

# Biomedical Sciences, BS

---

**Chairperson: David Baker, Ph.D.**

Department of Biomedical Sciences website (<https://www.marquette.edu/biomedical-sciences/>)

The Marquette University Department of Biomedical Sciences offers a Biomedical Sciences major and minor area of study for undergraduate students interested in pursuing clinical and non-clinical careers in health care and related fields. In addition, the department offers graduate and professional courses (5000-7000 level) for the Interdisciplinary Neuroscience Graduate Program, the Masters in Biomedical Sciences, the pre-dental post-baccalaureate program and multiple health professional programs.

The Biomedical Sciences major provides a concentration of human- and medically-oriented courses that build an in-depth understanding of the intricate interplay between genes, proteins, cells and organs in the human body that underpin the complexities of human health and disease. The department offers courses in areas such as anatomical sciences, biochemistry, genetics, microbiology, neuroscience, pathology, pharmacology and physiology. The curriculum provides students with the opportunity to acquire the concepts, principles, critical thinking skills and terminology fundamental to all health care professions and related biomedical careers. In addition, the wide range of course options and flexibility in the major allows students to tailor their degree plans to prepare students for a number of careers beyond the clinical professions.

Lastly, the department also participates in a variety of accelerated degree and advanced programs for students in the undergraduate major. Biomedical Sciences offers accelerated direct admission entry into the Doctor of Physical Therapy, Doctor of Dental Surgery and J.D. (Juris Doctor/Doctor of Law) programs. Biomedical sciences students also have an opportunity for early admission to the Physician Assistant Studies program, Interdisciplinary Neuroscience Ph.D. program, Doctor of Occupational Therapy, Exercise and Rehabilitation Science M.S. program, Medical Laboratory Science Certificate Program, and Master of Business Administration (M.B.A.) program at Marquette University as well as the Pharm.D. and Global Health Equity M.S. programs at the Medical College of Wisconsin. For students who demonstrate exceptional work in the areas of research and community engagement and maintain high academic standards, the department offers the opportunity to receive Disciplinary Honors in Biomedical Sciences. More information about these programs can be found below.

## Pre-Medical and Pre-Dental Studies

The Biomedical Sciences major at Marquette provides uniquely powerful preparation for students planning to pursue careers in medicine or dentistry. The opportunity to study distinctively human, medical science-related courses at the undergraduate level is exceedingly rare. In addition, courses in the curriculum are taught by faculty who are biomedical scientists, many of whom also teach in Marquette School of Dentistry. Students in this program pursue course work in the anatomical sciences (including gross anatomy), biochemistry and physiology, all taught from a clinical, human perspective. The curriculum provides students with the opportunity to acquire concepts, principles, critical thinking skills and terminology fundamental to not only medicine, but to all health professions and related fields. In addition, the wide range of course options and flexibility in the major allows students to develop degree plans that match their areas of interest, such as, neuroscience, head and neck anatomy, public health, genetics, microbiology, pharmacology, research, etc. The program boasts exceptionally high acceptance rates to medical and dental schools, and tremendous success among graduates competing for medical residencies following medical school.

## Early Admission to Physician Assistant Studies

Partnering with the Department of Physician Assistant Studies at Marquette University, the Biomedical Sciences department provides a 3+2 early admission opportunity to the Physician Assistant (PA) Studies program. Students who complete the first three years of the pre-physician assistant curriculum are eligible to apply to the Marquette University Physician Assistant Studies program as early as the summer after their sophomore year. Admitted students complete their undergraduate degree in Biomedical Sciences within the first year of the PA program. A Master of Physician Assistant Studies degree is awarded upon graduation from the PA program. Students who do not enter the PA program their Senior year continue within the Biomedical Sciences major. The department has course outlines for those who enter the PA program following their Senior year and for those who complete the standard bachelor's degree. Students work with their advisers to identify the most appropriate program.

## Pre-Dental Scholars

Partnering with the School of Dentistry at Marquette University, the Biomedical Sciences department offers an accelerated option as part of the Pre-Dental Scholar program, allowing students to complete their undergraduate degree within the first year of the dental school program. Students who are admitted directly to the Pre-Dental Scholar program or those admitted following freshmen year must meet the academic standards set by the School of Dentistry to continue within the program. Students who do not meet the academic requirements work with their advisers to complete the standard Biomedical Sciences major.

## Interdisciplinary Neuroscience PhD Accelerated Degree Program (ADP)

The graduate school offers a combined bachelor's-doctoral pathway program available to outstanding Marquette University biomedical sciences undergraduate students. This program enables students to complete their undergraduate degree within the first year of the neuroscience graduate program, allowing them to complete their doctorate in less time than traditional graduate students. Biomedical sciences undergraduate students

can apply for early admission to the neuroscience doctoral program in the first term of their junior year. The cellular and molecular neuroscience specialization must be chosen. Students may request permission to move to another specialization, though requests are not guaranteed.

Students accepted into this program are eligible to enroll in up to 14 credits (7-8 credits/semester) of graduate neuroscience courses in their senior year that can be used to fulfill both undergraduate and graduate degree requirements. Interested students should contact their adviser early in their undergraduate career to plan the curriculum for the biomedical sciences major accordingly. Students must submit an application to the Graduate School, indicate their interest in the accelerated degree program and meet all other admission criteria as stated in the Application Requirements section. GRE test scores are not required.

## Direct Admit Physical Therapy

Partnering with the Physical Therapy program at Marquette University, the Biomedical Sciences department offers an accelerated option for the Direct Admit Physical Therapy program, allowing students to complete their undergraduate degree within the first year of the professional phase of the program. Students who are admitted directly to the Physical Therapy program or those admitted following their junior year (space permitting) must meet the academic standards set by the Physical Therapy Department to continue within the program. Students who do not meet the academic requirements work with their advisers to complete the standard Biomedical Sciences major.

## Exercise and Rehabilitation Science M.S. Accelerated Degree Program (ADP)

The Department of Biomedical Sciences together with the Graduate School offers an accelerated degree program which allows accepted students to complete graduate course work in the Exercise and Rehabilitation Science M.S. program in their senior year of undergraduate study.

Marquette undergraduate students majoring in Biomedical Sciences can apply for admission to the Exercise and Rehabilitation Science M.S. program in their junior year. Students accepted into the program are eligible to enroll in up to 14 (or 17) credits of graduate course work during the senior year. Credits earned for graduate courses can be used to fulfill both undergraduate and graduate degree requirements.

## Early Assurance PharmD Program

The Biomedical Sciences department participates in the Early Assurance PharmD program through the university's partnership with the Medical College of Wisconsin (MCW) School of Pharmacy. The 3+3 Early Assurance PharmD program allows students in the Biomedical Sciences major to earn dual degrees, a bachelor's degree from Marquette University and a Doctor of Pharmacy degree from the Medical College of Wisconsin, in a total of six years. Students accepted to this program who meet all eligibility requirements throughout the program, can matriculate to MCW's Schools of Pharmacy in their senior year. A bachelor of science degree from Marquette University is awarded after successful completion of the first year at MCW. Applications to the program are due at the start of the spring term in freshman or sophomore year. Interested students should consult with their academic adviser in biomedical sciences. More detailed information can be found in the university Resources and Opportunities (<https://bulletin.marquette.edu/resources-opportunities/early-assurance-pharmd-program/>) section of this bulletin.

## Global Health Equity M.S. Accelerated Degree Program

The Department of Biomedical Sciences together with the Medical College of Wisconsin Global Health Equity M.S. program offers an accelerated degree program which allow students to earn their B.S. in Biomedical Sciences, and a master of science (M.S.) in Global Health Equity, all within a five-year time period.

Marquette undergraduate students majoring in Biomedical Sciences can apply for admission to the Global Health Equity M.S. program in the second term of their junior year. Students accepted into the program are eligible to enroll in up to 12 credits of pre-approved course work during the senior year to fulfill both undergraduate and graduate degree requirements.

Due to the structure of the program within the senior year, careful planning as early as sophomore year is encouraged. Interested students should contact their undergraduate adviser to be connected with the program contact within the Biomedical Sciences Department.

## Pre-Law Scholars

Partnering with the Law School at Marquette University, the Biomedical Sciences department offers an accelerated option as part of the Pre-Law Scholar program, allowing students to complete their undergraduate degree within the first year of the law school program. Students who are admitted directly to the Pre-Law Scholar program must meet the academic standards set by the Law School to continue within the program. Students who do not meet the academic requirements work with their advisers to complete the standard Biomedical Sciences major.

## MBA Accelerated Degree Program (ADP)

Marquette undergraduate students majoring in Biomedical Sciences can apply for admission to the Master of Business Administration (M.B.A.) program in the second term of their junior year. Students accepted into this program are eligible to enroll in up to 12 credits of M.B.A. course work that carry graduate credit during their senior year. Credits obtained for these courses can be used to fulfill both undergraduate and graduate degree requirements. Due to the number of prerequisite courses required for admission to the M.B.A. program, the M.B.A. accelerated degree option requires careful planning as early as freshman year. Interested students should contact their adviser early in their undergraduate career. Once students inform the Graduate

School of Management of their completion of undergraduate degree requirements, their admission as a regular degree status (RDS) student in the Graduate School of Management is activated.

## Medical Laboratory Science Certificate Accelerated Degree Program (ADP)

The Department of Biomedical Sciences together with the Department of Medical Laboratory Science offers an accelerated degree program which allows accepted students to complete graduate course work in the Medical Laboratory Science Certificate program in their senior year of undergraduate study.

Marquette undergraduate students majoring in Biomedical Sciences can apply for admission to the Medical Laboratory Science Certificate program in their junior year. Students accepted into the program are eligible to enroll in up to 20 credits of graduate course work during the senior year. Credits earned for graduate courses can be used to fulfill both undergraduate and graduate degree requirements.

## Disciplinary Honors Program

The Disciplinary Honors Program in Biomedical Sciences is designed for students to demonstrate exceptional work in the areas of research and community engagement, and maintain high academic standards. Students involved in this program must go beyond normal expectations in these areas by generating an honors proposal that integrates course work, research, community engagement, writing and oral presentations into a coherent plan of work. There are two specific focuses within the program, one in which the emphasis is on scientific research and the other on community engagement, although all students must include some experience in each area.

Graduation with Disciplinary Honors in Biomedical Sciences requires completion of the portfolio and participation in a second-term senior year capstone course. Students are also required to prepare a presentation describing how they completed their honors plan.

## Degree Requirements

### Amount and quality of work

Candidates for a bachelor of science degree with a major in biomedical sciences must meet the follow requirements:

- A minimum 128 total credit hours that includes completion of the degree requirement areas listed below. Certain combinations of majors/minors and early/direct admission curricula may exceed the minimum 128 total credits hours. It is the responsibility of students to utilize their Graduation Checklist in CheckMarq to understand and fulfill all degree requirements.

Area	Credit Hours
Marquette Core Curriculum (MCC)	30
BISC Foundational Courses	25-31
BISC Major Courses (must be completed with a C- or above)	33
General Electives	to achieve at least 128 total credits

- A minimum cumulative (overall) GPA of 2.000 (C average).
- A minimum BISC major GPA of 2.000 with a C- or above in all BISC major courses. Major courses completed with grade below a C- do not count toward the 33 credits required for the BISC major, but credit earned will count towards the 128 total credits required for the B.S. degree.
- A waiver request may be submitted if a course taken in the senior year to fulfill a requirement for the Biomedical Sciences major is completed with a grade of D+ or D provided students complete at least 33 credits in the major with a C- or above and meets the minimum BISC major GPA of 2.000 or above. A waiver request may be granted for no more than one course.

