

Graduate Student Handbook

Master's in Biomanufacturing and Bioprocessing

University of Georgia

Welcome to the Masters in Biomanufacturing and Bioprocessing program at the University of Georgia. This handbook serves as a guide to help students navigate their academic journey and make the most of their graduate experience. Please familiarize yourself with the program policies, requirements, and resources outlined below.

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1. Introduction:

The Master's in Biomanufacturing and Bioprocessing program at the University of Georgia is designed to provide students with a comprehensive understanding of the principles and practices involved in the manufacturing and processing of biopharmaceuticals, biotherapeutics, and other bio-based products. This program prepares students for careers in the biotechnology industry, regulatory agencies, and research institutions.

This Graduate Handbook does not replace or supersede the Graduate Bulletin (<http://grad.uga.edu/index.php/currentstudents/policies-procedures/graduate-bulletin/graduate-bulletin-a-c/>) issued by the University of Georgia, and it should be viewed as a supplement to the material in the catalog. In the event of a conflict between this handbook and the Graduate Bulletin, the Graduate Bulletin shall prevail.

This handbook serves as a guide to help students navigate their academic journey and make the most of their graduate experience. Please familiarize yourself with the program policies, requirements, and resources outlined below.

2. Program of Study:

The MBB program is offered through the School of Chemical, Materials, and Biomedical Engineering and the College of Engineering at the University of Georgia. It is a full-time, interdisciplinary program that combines coursework, research, and industry experiences. The program duration is typically two years, consisting of four semesters of coursework, an industry internship during the summer semester, and a capstone research project to be completed during your final semester.

The program of study for the Master's in Biomanufacturing and Bioprocessing program includes core courses, electives, research credits, and a capstone project. The total credit requirement for graduation is 38 credit hours. An example Program of Study is shown below.

Students with a non-engineering background *may* be assigned additional undergraduate level courses to address academic deficiencies and prepare them for graduate-level engineering coursework. These courses must be completed successfully before the end of the student's first year and may not be used on a Program of Study.

2.1 Program of Study – Athens Campus

Students must earn a grade of "C" (2.0) or better in all courses and must maintain an overall GPA of >3.0.

YEAR ONE					
Fall Semester		Hours	Spring Semester		Hours
BCHE 6010	Bioengineering Fundamentals*	3	BCHE 6510	Biochemical Engineering	3
OR			BIOE 6780	Regulations and Ethics in BME	3
BCMB 6000	General Biochem & Mol. Bio [†]	3	PHAR 6120E	Process Control and Validation	3
BCHE 6030L	Bioprocess Technology	4			
PHAR 6030E	Current Good Manufacturing Practices	4			
Total Credit Hours		11	Total Credit Hours		9
Summer					
ENGR 7900	Graduate Internship	1			
Total Credit Hours		1			

YEAR TWO					
Fall Semester		Hours	Spring Semester		Hours
BCHE 6520	Biochemical Separations Proc	3	BCHE 8210	Fermentation Engineering Lab	3
	Science / Engineering Elective	3	BCHE 7010	Project-Focused Masters Research	2
	Science / Engineering Elective	3		Science / Engineering Elective	3
Total Credit Hours		9	Total Credit Hours		8

Science/Engineering Electives (select three of the following):

Track 1: Synthetic Biology		Track 2: Biopharmaceutical & Cell Manufacturing	
BCHE 6550	Bioprocess Des & Simulation (3)	BCHE 6600	Biopharmaceutical Engineering (3)
BCHE 6655	Metabolic Engineering & Syn Biol (3)	BCHE 6650	Animal Cell Biomanufacturing (3)
BCHE 6710	Bioelectrochemical Engineering (3)	BCHE 8980	Advanced Topics in BCHE (3)
BCHE 8150	Kinetics Reactor Design (3)	BCMB 8113	Adv Genetics Cell Bio Biochem 1a (2)
BCHE 8220	Adv. Metabolic Engineering & Syn Biol (3)	BCMB 8213	Adv Genetics Cell Bio Biochem II (2)
BCHE 8350	Sustainable Process Engineering (3)	BIOE 6625	Tissue Engineering (3)
BCHE 8610	Bioelectroanalytical Techniques (3)	BIOE 6740	Biomaterials (3)
BCHE 8980	Advanced Topics in BCHE (3)	BIOE 8240	Stem Cell Engineering (3)
ENGR 6490	Renewable Energy (3)	BIOE 8120	Regen Med, Cell Manufacturing & Society (3)
MIBO 6600L	Experimental Microbiology Lab (3)	PHAR 6010E	Intro Pharm, Biotech & Device Industries (4)
GENE 6520	Gene Industrial Micro Organism (3)	PHAR 6020E	Food and Drug Law (3)
GENE 8980	Prokaryotic Genetics (2)	PHAR 6100E	Quality Assurance (3)
		PHAR 6160E	Chemistry, Manufacturing & Controls (4)
		PHAR 7100E	Biostat App Pharm Biotech Ind

* Required for students with a non-engineering undergraduate degree.

