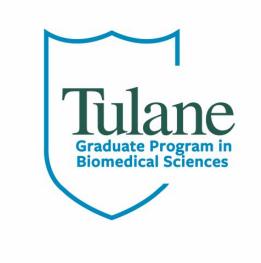
POLICY HANDBOOK

Graduate Program in Biomedical Sciences (BMS)



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I. ADMINISTRATION

A. Introduction

1. The Goal of Graduate Training in Biomedical Sciences

The Graduate Program in Biomedical Sciences (BMS) is an interdisciplinary, interdepartmental, and intercampus program, comprised of faculty actively engaged in biomedical research and education. The participants are from the Tulane School of Medicine and the Tulane National Primate Research Center (TNPRC). The goal of the BMS Graduate Program is to prepare students for careers in research and education in both academic and non-academic settings, providing a new generation of scientific leaders. The BMS program is committed to providing a rigorous and stimulating research and training environment for MS, PhD, MD/PhD, DVM/PhD, and MS/PhD trainees, for diverse careers in the biomedical sciences.

2. Accreditation and Compliance

Tulane University is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) to award baccalaureate, master's, doctorate, and professional degrees. Questions about the accreditation of Tulane University may be directed in writing to the Southern Association of Colleges and Schools Commission on Colleges at 1866 Southern Lane, Decatur, GA 30033-4097, by calling (404) 679-4500, or by using information available on SACSCOC's website (www.sacscoc.org). The BMS Graduate Program is governed by the Tulane University Provost, and undergoes Programmatic Review by the Office of Graduate and Postdoctoral Studies (https://ogps.tulane.edu/) every five years to ensure compliance with Tulane University and SACSCOC.

3. Student Responsibility

Upon admission to the Graduate Program, students are held responsible for compliance with the regulations of the Graduate program and Tulane University as set forth in this Program Guide and other Tulane University policies and should familiarize themselves with these regulations.

B. ACADEMIC CALENDAR 2023-2024

Fall	-20	173

Aug. 21, Classes Begin

Aug. 25, Last Day to Confirm Registration

Sept. 1, Last Day to Register/Add Classes Last Day to Drop with 100% Tuition and Fee Refund

Sept. 4, LABOR DAY HOLIDAY

Sept. 22, Last Day to Drop without Record

Oct. 5-6, FALL BREAK

Oct. 23, Last Day to Withdraw

Nov. 6, Registration for Spring Begins

Nov 20-26, THANKSGIVING BREAK

Dec. 8, Last Day of Classes

Dec. 11-16 Final Exams

Dec. 18, Grades Due for all Graduates

Dec 20, Grades Due for all Students

Dec. 23- Jan. 1, WINTER RECESS

Dec. 31, Fall Degree Conferral Date

Spring - 2024

Jan. 8, Spring Semester Begins (PI may require student to begin Jan 2)

Jan. 15, MARTIN L. KING, JR HOLIDAY

Jan. 16, CLASSES BEGIN

Jan. 26, Last Day to Register/Add Classes Last Day to Drop with 100% Tuition and Fee Refund

Feb. 12-13, MARDI GRAS HOLIDAY

Feb. 16, Last Day to Drop without Record

March 18, Last Day to Withdraw

March 25-31, SPRING BREAK

April 10, Registration for Summer and Fall Begins

May 1, Last Day of Classes

May 4-9, Final Exams

May 11, Grades Due for all Graduates

May 12, Grades Due for all Students

May 16, BMS Graduate Hooding Ceremony

May 18, Unified Commencement

Students enrolled in classes will follow the Academic Calendar for their <u>coursework only</u>. For PhD students: once a Dissertation Advisor is chosen, students are expected to work in the laboratory according to the Dissertation Advisor's expectations, while using the University Holiday Schedule as a guide (https://hr.tulane.edu/employee-engagement/holidays-and-winter-recess). Vacation requests should be submitted to the Dissertation Advisor and BMS office.

C. DIRECTORY

1. BMS Graduate Program Administration

BMS Leadership Associate Dean Assistant Dean Director, Graduate Education	Robert F. Garry, Ph.D.	504-988-2027	rfgarry@tulane.edu
	Heather L. Machado, Ph.D.	504-988-1753	hmachado@tulane.edu
	Derek Pociask, Ph.D.	504-988-7758	dpociask@tulane.edu
BMS Office Assistant Director Admissions and Communication Specialist	Kourtnie Robin, Ed.D.	504-988-3441	krobin@tulane.edu
	Lucy Archer, M.A.	504-988-5043	larcher1@tulane.edu
Academic and Career Advisor	Weiwei Xu, Ph.D.	504-988-5042	wxu1@tulane.edu

Main Contact: bms@tulane.edu

Graduate Program Administrative Offices are located in the Hutchinson Building, Room 1524. Office hours are from 8:00 a.m. to 4:30 p.m. Monday through Friday. The program website is https://medicine.tulane.edu/education/biomedical-sciences-graduate-program.

2. Services

Downtown Campus	Telephone
Mail Services	504-988-5299
Financial Aid Office	504-988-6135
Matas Medical Library	504-988-5155
Parking Services	504-988-5577
Student Health Center	504-988-6929
Technology Services	504-988-8888
School of Medicine Bookstore	504-988-5204
Tulane Fitness Center	504-988-8652
Uptown Campus	
Registrar's Office	504-865-5231
General Information	504-862-8000
Student Directory	504-865-4000
Accounts Receivable	504-865-5368
Bookstore University Center	504-865-5913
Bursar	504-865-5398
Tulane Counseling Center	504-314-2277
International Student Center	504-865-5208
Howard Tilton (Main) Library	504-865-5604
Reily Recreation Center:	
Membership	504-865-5431
General/Court Reservations	504-865-5242
Student Records & Registration	504-865-5231

D. STANDING COMMITTEES

1. BMS Steering Committee

The BMS Steering Committee is an advisory committee to BMS leadership. The Committee provides important guidance on program administration, approval of changes/additions to the program and decisions on individual student issues. This committee is composed of faculty members from each basic science department, the Department of Medicine, the MD/PhD program, the Tulane National Primate Center, the MS subcommittee, and the SOM Associate Dean of Student Affairs. BMS leadership (Associate Dean, Assistant Dean, Director of Graduate Education) are non-voting members. Graduate students also have input on this committee via a representative from the Biomedical Sciences Student Association (BMSSA).

2. BMS MS Subcommittee of the Steering Committee

The MS Subcommittee of the BMS Steering Committee is an advisory committee to BMS leadership and the Steering Committee. It is comprised of faculty members from several Master of Science Programs, and provides important guidance on issues and decisions related to MS programs and students. One member of BMS leadership serves as a non-voting member. Major changes to the MS programs and decisions on individual student issues may be subsequently reviewed by the BMS Steering Committee.

3. BMS Curriculum Committee

The BMS Curriculum Committee is composed of faculty members from the basic science departments and MS programs, a PhD BMS student, and one member of BMS leadership. This committee reviews new programs, major program changes that involve curriculum, and current and new courses.

4. BMS Admissions Committee

The BMS Admissions Committee evaluates PhD applicants and makes recommendations for admission to the PhD Graduate Program in BMS. This committee is composed of faculty members from each basic science department, the Department of Medicine, and the Tulane National Primate Center.

E. BIOMEDICAL SCIENCES STUDENT ASSOCIATION (BMSSA)

The Biomedical Sciences Student Association (BMSSA) is a student organization that represents the interests of graduate students to the BMS administration and to the Tulane Student Government Association (GAPSA). The BMSSA also provides a forum for discussion of relevant issues and acts to organize, promote and conduct activities to benefit Tulane graduate students. In addition, the BMSSA informs graduate students of pertinent developments in the Tulane community and recommends graduate students for appointment to faculty and university committees. All currently enrolled graduate students (MS and PhD) in good standing can be members of the BMSSA.

BMSSA officer elections are held at the end of each academic year in the spring. A special election for 1st year PhD representative typically occurs one month after the Fall semester starts. There are also several MS representative positions.

Contact: bmssa@tulane.edu

Website: https://tulanebmssa.wordpress.com/

II. DEGREES AND REQUIREMENTS

A. DEGREES OFFERED

1. Doctor of Philosophy

- Ph.D. in Biomedical Sciences
- Ph.D. in Biomedical Sciences for DVM's

2. Doctor of Philosophy and Medical Degree – M.D./Ph.D. Dual Degree

• M.D./Ph.D. in Biomedical Sciences (Physician Scientist; PSP)

3. Master of Science and Doctor of Philosophy – M.S./Ph.D. Dual Degree

• M.S. in Biomedical Sciences/Ph.D. in Chemical Engineering

4. Medical Degree and Master of Science – M.D./M.S. Dual Degree

M.D./M.S. in Bioethics and Medical Humanities

5. Master of Science

- Anatomic Pathology (Pathology Assistant, 2-yr non-thesis)
- Biochemistry and Molecular Biology (1-yr and 2-yr degrees)
- Bioethics and Medical Humanities (2-yr)
- Biomedical Informatics (2-yr)
- Biomedical Sciences (awarded only to Ph.D. students under special circumstances)
- Clinical Research (2-3-yr)
- Clinical Research Methods (1-yr)
- Medical Genetics & Genomics (1-yr)
- Microbiology & Immunology (1-yr) (thesis option)
- Molecular Medicine & Health Sciences (1-yr or 2-yr)
- Pharmacology (1-yr)
- Physiology (1-yr)
- Structural & Cellular Biology (Anatomy)

Anatomy (1-yr)

Clinical Anatomy (2-yr non-thesis)

Anatomy Research (2-yr thesis)

B. DOCTOR OF PHILOSOPHY IN BIOMEDICAL SCIENCES

The Doctor of Philosophy in Biomedical Sciences degree is awarded for an accumulation of course credits, and primarily for superior attainment and accomplishment in biomedical sciences research. The student must demonstrate the ability to carry out independent study and research in a chosen field, as evidenced by the dissertation.

1. Time Allowed for Degree Completion

Students are expected to finish all course requirements in two full years of graduate study and complete their dissertation by the end of the fifth year. A minimum of one year of full-time study in residence at Tulane is required. Students should complete the requirements for the Ph.D. degree within seven years from the date of matriculation in the program. Students will be asked for a plan to complete their degree at the beginning of their sixth year in the program. Students who wish to continue study beyond the seven year must request permission from BMS leadership in

consultation with the BMS Steering Committee, and have the support of their Dissertation Advisor and Committee.

