerequisites: jr st & Bio Sci 383(303)(P); or grad st; or cons instr.**Last Taught:** Spring 2025.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 535 Medical Microbiology Laboratory**

2 cr. Undergraduate/Graduate.

Formal systematic laboratory study of microorganisms important in human health and disease. Emphasis on current methods of detection, identification and treatment. 4 hr lab.

Prerequisites: jr st & Bio Sci 383(303)(P), or cons instr; BMS 534(C).**Last Taught:** Spring 2025.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 535G Medical Microbiology Laboratory**

2 cr. Undergraduate/Graduate.

Formal systematic laboratory study of microorganisms important in human health and disease. Emphasis on current methods of detection, identification and treatment. 4 hr lab.

Prerequisites: jr st & Bio Sci 383(303)(P), or cons instr; BMS 534(C).**Last Taught:** Spring 2025.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 536 Applied Clinical Microbiology**

2 cr. Undergraduate.

Lectures and laboratory dealing with the systematic study of bacteria of medical importance to humans.

Prerequisites: senior standing in biomedical science program or consent of program director.**Last Taught:** Summer 2025, Summer 2024, Summer 2023, Summer 2022.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 537 Medical Parasitology and Mycology**

2 cr. Undergraduate/Graduate.

Lectures and laboratory dealings with the medically significant parasitic and mycotic agents of human disease.

Prerequisites: senior standing in biomedical science program or consent of program director; or graduate standing.**Last Taught:** Summer 2025.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 537G Medical Parasitology and Mycology**

2 cr. Undergraduate/Graduate.

Lectures and laboratory dealings with the medically significant parasitic and mycotic agents of human disease.

Prerequisites: senior standing in biomedical science program or consent of program director; or graduate standing.**Last Taught:** Summer 2025.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 538 Advanced Clinical Microbiology Practicum**

3 cr. Undergraduate.

Clinical instruction in techniques utilized for the diagnosis of infectious disease, including special culture techniques.

Prerequisites: senior standing in biomedical science program or consent of program director.**Last Taught:** Spring 2025, Spring 2024, Spring 2023, Spring 2022.**Current Offerings:** <https://catalog.uwm.edu/course-search/>

BMS 539 Public Health Microbiology

2 cr. Undergraduate/Graduate.

The role of microbiological analysis in public health and the current techniques for detecting, identifying, and enumerating pathogenic microorganisms.

Prerequisites: jr st & Bio Sci 383(303)(P), or grad st; or cons instr.**Last Taught:** Fall 2024.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 539G Public Health Microbiology**

2 cr. Undergraduate/Graduate.

The role of microbiological analysis in public health and the current techniques for detecting, identifying, and enumerating pathogenic microorganisms.

Prerequisites: jr st & Bio Sci 383(303)(P), or grad st; or cons instr.**Last Taught:** Fall 2024.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 540 Public Health Microbiology Lab**

2 cr. Undergraduate/Graduate.

Current laboratory techniques for detecting, identifying, and enumerating pathogenic microorganisms.

Prerequisites: jr st, or cons instr**Last Taught:** Fall 2023, Fall 2021.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 540G Public Health Microbiology Lab**

2 cr. Undergraduate/Graduate.

Current laboratory techniques for detecting, identifying, and enumerating pathogenic microorganisms.

Prerequisites: jr st, or cons instr**Last Taught:** Fall 2023, Fall 2021.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 541 Urinalysis**

1 cr. Undergraduate.

Lecture and laboratory experience in clinical analysis of urine.

Prerequisites: senior standing in biomedical science program or consent of program director.**Last Taught:** Summer 2025, Summer 2024, Summer 2023, Summer 2022.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 542 Applied Clinical Chemistry**

2 cr. Undergraduate.

Systematic instruction in the laboratory determination of substances of principal interest to the diagnosis of human disease.

Prerequisites: senior standing in biomedical science program or consent of program director.**Last Taught:** Summer 2025, Summer 2024, Summer 2023, Summer 2022.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 544 Advanced Clinical Chemistry Practicum**

3 cr. Undergraduate.

Experience in a hospital laboratory dealing with routine and specialized biochemical procedures and all phases of instrumentation currently used in this field.

Prerequisites: senior standing in biomedical science program or consent of program director.**Last Taught:** Spring 2025, Spring 2024, Spring 2023, Spring 2022.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 545 Human Histology**

3 cr. Undergraduate/Graduate.

