

# Biomedical Engineering Graduate Program

# MS Graduate Student Handbook Academic Year 2025-2026

School of Biological and Health Systems Engineering

**Arizona State University** 

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# **Introduction**

Our graduate educational goal is to prepare graduates to work as biomedical engineers for the broad range of opportunities available in industrial, commercial, and academic organizations and to prepare graduates for continued learning experiences either in a formal graduate or professional program or in continuing education. Students will have core knowledge in, engage in independent research in, and disseminate knowledge in one or more of the following areas: biomaterials, biosensors, biomarkers and biomimetic materials; biomedical imaging; molecular, cellular and tissue engineering; neural and rehabilitation engineering; and/or synthetic and systems biology. Our alumni will be enabled to advance in their fields in academia or industry with their chosen careers as researchers, entrepreneurs, and engineers. We aim to provide exceptional graduate training in Biomedical Engineering that benefits our students, our community, our stakeholders, and society in line with the university's Charter.

We extend a warm welcome to all to the School of Biological and Health Systems Engineering (SBHSE) at Arizona State University!

# **ASU Charter**

ASU is a comprehensive public research university, measured not by whom it excludes, but by whom it includes and how they succeed; advancing research and discovery of public value; and assuming fundamental responsibility for the economic, social, cultural and overall health of the communities it serves.

# **Acknowledgement of Inclusion**

The School of Biological and Health Systems Engineering (SBHSE) in the Ira A. Fulton Schools of Engineering (FSE) recognizes the intrinsic value of inclusion within academia. SBHSE commits to breaking down traditional structures to build an inclusive culture and community for our students, faculty, and staff to thrive within local and global biomedical engineering communities. SBHSE also recognizes diversity in many dimensions as a strength in innovation and developing the next generation of engineers. ASU's charter is an integral part of our standing as an institution and demonstrated by how we uphold, value, and cherish the diversity of our students and faculty members.

# **Academic Integrity**

At Arizona State University academic honesty is expected of all students in all examinations, papers, academic transactions and records. The possible sanctions include, but are not limited to: appropriate grade penalties, loss of registration privileges, disqualification and dismissal. ASU strictly adheres to the academic integrity policy. This policy sets forth the ASU Student Academic Integrity Policy and appeal procedures. The policy can be found on the <a href="University Provost">University</a> Provost website. Additional information and resources can be found on the Ira A. Fulton Schools

of Engineering website regarding <u>Academic Standards</u> and <u>Academic Integrity</u>. Students and faculty are also expected to adhere to the <u>Arizona Board of Regents Code of Conduct</u>.

# Discrimination, Harassment, and Retaliation

ASU prohibits all forms of discrimination, harassment, and retaliation. To view ASU's policy please see <a href="https://www.asu.edu/aad/manuals/acd/acd401.html">https://www.asu.edu/aad/manuals/acd/acd401.html</a>.

Title IX protects individuals from discrimination based on sex in any educational program or activity operated by recipients of federal financial assistance. As required by Title IX, ASU does not discriminate on the basis of sex in the education programs or activities that we operate, including in admission and employment. Inquiries concerning the application of Title IX may be referred to the Title IX Coordinator or to the U.S. Department of Education, Assistant Secretary, or both. Contact titleixcoordinator@asu.edu or 480-965- 0696 for more information. Office located at 1120 S. Cady Mall, INTDSB 284. For information on making a report please go to <a href="https://www.asu.edu/reportit/">www.asu.edu/reportit/</a>.

### Introduction

### **Objective of the Handbook**

This handbook will provide you with the basic information needed throughout the course of study and assist you in navigating through the MS program in SBHSE. The Handbook is the main source of information regarding policies, regulations, and academic requirements necessary to complete the MS degree. We acknowledge that this handbook is not meant to be an exhaustive collection of all policies at ASU. Instead, students and faculty are encouraged to review the ASU Graduate Policies and Procedures regarding University policies on graduate programs. The relevant links are provided throughout this Handbook. You are responsible for being informed about all academic requirements of the graduate program. We also acknowledge that additional questions and concerns may arise that are not formally addressed in these sources. Our Advising staff, Graduate Program Chair, and Graduate Program Committee will be valuable assets as you progress through your degree. You are urged to maintain close contact with the Graduate Academic Advisor and to seek additional information as the need arises.

### **Program Contacts**

**Graduate Program Chair**: Sydney Schaefer, PhD (Email: sydney<dot>schaefer<at>asu<dot>edu)

Assistant Director, Academic Services: Elizabeth Tripodi, M.Ed.