† Required for students with a non-life science undergraduate degree.

2.2 Program of Study – MBB-BUCT

Students must earn a grade of "C" (2.0) or better in all courses and must maintain an overall GPA of >3.0.

YEAR ONE						
Fall Semester			Hours	Spring Semester		Hours
BCHE 6030L	Bioprocess Technology		4	BCHE 6520	Biochemical Separations Proc	3
BCHE 6510	Biochemical Engineering		3	BCHE 8210	Fermentation Engineering Lab	3
PHAR 6120	Process Control and Validation		3	PHAR 6030	Current Good Manufacturing Practices	4
Total Credit Hours			10	Total Credit Hours		10
Summer						
ENGR 7900	Graduate Internship		1			
Total Credit Hours			1			

YEAR TWO						
Fall Semester			Hours	Spring Semester		Hours
BIOE 6780	Regulations and Ethics in BME		3	BCHE 8980	Advanced Topics in BCHE	3
	Science / Engineering Elective		3	BCHE 7010	Project-Focused Masters Research	2
	Science / Engineering Elective		3		Science / Engineering Elective	3
Total Credit Hours			9	Total Credit Hours		8

Science/Engineering Electives (select three of the following):

Track 1: Synthetic Biology		Track 2: Biopharmaceutical & Cell Manufacturing	
BCHE 6550	Bioprocess Des & Simulation (3)	BCHE 6600	Biopharmaceutical Engineering (3)
BCHE 6655	Metabolic Engineering & Syn Biol (3) *	BCHE 6650	Animal Cell Biomanufacturing (3) *
BCHE 6710	Bioelectrochemical Engineering (3)	BCMB 8113	Adv Genetics Cell Bio Biochem 1a (2)
BCHE 8150	Kinetics Reactor Design (3)	BCMB 8213	Adv Genetics Cell Bio Biochem II (2)
BCHE 8220	Adv. Metabolic Eng & Syn Biol (3) *	BIOE 6625	Tissue Engineering (3)
BCHE 8350	Sustainable Process Engineering (3)	BIOE 6740	Biomaterials (3)
BCHE 8610	Bioelectroanalytical Techniques (3)	BIOE 8240	Stem Cell Engineering (3)
ENGR 6490	Renewable Energy (3)	BIOE 8120	Regen Med, Cell Manufacturing & Society (3)
MIBO 6600L	Experimental Microbiology Lab (3)	PHAR 6010E	Intro Pharm, Biotech & Device Industries (4)
GENE 6520	Gene Industrial Micro Organism (3)	PHAR 6020E	Food and Drug Law (3)
GENE 8980	Prokaryotic Genetics (2)	PHAR 6100E	Quality Assurance (3)
		PHAR 6160E	Chemistry, Manufacturing & Controls (4)
		PHAR 7100E	Biostat App Pharm Biotech Ind

Students at the BUCT campus in Beijing may be required to take additional courses by the Chinese Ministry of Education. Please consult with staff in the BUCT School of International Education.

* Preferred electives

Please note that the curriculum may be subject to change, and specific course offerings may vary from year to year. Students are advised to consult with their academic advisor for the most up-to-date course information.

2.3 Internship and Capstone Research Project:

Students are required to complete an approved internship for 400 hours, the equivalent of working 40 hours per week for ten weeks with a company directly related to the MBB program. The internship is typically completed during the summer semester between the first and second years of study but can be completed at any time. Students are responsible for securing their own internship; however, the College of Engineering Office of Student Success and the University of Georgia Career Services provide several resources to assist students. Students must provide their academic advisor with an official offer letter before they can be given permission to register for ENGR 7900 – Graduate Internship.

As part of the program, students are required to complete a capstone research project and submit a final project report. Students may also be required to present the results of their research during a college or school research symposium. The project provides an opportunity to apply the knowledge and skills gained throughout the program to a real-world problem or research question. Students will work closely with a faculty advisor to develop and execute their research project. The capstone project may involve experimental research, computational modeling, process optimization, or a combination of these approaches.