## University Graduation Requirement

### Undergraduate Graduation Policy

Students are required to graduate at the end of the term in which all degree requirements are completed. Degree requirements are those requirements, including university, college and all other requirements necessary to earn a minimum of one undergraduate degree and any declared degrees/majors/minors/concentrations. That is, additional degrees/majors/minors/concentrations may be earned; however, they must be completed in the same term as the first degree/primary major is completed. Except in the case of readmission, undergraduate students must meet the graduation requirements which are stated in the Undergraduate Bulletin issued for the year in which they entered Marquette. Substitutions or waivers for specific courses required for degree completion may occur, as determined by the college and/or the Marquette Core Curriculum committee.

Students who have interrupted their enrollment from the university, are normally obliged to follow the degree/major/minor/concentration requirements in effect at the time of readmission. Policies that are in effect at the time of the return, apply to all students, regardless of the term of initial enrollment. Students are responsible for keeping themselves informed of the requirements which apply in their particular cases. Students have faculty advisers available who assist in planning and implementing their plan of studies; however, it is ultimately each student's responsibility to know and fulfill the requirements for graduation specified for the selected plan. This should be done not only by utilization of specific advisers, but also with Academic Advisement, the university's online degree audit tool on CheckMarq provided to all undergraduates. With Academic Advisement, students track their

degree progress until graduation. It is the responsibility of students to immediately bring any discrepancies found in Academic Advisement to the attention of their college.

A candidate for a baccalaureate degree must meet the following graduation requirements:

1. In all undergraduate colleges and programs, a minimum of 120 credits earned and a cumulative grade point average of 2.000 is required for a Marquette undergraduate degree.
2. Credits required to be completed in residence at Marquette:
  - a. A minimum of 45 total credits must be completed at Marquette. Up to 15 of the 45 credits may be completed through an approved study abroad program.
  - b. A minimum of 32 upper-division credits must be completed at Marquette. This may include upper-division credits from an approved study abroad program.
  - c. The final 30 credits needed to complete a Marquette undergraduate degree must be completed at Marquette, unless those credits are earned in an approved study abroad program, or are earned as part of a written/contractual agreement with another institution, in which Marquette students participate during the final year of their degree program.
  - d. A minimum of one-half of credits in the major, minor, and concentration not attached to a major must be completed at Marquette.
3. Students must attend all courses, lectures, or any other exercises that are required, even though, in some cases such activities receive no recognition in terms of credit hours.
4. Students' records must be cleared of all grades that are not permanent, i.e., grades of I, IC, IE and NG.
5. Students must file the online application for a degree by the deadline published in the Academic Calendar (<https://www.marquette.edu/central/registrar/calendars-exams-schedules.php>); however, because students are required to graduate at the end of the term in which all university, degree requirements are complete, the university reserves the right to graduate a student without a graduation application on file. If the university exercises this option, there is no guarantee students will be able to participate in Commencement.
6. Commencement is held in May, after the spring term. Participation in Commencement does not mean students are graduated. See the Commencement Policy (<https://bulletin.marquette.edu/policies/commencement/>) in this section for further details.
7. Exceptions to this Graduation Requirements policy must be approved by the Office of the Provost, except:
  - the course and bulletin year exceptions listed in the 'Graduation Requirements' section above (as approved by the college)
  - number 3 above (as approved by the college)
  - the dean's office in the college where the student's program resides may exempt up to 6 of the final 30 credits from being completed in residence (number 2c above)

For additional college requirements, consult the Degree Requirements listed for each undergraduate program in this bulletin.

**Special Note for 2023-2024:** Students who attended Cardinal Stritch University in a bachelor's degree program during the 2022-2023 year and directly transfer to a bachelor's degree program at Marquette University in Fall 2023 or Spring 2024 with fewer than 45 credits remaining in their Marquette program are exempted from the standard Marquette residency requirement (items 2-6 listed above). In lieu of the standard residency requirement, exempted students must complete all remaining credits for their undergraduate degree at Marquette. Exempted students are expected to remain continuously enrolled (fall and spring terms) at Marquette until the completion of their bachelor's degree.

## Graduation Latin Honors

The grade point average is used to compute graduation Latin honors. The computation is made by dividing the total number of grade points earned at Marquette University by the total number of grade point hours earned. The official Marquette GPA of all students is calculated by the student information system and this GPA is not rounded up or down for any reason. To graduate with Latin honors, candidates must be pursuing their first bachelor's degree, earned at least 60 grade point hours and 60 degree hours at Marquette University, normally as a junior and senior. First bachelor's degree is defined as the first bachelor's degree earned from any institution. When students earn a concurrent additional bachelor's degree (i.e., finish in the same term as the first bachelor's degree), the additional degree is also eligible for Graduation Latin Honors, if the first bachelor's degree qualifies.

Graduates whose grade point average is 3.500, graduate with cum laude (Latin for 'with honor'); graduates whose grade point average is 3.700, graduate with magna cum laude (Latin for 'with great honor'); and graduates whose grade point average is 3.900, graduate with summa cum laude (Latin for 'with highest honor'). Graduation Latin honors are recorded on diplomas, noted in the published lists of graduates at Commencement and recorded on students' transcript.

## Graduation Record

The academic record of students is frozen once the degree is posted and may not be altered thereafter, unless required to do so by law and/or a documented university error is discovered after the degree is posted. This includes, but is not limited to: all relevant grade point averages, grades, additional information relating to the degree(s), major(s), minor(s), concentration(s), Latin Honors and academic censure.

## Marquette Core Curriculum (MCC) - 30 Credits

### Foundation Tier - 15 Credits

Code	Title	Hours
ENGL 1001 or HOPR 1955H	Foundations in Rhetoric Core Honors First-Year Seminar	
PHIL 1001 or PHIL 1001H	Foundations in Philosophy Honors Foundations in Philosophy	
THEO 1001 or THEO 1001H	Foundations in Theology: Finding God in all Things Honors Foundations in Theology: Finding God in all Things	
CORE 1929 or CORE 1929H	Foundations in Methods of Inquiry Honors Foundations in Methods of Inquiry	
Engaging Social Systems and Values 1 (ESSV1)		

### Engaging Social Systems and Values 1 (ESSV 1) Course Options

Some faculty-led study abroad courses have also been approved for ESSV1, consult the MCC website (<https://www.marquette.edu/core-curriculum/mcc-study-abroad.php>) for a complete list.

Code	Title	Hours
ANTH 1001	Being Human	3
EDUC 1001	Child and Adolescent Development and Learning	3
ENGL 2020	Texts, Social Systems and Values	3
ENGL 2030	Global Literatures	3
HEAL 1025	Culture and Health <sup>1</sup>	3
HIST 1101	Introduction to American History	3
HIST 1601	Difference and Democracy	3
HIST 1701	Engaging the World	3
HOPR 2956H	Honors Engaging Social Systems and Values 1: Engaging the City	3
INGS 1001	Introduction to Gender and Sexualities Studies	3
SOCI 1001	Principles of Sociology	3
SOWJ 1001	Introduction to Social Welfare and Justice	3
SPAN 3300	Peoples and Cultures of Spain	3
SPAN 3310	Peoples and Cultures of Latin America	3

<sup>1</sup> Honors (H) designation of same course number also fulfills MCC requirement.

### Discovery Tier - 12 Credits

Students must complete **four** Discovery Tier courses, all from the **same** Discovery Theme. These four courses must include one course from each of the three content areas (Humanities, Natural Science and Mathematics, and Social Science), and one elective (an additional course from any of the three content areas). A maximum of two courses in the Discovery Tier can be applied toward a primary major. Additional dual counting may be allowed towards college-level requirements.

Students declare their Discovery Theme using the Discovery Tier Declaration Form (<https://www.marquette.edu/central/registrar/how-do-i-declare-change-mcc-discovery-tier-theme.php>) in CheckMarq.

For students who participate in a full-time (12 credits or more) Marquette-approved study abroad program, one study abroad course (minimum 2.5 transfer credits awarded) may fulfill the elective requirement of the Discovery Tier. Any additional MCC requirements may be fulfilled only when the approved transfer equivalent is an exact match to a specific MCC course.

### Discovery Themes

The five discovery theme options are listed below. See additional information and course listings (<https://bulletin.marquette.edu/resources-opportunities/marquette-core-curriculum/#discoverythemestext>).

- Basic Needs and Justice
- Cognition, Memory and Intelligence

- Crossing Boundaries: The Movement of People, Goods and Ideas
- Expanding Our Horizons
- Individuals and Communities

### Culminating Course - 3 Credits

Code	Title	Hours
CORE 4929	The Service of Faith and Promotion of Justice	
or CORE 4929H	Honors Service of Faith and Promotion of Justice	

### ENGAGING SOCIAL SYSTEMS AND VALUES 2 (ESSV2) - ONE COURSE or Experience Required

Students must complete a course or approved experience that is designated "ESSV2." This requirement can be completed via one of the four Discovery Tier courses or through other degree requirements.

Some faculty-led study abroad courses have also been approved for ESSV2, consult the MCC website (<https://www.marquette.edu/core-curriculum/mcc-study-abroad.php>) for a complete list.

Code	Title	Hours
ADPR 4750	Strategic Communication in a Culturally Diverse Marketplace	3
ADVE 3986	Internship in Advertising	3
ANTH 3100	Urban Anthropology	3
ANTH 3986	Internship in Anthropology	3
ANTH 4986	Advanced Internship in Anthropology	3
ARBC 3200	Culture and Civilization of the Middle East (WRIT)	3
ARBC 3220	Arab and Muslim Women in the United States (WRIT)	3
ARSC 4953	Seminar In Urban Social Issues	3
BISC 3929	Reflective Analysis of Global Dental Brigade	0
BISC 4460	Practical Cases in Medicine	3
BULA 4001	Business Law for Accounting	3
CCOM 4986	Corporate Communication Internship	0-3
CHNS 3215	Chinese Cuisine and Culture	3
CMST 3120	Interpersonal Communication	3
CMST 4986	Internship in Communication Studies	0-3
CNEN 3860	Construction Materials and Methods	3
COMM 4986	Internship in Communication	0-3
CRLS 2540	Surveillance, Law and Society	3
CRLS 3150	Reentry and Life After Incarceration	3
CRLS 3170	Policy and Practice for Children Impacted by Incarceration	3
CRLS 3986	Internship and Seminar in Criminology and Law Studies	3
CRLS 4986	Advanced Internship and Seminar in Criminology and Law Studies	3
DGMD 3986	Internship in Digital Media	3
EDUC 4965	Student Teaching: Middle/Secondary	15
EDUC 4966	Student Teaching: Elementary/Middle	15
EDUC 4986	Community-Engaged Internship 1	3
EDUC 4987	Community-Engaged Internship 2	3
ENGL 2001	Ways of Knowing (WRIT)	3
ENGL 3140	Sociolinguistics	3
ENGL 3249	Creativity and Community	3
ENGL 3250	Life-Writing, Creativity and Community (WRIT)	3
ENGL 3261	Poetry and Community (WRIT)	3
ENGL 3780	Water Is Life: Indigenous Art and Activism in Changing Climates (WRIT)	3
ENGL 4221	The Rhetoric of Martin Luther King, Jr. and Malcolm X (WRIT)	3