(Email: etripodi<at>asu<dot>edu)

Graduate Academic Success Advising Coordinator: Roberto Reynoso, M.B.A.

(Email: rjreynos<at>asu<dot>edu)

Program faculty: <a href="https://sbhse.engineering.asu.edu/faculty/">https://sbhse.engineering.asu.edu/faculty/</a>

### **General Graduate Student Expectations**

It is the responsibility of the graduate student to know and to observe all procedures and requirements as defined in this handbook, the Graduate Catalog, and the Schedule of Classes. A copy of the Schedule of Classes is available on-line at <a href="https://webapp4.asu.edu/catalog/">https://webapp4.asu.edu/catalog/</a>. Graduate students are expected to be familiar with the Code of Conduct, which is available in the Office of Student Affairs. Violations of the Code of Conduct or incidents of dishonesty such as cheating in examinations, cheating in laboratory work or plagiarism is subject to university discipline whether committed by individuals or groups. **Graduate students are expected to demonstrate satisfactory progress** (see the definition of satisfactory progress in the Requirements for the Master of Science Degree section below). They are also expected to maintain the highest degree of academic integrity, enthusiasm for their academic studies, and a high degree of professionalism. For more information about academic integrity, visit: <a href="https://engineering.asu.edu/academic-integrity-for-students/">https://engineering.asu.edu/academic-integrity-for-students/</a>

### **General Graduate Faculty Responsibilities**

Faculty members serving as members of the SBHSE Graduate Faculty, especially those who are endorsed to the level of chair or co-chair, accept the responsibility of mentoring graduate students, and are expected to know and to observe the procedures and requirements defined in this handbook and the other publications listed above.

### General Communication Expectations for Culminating Experience

It is the expectation of the student and faculty/industry mentor(s) and all committee members (for thesis students), especially the primary mentor/Chair/Co-Chairs,to regularly engage in transparent communication about expectations, progress, and desired outcomes. For Applied Project students, it is expected that the student, faculty/industry mentor, and Applied Project instructor communicate regularly to coordinate expectations for deliverables associated with the applied project. For Thesis students, it is expected that the Chair/Co-Chairs coordinate the

efforts and expectations of the committee at large to ensure the MS student under the committee's mentorship can operate within clearly defined parameters and expectations as the student works to complete or advance their thesis project.

### **General Safety**

SBHSE is committed to providing a safe work environment for faculty, staff and students. Students are required to follow safe procedures in accomplishing their research and teaching assignments, in line with the <a href="Dean's Office of Infrastructure and Safety">Dean's Office of Infrastructure and Safety</a> for the Ira A. Fulton Schools of Engineering. This Office is a department devoted to providing safety and services for all of the engineering schools, faculty, researchers, staff, and students. The primary goal of the FSE DO Infrastructure and Safety Team is to provide a central hub of resources and information to assist faculty, researchers, staff, and students in their day-to-day and long-term activities while ensuring a safe work and research environment. The Team is coordinated by the Dean's Office and is comprised of representatives in each of the engineering schools. Students are required to take a series of safety or safety refresher courses EVERY year.

### **College and University Procedures and Policies**

All policies and procedures outlined in this handbook are in accordance with policy set by the <u>Graduate College</u> and Office of the University Provost.

# **Goal and Outcomes of the Master of Science Program**

The School of Biological and Health Systems Engineering (SBHSE) provides a comprehensive education to a multicultural student body covering many areas in biomedical engineering, preparing large numbers of engineers who will engage in industry, health-related and biomedical research, education, and entrepreneurship, thus addressing a wide selection of societal needs. These efforts support the university's mission of advancing research and discovery of public value, and assuming fundamental responsibility for the economic, social, cultural and overall health of the communities it serves.