2. Maintaining Full Time Status

Students must maintain full-time status every semester for the duration of their PhD training. All students must register for at least 9 credit hours each spring and fall semester to maintain their full-time status, tuition scholarships, and fellowship awards until course requirements are completed. Registration for Dissertation Research (BMSP 9990), maintains a student's full-time status. Therefore, all students should register for BMSP 9990 every summer and every semester after completing the coursework requirements in their second year for the remainder of their academic tenure until graduation. Failure to register for BMSP-9990 will likely result in increased taxation of the stipend income, which lowers bi-weekly take-home pay.

3. Course Requirements

A minimum of 48 credit hours of course work and independent study is required for a Ph.D at Tulane University. Students take an identical Core Curriculum in the first year (except for BMI Track detailed below), totaling 27 credit hours. In the second year, students must complete at least 21 credits hours. Coursework in the second year must include at least 6 credit hours of lecture-based course work (electives), with the remaining credit hours consisting of Independent Study and/or Special Topics (research). Students may take Independent Study and/or Special Topics for 1-6 credits each per semester for a maximum of 12 credits each until course completion. Electives are selected from the elective curriculum by the student in consultation with the dissertation advisor.

a) Program and Departmental Tracks - Course Requirements

After completion of the Core Curriculum, students may choose to specialize in an area of research emphasis by choosing a Track/Concentration. Specialization may require additional or different didactic courses or other requirements, in years 2 and beyond.

b) Biomedical Informatics Track – Course Requirements

Unlike Program and Departmental Tracks, students are admitted to the Biomedical Informatics (BMI) Track upon admission to the BMS program. A minimum of 48 credit hours of course work and independent study is required for the Ph.D. In the first year, students in the Biomedical Informatics (BMI) Track take an identical curriculum, totaling 28 credit hours. In the second year, students complete core coursework, electives, and Directed Independent Study, for a minimum of 20 credit hours.

Students wishing any deviation from the Core Curriculum must submit their request in writing to the BMS Office for Steering Committee approval (see Appendix for Ph.D. course curriculum, BMI Track, Pharmacology Track, and Electives).

4. Laboratory Rotations

Research Topics and Rotations (BMSP 7120/7130), formerly known as Research Methods, is part of the Core Curriculum (except for BMI Track detailed below). Students are required to complete one 8-week lab rotation in the Fall Semester of the first year and two 8-week lab rotations in the Spring Semester of the first year. The expectation of this course is to choose a Dissertation Advisor from one of the three rotations. Students are strongly encouraged to complete all three rotations before choosing a Dissertation Advisor. This policy allows for students to gain knowledge of different scientific fields, experience different mentoring styles and expectations, and experience the breadth and depth of research being conducted in the School of Medicine. Additionally, it is important that students select a Dissertation Advisor who is compatible, as the Dissertation Advisor and student will work closely together for several years. If a student has not chosen a Dissertation Advisor after three rotations, they will be required to perform one additional rotation. In rare cases, students may request to waive one rotation, and must receive Steering Committee approval. Dissertation Advisors must be BMS faculty at the SOM.

a) Biomedical Informatics Track – Lab Rotations

Research Methods (BIMI 7220) is part of the Core Curriculum for students who have been admitted to the BMI track. Students will perform rotations in labs of faculty within the Division of Biomedical Informatics and Genomics, and will match with a BMS faculty member within the Division.

5. Teaching Assistantships

BMS PhD students are required to perform Teaching Assistant (TA) duties for the Department of Cell and Molecular Biology in the School of Science and Engineering on the Uptown Campus. The TA-ship involves one course section per semester during the first year of the BMS program, unless this service requirement is in conflict with donor or sponsor funding conditions. If additional TAs are needed, or if a student wishes to seek additional TA opportunities, the BMS office may offer positions to BMS students, to be approved by the Dissertation Advisor.

TAs are required to be present at every assigned lab section meeting and at a weekly preparatory meeting unless they provide adequate excuse and/or a suitable replacement in a timely manner. Lab meetings outside the regularly scheduled class time, including the preparatory meeting, should be coordinated with the course director and should not interfere with BMS required courses or functions.

TA assignments should be coordinated with each individual student, BMS administration, and the department for which the course section is taught. Lab directors should make lab expectations and requirements clear in writing at the beginning of the semester. Students who are teaching for the first time are required to attend the Cell and Molecular Biology TA Orientation during the week before classes begin. This session will provide information about how each coordinator organizes their course and what is expected of the BMS TAs. Students who do not perform TA duties in a satisfactory manner after repeated warnings will incuraction on the part of the BMS administration. Guidelines and Policies for Graduate Assistants found Tulane's can https://ogps.tulane.edu/graduate-policies.

6. Presentation Requirements and Attendance at Annual Events

Students are required to present their research at least once by poster presentation and at least once by oral presentation, during their tenure as graduate students. These presentations may be local (including events at Tulane) or at a National Conference. Upon fulfilling the presentation requirement, students should submit the Presentation Requirement form to the BMS office. Students are required to attend the annual BMS Fall Symposium and Mixer and the BMS Annual Retreat (Spring). Students in their third year and beyond are required to submit an abstract at these events for selection for an oral or poster presentation each year. Students do not have to attend the retreat in the year in which they are graduating, as evidenced by a completed Prospectus and a Dissertation Defense date.

7. Individual Development Plan and Student Tracking Record

Individual Development Plan (IDP) provides students with opportunities to think about training objectives, review progress, and set academic and career goals. In years 2 and beyond, students should could complete an IDP annually, and review with the Dissertation Advisor. Students should also submit a completed Student Tracking Record form annually to the BMS Office.

<u>Deadline</u>: Students should submit a completed **IDP** AND **Student Tracking Record** form by June 30 each year. Failure to submit these forms by the deadline will result in disciplinary action, such as academic probation.

8. Ph.D. Milestones and Timelines

Failure to meet any hard deadline outlined below may lead to disciplinary action, including academic probation and/or dismissal from the program.

a) Timetable for Milestones, Deliverables, and Completion: A timeline that shows the milestones and required deliverables for the Ph.D. degree is provided below. Students will be assigned a temporary advisor in their first semester, who will perform the functions of the Dissertation Advisor until one is selected. The Dissertation Committee should meet at least annually. At the beginning of each Dissertation Committee meeting, the student should be briefly dismissed and the Dissertation Advisor should candidly discuss the student's progress with the dissertation committee before the student is readmitted.

Year	Student Functions	Milestone and/or Deliverable	Milestone Due Date
1	Contact Temporary Advisor		
1	Select Dissertation Advisor (Research Mentor)	M1: Dissertation	June 1
	Meet with Research Mentor to select second year courses	Advisor Form	(Y1)
2	Select Dissertation Committee	M2: Dissertation	Dec 31
		Committee Form	(Y2)
2	Annual Dissertation Committee Meeting to discuss research	Committee	July 31
	project (recommended to combine with Preliminary Exam topic approval)	Meeting Form	(Y2)
2-3	Preliminary Exam	M3: Preliminary	Dec 31
	,	Exam Form	(Y3)
3	Annual Dissertation Committee Meeting to review research	Committee	July 31
	progress	Meeting Form	(Y3)
4	Annual Dissertation Committee Meeting to review research	M4: PhD	July 31
	progress and discuss candidacy.	Candidacy Form	(Y4)
	Admit to Candidacy – all coursework is complete, student passed preliminary exam, 1 year of research completed		
4	Prospectus (Can be combined with Annual Committee	M5: Prospectus	July 31
	Meeting/Candidacy recommendation)	Form	(Y4)
5	Dissertation Defense or Annual Committee Meeting	M6: Dissertation	
6	Contact BMS to request permission to remain in the program		

^{*}Although there may be variations in each student's timeline, a student should meet with the Dissertation Committee annually and provide documentation to the BMS office. Failure to meet deadlines listed in the above table can result in disciplinary action, including academic probation or dismissal from the program. If a student is unable to meet the above deadlines, a written request for an extension from both the student and the Dissertation Advisor must be submitted to BMS Leadership to avoid disciplinary action. These requests may also be reviewed by the BMS Steering Committee.

b) Choosing a Dissertation Advisor: During the first two semesters, students rotate in 8-week blocks through three of the program's participating research laboratories of the student's choice. This format allows students to become more familiar with BMS research and faculty. Students should choose a Dissertation Advisor by the end of the second semester and must begin their dissertation research during the summer of their first year. Students must submit a Dissertation Advisor Form to the BMS office (Milestone 1) for approval by BMS leadership. If the student fails to choose a Dissertation Advisor by the end of the second

semester of their first year, they must explain the delay to their temporary advisor and BMS Leadership and perform additional research rotations during the summer semester. In this case, a student must choose a Dissertation Advisor by the end of the summer semester. Failure to match with a Dissertation Advisor can lead to dismissal.

c) Choosing a Dissertation Committee: After choosing a Dissertation Advisor, students select a research topic or project in consultation with their advisor. With a topic or project agreed upon, the Dissertation Advisor and student consult to appoint a committee of at least three additional members who are faculty members of the BMS program, with the Dissertation Advisor to serve as chair of the committee. The Dissertation Advisor may require additional members. The student's proposed committee requires approval of the BMS leadership. This committee is usually involved in administering the Preliminary Examination, approving the Prospectus and approving the oral thesis Defense and the final written dissertation. Students must submit a Dissertation Committee Form (Milestone 2) to the BMS office, as well as Annual Dissertation Meeting Forms, for approval by BMS leadership.

d) Preliminary (General) Examination

- **i. Timeline:** Upon meeting the core course requirement, the student shall undertake the preliminary examination. Normally this examination is taken by the end of the second year of graduate study or at the beginning of the third year but must be taken by the end of the fall semester in year 3 (semester 5). A student who fails to take the test by the end of the fall semester in year 3 may be subject to disciplinary action and placed on academic probation.
- ii. Content: The test is a comprehensive examination. It covers the student's coursework and is a rigorous test of scholarly competence and knowledge. The examination also tests acquaintance with the scholarship in the student's chosen research area and on her/his powers of bibliographical criticism. Finally, the examination affords the examiners the basis for constructive recommendations on any subsequent programs of study to be undertaken by the student. The Preliminary Examination consists of a research proposition (selected by the student) that is presented as a written proposal and defended orally. The proposition will consist of an original research problem in biomedical sciences and should reflect ideas or theories derived by the student from advanced courses, seminars, and scientific literature. The topic must not directly relate to research ideas generated by the dissertation advisor. The preparation and defense of this proposition is intended to broaden the student's background conceptually and methodologically. The scope of the proposal will be that of a 3-year predoctoral research project outlining specific experimental plans designed to address the central scientific question identified by the student. The proposal should be modeled after an NIH-F31 application, and include (1) Specific Aims (1 page max), and (2) Research Strategy (6 pages max), where the Research Strategy includes (a) Significance, (b) Innovation, and (c) Approach; followed by a Bibliography. The proposal must represent the student's own work. Committee members should receive copies of the proposition at least two weeks prior to the scheduled date of the exam. Failure to submit the proposal to the Dissertation Committee at least two weeks prior to the exam can result in rescheduling the exam.
- **iii. Proposition Selection Process:** The mechanics of the submission of the proposal and its defense are as follows: the student's advisor indicates the general acceptability of the proposition topic and the student provides the Dissertation Committee with a written summary (1-2 pages) of the proposal. The Committee meets with the student to determine whether the proposal presents a fundamentally sound hypothesis and whether the student's

background is appropriate to defend the proposition. The Committee also defines its expectations regarding the scope of both the written proposal and the oral examination. The student then prepares the proposal based on the Committee's recommendations. The student and the Dissertation Committee should allow 4-6 weeks to write the proposal and to prepare for the oral examination. The proposal must represent the student's own work.