2.4 MBB Program of Study Approval

The MBB Program of Study (PS) form (<https://grad.uga.edu/current-students/forms/>) outlines the planned classroom courses and research for students in accordance with the student's degree requirements. The form should be completed in coordination with the student's academic advisor and/or the MBB Graduate Coordinator. Students are strongly encouraged to submit the Program of Study by the end of the student's second semester of the MBB program. The Program of Study form must be submitted to the Graduate School by Friday of the second full week of classes of the semester in which degree requirements are completed.

2.5 Milestones and Timeline

The "MBB Program Framework - Milestones & Timeline" document can be found on the following page. This document outlines the program milestones, specifies the timeframes for completing each milestone, and provides detailed steps that students need to follow to fulfill each milestone requirement.

UGA Master’s of Biomanufacturing and Bioprocessing Program Framework – Milestones and Timelines

Student Program Milestones	MBB Program Event	Student Action Required	Time for Completion	Steps to Take
Scoping a Program of Study: With the input of her/his Academic Advisor and/or the MBB Graduate Coordinator, the student arrives at a planned set of classroom courses and research.	Student Completes her/his Program of Study in coordination with Advisory Committee.	Program of Study (PS) form*	Due by the end of student's second semester.**	Submit PS form online
Scoping the Planned Internship	In consultation with her/his Academic Advisor, the student identifies potential internship opportunities and companies	Student must be offered an internship position for a cumulative 400 hours and register for ENGR 7900*	Must be completed within the first week of classes of the semester in which degree requirements are completed.	Confer with Academic Advisor, Office of Student Success and UGA Career Services
Scoping the Planned Research	In consultation with her/his Academic Advisor, the student identifies research projects and faculty advisors	Student must register for BCHE 7010	Must be completed within the first week of classes of the semester in which degree requirements are completed.	Identify potential faculty that can sponsor the research project and discuss possible research topics.
Execution and completion of the master’s research project and program of study	Application for Graduation: With the concurrence of the student's academic advisor, the application for graduation is made.	Application for graduation must be filed with the Graduate School online (Athena)	Due no later than Friday of the second full week (the first full week for summer) of classes in the semester of the anticipated graduation date.	Click here for detailed instructions.

Grad School Reference: <http://grad.uga.edu/index.php/current-students/policies-procedures/academics/types-of-degrees-offered/masters-degrees/>

*Reviewed and approved by MBB Graduate Coordinator

**Double Dawg students should complete during their first semester as a graduate student.

3 Academic Advising:

The MBB Graduate Coordinator will serve as the academic advisor for students admitted into the MBB program and will guide students through their academic journey. For students in the MBB-BUCT program, the MBB-BUCT Program Director will serve as the academic advisor. The academic advisor will assist the student in course selection, research project planning, and career development. Students must meet with their advisor at least once per semester to discuss course registration and their progress towards graduation as well as to seek guidance.

Students are responsible for registering for courses each semester. Registration and withdrawal dates and procedures will be communicated by the university's Registrar's Office. It is important to plan ahead and enroll in courses that align with the program requirements and your career interests. Students should consult with their academic advisor before finalizing their course schedule.

3.1 Minimum Enrollment

All enrolled students pursuing graduate degrees at the University of Georgia must register for a minimum of 3 hours of credit during any semester in which they use University facilities and/or faculty/staff time.

3.2 Continuous Enrollment Policy

All enrolled graduate students must maintain continuous enrollment from matriculation until completion of all degree requirements. Continuous enrollment is defined as registering for a minimum of three (3) credits in at least two semesters per academic year (Fall, Spring, Summer) until the degree is attained or status as a degree-seeking graduate student is terminated. All students must be enrolled for at least three graduate credits in the semester in which degree requirements are completed.

3.3 Residence Credit Requirement

There is no residency requirement for master's degree programs.

The minimum residence requirement for the MBB-BUCT degree is two semesters, which do not have to be consecutive.

3.4 Leave of Absence

A leave of absence provides a mechanism for students experiencing unusual circumstances to be exempt temporarily from the continuous enrollment policy. A leave of absence requires approval of the Graduate Coordinator and the Dean of Graduate School. A leave of absence will be granted only for good cause such as serious health-related issues, significant family issues, and other major personal circumstances that interfere with the ability to undertake graduate study. Contact the Graduate Program Administrator for additional information.

3.5 Time Limits

Master's degree students must complete all degree requirements, including all coursework on their approved program of study, within six years of matriculation. The six-year limit begins with the

semester the student matriculated into the program and ends with the last semester before the beginning of the sixth year.