The master's degree program (Master of Science) combines coursework on advanced topics in the student's field of specialization with an introduction to research or applied project. The student may: (i) be taught the scientific method by intensely studying a specific project (ii) and/or extensively apply technical knowledge to solve a biomedical problem. Generally, the master student's program of study advances the knowledge obtained in their broader undergraduate program of study. The professional master's program non-thesis option is designed to bridge the gap between knowledge of the engineering sciences and creative engineering practice. At the same time, it increases the depth and breadth of knowledge in selected areas of emphasis. All master's degree candidates are admitted to the program in the non-thesis option by default (and can petition to switch to the thesis option once a faculty chair and topic have been identified), and are expected to identify an appropriate applied project or thesis in consultation with a faculty mentor. Students are encouraged to interact with faculty members early on in their degree to help identify possible projects that can be feasibly completed in the appropriate time frame. The

student and faculty member can also identify research projects that better fit with the thesis option program. Typically, students who pursue careers in industry upon completion of their MS degree choose the Applied Project option, which provides opportunities for students to demonstrate their ability to apply knowledge gained over their coursework and hone additional skills that may be beneficial to their careers and/or job-seeking activities. Students who pursue additional graduate school opportunities (i.e., applying to PhD programs) often choose the Thesis option to demonstrate their ability to execute, complete, and defend a research project.

Thus, by the end of their MS degree, regardless of which option they choose, students will be able to demonstrate an ability to use biomedical engineering concepts and skills to address a biomedical problem through a culminating experience. Students must use the knowledge that they have learned in the program to demonstrate critical thinking skills and apply domain-specific competencies. Students will be able to demonstrate mastery of a faculty-approved topic by successfully passing their culminating experience in accordance with degree standards.

## Why pursue a Master's degree in Biomedical Engineering at ASU?

100% were satisfied or very satisfied with the academic caliber of faculty.

94% were satisfied or very satisfied with the quality of courses

88% were satisfied or very satisfied with professional development.

91% would probably or definitely choose ASU again.

94% agree or strongly agree that they felt like they belonged at ASU.

\*based on responses from the 2022-23 ASU Graduate and Law Student Report Card

# **General Admission Requirements**

### **Regular Admission**

To be eligible for regular admission, the student must have a Bachelor's degree in Bioengineering, Biomedical Engineering, or equivalent coursework. Prospective students normally will have a minimum grade point average (GPA) of 3.0 out of a total possible 4.0 or equivalent. Foreign students must also submit test scores from the Test of English as a Foreign Language Exam (TOEFL), International English Language Testing System (IELTS), or Duolingo. TOEFL scores should be close to 100 for admission.

Submission of GRE scores is optional for master's program applications. Applications are evaluated using a holistic review process that considers the multiple, intersecting factors – academic, nonacademic, and contextual – that uniquely define each applicant. This process can include, but does not require, consideration of GRE scores. Thus, an absence of GRE scores will not be viewed negatively during the application review process. Applicants who chose to

have their scores considered as a supplement to their application should submit them to ASU's Graduate Admission Services and indicate in their personal statement how the scores supplement their application.

Regarding letters of recommendation, applicants are encouraged to seek doctoral-level references from their own academic and/or professional institutions who can speak to their academic potential.

### **Regular Admission with Unmet Prerequisites**

Regular admission may also be given to students with a Bachelor of Science degree in another discipline. In this case, however, the student may be required to take a number of courses to fulfill the needed pre-requisite coursework. These courses may be in addition to the graduate program of study. The letter of admission identifies that pre-requisite coursework needs to be completed and will often specify which need to be completed. Students will be required to complete any unmet prerequisites within the first year of their admission to the Biomedical Engineering master's degree program.

Note that most of the below courses will need to be completed at the undergraduate level (max 300-level) and therefore cannot fulfill degree requirements. In some cases, graduate level courses can be assigned as pre-requisites, which would allow the student to count those courses in their master's program plan of study. The program utilizes every opportunity to assign graduate level pre-requisites to be inclusive of a variety of backgrounds and support timely degree attainment.

### **Pre-requisite Coursework**

### **Mathematics and Basic Sciences**

Mathematics: Calculus through Differential Equations (e.g. MAT 270, 271, 272 AND 275; typically at least 12 semester hours credit total).

Physics: One year of calculus-based physics including laboratory (typically 8 semester hours).

Biology: Minimum of one "General Biology" course (typically 4 semester hours).

Physiology: Minimum of one "Physiology" course (typically 4 semester hours).

Chemistry: Minimum of one Chemistry course including laboratory (typically 4 semester hours).

### **General Engineering Fundamentals**

Students without the equivalent courses must complete additional course work in **four** of the following six topics:

Thermodynamics
Fluid Mechanics
Mechanics of Rigid Bodies
Electrical Networks
Signals and Systems
Biomaterials/Materials Science and Engineering

### **Provisional Admission**

Applicants with scholastic records below the standards for regular admission may be admitted provisionally in certain special cases at the discretion of the departmental graduate committee with the approval of the graduate committee and the department chair. A student admitted with provisional status must follow the provisional terms as outlined in the admission letter, typically earning a 3.25 out of a 4.0 in the first semester in nine (9) graduate level credits.