iv. Evaluation: The written proposal and oral defense will be judged on the basis of the student's knowledge of the area, originality of the approach proposed for the experiments and the hypothesis to be proven, likelihood of valid conclusions to be drawn from the experiments, and the ability of the student to critically evaluate his/her proposed research methods and expected results. During the oral examination, the student may also be questioned on any other area of biomedical sciences at the discretion of the Dissertation Committee. Once completed, bring the Preliminary Examination Form to the BMS Office **(Milestone 3)**.

e) Admission to Candidacy

Admission into BMS in a Ph.D. program does not constitute official admission to candidacy for the Ph.D. To be admitted officially to candidacy for the PhD, a student must have completed course requirements, passed the preliminary exam, and performed independent research for at least one year. The recommendation for admission to candidacy is made by the chair of the student's department and must bear the signatures of both the Dissertation Advisor and BMS Leadership. The recommendation for admission to candidacy must be submitted to the BMS Office by the end of year 4 in order to continue in the program (Milestone 4).

f) Prospectus

Until a student's prospectus has been approved by the prospectus committee and BMS Leadership, dissertation work has no official status. Normally, a student will not submit a prospectus until the student has completed course requirements, passed the preliminary (general) examination, and satisfied research requirements (ie: candidacy). The prospectus should include: (1) cover sheet, (2) specific aims page (1 page), (3) research progress and plans to complete the dissertation (2-3 pages), (4) relevant manuscripts planned or already published, and (5) bibliography. The student should present their presentation in the form of a 30 minute presentation to the Dissertation Committee, and the written prospectus should be given to the committee at least 2 weeks prior to the meeting. The Prospectus Approval Form should be submitted to the BMS Office no later than the end of the year 4 to avoid disciplinary action (Milestone 5).

g) Dissertation Requirements General

The dissertation is an essential part of the candidate's degree work and is the appropriate culmination of the Ph.D. degree. The dissertation is the necessary demonstration that the candidate is worthy of taking a place among research scholars in the discipline. It must demonstrate not only mastery of the literature of the subject, but also the ability to carry on independent research that results in a genuine contribution to knowledge or an original interpretation of existing knowledge, and it must do so in a literate and lucid fashion. The dissertation committee shall agree on the acceptability of the dissertation before it is submitted to the Graduate Program in Biomedical Sciences in final form. (For deadline dates for the appropriate award of degrees, see Calendar.) Acceptability, however, is not final approval. The candidate must defend the dissertation successfully before the degree is awarded. For details, see 'Final Examination' below.

i. Preparation: The **title page** of both the abstract and the dissertation must contain: The subject of the dissertation, the date on which it was submitted, the department and the

signature of the candidate, with the candidate's full legal name typed underneath. Signatures of the examining committee members should be listed in the lower right-hand corner; the full name of the committee chair and committee members must be typed under the signatures. A full list of authorities and books consulted and a short biographical sketch must be appended. Bound thesis copies prepared by former BMS PhD students can be examined in the BMS Office. More detailed instructions for the preparation of the dissertation may be obtained from A Manual of Style, University of Chicago Press; the M.L.A. Style Sheet; or A Manual for Writers of Term Papers, Theses and Dissertations, by Kate L. Turabian. The dissertation advisor will advise which guide is preferred.

ii. Submission: Students must submit two unbound copies of the thesis with original signatures of the committee on acid-free, 100% cotton paper of at least 20 LB. weight to the BMS Office no later than one week before classes end for the semester. The student should also keep a copy of the dissertation and submit another copy to the department in which it was written. The decision to copyright the dissertation must be made before it is uploaded to ProQuest. If students want a personal bound copy of their thesis, they may submit an additional copy to the BMS Office and pay the binding fee of \$65 at that time.

h) Final Examination

All candidates must take a final examination for the Ph.D. degree. The examination consists of a public and private oral defense of the dissertation. Students will orally present the dissertation research as a seminar, which will be followed by a private defense to the Dissertation Committee.

This examination should be scheduled after the dissertation is in its final form and reviewed and approved by the committee, no later than two weeks prior to the last day of class in the semester you wish to graduate. The requirement for final examination will not be waived, unless the candidate and the department can establish a case of hardship in extremis, subject to approval by BMS leadership. Students shall bring the completed Final Examination Form to the BMS Office.

9. Graduation

Degrees earned in the School of Medicine are awarded three times a year; December, May, and August. Applications for Degree must be filed for the current term on or before the deadline date for graduation. This is usually due early in the semester. Applications filed in previous terms are not valid.

Prerequisites: Students must submit the following forms or proof of submission to the BMS office at least one week prior to the end of classes except where otherwise noted:

- 1. Application for degree (due approximately 6 weeks after start of semester)
- 2. Final Exam/Oral Defense Form (two weeks prior to end of classes)
- 3. Turn in 2 copies of complete thesis for Binding
- 4. Complete online survey of Earned Doctorates https://sedsurvey.org/
- 5. Upload and submit final thesis with signatures to ProQuest MNI website https://www.etdadmin.com/main/home?siteId=61 (uploading is free unless copyrighted)
- 6. Upload and submit final thesis with signatures to the Tulane Howard Tilton Thesis Archive
 - https://digitallibrary.tulane.edu/user/login?destination=islandora/object/tulane%3Ast udent submission collection/manage/overview/ingest

Commencement Exercises are held at the end of the Spring semester only. There are no ceremonies at the end of the Summer or Fall semesters. An application for graduation must be completed at the beginning of the semester in which you plan to graduate. This application can be obtained in the BMS Program Office or on the website. Any outstanding debts with an office in the University must be paid NO LATER THAN 10 days prior to the date of the commencement or award of degree will be denied. Every student should check their Gibson account to be sure there are no payments due.

C. Doctor of Philosophy for DVM's

The Tulane National Primate Research Center offers DVMs to apply for an opportunity to complete a Ph.D. while conducting research on their campus. Please contact Dr. Robert Blair, Assistant Professor, Division of Comparative Pathology, Tulane National Primate Research Center for more information. Students enrolled in this program must follow the curriculum in the **Appendix**. Up to 24 credit hours of coursework can be transferred from the student's DVM degree. The transfer process requires approval from the BMS Steering Committee and the candidate must match their DVM courses with Core or Elective courses within the BMS curriculum (*see Appendix*). Credit hour transfers can only occur after one semester of coursework has been completed. All other requirements of the Ph.D. component of this program are the same as those of the doctoral degree (*see pages 5-12*), except that DVM's must complete their Preliminary Exam by the end of the Third (Spring) Semester.

D. M.D./PH.D. (PHYSICIAN SCIENTIST PROGRAM, PSP)

The primary aim of the Physician Scientist Program is to provide an integrated learning environment that supports the development of physicians committed to the advancements of the medical sciences. Students will acquire the necessary skills to become both sound clinicians and accomplished scientists. More importantly, it is intended to promote a view of medicine and science as unified endeavors rather than distinct disciplines. There are two tracks ("A" and "B") that lead to a dual M.D./Ph.D. degree:

1. Tracks

Track A: Students are considered for the combined degree program at the time of application to medical school. Students must indicate that they are applying for a combined M.D./Ph.D. by marking the appropriate box on their AMCAS application and by providing the additional information required by AMCAS. Each year, the Physician Scientist Program (PSP) accepts two (2) Track A students into the program. This program provides tuition waivers and stipends during both medical and graduate school. Track A is a selective program and students must apply before entering medical or graduate school. If selected, Track A students will begin their first laboratory rotation the summer before entering medical school.

Track B: Alternatively, first and second year medical students who wish to pursue a Ph.D. may apply for admission to the BMS graduate program. If accepted, these "Track B" students follow the same training plan and curriculum as the Track A students. A graduate student stipend and graduate school tuition waiver is offered, but track B students are not typically granted medical school tuition waivers. Track B students begin rotations as soon as possible after joining the program.

2. Program Duration

The PSP is designed to take a total of 7 to 8 years. Students rotate in a lab the first summer prior to beginning medical school. Students will also complete a rotation in the summer between their first and second years of medical school. If necessary, a third rotation can be done. Students complete their first two years of medical school as well as one clinical rotation in family medicine

for 6 weeks before entering the Ph.D. training portion of their education. Students will have chosen a Dissertation Advisor prior to transferring to their Ph.D. training. Ideally, the Ph.D. portion should take 3-4 years.

3. Maintaining Full Time Status

All students must register for at least 9 credit hours each semester to maintain their full-time status, tuition scholarships, and fellowship awards. Registering for Dissertation Research (BMSP 9990), even though it is zero credit hours, maintains your full-time status. Therefore, all students should register for BMSP 9990 every summer and every semester after completing the coursework requirements in their second year for the remaining of their academic tenure. Failure to register will affect your stipend, primarily by having more taxes withdrawn which will lower the bi-weekly take-home pay. This requirement applies to PSP students who may be between the MD and PHD portions of their program, if they take less than 9 credits in any semester.

4. Course Requirements

The first and second year consist of formal didactic courses. If a student chooses a Dissertation Advisor within a specific area of research emphasis (a Departmental Track), further elective requirements may be necessary. Students should only substitute a core course with an elective course with the support and recommendation of their mentor and the written permission from the Physician Scientist Program Director. Under exceptional circumstances, more than one core course substitution may be allowed (see Appendix for PSP course curriculum and electives).

5. PhD Milestones and Timelines

PSP students will follow the PhD milestones, timeline, structure, and evaluation process described for doctoral BMS students (*see pages 8-12*), with one exception described below for the Preliminary Examination:

a) Preliminary (General) Examination

PSP students have the option to choose a proposition topic that is similar to their dissertation project. <u>If</u> a student chooses this option, they should demonstrate plans to submit an NIH F30 proposal within the year. The proposal must represent the student's own work, and should not be directly related to the Dissertation Advisor's funded grants.

6. Transfer of Credits from Medical School

Students may transfer up to 24 credit hours of coursework from their medical school coursework. These credits should be transferred after one semester of graduate coursework has been completed. Student should submit a written request to BMS Office for approval.