ENGL 4222	Feminist Rhetorics (WRIT)	3
ENGL 4223	The Rhetoric of Black Protest (WRIT)	3
ENGL 4230	Writing Center Theory, Practice and Research (WRIT)	4
ENGL 4453	Romanticism and Nature (WRIT)	3
ENGL 4631	Toni Morrison (WRIT)	3
ENGL 4825	Native American / Indigenous Literatures (WRIT)	3
ENGL 4826	Global Indigenous Literatures (WRIT)	3
ENGL 4988	Practicum in Literature and Language Arts	1-3
EXPH 4986	Exercise Physiology Practicum 2	6-16
GEEN 2960	Engineering Social Systems and Values	0
GRMN 3540	Heckling Hitler	3
GRMN 3550	German Reunification: The Collision of Two Worlds	3
HESC 3929	Global Brigades Reflective Analysis	0
HIST 4120	American Immigration	3
HIST 4125	Latinx Civil Rights Movements	3
HIST 4135	African-American History	3
HIST 4140	American Urban History	3
HIST 4155	A History of Native America	3
HIST 4247	Comparative Homefronts during the Second World War	3
INPS 2010	Introduction to Peace Studies	3
JOUR 3986	Internship in Journalism	0-3
JOUR 4986	Internship in Journalism	0-3
LLAC 1010	Working Without Borders	3
LLAC 3220	Cultures and Foodways	3
LLAC 3250	Linguistic Diversity and Social Justice	3
MANA 3035	Diversity in Organizations	3
MARQ 3929	Engaging Social Systems and Values Reflective Analysis	0
MARQ 3961	International Service Learning - Living Justice: Accompaniment in an Unjust World	3
NURS 3956H	Honors Nursing Practicum 1	1
NURS 3965	Community and Population Health Nursing - Clinical <sup>1</sup>	2
PHIL 3502	Narrating Freedom: Gender, Race and Mass Incarceration	3
PHIL 3507	Global Justice	3
PHTH 4512	Culture and Disability	3
PSYC 3201	Introductory Social Psychology	3
PSYC 3420	Health Psychology	3
PURE 3986	Internship in Public Relations	0-3
SOCI 3700	Social Movements, Protest and Change	3
SOCI 3986	Internship and Seminar in Sociology	3
SOCI 4986	Advanced Internship and Seminar in Sociology	3
SOWJ 3170	Policy and Practice for Children Impacted by Incarceration	3
SOWJ 3400	Advocacy and Social Change: Theory and Practice	3
SOWJ 3986	Internship in Social Welfare and Justice	3
SOWJ 4700	Global Aid and Humanitarianism	3
SOWJ 4986	Advanced Internship in Social Welfare and Justice	3
SPAN 3001	Advanced Communication in Spanish	3
SPAN 4150	Spanish in the United States	3
THAR 3620	Multicultural Playwrights	3
THAR 4986	Internship in Theatre Arts	0-3
THEO 2500	Theologies of Nonviolence <sup>1</sup>	3
THEO 3250	Contemplation and Action	3
THEO 3350	Christian-Muslim Dialogue	3
THEO 3600	Theology Engaging Culture	3

THEO 4270	The Many Faces of U.S. Catholicism	3
THEO 4400	Christian Faith and Justice <sup>1</sup>	3

<sup>1</sup> Honors (H) designation of same course number also fulfills MCC requirement.

## WRITING INTENSIVE COURSES (WRIT) - ONE COURSE REQUIRED

Students must complete a course that is designated "WRIT." This requirement can be completed via one of their four Discovery Tier courses or through other degree requirements.

Some faculty-led study abroad courses have also been approved, consult the MCC website (<https://www.marquette.edu/core-curriculum/mcc-study-abroad.php>) for a complete list.

Code	Title	Hours
ACCO 4000	Accounting Communications	3
ADPR 2200	Media Writing	3
ANTH 2101	Cultural Anthropology	3
ARBC 3200	Culture and Civilization of the Middle East (ESSV2)	3
ARBC 3210	Arabic Literature in English Translation	3
ARBC 3220	Arab and Muslim Women in the United States (ESSV2)	3
BIOL 4102	Experimental Molecular Biology	3
BIOL 4202	Experimental Genetics	3
BIOL 4302	Experimental Cell Biology	3
BIOL 4402	Experimental Ecology and Field Biology	3
BIOL 4403	Tropical Ecology in Panama	3
BIOL 4502	Experimental Neurobiology	3
BIOL 4702	Experimental Physiology	3
BIOL 4802	Experimental Microbiology	3
BISC 4325	Endocrinology	3
BUAD 4010	Business in Film	3
BULA 3001	Legal and Ethical Environment of Business	3
CCOM 3250	Corporate Writing	3
CMST 3000	Theories in Communication Studies	3
CRLS 3050	Methods of Criminological Research	3
CRLS 3150	Reentry and Life After Incarceration	3
EDUC 4000	Educational Inquiry 2: Advanced Topics	3
EDUC 4540	Philosophy of Education	3
ELEN 3025	Electrical Instrumentation Laboratory	2
ENGL 2001	Ways of Knowing (ESSV2)	3
ENGL 2011	Books that Matter	3
ENGL 2012	Well Versed	3
ENGL 3000	Introduction to Literary Studies	3
ENGL 3210	Writing Practices and Processes	3
ENGL 3220	Writing for Workplaces	3
ENGL 3221	Technical Writing	3
ENGL 3222	Writing for Health and Medicine	3
ENGL 3240	Introduction to Creative Writing	3
ENGL 3241	Crafting the Short Story	3
ENGL 3242	Writing Science Fiction and Fantasy	3
ENGL 3245	Creative Nonfiction	3
ENGL 3250	Life-Writing, Creativity and Community (ESSV2)	3
ENGL 3261	Poetry and Community (ESSV2)	3
ENGL 3301	Here Be Monsters	3
ENGL 3302	Crossing Over	3
ENGL 3410	Drama	3

ENGL 3462	Introduction to Gothic Fiction	3
ENGL 3513	Modern Irish Literature	3
ENGL 3514	Contemporary Irish Literature	3
ENGL 3517	Memory and Forgetting in Contemporary Historical Fiction	3
ENGL 3751	The Art of War	3
ENGL 3761	Medicine and Literature	3
ENGL 3762	Disability and Literature	3
ENGL 3780	Water Is Life: Indigenous Art and Activism in Changing Climates (ESSV2)	3
ENGL 3785	LGBTQ+ Narratives: Literature, Film, Theory	3
ENGL 3841	Global Hip Hop	3
ENGL 3860	The Russian Novel and the Search for Meaning	3
ENGL 4210	Writing, Literacy, and Rhetoric Studies	3
ENGL 4220	Rhetorical Theories and Practices <sup>1</sup>	3
ENGL 4221	The Rhetoric of Martin Luther King, Jr. and Malcolm X (ESSV2)	3
ENGL 4222	Feminist Rhetorics (ESSV2)	3
ENGL 4223	The Rhetoric of Black Protest (ESSV2)	3
ENGL 4224	Radical Writing: An Invitation to the Self	3
ENGL 4230	Writing Center Theory, Practice and Research (ESSV2)	4
ENGL 4250	Creative Writing: Fiction	3
ENGL 4260	Creative Writing: Poetry	3
ENGL 4303	Studies in the Medieval Imagination	3
ENGL 4311	Themes in Medieval Literature	3
ENGL 4331	Shakespeare	3
ENGL 4402	The Novel to 1900	3
ENGL 4412	Transatlantic Literature, 1700-1900	3
ENGL 4422	British Literature of the Long 18th Century	3
ENGL 4423	Legal Fictions of the Enlightenment	3
ENGL 4453	Romanticism and Nature (ESSV2)	3
ENGL 4472	British Literature of the Victorian Period, 1837-1900	3
ENGL 4616	Moby-Dick	3
ENGL 4631	Toni Morrison (ESSV2)	3
ENGL 4715	Children's Literature	3
ENGL 4730	What Is a Book?	3
ENGL 4734	The Epic	3
ENGL 4738	Poetry	3
ENGL 4739	Words to Worlds	3
ENGL 4755	Law and Literature	3
ENGL 4765	Material Cultures	3
ENGL 4786	Women Writers	3
ENGL 4810	Comparative Race and Ethnic Studies	3
ENGL 4820	Studies in Critical Race and Ethnic Studies	3
ENGL 4825	Native American / Indigenous Literatures (ESSV2)	3
ENGL 4826	Global Indigenous Literatures (ESSV2)	3
ENGL 4830	Africana Literatures	3
ENGL 4932	Topics in Writing	3
ENGL 4954	Seminar in Creative Writing	3
ENGL 4997	Capstone	3
EXPH 4020	Clinical Case Management in Exercise Science	3
FREN 4110	Advanced Grammar and Written Expression in French	3
FREN 4270	French Holocaust Writings in English Translation	3
FREN 4280	Creative Writing in French	3
GRMN 3500	The Modern German Short Story	3

GRMN 3505	The Modern German Short Story in English	3
HIST 1301	History of Latin America	3
HIST 3104	The Civil War Era	3
HIST 4210	The Black Death	3
HIST 4460	Race and History of South Africa	3
HIST 4955	Undergraduate Seminar in History	3
JOUR 4150	Investigative Reporting	3
MANA 3002	Business and Its Environment	3
MLSC 4180	Concepts in Clinical Education Methods and Practicum	2
NURS 4000	Quality and Safety in Nursing	3
PHIL 3505	Philosophy and Film	3
PHIL 3610	Ancient Philosophy	3
PHIL 4540	Philosophy of Education	3
PHTH 7505	Patient/Client Management 3 <sup>2</sup>	2
PHTH 7974	Clinical Education Experience 1 <sup>3</sup>	4
POSC 3101	Writing and Argumentation in Political Science	3
PURE 3600	Public Relations Writing	3
SOCI 3050	Methods of Social Research	3
SPAN 3001	Advanced Communication in Spanish	3
SPAN 3005	Advanced Communication in Spanish for Heritage Speakers	3
SPAN 3500	Texts, Images and Critical Thinking in Spanish	3
SPAN 3505	Texts, Images, and Critical Thinking in Spanish for Heritage and Native Speakers	3
SPAN 4700	Creative Writing in Spanish	3
STCM 3400	Writing for Strategic Communication	3
THAR 4600	Playwriting	3
THEO 3130	Miracles <sup>1</sup>	3
THEO 3530	Theology and Economics <sup>1</sup>	3
THEO 4210	History and Theology of the Christian East	3
THEO 4300	The Question of God in a Secular Age <sup>1</sup>	3
THEO 4460	Religion, Science and Ethics	3

<sup>1</sup> Honors (H) designation of same course number also fulfills MCC requirements.

<sup>2</sup> With PHTH 7974 Clinical Education Experience 1

<sup>3</sup> With PHTH 7505 Patient/Client Management 3

## Grade Minimums & Additional Information

- A grade of C or better is required in Honors MCC courses. A passing grade is required in non-Honors MCC courses.
- Review the Marquette Core Curriculum (<https://bulletin.marquette.edu/resources-opportunities/marquette-core-curriculum/>) section of the bulletin for additional information, including transfer student requirements and Discovery Theme details.