Full-time provisional students must take a minimum of nine (9) hours during their first semester in residence. Part-time provisional students may take fewer than nine (9) hours of coursework during their first semester. Failure to do this will result in suspension from the program. Students who meet this requirement are reclassified as a regular graduate student and the regulations governing academic performance for regular students apply. It is the student's responsibility to see that their status is changed from provisional to regular after having successfully completed these requirements. Please contact your Graduate Academic Advisor when you have fulfilled the provisional requirements.

### **Non-Degree Seeking Admission Pathway**

It is not uncommon for prospective students interested in our MS program to have unmet prerequisites, especially if the student comes from another discipline. In some cases, students may wish to enroll at ASU as a non-degree seeking graduate student to work on deficiencies or get started on the program before being officially admitted. This option gives students the ability to take ASU classes at either the undergraduate or graduate level (may need specific department approval) to complete prerequisites, demonstrate aptitude for the degree program, and begin networking with faculty. Up to 12 credits of graduate-level coursework taken as a non-degree seeking student can be transferred to the MS program, provided the credits meet program requirements. Please note that the non-degree seeking option is not necessarily available to all students. For example, international students attending a university on an F-1 or J-1 visa status are typically not able to enroll as a non-degree student due to visa restrictions that mandate enrollment in a degree granting program. It is the student's responsibility to review and be aware of all requirements associated with the non-degree seeking pathway. There is no specific advising support associated with the non-degree enrollment option, but the SBHSE Advising Office is happy to offer advice and guidance on how course choices align with MS degree requirements and provide information on admission requirements.

### **Tuition and Fees**

Tuition is set by ASU and the Arizona Board of Regents each year. View the general <u>Tuition and Fees Schedule</u>, or calculate a more specific estimate of charges using the <u>ASU Tuition Estimator</u>. Information on residency requirements can be found at <u>Residency for Tuition Purposes</u>.

All amounts shown in the Tuition and Fees Schedules or in other University publications or web pages represent <u>tuition and fees</u> as currently approved. However, Arizona State University reserves the right to increase or modify tuition and fees without prior notice, upon approval by the Arizona Board of Regents or as otherwise consistent with Board policy and to make such modifications applicable to students enrolled at ASU at that time as well as to incoming students. In addition, all tuition amounts and fees are subject to change at any time for correction of errors. Finally, please note that fee amounts billed for any period may be adjusted at a future date.

For details about current and past Graduate Program Fees, click here.

# **Requirements for the Master of Science Degree**

The Graduate College sets certain general requirements for the MS degree. In addition to these general requirements, the department sets specific program requirements, which exceed those imposed by the Graduate College. All BME MS students will be admitted into the program as a non-thesis applied project student. Upon entry into the program, you will work with your faculty advisor to identify if you should move into the thesis track. Typically this decision is based on a combination of your research interests, career goals, and other factors in discussion with your faculty advisor. The student must find a faculty mentor who agrees to provide the material and intellectual support for the student to complete the proposed thesis project. The request form to change to thesis can be found <a href="here">here</a>. Both the thesis and non-thesis options require 30 credit hours of coursework. This section outlines both the general requirements specified by the Graduate College and the additional requirements specified by the Biomedical Engineering Program.

# **Grading**

Grades are assigned in graduate courses in compliance with the current definitions as set by the university. For more information, please see: <a href="https://students.asu.edu/grades">https://students.asu.edu/grades</a>

A grade of "P" (Pass) in a 400 or higher level course may not appear on a program of study. Grades of "D" or "E" cannot be used to meet the requirements for a degree although they are used to compute the grade point averages. A student receiving a grade of "D" or "E" must repeat the course in a regularly scheduled (not an independent study) class if it is to be included in the program of study. However, both the "D" or "E" and the new grade are used to compute

the grade point averages. Grades on transfer work will not be used in computing grade point averages.

### **Repeating ASU Courses**

Graduate students (degree or non-degree) may retake any course at any level at ASU, but all grades remain on the student transcript as well as in GPA calculations.

### **Good Standing and Satisfactory Academic Progress**

A student who has been admitted to a graduate degree program in Engineering, with either regular or provisional admission status, must maintain a 3.0 or higher grade point average (GPA):

- 1. in all work taken for graduate credit (courses numbered 500 or higher),
- 2. in the coursework in the student's approved program of study, and
- 3. in all coursework taken at ASU (overall GPA) post baccalaureate.