E. M.S. BIOMEDICAL SCIENCES/PH.D. CHEMICAL ENGINEERING DUAL DEGREE

Students enrolled in the PhD program in Chemical Engineering through the School of Science and Engineering may have the option to earn a thesis-based Master of Science in Biomedical Sciences. For information regarding this program, contact the BMS Office.

F. M.D./M.S. BIOETHICS & MEDICAL HUMANITIES DUAL DEGREE

The Master of Science in Bioethics and Medical Humanities guides students to understand and navigate the ever-evolving technological and social complexities of healthcare by examining them from the perspective of ethics and the humanities. It is an ideal program for any student who envisions pursuing these issues in their future career. The Dual Degree (MD-MS) program can be completed within the 4-year Medical School curriculum. MD-MS dual degree students complete the MS portion of the curriculum in the first two years at Tulane School of Medicine. M.S. coursework

the program is set up to allow integration with the MD curriculum and will ensure that MS classes do not conflict with the scheduled and required MD curriculum and through elective coursework offered in the summer before and after Year 1.

https://medicine.tulane.edu/ms-bioethics-and-medical-humanities/md-ms-dual-degree

G. MASTER OF SCIENCE DEGREE

There are programs leading to a Master of Science degree in the departments of Biochemistry & Molecular Biology, Clinical Research & Training, the Hayward Genetics Center, Microbiology & Immunology, Pathology & Laboratory Medicine, Pharmacology, Physiology and Structural & Cellular Biology.

1. One-Year Programs

One-year programs are designed to attract those students who are interested in improving their credentials to compete for admission to a professional school including medical school or dental school, as well as those individuals who are interested in achieving their professional goals and advancement within their chosen profession.

a) M.S. in Anatomy

Department of Structural & Cellular Biology

https://medicine.tulane.edu/structural-cellular-biology/masters/anatomy

b) M.S. in Biochemistry and Molecular Biology

Department of Biochemistry and Molecular Biology

https://medicine.tulane.edu/biochemistry-molecular-biology/masters-1-year

c) M.S. in Clinical Research Methods

Department of Medicine

This is a 32 credit, 1-year, full-time structured curriculum designed for the recently graduated MD to pursue before entering a traditional training track. The program educates the student in the process and methods of clinical research. The student resides in the New Orleans area and pursues classes full time.

 $\underline{https://medicine.tulane.edu/research/clinical-research-training/clinical-research-methods-masters.}$

d) M.S. in Medical Genetics and Genomics

Department of Medicine, Hayward Genetics Center

https://medicine.tulane.edu/masters-medical-genetics-genomics

e) M.S. in Microbiology and Immunology

Department of Microbiology & Immunology

*Thesis option offered.

https://medicine.tulane.edu/microbiology-immunology/masters

f) M.S. in Molecular Medicine and Health Sciences

Department of Pathology and Laboratory Medicine

*1-year (non-thesis) and 2-year (thesis) options offered.

https://medicine.tulane.edu/pathology-laboratory-medicine/masters

g) M.S. in Pharmacology

Department of Pharmacology

https://medicine.tulane.edu/pharmacology/masters

h) M.S. in Physiology Department of Physiology https://medicine.tulane.edu/physiology/masters-program

2. Two-Year Programs

- a) Master of Science in Anatomic Pathology (Pathologists' Assistant Program): This is a full-time 2-year post-baccalaureate program leading to a Master of Science in Anatomic Pathology with the goal of becoming a Pathology Assistant. Students receive a broad range of clinical exposure in surgical pathology, clinical pathology, and autopsy pathology under the guidance of experienced pathologists' assistants, anatomic, clinical, and forensic pathologists, as well as laboratory specialists. The professional curriculum is arranged with the presumption that students devote their full time and energy to their university experience. Students are 1imit their outside employment during encouraged the https://medicine.tulane.edu/departments/pathology-laboratory-medicine/academicprograms/pathologists-assistant-program.
- b) Master of Science Anatomy Research: This is a 2-year thesis program of study of gross anatomy, embryology, cell biology, and histology leading to a Master of Science degree in Anatomy by research. It is designed specifically for candidates who wish to develop research careers in biomedical science and medical education. In the first year, students in the program take anatomy and histology courses along with other graduate courses. All courses in the program are taught within the School of Medicine by full time faculty. In the second year, students carry out mentored research in the Department of Structural and Cellular Biology. https://medicine.tulane.edu/departments/structural-cellular-biology/academic-programs/masters-programs/ms-anatomy-research.
- c) Master of Science Biochemistry & Applied Bioinformatics: This is a 2-year thesisrequired program for the study of biochemistry and bioinformatics leading to a Master of Science degree in Biochemistry and Applied Bioinformatics. The program is designed to improve academic credentials and scientific research experience of graduates. Our distinctive program emphasizes student development in five areas (coursework, laboratory skills, independent thought, presentation skills, and personal growth), allows students to broaden and strengthen their academic foundation, and equips students with basic and advanced lab and skills bioinformatics for career in academic industrial research. https://medicine.tulane.edu/departments/biochemistry-molecular-biology/academicprograms/masters-2-year
- d) Master of Science Bioethics and Medical Humanities: This is a 2-yr, 33 credit hour post-baccalaureate program leading to a Master of Science in Bioethics and Medical Humanities. This program is designed to improve the credentials of learners who are: 1) Dual-degree students in Medicine, Law, Public Health and Social Work; 2) Interested in applying for admission to medical, dental and other health-related professional schools; and 3) Mid-Career Professionals who wish to enhance their scholarly and clinical background in these areas for future service or scholarship.

https://medicine.tulane.edu/education/biomedical-sciences-graduate-program/mdms-bioethics.

e) Master of Science Biomedical Informatics: The Tulane University School of Medicine Biomedical Informatics MS program provides students an academic foundation to become informatics leaders in medicine, biology, and public health. This 2-yr, 30-credit program combines coursework with seminars and journal clubs, and results in a research-focused thesis

that will prepare students for both academia and industry. Students will have opportunities to translate classwork, critical research skills, and personal growth into real-world experience while collaborating with expert faculty across multiple domains and departments. Our well-funded and published faculty encompass multiple areas of informatics expertise:

- Translational science, genomics, multi-omics, and single cell and spatial sequencing
- Biomedical data science AI/machine learning/biostatistics
- Precision medicine and implementation science
- Bioinformatics, statistical genetics, and computational biology
- Learning healthcare systems clinical informatics

 $\frac{https://medicine.tulane.edu/biomedical-informatics-genomics-}{division\#:\sim:text=The\%20Biomedical\%20Informatics\%20Master's\%20Program,or\%20other}\%20healthcare\%2Drelated\%20professions.}$

- f) Master of Science Clinical Anatomy: This is a two-year non-thesis program designed for bachelor's degree graduates and physicians who intend to follow a career in teaching the morphological sciences in colleges as well as research and scholarship in health sciences education. With a MS Clinical Anatomy degree, graduates can apply for teaching positions in anatomy, histology, embryology, neuroanatomy and biomedical sciences. More information is available at: https://medicine.tulane.edu/departments/structural-cellular-biology/academic-programs/ms-clinical-anatomy.
- g) Master of Science Clinical Research: This is a 38 credit, 2 to 3-year, curriculum designed for senior post-doctoral fellows and junior faculty to provide them with the tools and experience to conduct clinical and translational research. The program includes didactic training in clinical research as well as a mentored research component. The scholar must have institutional and departmental support as well as protected time to attend classes and pursue mentored research. In lieu of a thesis, the candidate is expected to prepare a grant ("K" or "R" format) and/or a paper based on the mentored research. More information about admission requirements can be found program website: at the https://medicine.tulane.edu/clinical-research-masters
- h) Master of Science in Molecular Medicine and Health Science: This is a full-time two-year program leading to a Master of Science in Molecular and Cellular Pathobiology. This program is designed to enrich the scientific research experience and improve the academic credentials of students interested in careers in the biotech and pharmaceutical industries, as well as in academia. The degree requirements in this program include 30 credit hours of coursework with a cumulative GPA ≥ 3.0, plus preparation and successful defense of a thesis. In the second year, students will conduct mentored research in the Department of Pathology. Recipients of the Master of Science in Molecular and Cellular Pathobiology will demonstrate advanced knowledge in the molecular and cellular basis of disease and develop quantitative and qualitative research skills in data collection and analyses. Graduates of this program will possess the required skills to conduct independent research. More information is available at: https://medicine.tulane.edu/departments/pathology-laboratory-medicine/academic-programs/masters-programs.

3. Thesis Requirements (only for programs where a thesis is a part of the curriculum)

a) Process: The subject of the thesis for all master's degrees must be in the field of major study and must have the approval of the professor by whom the thesis is to be directed. The finished thesis must have the approval of a committee appointed by the chair of the

department. The director of the department will serve as chair of the thesis committee. At the request of the director, a member of some other department may be added to the committee.

- b) Submission: An electronic copy of the final, approved thesis must be submitted to the BMS office. The title page of both the abstract and the dissertation must contain the subject of the dissertation, the date on which it was submitted, the department and the signature of the candidate, with the candidate's full legal name typed underneath. Signatures of the examining committee members should be listed in the lower right-hand corner; the full name of the committee chair must be typed under the signature. A short abstract of 350 words should follow the abstract title page. The student must also upload the thesis to the ProQuest MNI website https://www.etdadmin.com/main/home?siteId=61.
- c) Formatting: A general guide for use in the formatting of theses and dissertations in the BMS program is available online at http://www.etdadmin.com/docs/bmstulane/bmstulaneguidelines.pdf. A full list of authorities and books consulted and a short biographical sketch must be appended. A basic style sheet for use in preparing theses and dissertations is available in the BMS Program office, as well as sample copies of master's dissertations. More detailed instructions for the preparation of the dissertation may be obtained from A Manual of Style, University of Chicago Press; the M.L.A. Style Sheet; or A Manual for Writers of Term Papers, Theses and Dissertations, by Kate L. Turabian. The dissertation advisor will advise which guide is preferred.
- d) Deadlines: The candidate should submit the thesis prior to the end of the exam period for the appropriate semester as listed in the BMS Calendar on Page 2. If the department in which a master's thesis has been written finds there is sufficient reason to protect the contents by copyright, there will be a fee charged from ProQuest.

4. Graduation

Commencement exercises are held at the end of the Spring semester only. There are no ceremonies at the end of the Summer or Fall semesters. An application for graduation must be filled out at the beginning of the semester in which you plan to graduate. Applications filed in previous terms are not valid. This application can be obtained in the BMS Program Office or on the website. Students are responsible for checking their Tulane issued email accounts daily since all graduation information will be sent to them via these accounts.