## BISC Required Foundational Courses

All students are required to complete:

Code	Title	Hours
<b>General Sciences</b>		<b>15-18</b>
BIOL 1001	General Biology 1	
BIOL 1002	General Biology 2	
CHEM 1001	General Chemistry 1	
CHEM 1002	General Chemistry 2	
CHEM 2111 or BISC 2050	Organic Chemistry 1 Organic Chemistry for the Health Sciences	
<b>Laboratory science (one course)</b>		<b>1-3</b>
BIOL 2001	Principles of Biological Investigation (3 credits)	

BISC 4147	Human Physiology Laboratory (1 credit)	
BISC 4165	Microbiology Laboratory (1 credit)	
MLSC 2200	Concepts in Medical Laboratory Science (3 credits)	
PHAS 7270	Diagnostics Technology (For students admitted to the PA program)	
<b>Statistics</b>		<b>3</b>
MATH 1700	Modern Elementary Statistics	
MATH 4720	Statistical Methods	
MATH 4740	Biostatistical Methods and Models	
SOCI 2060	Social Statistics	
<b>Medical Ethics (one course)</b>		<b>1</b>
HEAL 3200	Bioethics for Healthcare: Foundations, Dilemmas and Decision-Making	
PHIL 4335	Biomedical Ethics	
PHIL 4336	Applied Ethics for the Health Sciences (1 credit)	
THEO 4450	Medical Ethics (3 credits)	
<b>Health and Society (one course)</b>		<b>2-3</b>
BISC 4153	Epidemiology (Can be used as a Health and Society Cognate or BISC elective, but not both)	
BISC 4157	Global Health	
BISC 4170	Biology, Moral Behavior and Policy (Can be used as a Health and Society Cognate or BISC elective, but not both)	
BISC 4381	Politics of U.S. Health Care (or POSC 4381 with special permission)	
BISC 4461	Comparative Health Politics and Policy (or POSC 4461 with special permission)	
CMST 4500	Health Communication	
CMST 4520	Health Communication Campaigns	
ECON 4022	Economics of Healthcare and Health Policy	
ENGL 3222	Writing for Health and Medicine	
ENGL 3761	Medicine and Literature	
ENGL 3762	Disability and Literature	
ENGL 4762	Neuroscience and Literature	
HEAL 1025	Culture and Health	
HEAL 1200	Women's Health	
HEAL 1400	Veteran Health and Culture	
HEAL 2100	Introduction to Global Health	
HEAL 3200	Bioethics for Healthcare: Foundations, Dilemmas and Decision-Making (Can be used as a Health and Society Cognate or Medical Ethics Cognate, but not both)	
MLSC 2060	Public Health	
PHAS 7116	Clinical Decision Making 2 (for students admitted to the PA program)	
PSYC 2101	Introduction to Life-Span Developmental Psychology for the Health Professions	
PSYC 3101	Developmental Psychology: Conception Through Adolescence	
PSYC 3120	Developmental Psychology: Adulthood and Aging	
PSYC 3220	Human Sexuality	
PSYC 3420	Health Psychology	
PSYC 3440	Health Disparities: A Biopsychological Perspective	
PSYC 4730	Introduction to Evidence-Based Mental Health Treatment	
SOCI 3300	Sociology of the Life Course	
SOCI 3500	Culture, Health and Illness	
SOCI 3520	Health Care Systems	
SOCI 3550	Race, Gender and Medicine	
SOCI 3570	Men, Masculinities and Health	
SOCI 4300	Sociology of Aging	
SOWJ 1001	Introduction to Social Welfare and Justice	
SOWJ 2200	Human Behavior in the Social Environment	
SOWJ 4700	Global Aid and Humanitarianism	

SPAN 4715 Advanced Spanish for Health Care

THEO 3460 Theology and Global Health

Note: Biomedical Sciences often offers special topics courses (BISC 4930 and BISC 4931) which may be approved for the Health and Society cognate. Students should confirm with their adviser whether a course fulfills the requirement. To request approval, a student must submit a Health and Society Approval Form, available in the department office.

**Disease and Pathology 3**

Can satisfy both this Disease and Pathology foundational requirement and a BISC major requirement if completed with a C- or above

BISC 3150 General Pathology

BISC 4120 Pharmacology (BISC 7220 for students admitted to PA program)

or BISC 7220 Medical Pharmacology

BISC 4160 Molecular Pathology

OCTH 7150 Clinical and Health Conditions 1 (for students admitted to the OTD program)

PHTH 7515 Clinical Pathology and Pathophysiology (for students admitted to the DPT program)

**Total Credit Hours: 25-31**

Students who are interested in pursuing a professional or graduate education (i.e. pre-med, pre-dental) should consider taking the following courses which are common prerequisites for health professional and graduate programs. Students must consult with specific program(s) of interest to confirm prerequisites:

Code	Title	Hours
CHEM 2111	Organic Chemistry 1	
CHEM 2112	Organic Chemistry 2	
PHYS 1001	General Physics 1	
PHYS 1002	General Physics 2	
BIOL 2001	Principles of Biological Investigation	
MATH 1410	Calculus for the Biological Sciences	
SOCI 1001	Principles of Sociology	
PSYC 1001	General Psychology	

Typical four-year curriculum plans for Biomedical Sciences (p. ), Pre-Physician Assistant Studies (p. ), Direct Admit Physical Therapy (p. ), Pre-PharmD program (p. ), STEM-MBA and Pre-Dental Scholars (p. ) follow the listing of Biomedical Sciences Major requirements.

**Biomedical Sciences Major**

Typical four-year curriculum plans for Biomedical Sciences (p. ), Pre-Physician Assistant Studies (p. ), Direct Admit Physical Therapy (p. ), Pre-PharmD program (p. ), Pre-Dental Scholars (p. ), Neuroscience PhD ADP (p. ), Exercise Sciences and Rehabilitation Science MS ADP (p. ), Occupational Therapy OTD ADP (p. ), and Medical Laboratory Science Certificate ADP (p. ) follow the listing of Biomedical Sciences Major requirements.

**BIOMEDICAL SCIENCES MAJOR**

The major in biomedical sciences consists of a minimum of 33 credit hours completed with a C- grade or better and meet a minimum cumulative GPA of 2.000. A maximum of 9 transfer credits can be applied towards the major. The major includes the following requirements:

**Biomedical Sciences Major: Required Courses (three courses, 11-12 credits)**

Code	Title	Hours
BISC 3135	Clinical Human Anatomy	4
BISC 3213	Biochemistry	3-4
or BISC 2070	Biochemistry for the Health Professions	
BISC 4145	Human Physiology <sup>1</sup>	4

**Total Credit Hours: 11-12****Biomedical Sciences major: Content Areas (Five courses, minimum 15 credits):**

Choose two courses (6 credits) from each of the two content areas listed below, plus an additional course (3 credits) from either content area. At least one of the five courses must also be designated as fulfilling the Disease and Pathology cognate. Courses eligible for the Disease and Pathology cognate can only fulfill both the content course requirement and Disease and Pathology cognate if it is completed with a C- or better. If the course is completed

with a D or D+, it can fulfill the cognate, but the student will need to complete an additional content course with a C- or better in order to fulfill the major requirements.

Code	Title	Hours
Anatomy and Systems Content Area (BISC AS) - 2 courses, minimum 6 credits		6
BISC 3110	Nutritional Aspects of Health	
BISC 3112	Head and Neck Anatomy	
BISC 3150	General Pathology <sup>2</sup>	
BISC 3850	Systems Neuroscience	
BISC 4010	Neuroeconomics: The Neuroscience of Decision Making	
BISC 4113	Anatomy Teaching Practicum	
BISC 4120/7220	Pharmacology (Substitute BISC 7220 for MPA program only) <sup>1,2</sup>	
BISC 4140/5140	Functional Neuroanatomy <sup>1</sup>	
BISC 4155/5155	Diseases of the Brain <sup>1</sup>	
BISC 4173/5173	Principles of Human Embryology <sup>1</sup>	
BISC 4325/5325	Endocrinology <sup>1</sup>	
BISC 4514/7514	Human Microanatomy	
BISC 7130	Human Gross Anatomy (5 credits; must be enrolled in the DPT or OTD program)	
BISC 7230	Medical Anatomy (6 credits; must be enrolled in the MPA program)	
BISC 7515	Biomedical Systems 1 (Pre-Dental Scholars only)	
BISC 8002	Neuroscience Foundations 2 (NRSC PhD only)	
EXPH 5192	Advanced Exercise Physiology (EXRS MS only)	
OCTH 7150	Clinical and Health Conditions 1 (OTD program only) <sup>2</sup>	
PHTH 7515	Clinical Pathology and Pathophysiology (only for students admitted to DPT program) <sup>2</sup>	
Note: BISC 9391 Signifies transfer credit for the Anatomy and Systems content area		
Cellular and Molecular Content Area (BISC CM) - 2 courses, minimum 6 credits		6
BISC 3115/7410	Human Microbiology (BISC 7410 for Pre-Dental Scholars only) <sup>1</sup>	
BISC 4020	Molecular Neuroscience	
BISC 4160/5160	Molecular Pathology <sup>1,2</sup>	
BISC 4210	Biology of Aging	
BISC 4340/5340	Human and Applied Medical Genetics <sup>1</sup>	
BISC 4342	Epigenetics and Human Disease	
BISC 8001	Neuroscience Foundations 1	
BIOL 3201	Genetics	
BIOL 3301	Cell Biology	
BIOL 4501	Cellular Neurobiology	
BIOL 4806	Immunobiology	
Additional Content Course (BISC AS/CM) - one course, minimum 3 credits		3
One additional course from either the BISC AS or BISC CM content areas listed above		
<b>Total Credit Hours:</b>		<b>15</b>

### Biomedical Sciences Major: Electives 6-7 Credits

Select from the following list, or any additional courses within the Anatomy & Systems or Cellular & Molecular content areas listed above, to total the 33 credit hours required for the major completed with a minimum grade of C-.