Maintaining these GPA categories at 3.0 or above is considered satisfactory academic progress in the MS program.

A student will be placed on <u>academic probation</u> if one or more of the student's GPAs listed above falls below 3.0. Students will be notified by email when placed on academic probation.

A student will earn academic good standing by obtaining a 3.0 or better in the GPAs listed above by the time the next nine hours are completed. Coursework such as research and dissertation registration that are for Z or Y grade cannot be included in these nine hours.

A student may be recommended for dismissal from a graduate program if the student fails to increase all of the GPAs listed above to 3.0 or better by the time he/she completes at least nine credit hours as defined in the above paragraph.

A student may appeal actions concerning dismissal by petitioning the departmental unit in which they are enrolled.

### **Misconduct**

The highest standards of academic integrity are expected of all students. The failure of any student to meet these standards may result in suspension or expulsion from the university and/or other sanctions as specified in the academic integrity policies of the individual colleges. Violations of academic integrity include, but are not limited to, cheating, fabrication, tampering, plagiarism, falsification or misrepresentation of data or facilitating such activities. The <u>university</u> and <u>Fulton Schools of Engineering</u> academic integrity policies are available online.

### **Graduate Credit Courses**

Courses at the 500, 600 and 700 levels are graduate credit courses. Courses at the 400 level satisfy graduate degree requirements when appearing on an approved plan of study. There is a limit of 6 credits of 400 level courses that can be included on the plan of study.

### **Transfer Credit**

Transfer of credit is the acceptance of credit from another institution for inclusion in a program of study leading to a degree awarded by ASU. Transfer of credit can also apply to credits taken at ASU as a non-degree student.

Transfer credits may not be applied toward the minimum degree requirements for an ASU degree if they have been counted toward the minimum requirements for a previously-awarded degree.

The number of hours transferred from other institutions may not exceed 20 percent of the total minimum semester hours required for a master's degree unless stated otherwise for a specific degree program. Up to 12 semester hours of credit taken at another institution and not counted toward a previous degree may be counted toward the minimum semester hours required for a specific ASU graduate degree program. In all cases, the inclusion of transfer courses on a program of study is subject to approval by the academic unit and the Graduate College.

Certain types of graduate credits cannot be transferred to ASU, including the following:

- credits awarded by postsecondary institutions in the United States that lack candidate status or accreditation by a regional accrediting association;
- 2. credits awarded by postsecondary institutions for life experience;
- 3. credits awarded by postsecondary institutions for courses taken at noncollegiate institutions (e.g., government agencies, corporations, and industrial firms);
- credits awarded by postsecondary institutions for noncredit courses, workshops, and seminars offered by other postsecondary institutions as part of continuing education programs;
- 5. credits given for extension courses; and
- 6. credits completed before the posting of a bachelor's degree.
- Acceptable academic credits earned at other institutions that are based on a unit of credit different from the ones prescribed by the Arizona Board of Regents are subject to conversion before being transferred to ASU.

Transfer credits must be acceptable toward graduate degrees at the institution where the courses were completed. Only resident graduate courses (at the institution where the courses were completed) with an "A" (4.00) or "B" (3.00) grade may be transferred. A course with the grade of pass, credit, or satisfactory may not be transferred. Additionally, transfer credits must be within the six-year time limit to be used on a master's plan of study.

Official transcripts of any transfer credit to be used on a plan of study must be sent directly to the Graduate Admissions Office from the Office of the Registrar at the institution where the credit was earned.

### **Concurrent Degree**

Concurrent degrees may be available, enabling qualified graduate students to pursue two graduate degrees. Students **must** petition both departments and receive approval. NOTE: One-sixth or twenty percent (1/6) of the total combined hours may be used on the two degrees. (i.e. two 30 hour degrees = 60 hours hence 10 hours may be used in both degrees.)

# **Foreign Language Requirement**

None.

### **Maximum Time Limit**

All work offered toward the master's degree must be completed within 6 consecutive years. The six years begin at the initial enrollment into the masters program. Any exception must be approved by the Graduate Program Committee and the dean of the Graduate College.

### **Course Load**

Course load is not to exceed 13 semester hours (without approval) of credit during each of the two semesters, 6 semester hours during each 6-week summer session or 9 semester hours of credit during the 8-week summer session or a petition must be submitted to SBHSE.