Prerequisites: Master's Students must complete the following forms: 1) Application for degree (available in BMS Graduate Program Office); 2) Final Examination/Oral Defense Form, available at the BMS website. Students are also required to upload their thesis to ProQuest. Any outstanding debts with an office in the University must be paid NO LATER THAN 10 days prior to the date of the commencement or the award of degree will be denied. Every studentshould check with Accounts Receivable to be sure his/her account is cleared. Students should order their academic regalia at the Downtown Bookstore as soon as possible.

III. FINANCIAL REGULATIONS

A. FEDERAL INCOME TAX

Determination of the tax status of an individual receiving compensation from any grant is the responsibility of the Internal Revenue Service. According to the IRS, fellowships and scholarships made to US students are tax-free for degree-seeking students ONLY if used for tuition, fees and other required educational expenses. Scholarship and Fellowship awards made to foreign students are not subject to any service conditions; however, depending upon the treaties in effect between the student's country and the US government, taxes may be withheld from this portion of the award. Foreign students should contact https://www2.tulane.edu/wfmo/payroll/international_tax.cfm for more information.

Tulane University withholds Federal Income taxes for Service-required Stipends over a certain threshold for full-time students. Service-required stipends include Teaching Assistantships and Research Assistantships. All students must file income tax returns with the Federal and State Governments at the end of each calendar year. It is the responsibility of each student to file prior to the deadline date (April 15).

B. FINANCIAL AID

The Tulane Financial Aid Office maintains a website for School of Medicine graduate students: https://financialaid.tulane.edu/graduate/medicine. The website includes a Financial Aid Application Checklist and a list of financial advisors.

C. TUITION AND FEES

1. Doctoral Students

For Ph.D. students enrolled as full-time students, the BMS program provides full tuition waivers, and the Tulane Student Health Insurance Plan (T-SHIP) is provided at no cost to the students. The BMS program also provides waivers for the Campus Health fee and the Dissertation fee. **Students are required to pay all other fees.** During the first two years, student fees (Student Activity, Recreation Center, Academic Service) are withheld from the student's stipend. In years 3 and beyond, **students are responsible for paying their own fees,** as they are <u>not</u> deducted from student stipends. Current fees for the academic year can be found at https://studentaccounts.tulane.edu/content/tuition-and-fees.

2. Master of Science Students

Tuition and fee waivers are not available to MS students. Tuition and fees are due at the time of registration. Tuition is listed under the School of Medicine for all BMS MS programs in the following website which shows the current fee schedule for Tulane University: https://studentaccounts.tulane.edu/content/tuition-and-fees.

D. FINANCIAL RESPONSBILITY

**Responsibility to Pay: Students are responsible for paying their fee bill by the published payment deadline printed on your billing statement. See the Accounts Receivable website at for more information about payment procedures.

<u>Gibson Online</u> can help you stay in control of your student account and financial aid. Use the Student Accounts menu to view your fee invoice and student account history.

• Remember to check your fee invoice in the Student Accounts section, immediately after enrolling each semester, each time you add or drop courses, just before classes begin, and just before you pay your tuition and fees bill.

- Read your fee invoice carefully.
- Review the courses listed to be sure they are correct. If not, go to *GIBSON* and add/drop.
- Check the "Bills" to be sure your tuition and fees are calculated correctly for your residency and courses. Graduate and undergraduate courses are charged different rates.
- Review the "Payment History" section to see payments you have made yourself. If you are expecting a graduate tuition waiver, payment from a Tulane account, or payment from an external agency or employer, check this section to see if the payments are showing on your account as credits. Often payments from other sources do not show until after the add/drop period ends.
- Check the "Recent Activity." This amount due is calculated based on your current enrollment and all credits.
- Subtract your Estimated Aid from the Amount Due if you meet all eligibility requirements to receive the aid.
- Estimated aid and graduate tuition waivers are not immediately updated when your enrollment status changes. For graduate tuition waivers, awards will start showing during the first month of class each semester. Remember to wait at least 24 hours after enrolling or making enrollment changes, and then check your fee invoice again for graduate tuition waivers.

E. STIPENDS

All PhD students receive an annual stipend while enrolled as full-time students in the BMS Program. The stipend is continued as long as the student is making progress toward the degree. Stipends are coordinated by the BMS Office and require direct deposit. All fellowships, scholarships, and any type of assistantships require full-time residence status and maintaining an academic level of performance satisfactory to both the department and BMS leadership.

Student stipends are funded by the BMS program until July of their second year in the program. This funding normally includes both a Fellowship and a Teaching Assistantship stipend. Dissertation Advisors are responsible for stipend funding and T-SHIP beginning July of the 2nd year until graduation. Stipends provided by the Dissertation Advisor are Research Assistantships.

Stipends, fellowships and assistantships are not available for Master of Science students.

F. OUTSIDE EMPLOYMENT

Ph.D. students are not permitted to be employed off campus during their entire program. Any off-campus employment for remuneration may disqualify a student from receiving financial aid from the Graduate Program in Biomedical Sciences.

IV. POLICIES AND PROCEDURES

A. CODE OF GRADUATE STUDENT ACADEMIC CONDUCT

The Graduate Program in Biomedical Sciences expects students to conduct their academic endeavors with honesty and integrity. Activities covered by the Code of Academic Conduct include course work, examinations, and research. This Code outlines individual responsibilities as well as procedures to be followed if there is a question concerning a student's academic honesty or integrity. These values are held in common by all departments and enforced by the sanctions of the BMS program. All students enrolled in BMS are subject to these regulations and should be familiar with this Code of Academic Conduct. Lack of familiarity with the Code or with the precise application of its principles to any specific instance is not an excuse for noncompliance. The Code of Academic Conduct is available at: https://ogps.tulane.edu/sites/default/files/Unified-Code-of-GS-Academic-Conduct-06-18-13.pdf.

Principles and activities not covered by this Code may fall under the purview of university or departmental research and/or ethics committees. Questions concerning jurisdiction should be addressed to the BMS leadership.

B. THE TULANE UNIVERSITY CODE

The University requires of all of its student's behavior compatible with its high standards of scholarship and conduct. The Vice President for Student Affairs is responsible for formulating appropriate procedures and regulations concerning student behavior and for the judicial consideration of violations. https://conduct.tulane.edu/sites/conduct.tulane.edu/files/2018-19%20Code%20Pre%20edits 0.pdf.

C. REQUIREMENT TO STAY INFORMED

Students are responsible for checking their Tulane issued email accounts daily since announcements from the BMS Office, School of Medicine departments or other entities at Tulane are frequently sent via email.

D. REQUIREMENT TO INFORM TULANE

All students are required to have a personal evacuation plan that they can implement without reliance on Tulane University. This should be filed through Gibson and can be accessed by this link https://gibson.tulane.edu/tulane/legacy/storm_plan. Students are also responsible for informing the university of their change of name and address. This should be done by informing the BMS office and by logging into Gibson Online (https://gibson.tulane.edu/tulane/jsp/login.html)

E. ENROLLMENT REQUIREMENTS

A student admitted to any degree program in BMS must be continuously enrolled in a degree-granting division of the University during the 12-month calendar year and maintain full-time status. A student admitted into any BMS degree program must be in continuous registration in a degree-granting division of the University until the awarding of the degree. Any student who is not registered for course work in a degree-granting division of the University must be registered in Master's Research or Dissertation Research every semester, including the summer, in order to remain in continuous registration. Although these courses are zero-credit-hour courses, registration will maintain full-time status.

F. CLASS ATTENDANCE REQUIREMENTS

Students are expected to attend all classes unless they are ill or prevented from attending by exceptional circumstances. Instructors may establish policies for attendance of their classes, which are announced at the beginning of the semester. Students are responsible for making up the work covered during that session, including quizzes, examinations, and other exercises; they also are responsible for obtaining notes on material covered in lectures or other class sessions. Students are responsible for notifying professors about absences that result from serious illnesses, injuries, or critical personal problems.

G. ACADEMIC REGULATIONS

1. Academic Performance Standards

All students in the BMS program must maintain a grade point average of at least a 3.0 (B). If a student receives one B- grade, the student is immediately placed on academic probation. The student will be recommended to be removed from probation if they receive no further grades of B- or less in the following semester and if the student maintains a grade point average of 3.0 or better. If a student receives two grades of B-, or a single grade lower than B- during their tenure in the BMS program, the student is placed on academic probation and considered for dismissal by BMS leadership, in consultation with the Steering Committee. Students are required to earn a B- or above in any Core Curriculum classes in order to continue the program. The terms of probation and removal from probation or dismissal will be established by the Steering Committee in consultation with BMS leadership. Ordinarily, the department will recommend that a student with two grades of B- or lower be dropped from the graduate program. Minimum academic performance and/or unsatisfactory performance may also lead to the withdrawal of financial support. Equally important, probation or dismissal will be considered if a student fails to match with a lab within 5 rotations, pass the qualifying examination, complete the dissertation prospectus, or complete and defend the dissertation according to the established time frames (or completion of any milestone within the given timeframe). Under these conditions, terms of probation and dismissal will be set by the Steering Committee and BMS leadership.

2. Technical Performance Standards

Technical Standards are non-academic requirements essential for meeting the requirements of a Ph.D. and some MS programs in BMS. Granting of these degrees implies the recipient has demonstrated a base of knowledge in their chosen field of study and possesses the ability to independently apply that knowledge to form hypotheses, design and conduct experiments, interpret experimental results, and communicate these findings to the scientific community. The following technical skills are required for completion of degree:

- a) Observation: The candidate must be able to acquire knowledge by direct observation of demonstrations, experiments, and experiences within the research and instructional setting.
- **b) Intellectual/Conceptual Abilities:** The candidate must be able to measure, calculate, analyze, reason, integrate and synthesize information to solve problems.
- c) Motor Skills: The candidate must possess motor skills necessary to perform procedures required for experimentation within the chosen discipline. Those individuals with physical challenges are encouraged to contact the appropriate administration to determine their educational options within the chosen discipline.
- **d) Communication:** The candidate must be able to communicate and discuss his or her experimental hypotheses and results to the scientific community.

e) Behavioral and Social Attributes: The candidate must possess the emotional and mental health required for appropriate utilization of his or her intellectual abilities, the exercise of good judgment, the prompt completion of responsibilities inherent in managing a scientific setting, the ability to function under the stress inherent in research, and the ability to understand and comply with ethical standards for the conduct of research.

Process for Review of Status

Any degree candidate enrolled and placed in jeopardy by these policies may request a review of status by the Steering Committee. The procedure for a request of a review is to submit to the BMS Steering Committee through the BMS office, a written explanation of extenuating circumstances or other matters pertinent to the request for hearing. The decision of the Steering Committee shall be considered final.