Code	Title	Hours
BISC 1001	Contemporary Issues in Biomedical Sciences (required course for all first semester freshman)	1
BISC 1030	Introduction to Dentistry (can only be applied as an elective for Pre-Dental Scholars)	1
BISC 2010	Path to Research	3
BISC 2020	Medical Terminology	1
BISC 3136	Gross Anatomy for the Biomedical Sciences	2
BISC 3859	Evolution	3
BISC 3954	U-RISE Entering Biomedical Research Seminar 1	1.5
BISC 3955	U-RISE Entering Biomedical Research Seminar 2	1.5

BISC 4113	Anatomy Teaching Practicum	3
BISC 4142/4142H	Science and Society	1
BISC 4146/4146H	Physiology In Depth: Contemporary Issues	1
BISC 4147	Human Physiology Laboratory (can fulfill Laboratory Science Cognate or BISC elective, but not both)	1
BISC 4150	Outbreaks, Epidemics and Pandemics	3
BISC 4151/4151H	Advanced Pathology	1
BISC 4153	Epidemiology (can fulfill Health and Society Cognate or BISC elective, but not both)	3
BISC 4157	Global Health (can fulfill Health and Society Cognate or BISC elective, but not both)	3
BISC 4165	Microbiology Laboratory (can fulfill Laboratory Science Cognate or BISC elective, but not both)	1
BISC 4170	Biology, Moral Behavior and Policy (can fulfill Health and Society Cognate or BISC elective, not both)	3
BISC 4214/4214H	Advanced Biochemistry	1
BISC 4275	Modern Plagues: Stress, Trauma and Addiction	3
BISC 4341/4341H	Advanced Cellular Genetics and Cancer	1
BISC 4460	Practical Cases in Medicine	3
BISC 4851/4851H	Advanced Systems Neuroscience	1
BISC 4931	Topics in Biomedical Sciences	1-3
BISC 4953	Readings in Human Anatomy	1
or BISC 4953H	Honors Readings in Human Anatomy	
BISC 4986	Internship in Biomedical Sciences (maximum 6 credits, 3 credits toward BISC major)	1-3
BISC 4987	Internship in Biomedical Sciences-Grading Period (maximum 6 credits, 3 credits toward BISC major)	1-3
BISC 4988	Research Internship in Biomedical Sciences (maximum 6 credits, 3 credits toward BISC major)	1-3
BISC 4989	Research Internship in Biomedical Sciences-Grading Period (maximum 6 credits, 3 credits toward BISC major)	1-3
BISC 4991H	Honors Community Engagement in Biomedical Sciences (Only for students in the Disciplinary Honors Program; maximum 6 credits, 3 credits toward BISC major)	1-3
BISC 4995/4995H	Independent Study in Biomedical Sciences (Maximum 6 credits, 3 credits toward BISC major)	1-3
BISC 4997H	Capstone for Disciplinary Honors Program in Biomedical Sciences (Only for students in the Disciplinary Honors Program)	1
BISC 7516	Biomedical Systems 2 (only for Pre-Dental Scholars)	4
BIOL 4102	Experimental Molecular Biology	3
BIOL 4202	Experimental Genetics	3
BIOL 4302	Experimental Cell Biology	3
BIOL 4502	Experimental Neurobiology	3
BIOL 4702	Experimental Physiology	3
BIOL 4802	Experimental Microbiology	3
MLSC 2050	Forensic Science	3
MLSC 2060	Public Health (can fulfill Health and Society Cognate or BISC elective, but not both)	3
MLSC 4124/7124	Medical Microbiology 1	4
MLSC 4127/7127	Medical Microbiology 2	4
OCTH 7190	Neuroanatomy	3
PHAS 7260	Pediatric Medicine (only for students admitted to MPA program)	3
PHTH 7120	Pharmacology in Physical Therapy (only for students admitted to DPT program)	2

A maximum of nine transfer credit hours can be applied toward the requirements for a major

<sup>1</sup> 5000-8000 level courses only for students enrolled in pre-approved graduate programs.

<sup>2</sup> Denotes course fulfills the Disease and Pathology cognate requirement (see Degree Requirements tab)

## Typical Program for Biomedical Sciences Majors

### Freshman

First Term	Hours	Second Term	Hours
BISC 1001		1 BIOL 1002 <sup>1</sup>	3
BIOL 1001 <sup>1</sup>		3 CHEM 1002 <sup>1</sup>	4

CHEM 1001 <sup>1</sup>	4	PSYC 1001 or ELECTIVE <sup>1</sup>	3
ENGL 1001 or ESSV1 (MCC)	3	PHIL 1001 or THEO 1001 (MCC)	3
PHIL 1001 or THEO 1001 (MCC)	3	ENGL 1001 or ESSV1 (MCC)	3
Elective	3		
	<b>17</b>		<b>16</b>

**Sophomore**

First Term	Hours	Second Term	Hours
BISC 3135		4 CHEM 2112 or ELECTIVE <sup>1</sup>	4
CHEM 2111 or BISC 2050 (and 3 cr. electives)		4 BISC 2070 or 3213	3-4
MATH 1410 or ELECTIVE <sup>1</sup>		3 Statistics cognate	3
CORE 1929		3 DSCV (MCC) <sup>2,3</sup>	3
DSCV (MCC) <sup>2,3</sup>		3 Elective	3
	<b>17</b>		<b>16-17</b>

**Junior**

First Term	Hours	Second Term	Hours
PHYS 1001 or ELECTIVE <sup>1</sup>		4 PHYS 1002 or ELECTIVE <sup>1</sup>	4
BISC 4145		4 BISC Anatomy & Systems (AS)	3
BISC Anatomy & Systems (AS)		3 BISC Cellular & Molecular (CM)	3
BIOL 2001 (or other Lab cognate)		3 Health & Society cognate	3
DSCV (MCC) <sup>2,3</sup>		3 Medical Ethics cognate	1
	<b>17</b>		<b>14</b>

**Senior**

First Term	Hours	Second Term	Hours
BISC Cellular & Molecular		3 Disease & Pathology Cognate	3
BISC Elective		3 BISC Anatomy & Systems or Cellular & Molecular (AS/CM)	3
DSCV (MCC) <sup>2,3</sup>		3 BISC Elective	3-2
Elective		6 CORE 4929 (MCC)	3
		Elective	4
	<b>15</b>		<b>16-15</b>

**Total Credit Hours: 128**

- <sup>1</sup> Courses required for many post-graduate/professional programs, consult with specific program(s) of interest to confirm prerequisites.
- <sup>2</sup> The four courses in the Discovery Tier (DSCV) of the MCC must be completed in the same theme and include the following content areas: Humanities (HUM), Social Science (SSC), Natural Science and Mathematics (NSM) and one elective (ELE), which is any additional course from any of the three content areas. A maximum of two courses in the Discovery Tier can apply towards a primary major.
- <sup>3</sup> Students must also complete the Writing Intensive (WRIT) and Engaging Social System and Values 2 (ESSV2) requirements of the MCC. These requirements can be fulfilled through designated courses in the Discovery Tier or other degree requirements.

**Typical Program for Biomedical Sciences Majors - Direct Admit Physical Therapy Students**

Partnering with the Physical Therapy program at Marquette University, the Biomedical Sciences Department has established an accelerated option for the Direct Admit Physical Therapy program, allowing students to complete their undergraduate degree after the first year of the professional phase of the program. Students who were admitted directly to the Physical Therapy Program or those admitted following their Junior year (space permitting)

must meet the academic standards set by the Physical Therapy Department to continue in the program. Students who do not meet the academic requirements work with their advisers to complete the standard Biomedical Sciences major.

**Freshman**

First Term	Hours	Second Term	Hours
BISC 1001		1 BIOL 1002	3
BIOL 1001		3 CHEM 1002	4
CHEM 1001		4 PSYC 1001	3
ENGL 1001 or ESSV1 (MCC)		3 PHIL 1001 or THEO 1001 (MCC)	3
PHIL 1001 or THEO 1001 (MCC)		3 ENGL 1001 or ESSV1 (MCC)	3
Elective		3	
		<b>17</b>	<b>16</b>

**Sophomore**

First Term	Hours	Second Term	Hours
BISC 3135		4 BISC 2070 (or BISC 3213 for 4 cr.)	3
BISC 2050		1 Statistics cognate	3
PSYC 2101 (or PSYC 3101, 3120 or 3410 for DPT)		3 Health and Society Cognate	3
CORE 1929 (MCC)		3 PHTH 1001 <sup>3</sup>	1
DSCV (MCC) <sup>1,2</sup>		3 DSCV (MCC) <sup>1,2</sup>	3
Elective		2 DSCV (MCC) <sup>1,2</sup>	3
		<b>16</b>	<b>16</b>

**Junior**

First Term	Hours	Second Term	Hours
PHYS 1001		4 PHYS 1002	4
BISC 4145		4 BISC Cellular & Molecular (CM)	3
BISC Cellular & Molecular (CM)		3 BISC Anatomy & Systems or Cellular & Molecular (AS/CM)	3
BIOL 2001 (or other Lab cognate)		3 BISC Elective/General Elective <sup>3</sup>	3
DSCV (MCC) <sup>1,2</sup>		3 Medical Ethics cognate	1
		CORE 4929 (MCC)	3
		<b>17</b>	<b>17</b>

**Senior**

First Term	Hours	Second Term	Hours
BISC 7130 (BISC AS)		5 PHTH 7120 (BISC Elective)	2
PHTH 4512 (ESSV2)		3 PHTH 7515 (BISC AS and DP Cognate)	4
Remaining DPT Curriculum		6 Remaining DPT Curriculum	9
		<b>14</b>	<b>15</b>

**Total Credit Hours: 128**

<sup>1</sup> The four courses in the Discovery Tier (DSCV) of the MCC must be completed in the same theme and include the following content areas: Humanities (HUM), Social Science (SSC), Natural Science and Mathematics (NSM) and one elective (ELE), which is any additional course from any of the three content areas. A maximum of two courses in the Discovery Tier can apply towards a primary major.

<sup>2</sup> Students must also complete the Writing Intensive (WRIT) requirement of the MCC prior to senior year (DPT4). This requirement can be fulfilled through designated courses in the Discovery Tier or other degree requirements. The ESSV2 requirement of the MCC will be fulfilled in the senior year with PHTH 4512 (DPT4 course).

<sup>3</sup> Need to complete at least 22 of the 33 BISC major credits prior to entering the DPT4 year. The remaining 11 credits will be completed in the DPT curriculum.

## Typical Program for Biomedical Sciences Majors - Pre-Dental Scholars

Partnering with the School of Dentistry at Marquette University, the Biomedical Sciences Department has established an accelerated track option through the Pre-Dental Scholar Program, allowing students to complete their undergraduate degree within the first year of the dental school program. Students who were admitted directly to the Pre-Dental Scholar Program or those admitted following Freshmen year must meet the academic standards set by the School of Dentistry to continue in the program. Students who do not meet the academic requirements work with their advisers to complete the standard Biomedical Sciences major.

### Freshman

First Term	Hours	Second Term	Hours
BISC 1001		1 BIOL 1002	3
BIOL 1001		3 CHEM 1002	4
CHEM 1001		4 BISC 1030	1
ENGL 1001 or ESSV1 (MCC)		3 PHIL 1001 or THEO 1001 (MCC)	3
PHIL 1001 or THEO 1001 (MCC)		3 ENGL 1001 or ESSV1 (MCC)	3
Elective		3 Elective	3
	<b>17</b>		<b>17</b>

### Sophomore

First Term	Hours	Second Term	Hours
BISC 3135		4 CHEM 2112	4
CHEM 2111		4 BISC 2070 (or BISC 3213 for 4 cr.)	3
Statistics cognate		3 Health and Society cognate	3
CORE 1929 (MCC)		3 DSCV (MCC) <sup>1,2</sup>	3
Elective		3 DSCV (MCC) <sup>1,2</sup>	3
	<b>17</b>		<b>16</b>

### Junior

First Term	Hours	Second Term	Hours
PHYS 1001		4 PHYS 1002	4
BISC 4145		4 BISC Anatomy & Systems or Cellular & Molecular	3
Disease and Pathology cognate		3 BISC Cellular & Molecular (CM)	3
BIOL 2001		3 Medical Ethics	1
DSCV (MCC) <sup>1,2</sup>		3 CORE 4929 (MCC)	3
		DSCV (MCC) <sup>1,2</sup>	3
	<b>17</b>		<b>17</b>

### Senior

First Term	Hours	Second Term	Hours
BISC 7410 (BISC CM)		4 BISC 7516 (BISC elective)	4
BISC 7514 (BISC AS)		4 D1 Clinical Curriculum <sup>3</sup>	12
BISC 7515 (BISC AS)		3	

Remaining D1 Clinical Curriculum <sup>3</sup>	11	16
---	----	----

**Total Credit Hours: 128**

- <sup>1</sup> The four courses in the Discovery Tier (DSCV) of the MCC must be completed in the same theme and include the following content areas: Humanities (HUM), Social Science (SSC), Natural Science and Mathematics (NSM) and one elective (ELE), which is any additional course from any of the three content areas. A maximum of two courses in the Discovery Tier can apply towards a primary major.
- <sup>2</sup> Students must also complete the Writing Intensive (WRIT) and Engaging Social System and Values 2 (ESSV2) requirements of the MCC. These requirements can be fulfilled through designated courses in the Discovery Tier or other degree requirements.
- <sup>3</sup> Individual courses listed above apply towards the BISC major requirements. The remaining clinical curriculum credits in D1 year apply toward the 128 total credits required for the B.S. degree and are included in the GPA calculations for the B.S. degree and academic honors.