Although the majority of MS students are self-funded, there may be opportunities for support on a case-by-case basis as graduate research assistants (GRA) and/or teaching associates (TA). Please refer to Financial Support for more detail on where to find information about course loads associated with GRA or TA positions in SBHSE.

All graduate students doing research, working on thesis, or using university facilities or faculty time, must be registered for a minimum of one hour of credit that appears on the program of study or is an appropriate graduate level course. For additional information, visit the Graduate College handbook for GRA/TA's at <a href="https://graduate.asu.edu/ta-ra">https://graduate.asu.edu/ta-ra</a>

The student is expected to enroll continuously, excluding summer sessions, until all requirements for the degree have been fulfilled.

Details about course requirements are provided below under Specific Program Requirements.

In addition to the general requirements listed above, the department has established additional specific requirements for the Biomedical Engineering MS degree that relate to the culminating experience that the student chooses to complete: Thesis option or Applied Project option.

# **Thesis Option**

The Master of Science degree in Biomedical Engineering provides an in-depth study of topics through advanced coursework and an introduction to research. You must have approval of a faculty member willing to work with you before choosing this option.

### **Course Requirements**

The student's program of study will consist of 30 credit hours as follows:

Required Core (3 total credit hours) \*\*

BME 510: Biomechanics/Human Physical Capability (3)

Advanced Biomedical Fundamentals (12 total credit hours)

Choose from the following options:

- BME 598: Advanced Modeling of Transport Phenomena for BME
- BME 598: Signals and Systems Mastery: Practical Applications in BME
- BME 598: Biomolecular and Genetic Engineering
- BME 598: Applied Programming: Data Modeling and Analysis
- BME 598: Biomaterials Design and Application

**General Electives (6 total credit hours).** The student must select 6 semester hours of electives from additional BME prefix graduate level courses.

**Thesis (6 total credit hours).** The student must register for 6 hours of thesis, BME 599. If students wish to get a head start on their thesis project or acquire more research knowledge/acumen prior to embarking on the thesis culminating experience, students also have the option of registering in BME 592, research. A maximum of three credits of research can apply to the plan of study in the General Elective category.

**Seminar (3 total credit hours).** All students must have a minimum of 3 semester hours of credit in seminar (BME 591) included in the program of study. BME 591 is offered for 1 credit each term and multiple instances of the course cannot be enrolled in concurrently.

Candidates whose undergraduate degree was in a field other than Biomedical Engineering may be required to complete more courses. (see **Non-degree Seeking Admission Pathway**).

<sup>\*\*</sup>The required core course (3 credit hours) can be replaced by a different course from the Advanced Biomedical Fundamentals category.

### **Thesis Chair and Supervisory Committee**

The thesis option requires a faculty member to chair this culminating experience, as well as a supervisory committee. The faculty chair must be a tenured or tenure track faculty member, or a graduate faculty of Biomedical Engineering. In instances where the student selects a chair who is not a member of the graduate faculty with endorsement to chair, a co-chair with endorsement to chair must be appointed instead. As described above in the Goal and Outcomes of the Master of Science Program, students are encouraged to interact with faculty members early on in their degree, ideally in their first or second semester taking graduate courses, to help identify possible thesis opportunities that align with their research interests that can be feasibly completed in the appropriate timeframe for the thesis. It is the student's responsibility to initiate communication with potential faculty advisors and to be actively engaged in the process leading up to the thesis. Again, students are encouraged to begin the selection process early in (or even prior to) their MS program to ensure a thoughtful and timely completion. To learn more about faculty's research interests, students can visit the SBHSE website. Student-initiated discussions with faculty can occur a number of ways, such as informally and professionally approaching faculty before/after class, sending an email (with 1-2 follow-up emails if necessary), and/or requesting to attend a lab meeting to learn more about their research.

Once a thesis topic is selected, the supervisory committee will be established. The committee should consist of at least three (3) members (a chair plus other faculty or experts in the student's field of research) with 50% of the committee being tenure/tenure track SBHSE faculty. In some cases, the faculty advisor is outside of SBHSE and has only been endorsed by the Graduate Committee to the level of co-chair; in these instances, a tenure/tenure track SBHSE faculty must agree to serve as chair, and the co-chair will be present and listed. The members of the supervisory committee should have the necessary knowledge and skills to guide and evaluate the quality of the thesis. The necessary form for forming one's thesis supervisory committee can be found <a href="here">here</a>. This committee is responsible for the guidance and the direction of the student's graduate culminating event. The committee is also responsible for approving the student's research proposal, the title of the master's thesis and for conducting the final defense of the master's thesis. The supervisory committee is appointed by the Dean of the Graduate College upon the recommendation of the head of the Department of Biomedical Engineering.