3.6 Extension of Time

A special request for an extension of time on the six-year expiration of coursework may be made to the Dean of the Graduate School. This request must include specific reasons that the student did not complete requirements in the time allotted by Graduate School policy. A petition of this type must include 1) a specific timeline for the completion of requirements; 2) an approved Advisory Committee form, if required for the degree; and 3) an approved program of study and a letter of support from both the program graduate coordinator and the Academic Advisor.

For MBB-BUCT students, the MBB-BUCT program director must review the student's request and write a letter to the UGA Vice Provost and Dean of the Graduate School stating approval or disapproval of the petition. The Chemical, Materials, and Biomedical Engineering School Chair must review the program director's recommendation and indicate their concurrence by writing an additional letter. If the Chair does not concur with the recommendation, further information should be provided in a letter to the Chair. An extension of time may be granted only on conditions beyond the control of the student.

3.7 Dismissal

Students may be dismissed from the program at the end of any semester if they have not made sufficient progress towards graduation, failure to follow the student's Program of Study or other program guidelines, or low grades. In all instances, policies, procedures and guidelines contained in the College of Engineering Graduate Student Handbook will apply.

3.8 Appeals

UGA graduate students have the right to appeal certain academic decisions. The appeals process starts at the unit responsible for the decision (ex. grades will start with the department that offered the course). For most appeals, an unfavorable ruling at one level can be appealed to the successive level. All appeals are heard by the Appeals Committee of the Graduate Council.

For more information on the academic appeals process see the UGA [Graduate School Appeals Policy](#).

Written Student Complaints

The University of Georgia is committed to excellence in a teaching/learning environment dedicated to serve a diverse and well-prepared student body, to promote high levels of student achievement, and to provide appropriate academic support services. In line with this commitment, the University addresses all written student complaints in a fair, professional, and timely manner and in accordance with established procedures in [UGA Policy 01.08.008, Written Student Complaints](#).

Written student complaints are not meant to circumvent or replace existing UGA policies and procedures designed to address issues brought forward by students (e.g., the UGA Hotline, the NDAH Policy, Graduate School Appeals Process, etc.).

Currently enrolled students can submit a written student complaint through the web-based system available at <https://studentcomplaints.uga.edu/>. As part of the submission process, the student is required to log in to verify student status and provide a summary of the complaint, along with identifying the university functional area connected to the complaint.

The complaint is then routed to the proper functional area and the designated contact assigned the given complaint reviews the complaint and determines a course of action.

The designated contact provides a written response to the complaining student and this response may or may not indicate a full resolution of the complaint and then any necessary subsequent correspondence or actions to resolve the complaint take place.

For additional details on the procedure for submitted a written student complaint please review [UGA Policy 01.08.008, Written Student Complaints](#).

3.9 Graduation

Graduate students must register for a minimum of 3 hours in at least two semesters per academic year (Fall, Spring, Summer) including the 3 hours of graduate credit that is required for registration during the semester in which degree requirements are completed, per university policy.

Applications for graduation must be submitted in Athena by the UGA Graduate School's deadline www.grad.uga.edu/index.php/current-students/important-dates-deadlines/.

UGA does not have a summer commencement ceremony, but summer graduates are permitted to participate in the fall commencement event following degree completion. Students who have not completed degree requirements as determined by the Graduate School and by published deadlines will not be allowed to walk in the ceremony but may return to walk in a subsequent commencement event. There are no exceptions to this policy.

4 Compliance Policies:

Students are expected to maintain a high level of academic integrity and professionalism throughout the program. Plagiarism, cheating, and other forms of academic dishonesty are strictly prohibited and will result in disciplinary actions. Students are required to adhere to all UGA policies governing research and academic conduct, non-discrimination and anti-harassment, and workplace violence. See the following links for detailed information:

- UGA Academic Honesty: <https://honesty.uga.edu/Academic-Honesty-Policy/>
- UGA Non-Discrimination & Anti-Harassment Policy: <https://eoo.uga.edu/policies/non-discrimination-anti-harassmentpolicy>
- UGA Workplace Violence Policy: <http://safeandsecure.uga.edu/workplace.html>

Students must also complete the following compliance training:

- SecureUGA compliance training
- Right to Know, Lab Safety (Chemical Specific/Hazardous Waste), BioSafety, Radiation Safety

UGA/BUCT MBB students must also adhere to all BUCT policies.