A detailed study of the structure and function of human tissues.

Prerequisites: jr st.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 545G Human Histology**

3 cr. Undergraduate/Graduate.

A detailed study of the structure and function of human tissues.

Prerequisites: jr st.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 547 Clinical Laboratory Diagnosis**

2-5 cr. Undergraduate.

Lectures and laboratory covering special topics in the use of laboratory testing in clinical diagnosis of disease.

Prerequisites: senior standing in Biomedical Sciences program or consent of program director.**Last Taught:** Fall 2024, Fall 2023, Fall 2022, Fall 2021.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 548 Clinical Laboratory Practice**

2-5 cr. Undergraduate.

Experience in various laboratory techniques.

Prerequisites: senior standing in Biomedical Sciences program or consent of program director.**Last Taught:** Spring 2025, Fall 2024, Fall 2023, Fall 2022.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 549 Professional Development in Clinical Laboratory Sciences**

3 cr. Undergraduate.

Discussion and participation in professional development activities.

Topics include: laboratory management, laboratory information systems, professional conduct, ethics, certification, job placement, and educational methodologies.

Prerequisites: senior standing in BioMedical Science program or consent of instructor.**Last Taught:** Spring 2025, Spring 2024, Spring 2023, Spring 2022.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 552 Advanced Nutrition**

2 cr. Undergraduate/Graduate.

Nutrient utilization and human metabolism, nutritional influences in anthropology, epidemiology and international development issues.

Prerequisites: jr st; BMS 232(P) or Bio Sci 501(P).**Last Taught:** Spring 2008, Fall 2007.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 552G Advanced Nutrition**

2 cr. Undergraduate/Graduate.

Nutrient utilization and human metabolism, nutritional influences in anthropology, epidemiology and international development issues.

Prerequisites: jr st; BMS 232(P) or Bio Sci 501(P).**Last Taught:** Spring 2008, Fall 2007.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 555 Toxicology and Therapeutic Drug Monitoring**

1 cr. Undergraduate/Graduate.

Survey of the pharmacology and analytical methods for identification and quantitation of therapeutic and toxic substances.

Prerequisites: jr st, & Chem 341(P) or 345(P); or cons instr.**Last Taught:** Fall 2024.**Current Offerings:** <https://catalog.uwm.edu/course-search/>

BMS 555G Toxicology and Therapeutic Drug Monitoring

1 cr. Undergraduate/Graduate.

Survey of the pharmacology and analytical methods for identification and quantitation of therapeutic and toxic substances.

Prerequisites: jr st, & Chem 341(P) or 345(P); or cons instr.**Last Taught:** Fall 2024.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 560 Molecular and Genetic Diagnostics**

2 cr. Undergraduate/Graduate.

Introduction to principles and applications of DNA technology in the clinical laboratory.

Prerequisites: jr st, Bio Sci 325 (P); or grad st.**Last Taught:** Spring 2025.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 560G Molecular and Genetic Diagnostics**

2 cr. Undergraduate/Graduate.

Introduction to principles and applications of DNA technology in the clinical laboratory.

Prerequisites: jr st, Bio Sci 325 (P); or grad st.**Last Taught:** Spring 2025.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 561 Molecular Diagnostics Laboratory**

1 cr. Undergraduate/Graduate.

Clinical laboratory experiences in molecular diagnostic techniques and instrumentation.

Prerequisites: jr st & BMS 560(C); or grad st & BMS 705(P); or cons instr.**Last Taught:** Spring 2025.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 561G Molecular Diagnostics Laboratory**

1 cr. Undergraduate/Graduate.

Clinical laboratory experiences in molecular diagnostic techniques and instrumentation.

Prerequisites: jr st & BMS 560(C); or grad st & BMS 705(P); or cons instr.**Last Taught:** Spring 2025.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 575 Cytology of the Female Genital Tract - I**

4 cr. Undergraduate.

Fieldwork to include lectures discussing the normal and abnormal cytology of the female genital tract.

Prerequisites: sr st in BioMed Sci prog & cons prog dir.**Last Taught:** Fall 2013, Fall 2012, Fall 2011, Fall 2010.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 576 Cytology of the Female Genital Tract - II**

4 cr. Undergraduate.

Fieldwork to include laboratory experience dealing with the study of the normal and abnormal cytology of the female genital tract.