## Typical Program for Biomedical Sciences B.S. / Physician Assistant Studies Early Admission Option<sup>3</sup>

Partnering with the Department Physician Assistant Studies at Marquette University, the Biomedical Sciences Department has created an opportunity for early admission into the two-year Physician Assistant Studies (PA) program. Students who complete the first three years of the pre-physician assistant curriculum are eligible to apply to the Marquette University PA program in their junior year. Admitted students begin their PA1 year in summer after junior year and complete their undergraduate degree in Biomedical Sciences after the first year of the physician assistant program. A Master of Physician Assistant Studies is awarded upon graduation from the PA program. Students who do not enter the PA program before their senior year complete the standard Biomedical Sciences major.

**Freshman**

First Term	Hours	Second Term	Hours
BISC 1001	1	PSYC 1001 (or other social science for pre-PA)	3
BIOL 1001	3	BIOL 1002	3
CHEM 1001	4	CHEM 1002	4
ENGL 1001 or ESSV1 (MCC)	3	ENGL 1001 or ESSV1 (MCC)	3
PHIL 1001 or THEO 1001 (MCC)	3	PHIL 1001 or THEO 1001 (MCC)	3
Elective	3		
	<b>17</b>		<b>16</b>

**Sophomore**

First Term	Hours	Second Term	Hours
BISC 3135	4	BISC 3213	4
CHEM 2111	4	BISC 2020	1
CORE 1929 (MCC)	3	Statistics Cognate	3
DSCV (MCC) <sup>1,2</sup>	3	DSCV (MCC) <sup>1,2</sup>	3
Elective	3	Elective	3
	<b>17</b>		<b>14</b>

**Junior**

First Term	Hours	Second Term	Hours	Summer Term	Hours
BISC 4145	4	BISC CM	3	BISC 7220 (BISC AS/CM and DP Cognate)	3
BISC 3115 (BISC CM)	3	BISC Elective (if needed) <sup>3</sup>	3	BISC 7230 (BISC AS)	6
DSCV (MCC) <sup>1,2</sup>	3	Medical Ethics	1	PHAS 7270 (Lab Cognate)	3
DSCV (MCC) <sup>1,2</sup>	3	CORE 4929 (MCC)	3	Remaining PA Curriculum	5

Elective	3	Elective	3
	<b>16</b>		<b>13</b>
<b>Senior</b>			
<b>First Term</b>	<b>Hours</b>	<b>Second Term</b>	<b>Hours</b>
PA Curriculum	18	PHAS 7116 (HS Cognate)	2
		PHAS 7260 (BISC Elective)	3
		PA Curriculum	14
	<b>18</b>		<b>19</b>

**Total Credit Hours: 147**

- <sup>1</sup> The four courses in the Discovery Tier (DSCV) of the MCC must be completed in the same theme and include the following content areas: Humanities (HUM), Social Science (SSC), Natural Science and Mathematics (NSM) and one elective (ELE), which is any additional course from any of the three content areas. A maximum of two courses in the Discovery Tier can apply towards a primary major.
- <sup>2</sup> Students must also complete the Writing Intensive (WRIT) and Engaging Social System and Values 2 (ESSV2) requirements of the MCC. These requirements can be fulfilled through designated courses in the Discovery Tier or other degree requirements.
- <sup>3</sup> Need to complete at least 21 credits of the 33 credits in the BISC major prior to starting in the MPA program. The PA curriculum consists of 12 credits towards the BISC major. Note: PA curriculum subject to change prior to matriculation to the program.

## Typical Program for Biomedical Sciences B.S. / Medical College of Wisconsin (MCW) PharmD Early Assurance Program <sup>3</sup>

Partnering with the Medical College of Wisconsin Pharmacy School, the Biomedical Sciences Department has created an opportunity for early admission into the PharmD program. MU students in the biomedical sciences major are eligible to apply to the competitive Medical College of Wisconsin Pharmacy School's Early Assurance program early spring of the freshmen or sophomore year. Admitted students who complete all program requirements, earn an undergraduate degree in Biomedical Sciences from Marquette University after the first year of the PharmD program. A Doctor of Pharmacy is awarded by MCW upon successful completion of the three-year PharmD program. Students who do not enter the PharmD program before the senior year continue within the Biomedical Sciences major to complete the bachelor's degree.

**Freshman**

<b>First Term</b>	<b>Hours</b>	<b>Second Term</b>	<b>Hours</b>
BISC 1001		1 BIOL 1002	3
CHEM 1001		4 CHEM 1002	4
BIOL 1001		3 PHIL 1001 or THEO 1001 (MCC)	3
PHIL 1001 or THEO 1001 (MCC)		3 ENGL 1001 or ESSV1 (MCC)	3
ENGL 1001 or ESSV1 (MCC)		3 MATH 1100 (or other higher level MATH course)	3
Elective		3	
	<b>17</b>		<b>16</b>

**Sophomore**

<b>First Term</b>	<b>Hours</b>	<b>Second Term</b>	<b>Hours</b>
BISC 3135		4 CHEM 2112	4
CHEM 2111		4 BISC 2070 (or BISC 3213 for 4 cr.)	3
PSYC 1001		3 BIOL 2001	3
CORE 1929 (MCC)		3 DSCV (MCC) <sup>1,2</sup>	3
DSCV (MCC) <sup>1,2</sup>		3 Elective	3
	<b>17</b>		<b>16</b>

**Junior**

First Term	Hours	Second Term	Hours
BISC 4145		4 BISC Anatomy & Systems (AS)	3
Statistics Cognate		3 BISC Elective	3
DSCV (MCC) <sup>1, 2</sup>		3 Medical Ethics	1
DSCV (MCC) <sup>1, 2</sup>		3 CORE 4929 (MCC)	3
Elective		4 COMM 1100, CMST 2000, or CMST 3120	3
	<b>17</b>		<b>13</b>

**Total Credit Hours: 96****Note:** Senior Year completed at MCW.

For students accepted to the Early Assurance PharmD Program with MCW, the reverse transfer agreement allows for courses satisfactorily completed in the first year at MCW to transfer to MU (credits only, not grades) to satisfy the degree requirements listed below. Students who meet all early assurance program requirements<sup>3</sup> are eligible to walk in MU's graduation ceremony in May of their first year at MCW.

Department	Credit Hours
BISC Cellular & Molecular (CM)	8
BISC Anatomy & Systems (AS)	3
BISC AS/CM and DP Cognate	5
Health and Society Cognate	3
General Electives	13

- <sup>1</sup> The four courses in the Discovery Tier (DSCV) of the MCC must be completed in the same theme and include the following content areas: Humanities (HUM), Social Science (SSC), Natural Science and Mathematics (NSM) and one elective (ELE), which is any additional course from any of the three content areas. A maximum of two courses in the Discovery Tier can apply towards a primary major.
- <sup>2</sup> Students must also complete the Writing Intensive (WRIT) and Engaging Social System and Values 2 (ESSV2) requirements of the MCC. These requirements can be fulfilled through designated courses in the Discovery Tier or other degree requirements.
- <sup>3</sup> At least 60 credits must be completed at MU (excludes test, CLEP and transfer credit). More than 50% of the 33 credits in the BISC major must be completed at MU (17 credits or more). To qualify for academic honors at MU, at least 32 upper division credits must be completed at MU (3000 level or higher).

## Typical Program for Biomedical Sciences B.S. / Neuroscience Ph.D. Accelerated Degree Program.

The Department of Biomedical Sciences together with the Graduate School offers an accelerated degree program which allows accepted students to complete graduate course work in the Neuroscience Ph.D. program in their senior year of undergraduate study.

Marquette undergraduate students majoring in Biomedical Sciences can apply for admission to the Neuroscience Ph.D. program in their junior year. Students accepted into the program are eligible to enroll in up to 14 (or 17) credits of graduate course work during the senior year. Credits earned for graduate courses can be used to fulfill both undergraduate and graduate degree requirements.

**Freshman**

First Term	Hours	Second Term	Hours
BISC 1001		1 BIOL 1002	3
BIOL 1001		3 CHEM 1002	4
CHEM 1001		4 PSYC 1001	3
ENGL 1001 or ESSV1 (MCC)		3 PHIL 1001 or THEO 1001 (MCC)	3
PHIL 1001 or THEO 1001 (MCC)		3 ENGL 1001 or ESSV1 (MCC)	3
Elective		3	
	<b>17</b>		<b>16</b>

**Sophomore**

First Term	Hours	Second Term	Hours
BISC 3135		4 CHEM 2112 or ELECTIVE	4
CHEM 2111 or BISC 2050 (and 3 cr. elective)		4 BISC 2070 or 3213 (4 credits)	3
MATH 1410 or ELECTIVE		3 Statistics cognate	3
CORE 1929		3 DSCV (MCC) <sup>1, 2</sup>	3
Elective		3 Elective	3
		<b>17</b>	<b>16</b>

**Junior**

First Term	Hours	Second Term	Hours
PHYS 1001 or ELECTIVE		4 PHYS 1002 or ELECTIVE	4
BISC 4145		4 DP Cognate	3
BISC CM		3 BISC 3850 (BISC AS)	3
BIOL 2001 (or other Lab cognate)		3 Medical Ethics	1
DSCV (MCC) <sup>1, 2</sup>		3 BISC elective	2
		DSCV (MCC) <sup>1, 2</sup>	3
		<b>17</b>	<b>16</b>

**Senior**

First Term	Hours	Second Term	Hours
BISC 8001 (BISC CM) <sup>3</sup>		4 BISC 8002 (BISC Elective) <sup>3</sup>	4
BISC 5140 (BISC AS)		3 Elective	6
BISC Anatomy & Systems or Cellular & Molecular		3 CORE 4929 (MCC)	3
Elective		3 NRSC Curriculum - applies towards graduate degree only <sup>3</sup>	
DSCV (MCC) <sup>1, 2</sup>		3	
		<b>16</b>	<b>13</b>

**Total Credit Hours: 128**

- <sup>1</sup> The four courses in the Discovery Tier (DSCV) of the MCC must be completed in the same theme and include the following content areas: Humanities (HUM), Social Science (SSC), Natural Science and Mathematics (NSM) and one elective (ELE), which is any additional course from any of the three content areas. A maximum of two courses in the Discovery Tier can apply towards a primary major.
- <sup>2</sup> Students must also complete the Writing Intensive (WRIT) and Engaging Social System and Values 2 (ESSV2) requirements of the MCC. These requirements can be fulfilled through designated courses in the Discovery Tier or other degree requirements.
- <sup>3</sup> For students accepted to the neuroscience PhD program, a maximum of 14 credits of NRSC graduate course work taken in the senior year can apply towards both their undergraduate and graduate degrees.