5 Campus Resources:

The University of Georgia offers a comprehensive range of resources to support students' academic and personal success. Here are some key resources available:

Athena: The online portal to the student information system that allows students to access course schedules, register for courses, view student records, check holds, and access financial aid information (<https://athena.uga.edu>).

Bursar's Office: Responsible for tuition and fees, payment plans, deadlines, taxes, and other student account services (www.busfin.uga.edu/).

Counseling & Psychiatric Services (CAPS): Provides mental health support and services to help students achieve their academic and personal goals. See www.uhs.uga.edu/caps/welcome or call 706-542-2273 for more information.

Disability Resource Center: Offers accommodations and services for graduate students with disabilities (www.drc.uga.edu, 706.542.8719).

Graduate School: Coordinates graduate programs across all schools and colleges, providing resources for continuing students (www.grad.uga.edu).

Information Technology: For information on Instructional Technology, visit www.engineering.uga.edu/it. If you encounter any issues related to instructional technology within the College of Engineering, such as slow logins, difficulty accessing engineering lab computers, software problems, or video conference meeting assistance, reach out to the College of Engineering's IT Support Desk at support@engr.uga.edu. You can find our Computer Lab Guide at <http://www.engr.uga.edu/uploads/main/ITLabGuide.pdf>.

UGA's central IT department is the Enterprise Information Technology Services (EITS). They manage key technology systems and services on campus, including UGAMail, Athena, and eLearning Commons (eLC). If you need assistance, contact the EITS Help Desk at helpdesk@uga.edu or call 706-542-3106.

The EITS Help Desk's website, www.eits.uga.edu/, provides detailed instructions on resetting your UGA MyID password and configuring your UGAMail account for your phone. It also offers answers to other frequently asked questions. For the UGA Student Technology Guide and New Student Tech Checklist, visit www.eits.uga.edu/support/new_to_campus on the EITS website.

International Student Life (ISL): Enhances the student-learning environment for international students through programs and services (www.isl.uga.edu). International Student Life (ISL) arranges an orientation specifically for new international students. The program covers essential information on immigration matters, taxes for non-residents, cross-cultural adjustment, housing assistance, course registration procedures, Social Security Cards, UGA payroll, and campus tours. For further support, a valuable Resource Guide for new international students is available on their website at www.isl.uga.edu/content_page/international-student-resources-content-page.

Office of the Registrar: Provides various academic services, including student transcripts, certification letters, graduation clearance, course scheduling, and more. See www.reg.uga.edu for more information.

University Health Center: Offers primary, specialty, and mental health care services to full-time UGA students and their eligible partners (www.uhs.uga.edu).

University Libraries: Provides a wide array of electronic and print resources, with librarians available to assist students (www.libs.uga.edu/) The Research/Instruction Librarian for College of Engineering graduate students is Chandler Christoffel (christof@uga.edu, 706.542.0696).

Transportation and Parking Services: Issues parking permits and oversees UGA bus routes (www.tps.uga.edu).

Ramsey Student Center: A large student recreational and athletic facility on the East Campus, accessible to full-time students through a recreation fee (www.recsports.uga.edu/site).

University Health Center: The Health Center (www.uhs.uga.edu) provides students with primary, specialty, and mental health care services. All full-time UGA students and their eligible spouses/partners may use health center services.

University of Georgia Police Department: Ensures safety and security on campus, serving the University community (www.police.uga.edu, 706.542.2200). Call 911 in case of emergency.

Writing Center: Assists students with the writing process, idea elaboration, and editing their work (www.english.uga.edu/writing-center). To schedule an appointment, visit www.uga.mywconline.com and click on the "Appointments" link.

These resources contribute to fostering a supportive and enriching environment for students at the University of Georgia. Students are encouraged to make use of these services to enhance their academic journey and personal well-being.

6 Student Life and Engagement:

Engaging in extracurricular activities and building a strong network with fellow students and professionals are essential parts of the graduate experience. The University of Georgia offers various

opportunities for involvement, including student organizations, seminars, conferences, and workshops related to biomanufacturing and bioprocessing. Students are encouraged to explore these avenues to enhance their learning and professional growth.

7 Important Contacts:

MBB Graduate Coordinator:

Dr. Mark Eiteman

Interim School Chair & Professor

School of Chemical, Materials, and Biomedical Engineering

Nametie@uga.edu

MBB-BUCT Program Director

Dr. Yantao Fan

Lecturer and Program Director

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Graduate School:

Cheri Bliss

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Please note that the information provided in this handbook is subject to change, and it is essential to stay updated with program announcements, policy revisions, and university guidelines.