In some cases, individuals who are not members of the graduate faculty may be appointed to a supervisory committee as a main or extra member. Such appointments must be consistent with quality graduate training and must be strongly recommended by the chair of the graduate program. A curriculum vitae (CV) for this individual must be submitted to the Graduate College with a recommendation from the chair of the Biomedical Engineering program. To do so, the CV should be sent to the Graduate Academic Advisor, who will process the request to the Graduate College.

The supervisory committee chair is generally a tenured or tenure track faculty member, or a graduate faculty of Biomedical Engineering. In instances where the student selects a chair of the supervisory committee who is not a member of the graduate faculty with endorsement to chair, a co-chair with endorsement to chair must be appointed instead.

### **Interactive Plan of Study**

The student is required to file an interactive plan of study (iPOS) with SBHSE and the Graduate College after completing 50% of their degree plan credit hours, typically during the second semester. The iPOS will be available on MyASU. Changes in the planned program may be made with the approval of the student's dissertation committee and the approval of the Program Chair(s) or Director of the School of Biological and Health Systems Engineering. A step-by-step guide from the Graduate College for creating your iPOS is available <a href="here">here</a>.

### Sample Plan of Study

The sample plan of study included in this handbook is intended for **informational purposes only**. It serves as a general guide to help students understand the typical course sequencing and timeline within the program. Each student's academic journey is unique, and individual plans may vary based on course availability, prior coursework, research interests, and academic progress. Students should consult regularly with academic advising to develop and maintain an individualized plan of study that aligns with their goals, circumstances, and curricular requirements.

Term	Requirement	Credits
Year 1, Fall (semester 1)	BME 510	3
	Advanced BME course	3
	Advanced BME course	3
	BME 591	1
Milestone:	Submit initial iPOS with courses	By end of first semester
Year 1, Spring (semester 2)	Advanced BME course	3
	Advanced BME course	3
	BME 599	3
	BME 591	1
Year 2, Fall (semester 3)	General elective	3
	General elective	3
	BME 591	1

Term	Requirement	Credits
	BME 599	3
Milestone:	Defend thesis	By Graduate College deadline

The MS in Biomedical Engineering is typically completed in 18-24 months. Part-time attendance is an option, if desired by the student. As long as the student maintains continuous enrollment (at least 1 credit per Fall and Spring terms) and can complete the degree within the maximum allowable time frame (6 years), the student can take coursework at their own pace within these parameters.

As noted in this example plan, the Thesis requirement (6 credits) is split across two semesters for 3 credits each. While all 6 credits of the Thesis can technically be taken in one semester, it is highly advisable to spread those credits out over the course of two semesters, as most research projects at the level required to be considered a Master's Thesis require time to complete. SBHSE faculty also prefer students to be in the lab for more than one semester as student contributions can be much more impactful the longer they are in the lab.

### **Selection of a Thesis Research Topic**

The selection of a suitable research topic for the thesis is of paramount importance to a successful graduate program. Students interested in the thesis option are urged to select a topic and a research advisor early in their program of study, no later than the middle of their second semester. To accomplish this, the student should meet with faculty members and select an advisor and thesis topic that matches his/her/their goals and interests. SBHSE does not guarantee that a student will be selected to work on a specific project offered by a given faculty member. In all cases, the student must obtain the agreement of a faculty member to serve as the research advisor and chair of the supervisory committee. The student is also responsible for enlisting faculty to serve as members on the student's supervisory committee.

The research advisor (supervisory committee chair) works closely with the student to help plan his/her/their overall program and to coordinate coursework and research activities. Generally, the advisor helps the student select other members of his/her supervisory committee. Frequent contact between the student and the advisor is necessary to accurately define the research project. This helps to ensure that the student's research thesis topic is acceptable. The thesis topic is initiated by either the student or the faculty research advisor.

Often, well-planned experimental designs are unsuccessful. This often requires the application of different methods and procedures after the project is well underway. For these reasons, students are encouraged to initiate their thesis research even before they are able to devote full-time to the project. This helps to eliminate unnecessary delays in graduation. Original work

is desirable in pursuing the Master of Science degree. Often times, one or more research publications or presentations result from the research project.