Prerequisites: sr st in BioMed Sci prog & cons prog dir.**Last Taught:** Fall 2013, Fall 2012, Fall 2011, Fall 2010.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 577 Cytology of the Respiratory Tract**

3 cr. Undergraduate.

Lectures and laboratory experience in the study of the normal and abnormal cytology of the respiratory tract.

Prerequisites: sr st in BioMed Sci prog & cons prog dir.**Last Taught:** Fall 2013, Fall 2012, Fall 2011, Fall 2010.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 578 Cytology of the Gastrointestinal and the Genito-Urinary Tract**

2 cr. Undergraduate.

Fieldwork to include lecture and laboratory experience dealing with the normal and abnormal cytology of the G.I. and G.U. tracts.

Prerequisites: sr st in BioMed Sci prog & cons prog dir.**Last Taught:** Spring 2014, Spring 2013, Spring 2012, Spring 2011.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 579 Cytology of Effusions and the Central Nervous System**

3 cr. Undergraduate.

Fieldwork to include lecture and laboratory experiences in the study of various body fluids in health and disease.

Prerequisites: sr st in BioMed Sci & cons prog dir.**Last Taught:** Spring 2014, Spring 2013, Spring 2012, Spring 2011.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 580 Aspiration Cytology**

4 cr. Undergraduate.

Fieldwork to include lecture and laboratory experience dealing with aspiration cytology.

Prerequisites: sr st in BioMed Sci prog & cons prog dir.**Last Taught:** Spring 2014, Spring 2013, Spring 2012, Spring 2011.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 581 Special Procedures in Cytology**

1 cr. Undergraduate.

Fieldwork to include lecture and laboratory experiences dealing with special procedures used in cytological diagnosis.

Prerequisites: sr st in BioMed Sci prog & cons prog dir.**Last Taught:** Spring 2014, Spring 2013, Spring 2012, Spring 2011.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 582 Cytology of the Breast**

1 cr. Undergraduate.

Fieldwork to include lecture and laboratory experiences dealing with the normal and abnormal cytology of the breast.

Prerequisites: sr st in BioMed Sci prog & cons prog dir.**Last Taught:** Spring 2014, Spring 2013, Spring 2012, Spring 2011.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 583 Cytology Preparation Techniques**

1 cr. Undergraduate.

Fieldwork to include laboratory preparation of gynecologic and non-gynecologic cytology specimens using several different instrument methodologies.

Prerequisites: sr st in BioMed Sci prog & cons prog dir.**Last Taught:** Summer 2014, Summer 2013, Summer 2012, Summer 2011.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 585 Internship in Forensic Toxicology**

1-3 cr. Undergraduate.

Practical experience in a forensic toxicology laboratory under the supervision of a toxicologist.

Prerequisites: junior standing in Forensic Science certificate program; ANTHRO 281(P), CHEM 281(P), BMS 281(P), or CRM JST 281(P); ANTHRO 285(P), CHEM 285(P), BMS 285(P), or CRM JST 285(P); CHEM 221(P) or CHEM 223(P); and Hepatitis B vaccine series or waiver.**Course Rules:** ANTHRO 585, CHEM 585, BMS 585, and CRM JST 585 are jointly offered; they count as repeats of one another.**Last Taught:** Spring 2024, Spring 2002.**Current Offerings:** <https://catalog.uwm.edu/course-search/>

BMS 586 Cytology Lab Operations and Quality Control

1 cr. Undergraduate.

Basic administrative functions and quality control procedures utilized in the cytology laboratory.

Prerequisites: sr st in BioMed Sci prog & cons prog dir.**Last Taught:** Spring 2014, Spring 2013, Spring 2012, Spring 2011.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 587 Research Methods in Cytology**

1 cr. Undergraduate.

Research methods in cytology through journal club, literature reviews, case studies, and library research.

Prerequisites: sr st in BioMed Sci prog & cons prog dir.**Last Taught:** Summer 2014, Summer 2013, Summer 2012, Summer 2011.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 588 Diagnostic Microscopy in Cytology**

5 cr. Undergraduate.

Fieldwork in a functioning cytotechnology laboratory.

Prerequisites: sr st in BioMed Sci prog & cons prog dir.**Last Taught:** Summer 2014, Summer 2013, Summer 2012, Summer 2011.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 589 Internship in Death Investigation**

1-3 cr. Undergraduate.

Practical experience in death investigation under the supervision of a death investigator and forensic pathologist.