3. Course Registration

All students are responsible for their own class schedules. Consultation with academic advisors or thesis mentors is strongly encouraged before enrolling in any BMS class. Students register using Gibson Online (https://gibson.tulane.edu/tulane/jsp/login.html). Class schedules are found on the University Registrar's website (www.registrar.tulane.edu). Upon registering, students assume full financial responsibility for keeping the University informed of any address changes so that bills and priority registration materials may be delivered promptly.

a) Independent Study and Special Topics

Students must register for Independent Study (BMSP-7990) and Special Topics (BMSP-7500) in person with the BMS Office **prior** to the start of the semester, to ensure credit is received. Forms (https://medicine.tulane.edu/biomedical-sciences-graduate-program/current-students/forms) should be submitted to the BMS Office to register.

b) Registration Holds

Students who have an outstanding financial balance with Accounts Receivable and/or are blocked by Campus Health concerning their immunization records will need to resolve these issues before registering. The BMS Office can help with identifying the nature of registration holds.

4. Registration Deadlines/Course Changes

Registration deadlines are found at the Registrar's website. If registration deadlines are missed, students will need to complete a drop/add form, available in the forms section of the BMS website. Students wishing to add or drop courses should consult the Registrar's website for deadlines and instructions, and should be completed in <u>Gibson online</u>. Failure to make schedule adjustments promptly and accurately may result in financial or academic penalties. Registration will not be permitted beyond the first week of a course.

5. Course Audits

Students may audit any course in the BMS Program that he/she is otherwise qualified to attend except under the following circumstances:

- The course has reached capacity with "for grade" students and/or;
- The course is listed as "permission of the instructor required: and permission has not been granted, and/or;
- Official course registration is required. Usual advisor signatures, tuition and fees and add/drop dates apply. No transfers from audit to credit will be permitted after add/drop date;
- There are no class work or attendance requirements

A student may take a previously audited course for credit. This process requires a second official registration and payment for the course. Students paying audit tuition and fees are entitled to copies of handouts, assignments and/or other class materials. The conditions for student participation and evaluation of student work will be agreed upon in advance by the student and the instructor. Courses taken for audit will not appear on final transcript.

6. Transferring Credits

Students must make a written request to transfer credits from other graduate programs. These requests will be reviewed by the BMS Steering Committee and/or MS Subcommittee to Steering, and BMS leadership, in consultation with the appropriate course directors. Only courses in which the student achieved a grade of B or higher (as evidenced by an official transcript from the other institution), and which are no more than six years old, will be considered for transfer. To transfer credits, a course must be deemed equivalent to a course in the BMS curriculum. The number of credits transferred will be the lesser of the credits awarded from the transferring course and the BMS equivalent course. A maximum of 24 credit hours may be transferred from one PhD program to BMS PhD program, a maximum of 12 credit hours may be transferred from one MS program to BMS PhD program, and a maximum of 12 credit hours may be transferred from one MS program to BMS MS program. At least 50% of the credits counted towards a Tulane degree must be taken at Tulane.

7. Incomplete (I) Grade Resolution

An incomplete grade (I) is given at the discretion of instructors when special circumstances prevent a student from completing work assigned during the semester. Incomplete grades must be resolved within 12 months or they are automatically changed to a grade of F/I. The I will remain on the student's transcript, accompanied by the final course grade, e.g. I/A for a grade of A after an incomplete grade was resolved.

8. Program Withdrawal

a) Voluntary Withdrawal

A student who has registered for a semester and plans to withdraw from the program must inform the BMS Office in writing. The official date of the withdrawal must be approved by BMS leadership and is usually the date of formal notification. Students who officially withdraw from the program must surrender their student identification cards at the time of withdrawal. A "W" will be recorded on the student's transcript. In the case of a medical withdrawal, students must request a medical withdrawal in accordance with the checklist on the Case Management and Victim Support Services Website: https://cmvss.tulane.edu/content/medical-withdrawal-leave-return. Students must notify the BMS Office of their intent to request a medical withdrawal prior to beginning the process.

b) Administrative Withdrawal

Students who fail to register during a term without specifically requesting leave or permission to withdraw, will be withdrawn administratively. Transcripts will reflect "W". All payments and benefits, including tuition waivers or stipends, will cease upon administrative withdrawal.

9. Academic Probation

A student may be placed on academic probation for the following reasons:

- Failure to meet Academic Performance Standards (see page 21).
- Failure to meet Technical Performance Standards (see pages 21-22).
- Failure to complete Milestones in accordance with the timeline given (see pages 8-11).
- Failure to submit required annual paperwork, or other degree requirements (see pages 5-11).
- Other reasons at the discretion of BMS leadership.

The terms of the probation will be established by BMS leadership in consultation with the Steering

Committee. Students on academic probation are ineligible to obtain a letter of good standing, which may affect foreign student visa renewals.

10. Dismissal

A student may be dismissed for any of the following academic or non-academic reasons:

- Failure to meet Academic Performance Standards (see page 21).
- Failure to meet Technical Performance Standards (see pages 21-22).
- Violation of the honor system or other misconduct.
- Possibility of danger to the health of the student or to other students if enrollment is continued.
- Violation of the expectations of professional behavior.

The University reserves the right to forbid any student's continued enrollment without assignment of reason. An appellate procedure has been established in cases involving academic performance or possible infringement of academic freedom. The BMS Program also has appellate procedures in cases involving non-reappointment of fellowships or scholarships when the formal terms of the first award have given reasonable expectation of renewal. Such procedures may also apply to cases in which a graduate, teaching, or research assistant, is relieved of a position before the end of the term of the appointment or is not reappointed when the formal terms of the first appointment have given reasonable expectation of reappointment. Detailed procedures can be obtained from the BMS Program.

Timeline: Refer to OGPS published policy, "Timeline for Dismissal Process." https://ogps.tulane.edu/sites/default/files/Graduate%20Student%20Dismissal%20Policy.pdf

11. Student Appeals and Grievances

These procedures do not apply to cases under the Code of Academic Conduct or the Code of Student Conduct.

- 1. Within one month of receiving the grade, dismissal, or other cause of complaint, the student should make an informal attempt to resolve the grievance by approaching the teacher or other academic supervisor.
- 2. If student and teacher cannot arrive at a mutually satisfactory solution within seven days, the grievance should immediately be referred to by the student to the department chair for resolution.
- 3. If the complaint cannot be resolved by informal mediation within seven days of its referral to the department chair, the chair should invite both student and the teacher to submit written statements of their opinions concerning the grievance to the BMS Steering Committee (PhD students) or the MS Subcommittee to Steering (MS students). The committee should render a decision in the matter within ten days of receiving the written statements. The committee records should contain not only the decision but also an explanation of the grounds upon which the decision was reached.
- 4. One copy of the committee report should be sent to the Dean of the School of Medicine or the Executive Dean for Research (SOM). If either the student or the teacher involved is dissatisfied with the committee's decision, he or she may appeal to the Dean of the School of Medicine or Executive Dean for Research within five days of receiving the decision. The dean's decision should be made within ten days and communicated in writing to all principals in the case. In the event that the dean returns the case to the department for reconsideration, all procedures and appellate avenues described in section 3 and 4 of this document are again operative. The dean ultimately must uphold or reverse a departmental decision based on reconsideration of its earlier finding.

- 5. If the student is dissatisfied with the dean's ruling, the student may file a written appeal with the Senate Committee on Academic Freedom and Responsibility of Students within five days of receiving the dean's decision. Based on the petition and the reports from the Steering Committee and the dean, the Senate Committee will decide whether or not to hear the appeal. If the committee decides that there are not sufficient grounds for a review of the Steering Committee and the dean's decisions, the Chair of the committee will notify the student by letter, with copies to the principals involved in the case and to the Provost. If the committee decides that there are sufficient grounds for a review of the Steering Committee and the dean's decisions, it will interview both the student and the teacher. A quorum of three committee members, at least one of whom must be a representation of the administration, one of whom must be a faculty member, and one of whom must be a student, is necessary for all committee hearings.
- 6. If the committee interviews both the student and the teacher (or other principals involved) at a hearing, then the Chair will send the results of the committee's findings in the form of a letter of recommendation to the President of the University, with copies to the student and other principals involved and to the Provost.
- 7. If, in accordance with faculty rights as specified in the Faculty Handbook and in the Constitution and Bylaws of the University Senate and the various divisions, the teacher believes that his or her academic freedom or academic responsibilities have been affected by the dean's ruling, the teacher may appeal to the appropriate committee of peers at the divisional level (ordinarily the faculty grievance committee of the college or division). The teacher's appeal must be made within ten days of the action provoking the appeal. If the teacher is dissatisfied with the committee of peer's decision regarding his or her academic freedom or responsibilities, the teacher may appeal to the Senate Committee on Faculty Tenure, Freedom and Responsibility. That appeal must also be made within ten days of the action provoking it. No grade may be changed until the teacher's appeal process has been completed.
- 8. If the student is dissatisfied with any decision made in the appellate process described in item 7, the student may appeal to the Senate Committee on Academic Freedom and Responsibility of Students. All procedures described in items 5 and 6 above apply to the student's appeal in this instance.
- 9. In cases of conflict regarding the decisions of the divisional peer committee and the Senate Committee on Academic Freedom and Responsibility of Students, the matter shall be referred to the Senate Committee on Faculty Tenure, Freedom, and Responsibility. In cases of conflict regarding the decisions of the Senate Committee on Faculty Tenure, Freedom, and Responsibility and either of the other committees stemming from the deliberations described in item 7 above or this item, the committees at odds shall meet jointly to discuss the issue. The ultimate findings of the two committees shall be forwarded to the President of the University within ten days.

V. STUDENT AFFAIRS

A. DIVISION OF STUDENT AFFAIRS

BMS students are encouraged to take advantage of the wide-range of services offered by the Tulane University Division of Student Affairs related to student health and welfare. Graduate and Professional student resources can be found at https://studentaffairs.tulane.edu/graduate-professional-student-resources.

B. Professionalism and Environment of Learning Program

The Tulane University School of Medicine is committed to creating and maintaining a positive environment for its faculty and learners. This environment is based on mutual respect and accountability. The BMS Program is designed to provide an environment that is professional, respectful, inclusive, and intellectually-stimulating. Our program allows for individuals to confidentially report concerning behavior, or exceptional behavior. To report a concern, or to learn more information, visit: https://medicine.tulane.edu/student-affairs/professionalismenvironment-learning-program.