## **TYPICAL PROGRAM FOR BIOMEDICAL SCIENCES B.S. / Exercise and Rehabilitation Science M.S. ACCELERATED DEGREE PROGRAM.**

The Department of Biomedical Sciences together with the Graduate School offers an accelerated degree program which allows accepted students to complete graduate course work in the Exercise and Rehabilitation Science M.S. program in their senior year of undergraduate study.

Marquette undergraduate students majoring in Biomedical Sciences can apply for admission to the Exercise and Rehabilitation Science M.S. program in their junior year. Students accepted into the program are eligible to enroll in up to 14 (or 17) credits of graduate course work during the senior year. Credits earned for graduate courses can be used to fulfill both undergraduate and graduate degree requirements.

**Freshman**

<b>First Term</b>	<b>Hours</b>	<b>Second Term</b>	<b>Hours</b>
BISC 1001		1 BIOL 1002 <sup>1</sup>	3
BIOL 1001 <sup>1</sup>		3 CHEM 1002 <sup>1</sup>	4
CHEM 1001 <sup>1</sup>		4 PSYC 1001 <sup>1</sup>	3
ENGL 1001 or ESSV1 (MCC)		3 PHIL 1001 or THEO 1001 (MCC)	3
PHIL 1001 or THEO 1001 (MCC)		3 ENGL 1001 or ESSV1 (MCC)	3
Elective		1	
	<b>15</b>		<b>16</b>

**Sophomore**

<b>First Term</b>	<b>Hours</b>	<b>Second Term</b>	<b>Hours</b>
BISC 3135		4 CHEM 2112 or ELECTIVE <sup>1</sup>	4
CHEM 2111 or BISC 2050 (and 3 cr. electives)		4 BISC 2070 or 3213	3-4
MATH 1410 or ELECTIVE <sup>1</sup>		3 Statistics cognate	3
CORE 1929		3 DSCV (MCC) <sup>2,3</sup>	3
DSCV (MCC) <sup>2,3</sup>		3 Elective	3
	<b>17</b>		<b>16-17</b>

**Junior**

<b>First Term</b>	<b>Hours</b>	<b>Second Term</b>	<b>Hours</b>
PHYS 1001 or ELECTIVE <sup>1</sup>		4 PHYS 1002 or ELECTIVE <sup>1</sup>	4
BISC 4145		4 BISC Anatomy & Systems	3
BISC Cellular & Molecular		3 BISC elective	3
BIOL 2001 (or other Lab cognate)		3 Health and Society Cognate	3
DSCV (MCC) <sup>2,3</sup>		3 DSCV (MCC) <sup>2,3</sup>	3
	<b>17</b>		<b>16</b>

**Senior**

<b>First Term</b>	<b>Hours</b>	<b>Second Term</b>	<b>Hours</b>
BISC Cellular & Molecular		3 BISC Anatomy & Systems or Cellular & Molecular	3
Disease and Pathology cognate		3 BISC elective	3-2
EXPH 5192 (BISC AS) <sup>4</sup>		3 Medical Ethics	1
EXPH 5195 <sup>4</sup>		1 CORE 4929 (MCC)	3
EXRS 6958 <sup>4</sup>		1 EXRS ELECTIVE <sup>4</sup>	3
DSCV (MCC) <sup>2,3</sup>		3 EXRS 6960 <sup>4</sup>	1
		Elective	3
	<b>14</b>		<b>17-16</b>

**Total Credit Hours: 128**

<sup>1</sup> Courses required for many post-graduate/professional programs, consult with specific program(s) of interest to confirm prerequisites.

<sup>2</sup> The four courses in the Discovery Tier (DSCV) of the MCC must be completed in the same theme and include the following content areas: Humanities (HUM), Social Science (SSC), Natural Science and Mathematics (NSM) and one elective (ELE), which is any additional course from any of the three content areas. A maximum of two courses in the Discovery Tier can apply towards a primary major.

<sup>3</sup> Students must also complete the Writing Intensive (WRIT) and Engaging Social System and Values 2 (ESSV2) requirements of the MCC. These requirements can be fulfilled through designated courses in the Discovery Tier or other degree requirements.

<sup>4</sup> For students accepted to the Exercise and Rehabilitation Science M.S. program, a maximum number of 14 credits of the graduate course work taken in the senior year can apply towards both their undergraduate and graduate degrees.

**Note:** Graduate students involved in research are required to enroll on GRAD 9953 Seminar in Conduct of Research.

## BIOMEDICAL SCIENCES B.S. / MEDICAL COLLEGE OF WISCONSIN (MCW) Global Health Equity M.S. Accelerated degree program

The Department of Biomedical Sciences together with the Medical College of Wisconsin Global Health Equity M.S. program offers an accelerated degree program which allow students to earn their B.S. in Biomedical Sciences, and a master of science (M.S.) in Global Health Equity, all within a five-year time period.

Marquette undergraduate students majoring in Biomedical Sciences can apply for admission to the Global Health Equity M.S. program in the second term of their junior year. Students accepted into the program are eligible to enroll in up to 12 credits of pre-approved course work during the senior year to fulfill both undergraduate and graduate degree requirements.

Due to the structure of the program within the senior year, careful planning as early as sophomore year is encouraged. Interested students should contact their undergraduate adviser to be connected with the program contact within the Biomedical Sciences Department.

## Biomedical Sciences B.S. / M.B.A. Accelerated Degree Programs

The Department of Biomedical Sciences together with the Graduate School of Management offers an accelerated degree program which allow students to earn their B.S. in Biomedical Sciences, and a master of business administration (M.B.A.), all within a five-year time period.

Marquette undergraduate students majoring in Biomedical Sciences can apply for admission to the Master of Business Administration (MBA) program in the second term of their junior year. Prerequisites for the MBA program include the requirements for the minor in Business Administration, along with MATH 1400 or 1450 (AP credits accepted). Students accepted into the program are eligible to enroll in up to 12 credits of MBA course work during the senior year. Credits obtained for these MBA courses can be used to fulfill both undergraduate and graduate degree requirements. Due to the number of prerequisite courses required to apply to the MBA program, this accelerated degree option requires careful planning as early as freshman year.

Interested students should contact their undergraduate adviser and review the MBA information on the Graduate School of Management website (<https://www.marquette.edu/business/graduate/stem-mba.php>). Once students inform the Graduate School of Management of their completion of undergraduate degree requirements, their admission as a regular degree status student in the Graduate School of Management is activated.

## Typical program for Biomedical Sciences B.S. / O.T.D. Accelerated Degree Program

Partnering with the Occupational Therapy Program, the Biomedical Sciences Department has created an opportunity for early admission into the three-year Occupational Therapy (OT) program. Students need to have all the prerequisites completed before the start of the professional phase. Contact the OT program to learn more about this early entry program.

<b>Freshman</b>			
<b>First Term</b>	<b>Hours</b>	<b>Second Term</b>	<b>Hours</b>
BISC 1001		1 BIOL 1002	3
BIOL 1001		3 CHEM 1002	4
CHEM 1001		4 PSYC 1001	3
ENGL 1001 or ESSV1 (MCC)		3 PHIL 1001 or THEO 1001 (MCC)	3
PHIL 1001 or THEO 1001 (MCC)		3 ENGL 1001 or ESSV1 (MCC)	3
Elective		3	
	<b>17</b>		<b>16</b>
<b>Sophomore</b>			
<b>First Term</b>	<b>Hours</b>	<b>Second Term</b>	<b>Hours</b>
BISC 3135		4 BISC 2070 (or BISC 3213 for 4 cr.)	3
BISC 2050		1 BISC 2020 (OT prereq)	1
PSYC 2101 (or PSYC 3101, 3120 or 3410 for OT)		3 Health and Society Cognate	3

CORE 1929 (MCC)	3	Statistics cognate	3
DSCV (MCC) <sup>1,2</sup>	3	DSCV (MCC) <sup>1,2</sup>	3
Elective	3	DSCV (MCC) <sup>1,2</sup>	3
	<b>17</b>		<b>16</b>

**Junior**

First Term	Hours	Second Term	Hours
BISC 4145		4 Cell and Molecular course	3
Cell and Molecular course		3 BISC Additional Content Area course	3
BIOL 2001		3 BISC elective	2
Medical Ethics cognate		1 CORE 4929 (MCC)	3
DSCV (MCC) <sup>1,2</sup>		3 Elective	3
	<b>14</b>		<b>14</b>

**Senior**

First Term	Hours	Second Term	Hours
BISC 7130 (Anatomy and Systems)		5 OCTH 7190 (BISC elective)	3
OCTH 7150 (Anatomy and Systems Course/Disease and Pathology cognate)		3 Remaining OT Curriculum	13
Remaining OT Curriculum		10	
	<b>18</b>		<b>16</b>

**Total Credit Hours: 128**

- <sup>1</sup> The four courses in the Discovery Tier (DSCV) of the MCC must be completed in the same theme and include the following content areas: Humanities (HUM), Social Science (SSC), Natural Science and Mathematics (NSM) and one elective (ELE), which is any additional course from any of the three content areas. A maximum of two courses in the Discovery Tier can apply towards a primary major.
- <sup>2</sup> Students must also complete the Writing Intensive (WRIT) and Engaging Social System and Values 2 (ESSV2) requirements of the MCC. These requirements can be fulfilled through designated courses in the Discovery Tier or other degree requirements.

## TYPICAL PROGRAM FOR BIOMEDICAL SCIENCES B.S. / Certificate in Medical Laboratory Science

Partnering with the Medical Laboratory Science Department, the Biomedical Sciences Department has created an opportunity for early admission into the two year professional certificate program in Medical Laboratory Science. This accelerated program allows students to complete the first year (20 credits) of the two-year MLSC Certificate program in their senior year of undergraduate study, allowing students to complete their Bachelor of Science degree and Certificate in Medical Laboratory Science in five years instead of six years. Eligible students can apply for admission to the accelerated degree certificate program as early as the first term of their junior year.

Students accepted to the accelerated MLSC Certificate program must meet the listed program prerequisites and be on track with their undergraduate degree to allow for the 20 MLSC Certificate credits in the senior year. These 20 credits of 7000-level courses from the MLSC Certificate program can be used to fulfill both undergraduate degree and certificate requirements.