Prerequisites: junior standing in Forensic Science certificate program; ANTHRO 281(P), BMS 281(P), CHEM 281(P), or CRM JST 281(P); CRM JST 480(P); BMS 620(R); and Hepatitis B vaccine series or waiver.**Course Rules:** ANTHRO 589, CHEM 589, BMS 589, and CRM JST 589 are jointly offered; they count as repeats of one another.**Last Taught:** Spring 2023, Fall 2022, Fall 2019, Fall 2017.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 590 Topics in Clinical Laboratory Sciences:**

1-5 cr. Undergraduate/Graduate.

Topics of current interest in the field of clinical laboratory sciences. The major theme for each semester offering will be posted.

Prerequisites: junior standing; consent of instructor for graduate credit.**Course Rules:** May be retaken with change in topic to max of 9 cr for grad students.**Last Taught:** Summer 2025, Spring 2023.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 590X Topics in Clinical Laboratory Sciences:**

1-5 cr. Undergraduate/Graduate.

Topics of current interest in the field of clinical laboratory sciences. The major theme for each semester offering will be posted.

Prerequisites: junior standing; consent of instructor for graduate credit.**Course Rules:** May be retaken with change in topic to max of 9 cr for grad students.**Last Taught:** Summer 2025, Spring 2023.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 594 Internship in Forensic Science**

1-3 cr. Undergraduate.

On-site shadowing of evidence analyst at State Crime Laboratory.

Prerequisites: junior standing in Forensic Science certificate program; ANTHRO 281(P), CHEM 281(P), BMS 281(P), or CRM JST 281(P); CHEM 221(P) or CHEM 223(P); CRM JST 480(P); and Hepatitis B vaccine series or waiver.**Course Rules:** ANTHRO 594, CHEM 594, BMS 594, and CRM JST 594 are jointly offered and count as repeats of one another.**Last Taught:** Fall 2023, Spring 2023, Spring 2020, Spring 2016.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 599 Independent Study**

1-3 cr. Undergraduate.

Individualized experience which enables the student to study current topics of interest to the clinical laboratory scientist. Level of credit assigned based on time required for completion.

Prerequisites: cons instr & prog dir.**Course Rules:** May be retaken to 12 cr max.**Last Taught:** Spring 2025, Spring 2024, Fall 2023, Summer 2023.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 600 Contrast Diagnostic Imaging**

3 cr. Undergraduate/Graduate.

Use of contrast media in medical imaging diagnostic procedures.

Prerequisites: junior standing in BioMedical Science program; ARRT, ARDMS, or CCI Imaging Certification or completion of an Introductory Diagnostic Imaging course.**Last Taught:** Spring 2014.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 600G Contrast Diagnostic Imaging**

3 cr. Undergraduate/Graduate.

Use of contrast media in medical imaging diagnostic procedures.

Prerequisites: junior standing in BioMedical Science program; ARRT, ARDMS, or CCI Imaging Certification or completion of an Introductory Diagnostic Imaging course.**Last Taught:** Spring 2014.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 601 Molecular Imaging for Diagnostic Imaging**

3 cr. Undergraduate/Graduate.

Study of imaging principles utilized with molecular imaging. To include review of scientific publications for the use of molecular imaging to review various disease processes.

Prerequisites: junior standing in BioMedical Science program; ARRT, ARDMS, or CCI Imaging Certification or completion of an introductory Diagnostic Imaging course.**Last Taught:** Spring 2014.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 601G Molecular Imaging for Diagnostic Imaging**

3 cr. Undergraduate/Graduate.

Study of imaging principles utilized with molecular imaging. To include review of scientific publications for the use of molecular imaging to review various disease processes.

Prerequisites: junior standing in BioMedical Science program; ARRT, ARDMS, or CCI Imaging Certification or completion of an introductory Diagnostic Imaging course.**Last Taught:** Spring 2014.**Current Offerings:** <https://catalog.uwm.edu/course-search/>

BMS 610 Pharmacology

3 cr. Undergraduate/Graduate.

Lectures on pharmacokinetics, mechanisms of action, and physiological effects of toxic and therapeutic substances.

Prerequisites: jr st, Chem 501(P), or cons instr.**Last Taught:** Fall 2024.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 610G Pharmacology**

3 cr. Undergraduate/Graduate.

Lectures on pharmacokinetics, mechanisms of action, and physiological effects of toxic and therapeutic substances.