C. EXTENDED ABSENCES

1. Vacation Leave

Ph.D. students are entitled to 2 weeks of paid vacation (10 days) per year in addition to holidays approved by the BMS calendar. Vacation does not excuse students from class attendance requirements or other class responsibilities. All students taking vacation must inform their mentor and the BMS office two weeks prior to the scheduled vacation, by submitting the Vacation Leave form found on the BMS website. The summer session during graduate school is time spent in residence, **not a vacation period**. Students may request more than 10 days of vacation, however, stipends will be suspended for leave time beyond 10 days.

Foreign students holding a student visa who wish to temporarily leave the United States must obtain permission of their department chairman (if applicable) and submit a written request to the BMS Office at least *30 days prior to their travel* and/or before making any travel arrangements. Students granted permission then apply for a new I20 or IAP-66 in order to return to the United States. Any foreign student who leaves the United States without the consent of the BMS Office will be subject to disciplinary action. Students not returning from leave of absence within the approved date will have their stipends suspended and may be required to re-apply to the BMS Program.

2. Medical Leave

Students may experience medical and/or psychological conditions that significantly impact their ability to complete their academic pursuits. During such circumstances, a medical leave of absence from the University provides the student an opportunity to remain a matriculated student while also allowing time away for appropriate treatment and recovery. To apply for medical leave, students should contact Student Resources and Support Services by emailing tyner@tulane.edu, calling (504) 314-2129, or by scheduling an appointment here. Students should notify BMS leadership of plans to apply for medical leave. Policies and procedures for applying for leave and returning to the BMS program are found here: https://cmvss.tulane.edu/content/medical-withdrawal-leave-return.

3. Childbirth and Family Leave

All students who anticipate giving birth during the academic semester or during the period covered by financial support (e.g., stipends, grants, etc.) are eligible for a Childbirth Leave.

Students who seek benefits, services, or leave related to pregnancy and childbirth should contact Case Management and Victim Support Services. Detailed information on Childbirth Leave can be found at https://ogps.tulane.edu/graduate-policies. Students should complete the Student Childbirth and Pregnancy Request Form, found at https://pregnancy.tulane.edu/.

4. Other Leave

MS students should coordinate absences with their individual Program Director. Any Ph.D. student desiring to take a leave of absence from the Program for any reason except medical/psychological for an extended period of time (more than one week) must submit the request in writing to their Dissertation Advisor and to the BMS Office, stating the reason(s) for the requested absence. Approval for such leave must be granted by the Steering Committee. In emergencies, BMS leadership may grant this leave and present the request to the Steering Committee as soon as possible. This policy applies to all full-time Ph.D. students in the BMS Program.

VI. UNIVERSITY SERVICES

A. ACCOUNTS RECEIVABLE

Each month during your academic career at Tulane, you will receive a statement of unpaid charges owed to the university from the Accounts Receivable Office. These charges may include mandatory fees, health insurance, health service charges, bookstore charges, food service charges, returned check/fine charges, rent or tuition.

Since registration automatically establishes an open-end credit account for you with Accounts Receivable, it is very important that you read the Agreement and Disclosure Statement regarding your rights and responsibilities on this account. This disclosure statement is distributed by the university in the schedule of classes; however, you may obtain a copy from the Accounts Receivable Office.

B. CAREER SERVICES

In addition to the BMS Career Advisor, the Office of Graduate and Postdoctoral studies provides career resources specific to graduate students (https://ogps.tulane.edu/career-resources). Additional resources are available via Tulane Career Services (https://hiretulane.tulane.edu). By offering a comprehensive career decision making and career-planning instructional program, students are presented with opportunities and support systems that engage them actively in their own career management

C. COUNSELING CENTER

The Counseling Center is a safe and inclusive place for Tulane students to receive confidential assistance with concerns such as relationships, emotional health, happiness, motivation, troubling behaviors, stress, trauma, or life decisions. The center is staffed by licensed and experienced mental health counselors, social workers, psychologists and psychiatrists. They offer consultation, brief individual therapy, group therapy, psychiatric evaluation and medication management, urgent walk-in services, referrals to private care and community resources, stress management and other support groups, and mindfulness workshops. https://campushealth.tulane.edu/departments/counseling-center

D. GOLDMAN CENTER FOR STUDENT ACCESSIBILITY

The Goldman Center for Student Accessibility is committed to providing equal access and a friendly environment for all who study and work at Tulane University. They offer accommodation and modifications of the academic or work environment to students and employees with psychological, medical/physical, and learning or developmental disabilities. The Goldman Center for Student Accessibility has a process in place for undergraduate, graduate, and professional students who wish to be considered for reasonable accommodations.

Students may request and receive appropriate services and accommodations through the Goldman Center. Before accommodation decisions are made, students must register by filling out an Accommodation Packet and submitting all necessary documentation for review. Since this process can take time, students are strongly encouraged to register as soon as possible, rather than wait until a need arises. https://accessibility.tulane.edu/

E. Housing

On-Campus Housing options include the Deming Pavilion (https://www2.tulane.edu/deming/) and Thirteen 15 (https://www.thirteen15nola.com/). Accommodations are assigned on a lease basis. There is usually a waiting list for Deming so applications should be submitted early.

Resources for Off-Campus Housing provided by Tulane University can be found at https://offcampushousing.tulane.edu/.

F. LEGAL ASSISTANCE

The Tulane Legal Assistance Program (TULAP) is a legal services program funded by the Tulane University Associated Student Body. It provides free legal advice and low-cost representation to current Tulane University students, staff, and faculty. TULAP also provides free notarial services and informs Tulane community members of their legal rights. With funding from the university, TULAP is only able to provide representation to current students, staff, and faculty, and cannot represent one member of the Tulane community against another, as that would present a conflict of interest. https://law.tulane.edu/tulap

G. OFFICE OF INTERNATIONAL STUDENTS AND SCHOLARS

The Office of International Students and Scholars (OISS), located in Tate House, provides auxiliary services and support for international students. The aim of the OISS is to help Foreign Nationals have meaningful educational, cultural and social experiences at Tulane. The staff serves 2,000 students, staff and faculty from over 100 countries. A variety of programs and services are offered in the following areas: ESL classes, immigration information, housing assistance, cross cultural programs, community opportunities, counseling, and travel and scholarship information for American students. For students who are interested in living, working or traveling abroad, contact the International Center for information and a chance to meet someone from that country.

H. STUDENT HEALTH SERVICES

All BMS students and medical students are eligible to use the Downtown Health Center. There is no office visit fee for full-time students that have paid the Student Health fee. Part time students may incur some costs. The Student Health Service is located in the Elk Place Building at 127 Elk Place, Room 261.

Tulane University Hospital and Clinic

1415 Tulane Ave., New Orleans, LA 70112 Tel. 988-5263

Downtown Student Health Center

127 Elk Place, Room 261, New Orleans, LA 70112 Willow Street & Newcomb Tel. 504-988-6929

Tulane Hospital Emergency Room 220 LaSalle, New Orleans, LA 70112

Tel. 504-988-5711

Uptown Student Health Center

Tel. 504-865-5255

I. OFFICE OF MULTICULTURAL AFFAIRS

Tulane University School of Medicine values diversity, defined broadly to include persons of color, members of LGBTQIA community, members of diverse ethnic groups including those typically underepresented in medicine, members of economically disadvantaged groups, and any others who bring a different perspective to the learning environment. For information on events, resources and services the OMA provides, visit https://medicine.tulane.edu/office-multicultural-affairs.

APPENDIX: BMS PH.D. CURRICULUM

A. BMS Ph.D. Curriculum

Must complete 48 credit hours to earn a	PhD at Tulane Univers	sity
Course		Credit
First Year: Must complete 2	7 credit hours	
Fall 2023		
Advanced Cell Biology	BMSP 6070	3
Graduate Biochemistry	GBCH 6010	4
Research Topics and Rotations (Research Methods)	BMSP 7120	4
(2 credits faculty topics, 2 credits 1 st rotation)		
BMS Workshop	BMSP 7100	1
BMS Seminar	BMSP 7140	1
Responsible Conduct of Research	INTD 6010	0
		13 Total
Spring 2024		
Biomedical Statistics & Data Analysis	GBCH 7250	2
Human Molecular Genetics	EPID 7810	3
Systems Biology OR	BMSP 7770 OR	3
Genomic Sequence and Omics Data Analysis (Big Data	BIMI 7500	
Analysis in Biomedical Informatics)		
Research Topics and Rotations (Research Methods)	BMSP 7130	4
(2 credits 2 nd rotation, 2 credits 3 rd rotation)		
BMS Workshop	BMSP 7110	1
BMS Seminar	BMSP 7150	1
		14 Total
Summer 2024		
Dissertation Research	BMSP 9990	0
Second Year: Must complete	21 credit hours	•
Fall 2024		
BMS Workshop	BMSP 7100	1
BMS Seminar	BMSP 7140	1
¹ Independent Study AND/OR	BMSP 7990 and/or	1-6
¹ Special Topics	BMSP 7500	
² Electives		0/3/6
*must register for a minimum of 9 credit hours		9-14 Total
Spring 2025		
BMS Workshop	BMSP 7110	1
BMS Seminar	BMSP 7150	1
¹ Independent Study AND/OR	BMSP 7990 and/or	1-6
¹ Special Topics	BMSP 7500	
² Electives		0/3/6
*must register for a minimum of 9 credit hours		9-14 Total
Summer 2025 and Beyond		
Dissertation Research (BMSP 9990)	BMSP 9990	0
<u> </u>		

¹Must request BMS office to register; maximum of 6 credits per semester (12 credit max) of Independent Study+Special Topics combined.

²Electives are lecture-based courses, with a minimum of 6 credit hours in Fall+Spring combined

B. BMS Ph.D. Curriculum - Concentration in Biomedical Informatics

Must complete 48 credit hours to earn a	a PhD at Tulane Un	iversity
Course		Credit
First Year: Must complete	28 credit hours	
Fall 2023		
Elements in Biomedical Informatics	BIMI 6100	4
Introduction to Data Science for Biomedical	BIMI 6200	3
Informatics		
Research Methodology of Biomedical Informatics	BIMI 8500	2
BIMI Workshop (Journal Club)	BIMI 7210	1
BIMI Research Methods	BIMI 7220	4
(2 credits 1 st rotation, 2 credits 2 nd rotation)		
Responsible Conduct of Research	INTD 6010	0
		14 Total
Spring 2024		
Health Informatics in Biomedical Informatics	BIMI 6400	3
Human Molecular Genetics	EPID 7810	3
Fundamentals of Data Analytics	BIMI 6300	3
Research Methodology of Biomedical Informatics	BIMI 8500	2
BIMI Research Methods (3 rd rotation)	BIMI 7220	2
BIMI Workshop (Journal Club)	BIMII 7210	1
Birii Workshop (Journal Club)	BIIVIII 7210	14 Total
Summer 2024		1110001
Dissertation Research	BMSP 9990	0
Second Year: Must complete	21 credit hours	
Fall 2024		
Statistical Machine and Deep learning in Biomedical	BIMI 7100	3
Practice		
Research Methodology of Biomedical Informatics	BIMI-8500	2
BIMI Workshop (Journal Club)	BIMI-7210	1
Directed Independent Study	BIMI 7990	3
Electives		2
		11 Total
Spring 2025		
Research Methodology of Biomedical Informatics	BIMI-8500	2
BIMI Workshop (Journal Club)	BIMI-7210	1
Directed Independent Study	BIMI 7990	3
Electives	7.7.2	3
		9 Total
Summer 2025 and Beyond		1 2 3332
Dissertation Research (BMSP 9990)	BMSP 9990	0

C. BMS Ph.D. Curriculum - Concentration in Pharmacology

All BMS PhD students must take the identical first year curriculum of core courses (27 credit hours). After the first year of BMS core coursework, students may choose to join the Pharmacology Track, to earn a Concentration in Pharmacology. The Pharmacology track requires 25 credit hours of pharmacology-focused coursework, for a total of 52 credit hours for degree.