**Freshman**

First Term	Hours	Second Term	Hours
BISC 1001		1 BIOL 1002 <sup>1</sup>	3
BIOL 1001 <sup>1</sup>		3 CHEM 1002 <sup>1</sup>	4
CHEM 1001 <sup>1</sup>		4 PSYC 1001 or ELECTIVE <sup>1</sup>	3
ENGL 1001 or ESSV1 (MCC)		3 PHIL 1001 or THEO 1001 (MCC)	3

PHIL 1001 or THEO 1001 (MCC)	3	ENGL 1001 or ESSV1 (MCC)	3
<b>14</b>		<b>16</b>	

**Sophomore**

First Term	Hours	Second Term	Hours
BISC 3135		4 CHEM 2112 or ELECTIVE <sup>1</sup>	4
CHEM 2111		4 BISC 2070 or 3213	3-4
CORE 1929		3 Statistics cognate	3
DSCV (MCC) <sup>1,2</sup>		3 DSCV (MCC) <sup>1,2</sup>	3
Elective		2 Elective	3
<b>16</b>		<b>16-17</b>	

**Junior**

First Term	Hours	Second Term	Hours
PHYS 1001 or ELECTIVE <sup>1</sup>		4 PHYS 1002 or ELECTIVE <sup>1</sup>	4
BISC 4145		4 BISC Anatomy & Systems	3
BISC Anatomy & Systems		3 BISC Cellular & Molecular	3
MLSC 2200 (BISC Lab Cognate)		3 Health and Society Cognate	3
DSCV (MCC) <sup>1,2</sup>		3 Medical Ethics cognate	1
		DSCV (MCC) <sup>1,2</sup>	3
<b>17</b>		<b>17</b>	

**Senior**

First Term	Hours	Second Term	Hours
BISC Cellular & Molecular		3 MLSC 7127 (BISC elective)	4
BISC Anatomy & Systems or Cellular & Molecular		3 MLSC 7173	4
Disease and Pathology cognate		3 MLSC 7174	4
MLSC 7163		4 CORE 4929 (MCC)	3
MLSC 7124 (BISC elective)		4	
<b>17</b>		<b>15</b>	

**Total Credit Hours: 128-129**

<sup>1</sup> The four courses in the Discovery Tier (DSCV) of the MCC must be completed in the same theme and include the following content areas: Humanities (HUM), Social Science (SSC), Natural Science and Mathematics (NSM) and one elective (ELE), which is any additional course from any of the three content areas. A maximum of two courses in the Discovery Tier can apply towards a primary major.

<sup>2</sup> Students must also complete the Writing Intensive (WRIT) and Engaging Social System and Values 2 (ESSV2) requirements of the MCC. These requirements can be fulfilled through designated courses in the Discovery Tier or other degree requirements.

**University Policies**

- Academic Advising (<https://bulletin.marquette.edu/policies/academic-advising/>)
- Academic Censure - Undergraduate (<https://bulletin.marquette.edu/policies/academic-censure/undergraduate/>)
- Academic Integrity (<https://bulletin.marquette.edu/policies/academic-integrity/>)
- Academic Misconduct (<https://bulletin.marquette.edu/policies/academic-misconduct-policy/>)
- Academic Program Definitions (<https://bulletin.marquette.edu/policies/academic-programs-defined/>)
- Academic Standing (<https://bulletin.marquette.edu/policies/academic-standing/>)
- Accelerated Degree Programs (<https://bulletin.marquette.edu/policies/accelerated-degree-programs/>)
- Advanced Standing Credit - Undergraduate (<https://bulletin.marquette.edu/policies/advanced-standing-undergraduate/>)

- Attendance - Undergraduate (<https://bulletin.marquette.edu/policies/attendance/undergraduate/>)
- Audit - Undergraduate (<https://bulletin.marquette.edu/policies/audit/>)
- Awarding Diplomas and Certificates (<https://bulletin.marquette.edu/policies/awarding-diplomas-certificates/>)
- Background Checks, Drug Testing (<https://bulletin.marquette.edu/policies/background-checks-drug-testing/>)
- Class Rank (<https://bulletin.marquette.edu/policies/class-rank/>)
- Classification - Undergraduate (<https://bulletin.marquette.edu/policies/classification-undergraduate/>)
- Commencement (<https://bulletin.marquette.edu/policies/commencement/>)
- Conferral of Degrees and Certificates (<https://bulletin.marquette.edu/policies/conferral-degrees-certificates/>)
- Course Levels (<https://bulletin.marquette.edu/policies/course-levels/>)
- Credit Hour (<https://bulletin.marquette.edu/policies/credit/>)
- Credit Load - Undergraduate (<https://bulletin.marquette.edu/policies/credit-load/undergraduate/>)
- Examinations (Midterm and Final) - Undergraduate (<https://bulletin.marquette.edu/policies/examinations-midterm-final-undergraduate/>)
- Faculty Grading (<https://bulletin.marquette.edu/policies/faculty-grading/>)
- Family Education Rights and Privacy Act-FERPA (<https://bulletin.marquette.edu/policies/ferpa/>)
- Grade Appeals (<https://bulletin.marquette.edu/policies/grade-appeals/>)
- Grading System - Undergraduate and Health Science Professional (<https://bulletin.marquette.edu/policies/grading-system/undergraduate-healthscienceprofessional/>)
- Graduation - Undergraduate (<https://bulletin.marquette.edu/policies/graduation/undergraduate/>)
- Immunization and Tuberculosis Screening Requirements (<https://bulletin.marquette.edu/policies/immunization-and-tuberculosis-screening/>)
- Last Date of Attendance/Activity (<https://bulletin.marquette.edu/policies/last-dateof-attendance-activity/>)
- Major and Minor Declaration - Undergraduate (<https://bulletin.marquette.edu/policies/major-declaration/>)
- Medical Withdrawal (<https://bulletin.marquette.edu/policies/medical-withdrawal/>)
- Military Call to Active Duty or Training (<https://bulletin.marquette.edu/policies/militarycall-active-duty-training/>)
- Non-Degree Undergraduate Students (<https://bulletin.marquette.edu/policies/non-degree-undergraduate-students/>)
- Readmission - Undergraduate (<https://bulletin.marquette.edu/policies/readmission/>)
- Registration - Undergraduate (<https://bulletin.marquette.edu/policies/registration/undergraduate/>)
- Repeated Courses - Undergraduate (<https://bulletin.marquette.edu/policies/repeated-courses/undergraduate/>)
- Second Language Course Placement - Undergraduate (<https://bulletin.marquette.edu/policies/second-language-course-placement-undergraduate/>)
- Second/Additional Bachelor Degree (<https://bulletin.marquette.edu/policies/second-additional-bachelor-degree/>)
- Student Data Use and Privacy (<https://bulletin.marquette.edu/policies/student-data-use-privacy/>)
- Study at Other Institutions - Undergraduate (<https://bulletin.marquette.edu/policies/study-institutions/>)
- Transcripts-Official (<https://bulletin.marquette.edu/policies/transcripts-official/>)
- Transfer (Internal) to Another Undergraduate College within the University (<https://bulletin.marquette.edu/policies/transfer-internal-another-undergraduate-college-within-university/>)
- Transfer Course Credit - Undergraduate (<https://bulletin.marquette.edu/policies/transfer-course-credit-policy/undergraduate/>)
- Withdrawal - Undergraduate (<https://bulletin.marquette.edu/policies/withdrawals/undergraduate/>)

## College of Health Sciences Policies

- Academic Dismissal/Probation/Academic Alert (<https://bulletin.marquette.edu/health-sciences/policies/dismissal-probation-alert/>)
- Dean's List Criteria (<https://bulletin.marquette.edu/health-sciences/policies/deans-list-criteria/>)
- Degrees Offered (<https://bulletin.marquette.edu/health-sciences/policies/degrees-offered/>)

### **Program Director: Doug Lobner, Ph.D.**

The Disciplinary Honors Program in Biomedical Sciences is designed for students to demonstrate exceptional work in the areas of research and community engagement, as well maintain high academic standards. Students involved in this program must go beyond normal expectations in these areas by generating an honors proposal that integrates coursework, research, community engagement, writing, and oral presentations into a coherent plan of work. There are two specific focuses within the program, one in which the emphasis is on scientific research and the other on community engagement, although all students must include some experience in each area.

Graduation with Disciplinary Honors in Biomedical Sciences requires completion of the portfolio and participation in a second-semester senior year capstone course. As part of this course, students are required to prepare a presentation describing how they completed their Honors Plan.

## Curricular Requirements

Honors students within each focus are required to complete five courses which may be applied simultaneously to the Biomedical Sciences major as elective credit. Students should consult the Biomedical Sciences major bulletin to confirm which Honor's courses may be used toward Biomedical Sciences elective credit.

For their laboratory research experience, students within the research focus must complete six credits of BISC 4995H Honors Independent Study in Biomedical Sciences (students enroll twice, for three credits each class session) or complete three credits of BISC 4995H Honors Independent Study in Biomedical Sciences and participate in the Biomedical Sciences Summer Research Program. Participation in the summer research program is indicated by registration for a 0 credit summer course (BISC 9002H Honors Student Study/Research Placeholder in Biomedical Sciences).

### Research Focus Requirements – 2 Courses (3 or 6 Credits)

Questions about the research focus can be directed to Dr. Lobner, [Doug.Lobner@marquette.edu](mailto:Doug.Lobner@marquette.edu)

- Six credits of honors laboratory research (BISC 4995H Honors Independent Study in Biomedical Sciences) (enrolling twice, for three credits each class session), or three credits plus participation in the summer research program (BISC 9002H Honors Student Study/Research Placeholder in Biomedical Sciences)
- Thematic research plan-related curriculum
- Additional extra-curricular activities should be considered (seminar series, etc.)
- Inclusion of community engagement component (For example: assist with anatomy lab tours for high school students)
- A written component of the plan is required during one of the independent study courses or the capstone course.

### Community Engagement Focus Requirements – 2 Courses (6 Credits)

Questions about the community engagement focus can be directed to Autumn Swanson, [Autumn.Swanson@marquette.edu](mailto:Autumn.Swanson@marquette.edu)

- Six credits of honors community engagement course (BISC 4991H Honors Community Engagement in Biomedical Sciences) (enrolling twice, for three credits each class session)
- Thematic community engagement plan-related curriculum
- Additional extra-curricular activities should be considered (seminar series, etc.)
- Inclusion of relevant research component (For example: attend a research-based seminar series)
- A written component of the plan is required during one of the independent study courses or the capstone course.

### Curricular Requirements for Both the Research and Community Engagement Focuses – 3 Courses (3 Credits)

In addition to the individual focus requirements, all students within the program must take two one-credit Honors courses as well as the Honors Program capstone course.

Code	Title	Hours
Choose two of the following courses:		
BISC 4151H	Honors Advanced Pathology	1
BISC 4146H	Honors Physiology In Depth: Contemporary Issues	1
BISC 4214H	Honors Advanced Biochemistry	1
BISC 4341H	Honors Advanced Cellular Genetics and Cancer	1
BISC 4851H	Honors Advanced Systems Neuroscience	1
BISC 4953H	Honors Readings in Human Anatomy	1
Required Capstone:		
	Disciplinary Honors Capstone (BISC 4997H)	1

## Academic Standards

Students must have a 3.200 cumulative grade point average for entry into the Disciplinary Honors Program in Biomedical Sciences. Students must achieve a 3.200 cumulative grade point average in order to graduate with an Honors Program degree. If students drop below a 3.200 in any given semester during the junior year or any subsequent year, they receive a letter of warning from the director. If students drop below a 3.200 cumulative GPA, they are placed on Honors Program academic probation; if they do not achieve a 3.200 cumulative by the end of the following semester, they are removed from the program. Students must earn a grade of C or better in a course for it to count toward the Honors Degree.

## **Eligibility**

The program is structured to be completed over the last two years of students' academic career. Sophomores are eligible to apply to the program near the end of the spring semester as long as they meet the 3.2 minimum cumulative GPA requirement.

## **Application**

The application requires a comprehensive Honors Plan addressing three core honors themes: Academic Excellence, Research, and Community Engagement. Along with the Honors Plan submission, students must identify a faculty mentor who will sponsor their plan.

The Disciplinary Honors Program in Biomedical Sciences Committee approves the plans and selects a limited number of honors applicants to participate in the program.

Sample proposals, application deadline and application forms can be accessed at the Department of Biomedical Sciences Web page.