Prerequisites: jr st, Chem 501(P), or cons instr.**Last Taught:** Fall 2024.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 615 Cellular and Molecular Toxicology**

3 cr. Undergraduate/Graduate.

Cellular and molecular mechanisms of toxicant interactions with critical target organelles and molecules and subsequent downstream cellular responses.

Prerequisites: jr st, Chem 501(P) or cons instr; or grad st.**Last Taught:** Spring 2025, Spring 2024.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 615G Cellular and Molecular Toxicology**

3 cr. Undergraduate/Graduate.

Cellular and molecular mechanisms of toxicant interactions with critical target organelles and molecules and subsequent downstream cellular responses.

Prerequisites: jr st, Chem 501(P) or cons instr; or grad st.**Last Taught:** Spring 2025, Spring 2024.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 701 Human Pathophysiology I**

3 cr. Graduate.

An advanced course in basic pathological mechanisms underlying production of human disease and effects on selected organ systems.

Prerequisites: grad st or cons instr.**Last Taught:** Fall 2024, Fall 2023, Fall 2022, Fall 2021.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 702 Human Pathophysiology II**

3 cr. Graduate.

A continuation of 701 dealing with pathogenesis of the major diseases of human organ systems.

Prerequisites: grad st; BMS 701(P) or cons instr.**Last Taught:** Spring 2021, Spring 2020, Spring 2018, Spring 2016.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 705 Molecular Pathology**

3 cr. Graduate.

Principles, methods, and applications of nucleic acid-based technologies in pathology and laboratory medicine.

Prerequisites: grad st or cons instr.**Course Rules:** Counts as repeat of BMS 590 with similar topic.**Last Taught:** Fall 2017, Fall 2015, Fall 2013, Fall 2009.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 710 Seminar in Biomedical Sciences**

1 cr. Graduate.

Presentation of topics of current interest to the biomedical scientist.

Prerequisites: grad st or cons instr.**Course Rules:** May be repeated to max of 9 cr.**Last Taught:** Spring 2025, Fall 2024, Spring 2024, Fall 2023.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 717 Laboratory Technology-Theory and Practice**

2 cr. Graduate.

Fundamental laboratory bench techniques common to the biological sciences to prepare students for independent research.

Prerequisites: graduate standing or consent of instructor.**Last Taught:** Fall 2024, Fall 2023, Fall 2022, Fall 2021.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 718 Experimental Design and Research in Biomedical Sciences**

1 cr. Graduate.

Fundamentals of experimental design for beginning graduate students in Biomedical Sciences.

Prerequisites: grad st; biostatistics or undergraduate statistics course or consent of instructor.**Last Taught:** Fall 2024, Fall 2023, Fall 2022, Fall 2021.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 750 Infection and Immunity**

3 cr. Graduate.

Immunobiology of the response to infectious disease agents of humans, with resulting clinical outcomes; mechanisms of immune evasion in establishing infection and causing disease.

Prerequisites: grad st; Lec courses in immunology and microbiology or cons instr**Last Taught:** Fall 2024, Fall 2023, Fall 2022, Fall 2021.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 751 Immunopathology**

3 cr. Graduate.

Examination of mechanisms by which abnormal, unwanted, or absent immune responses result in disease, including discussion of clinical presentation, diagnostic testing, and therapeutic intervention.

Prerequisites: grad st; BMS 750(P) or cons instr**Last Taught:** Spring 2025, Spring 2023, Spring 2021, Spring 2020.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 756 Current Concepts in Cancer**

3 cr. Graduate.

An overview of various forms of human cancer. Emphasis on cell markers and cytomorphology, etiology and kinetics.

Prerequisites: grad st or cons instr.**Last Taught:** Spring 2025, Fall 2022, Fall 2020, Fall 2018.**Current Offerings:** <https://catalog.uwm.edu/course-search/>**BMS 765 Molecular Pathophysiology**

3 cr. Graduate.

Advanced theoretical skills and an appreciation of the current scientific literature in basic and clinical physiologic chemistry.

Prerequisites: grad st or cons instr; basic college chemistry class suggested**Last Taught:** Spring 2024, Spring 2022, Spring 2018, Spring 2016.**Current Offerings:** <https://catalog.uwm.edu/course-search/>

BMS 766 Advanced Cardiovascular Hemodynamics

3 cr. Graduate.

Study of fundamental principles of fluid mechanics as applicable to physiologic and biological systems. Topics include Poiseuille flow, circulatory flow resistance.