Course		Credit
Second Year: Must complete 25 credit hours		
Fall 2024		
Advances in Pharmacology	GPHR 7210	1
Medical Pharmacology	GPHR 7250	6
*requires concurrent registration of GPHR 7190		
Principles of Pharmacology	GPHR 7190	3
Practicing Professionalism	GPHR 7055	1
Pharmacology Seminar	GPHR 7230	1
		12 Total
Spring 2025		
Advances in Pharmacology	GPHR 7220	1
Medical Pharmacology	GPHR 7260	4
*requires concurrent registration of GPHR 7240		
Principles of Pharmacology	GPHR 7240	2
Practicing Professionalism	GPHR 7055	1
Pharmacology Seminar	GPHR 7200	1
Lab Research	GPHR 7510	2
Thematic course (see below for thematic courses)		2
		13 Total
Summer 2025 and Beyond		
Dissertation Research	GPHR 9990	0

Thematic Courses (choose one)

GPHR 7040	Neuropharmacology	(2 credits)
GPHR 7160	Environ Signaling in Medicine	(2 credits)
GPHR 7050	Cellular Control Mechanisms	(2 credits)
GPHR 7060	Endocrine Pharmacology	(2 credits)
GPHR 7040	Neuropharmacology	(2 credits)

D. BMS M.D./Ph.D. Curriculum: PhD portion of the PSP Program

A total of 48 credit hours must be completed to earn a PhD at Tulane University. Students in the PSP program may transfer 24 credit hours of MD coursework toward the PhD, and complete an additional 24 credit hours within the first 2 years of entering the PhD portion.

Course		Credit
First Year (Ph	D-1)	
Fall 2023	•	
BMS Workshop	BMSP 7100	1
BMS Seminar	BMSP 7140	1
¹ Independent Study	BMSP 7990	4-6
¹ Special Topics	BMSP 7500	1-6
² Elective		0-3
Responsible Conduct of Research	INTD 6010	0
*must register for a minimum of 9 credit hours		
Spring 2024		·
Biomedical Statistics & Data Analysis	GBCH 7250	2
BMS Workshop	BMSP 7110	1
BMS Seminar	BMSP 7150	1
¹ Independent Study	BMSP 7990	2-4
¹ Special Topics	BMSP 7500	1-6
² Elective		0-3
*must register for a minimum of 9 credit hours		
Summer 2024		
Dissertation Research	BMSP 9990	0
Second Year: P	PhD-2	
Fall 2024		
BMS Workshop	BMSP 7100	1
BMS Seminar	BMSP 7140	1
¹ Independent Study	BMSP 7990	1-6
¹ Special Topics	BMSP 7500	1-6
² Elective		0-3
*must register for a minimum of 9 credit hours		
Spring 2025		
BMS Workshop	BMSP 7110	1
BMS Seminar	BMSP 7150	1
¹ Independent Study	BMSP 7990	1-6
¹ Special Topics	BMSP 7500	1-6
² Elective		0-3
*must register for a minimum of 9 credit hours		
Summer 2025 and Beyond		
Dissertation Research (BMSP 9990)	BMSP 9990	0

¹Must request BMS office to register

²Elective courses should be chosen in consultation with the Dissertation Advisor. Advisor may suggest that no elective is needed.

E. BMS Ph.D. for DVMs Curriculum

A total of 48 credit hours must be completed to earn a PhD at Tulane University. Students in the DVM program may transfer up to 24 credit hours of DVM coursework toward the PhD, and complete an additional 24 credit hours within the first 2 years of entering the PhD portion.

Course		Credit	
First Year			
Fall 2023			
BMS Workshop	BMSP 7100	1	
BMS Seminar	BMSP 7140	1	
¹ Independent Study	BMSP 7990	3	
Faculty Topics and Rotations (Research Methods)	BMSP 7120	4	
(2 credits 1 st rotation, 2 credits 2 nd rotation)			
Responsible Conduct of Research	INTD 6010	0	
		9 Total	
Spring 2024			
Biomedical Statistics & Data Analysis	GBCH 7250	2	
BMS Workshop	BMSP 7110	1	
BMS Seminar	BMSP 7150	1	
¹ Independent Study	BMSP 7990	1	
¹ Special Topics	BMSP 7500	4	
		9 Total	
Summer 2024			
Dissertation Research	BMSP 9990	0	
Second Yea	r		
Fall 2024			
BMS Workshop	BMSP 7100	1	
BMS Seminar	BMSP 7140	1	
¹ Independent Study	BMSP 7990	3	
¹ Special Topics	BMSP 7500	4	
Complete Preliminary Exam		9 Total	
Spring 2025			
BMS Workshop	BMSP 7110	1	
BMS Seminar	BMSP 7150	1	
¹ Independent Study	BMSP 7990	3	
¹ Special Topics	BMSP 7500	4	
		9 Total	
Summer 2025 and Beyond			
Dissertation Research (BMSP 9990)	BMSP 9990	0	

¹Must request BMS office to register

F. Elective Courses Available to BMS PhD Students

Course		Credit
FALL		
Biochemistry and Molecular Biology		
Academic Writing & Critique	GBCH 7560	2
Introduction to Bioinformatics	GBCH 7230	3
Human Medical Cellular Biochemistry	GBCH 7500	5
Biochemistry and Molecular Biology Seminar	GBCH 6020	1
Biomedical Informatics		
Biomedical Informatics	BIMI 6100	4
Introduction to Data Science for Biomedical Informatics	BIMI 6200	3
Biomedical Informatics Workshop	BIMI 7210	1
Research Methodology of Biomedical Informatics	BIMI 8500	1
Microbiology and Immunology		
Graduate Microbiology	MIIM 7500	4
Medical Immunology	MIIM 7600	3
Seminar in Microbiology	MIIM 7010	1
Pathology and Laboratory Medicine	DATH (200	
Mechanism of Disease I	PATH 6300	5
Cancer Biology and Pathology	PATH 7600	3
Pathology Research Elective	PATH 6100	2
Advances in Pathology Research	PATH 2003	1
Pharmacology: Courses are only available to PhD sa	tudents in the Pharm	track
Practicing Professionalism	GPHR 7055	1
Advances in Pharmacology	GPHR 7210	1
Molecular and Cellular Pharmacology	GPHR 7530	2
Pharmacology Seminar	GPHR 7190	1
Physiology		
Translational Physiology	GPSO 7350	2
Medical Physiology	GPSO 6010	6
Medical Terminology	GPSO 7175	3
Physiology: Basis of Disease	GPSO 7180	2
Seminars in Physiology	GPSO 7910	1

Course		Credit		
SPRING		'		
Biochemistry and Molecular Biology				
Basic Medical Biochemistry	GBCH 6110	3		
Principles of Genetics	GBCH 7170	4		
Metabolic Biochemistry of Human Disease	GBCH 7520	5		
Biochemistry and Molecular Biology Seminar	GBCH 7100	1		
Cases in Research Ethics	GBCH 7590	2		
Advanced Bioinformatics	GBCH 7330	3		
Methods in Biochemistry	GBCH 7580	2		
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Biomedical Informatics	·	·		
Biomedical Data Science with Cloud Computing	BIMI 7300	3		
Genome Sequencing and Omics Data Analysis	BIMI 7500	3		
Statistical Machine and Deep Learning in Biomedical	BIMI 7100	3		
Practice				
Advances in Data Science Analysis Techniques	BIMI 8600	3		
Research Methodology of Biomedical Informatics	BIMI 8500	1		
Microbiology and Immunology				
Advanced Immunology (offered every other year)	MIIM 7620	3		
*Topics in Microbiology	MIIM 7030	1		
Seminar in Microbiology and Immunology	MIIM 7810	1		
Responsible Conduct – Biomedical Research	MIIM 7400	2		
*Advanced Research Methods	MIIM 7220	4		
*Medical Parasitology	MIIM 7750	3		
Vaccine Biology	MIIM 7250	3		
Clinical Cases & Underlying Mechanisms	MIIM 7100	2		
Advanced Virology	MIIM 7120	4		
Scientific Writing	MIIM 7065	2		
*Course instructor approval required for students				
outside the Microbiology department				
Pathology and Laboratory Medicine				
Mechanism of Disease II	PATH 6310	5		
Molecular & Cellular Pathobiology	PATH 6400	4		
Pathology Research Elective	PATH 6100	2		
Advances in Pathology Research	PATH 2003	1		
Surgical Pathology Techniques	PATH 6210	4		
	I di T			
Pharmacology: Courses are only available to PhD stu		track		
Advances in Pharmacology	GPHR 7220	1		
Medical Pharmacology	GPHR 7260	4		
(requires concurrent registration of GPHR 7240)	CDIID 7240	2		
Principles of Pharmacology	GPHR 7240	2		
Pharmacology Seminar	GPHR 7200	1		
Neuropharmacology	GPHR 7040	2		

Environmental Signaling	GPHR 7160	2
Cellular Control Mechanisms	GPHR 7050	2
Practicing Professionalism	GPHR 7055	1
Pharmacological Lab Research	GPHR 7510	2
Pharmacology ePortfolio	GPHR 7520	1
Endocrine Pharmacology	GPHR 7060	2
Physiology		
Experimental Physiology Lab	GPSO 6060	2
Renal Physiology	GPSO 7320	3
Integratice Cardiovascular Physiology	GPSO 7600	3
Membrane Physiology	GPSO 6250	2
Translational Physiology	GPSO 7350	2
Signal Transduction/Hormone Action	GPSO 7560	2
Seminar in Physiology	GPSO 7910	1
Structural & Cellular Biology		
Leadership in Healthcare	ANAT 7360	3