Prerequisites: Admission to Biomed Sci MS program; ARRT, ARDMS, or CCI Imaging Certification or completion of introductory course in diagnostic imaging

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 767 Comparative Analysis of Diagnostic Imaging

3 cr. Graduate.

Study of imaging principles evoked in utilizing multiple imaging modalities (DMS, CT, MRI and radiographic imaging) of both the normal and pathology findings.

Prerequisites: Admission to Biomed Sci MS program; ARRT, ARDMS, or CCI Imaging Certification or completion of introductory course in diagnostic imaging

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 768 Diagnostic Imaging of Acquired Heart Disease

3 cr. Graduate.

In-depth study of how acquired heart disease is imaged in the adult patient.

Prerequisites: Admission to Biomed Sci MS program; ARRT, ARDMS, or CCI Imaging Certification or completion of introductory course in diagnostic imaging

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 769 Diagnostic Imaging for Management of Cardiovascular Disease

3 cr. Graduate.

In-depth study of imaging used to monitor surgical and medical management of patients with cardiovascular disease.

Prerequisites: Admission to Biomed Sci MS program; ARRT, ARDMS, or CCI Imaging Certification or completion of introductory course in diagnostic imaging

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 775 Mechanisms of Infectious Disease

3 cr. Graduate.

Molecular and cellular means by which microorganisms facilitate infection, withstand or evade immune response, induce damage to host, and ensure transmission to human populations.

Prerequisites: graduate standing; Ic & Ia course in medical microbiology.

Last Taught: Spring 2020, Spring 2018, Spring 2016, Spring 2014.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 780 Emerging Infectious Diseases

3 cr. Graduate.

Detailed studies of those infectious diseases with both an emerging nature and a high impact on public health.

Prerequisites: grad st; background in microbiology, BMS 534 or BMS 539 or BioSci 383 (R)

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 782 Advanced Immunology

3 cr. Graduate.

Cellular basis of the immune response with emphasis on immunoregulation and clinical disease manifestations resulting from altered cellular immune function.

Prerequisites: grad st; course in immunology; or cons instr.

Last Taught: Spring 2010, Spring 2006, Spring 2004, Spring 2000.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 799 Research in Biomedical Sciences

1-8 cr. Graduate.

Prerequisites: graduate standing and consent of instructor.

Course Rules: Repeatable.

Last Taught: Spring 2025, Fall 2024, Summer 2024, Spring 2024.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 890 Capstone Project

2 cr. Graduate.

Capstone for the Biomedical Sciences MS non-thesis track.

Prerequisites: graduate standing and consent of instructor.

Course Rules: May be retaken one time; no more than 2 credits in total allowed for BMS 890.

Last Taught: Spring 2025, Spring 2024, Spring 2023, Fall 2022.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 909 Guided Teaching Experience in Health Sciences

3 cr. Graduate.

This course provides the student, under the supervision of a faculty member, with the opportunity to design, deliver, and evaluate an undergraduate course.

Prerequisites: graduate standing, one of the following: ATRAIN 900(P), OCCTHPY 900(P), PRPP 900(P), or PT 900(P), and consent of instructor.

Course Rules: Satisfactory/Unsatisfactory only. ATRAIN 909, BMS 909, COMSDIS 909, HCA 909, KIN 909, OCCTHPY 909, PT 909, and PRPP 909 are jointly offered and count as repeats of one another.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 910 Advanced Seminar in Health Sciences

1 cr. Graduate.

Faculty, students, and guests present research topics in the Health Sciences.

Prerequisites: grad st

Course Rules: Retakable to 4 cr max.

Last Taught: Fall 2024, Fall 2022, Fall 2020, Fall 2019.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 990 Research and Dissertation

1-6 cr. Graduate.

Preparation of a dissertation under the direction of the student's primary and secondary advisors.

Prerequisites: grad st; cons instr.

Last Taught: Fall 2022, Summer 2022, Spring 2022, Fall 2021.

Current Offerings: <https://catalog.uwm.edu/course-search/>

BMS 999 Advanced Independent Study

1-3 cr. Graduate.

Individualized experience enables student to study current topics of interest to the biomedical scientist. Level of credit assigned based on time required for completion.

Prerequisites: graduate standing and consent of instructor.

Course Rules: Repeatable to 9 cr max.

Last Taught: Fall 2024, Fall 2021, Summer 2021, Spring 2020.

Current Offerings: <https://catalog.uwm.edu/course-search/>