### **Written Thesis**

To satisfy the research requirement for the Master of Science degree with Thesis, the student is expected to present a written thesis, which is then defended in an oral examination. Students are encouraged to send a final version of their written thesis to their supervisory committee 10-14 days in advance of their oral defense to allow committee members to review the document. A thesis prospectus is not required, though some faculty advisors may encourage students to complete a written and/or oral proposal of their project to their supervisory committee well in advance of their thesis defense. The final thesis should be of high quality and should contribute something novel to the scientific field related to the student's area of research.

For formatting, please follow the <u>Graduate College requirements</u>. The Graduate College must review and approve the formatting of the final copy of the master's thesis. The final approved hardcopy will be bound and placed in the university library. Students should review the <u>Graduate College website</u> for details and deadlines.

Each student writing a thesis must register for and complete a minimum of 3 semester hours of thesis and 3 semester hours of research. These combined 6 semester hours of research and thesis are directed to researching a biomedical problem. Credit taken to fulfill the thesis enrollment requirement must appear on the program of study (iPOS). Students must be enrolled for at least 1 hour of credit that appears on the program of study or 1 hour of appropriate graduate level credit during the semester or summer session in which they orally defend the thesis (see below for details regarding the oral defense).

### **Oral Defense of the Thesis**

The final oral examination in defense of the thesis is mandatory and must be held on the campus of Arizona State University. Once a date and time is selected in consultation with the supervisory committee members, the student requests a room for the selected date and time using the <a href="mailto:Thesis Defense Schedule Form">Thesis Defense Schedule Form</a> to schedule the thesis and get approval by the supervisory committee and the dean of the Graduate College to schedule the oral defense. (Students are encouraged to email <a href="mailto:shbse@asu.edu">sbhse@asu.edu</a> for further assistance if they do not get a response within 48 hours of completing the form, excluding weekends).

Please review the following website for additional deadlines and thesis requirements: <a href="http://graduate.asu.edu/">http://graduate.asu.edu/</a>.

The oral defense of the student's thesis is a formal occasion and the student should treat it as such by dressing appropriately and scheduling the meeting for an appropriate seminar room. It is the responsibility of the student to arrange for all audiovisual aids and to request a room using forms available on the SBHSE website.

At the beginning of the examination, the student's research advisor introduces the student and the topic of their research to the general audience. The student is then expected to present a brief seminar outlining the results of their research. The presentation should be limited to 30 minutes. Following the presentation by the student, the general audience is invited to ask questions. Following this general question-and-answer session, the general audience is excused from the room and the student's committee continues to question the student in depth regarding his/her/their research findings. The student should be prepared to defend the research methodology used in the study and the results obtained.

The oral defense of the thesis is limited to a period of three hours (although rarely exceeds 60-90 minutes). If necessary, however, the proceedings may be adjourned and rescheduled for a mutually convenient date within one week. Only one adjournment is permissible. When the committee completes its questioning, the student is asked to leave the room and the committee discusses whether or not the student successfully defended their research and whether or not the completed thesis is acceptable.

### Level of Pass or Fail

Pass: Only minor format corrections need to be made (e.g., typographical errors, and pagination). At the conclusion of the defense, 1) the committee chair should indicate "pass" and briefly describe needed revisions, and 2) all committee members should report the examination results at the bottom of form and sign the thesis approval page.

Pass with minor revisions: Extensive format/editorial corrections and/or minor substantive changes need to be made (e.g., rewrite some text, correct grammatical errors). At the conclusion of the defense, 1) the committee chair should indicate "pass with minor revisions" and briefly describe revisions, and 2) the committee members, not including the chairperson, should report the examination results at the bottom of the form and sign the thesis approval page. 3) After revisions are made, the chairperson should report the exam results at the bottom of the form and sign the thesis approval page.

Pass with major revisions: Extensive substantive changes need to be made (e.g., chapter rewrite). 1) At the conclusion of the defense, the committee chair should indicate "pass with major revisions" and briefly describe revisions. 2) After revisions are made, all committee members should report the examination results at the bottom of the form, and sign the thesis page.

Fail: The basic design and/or overall execution of the study are flawed or the candidate's performance in the oral examination is seriously deficient. At the conclusion of the defense, 1) the committee chairperson should indicate "fail", and 2) all committee members should report the examination results at the bottom of the form. The thesis approval page should not be signed. While this is very rare, if a student fails their thesis defense, per the <a href="Graduate College recommendation">Graduate College recommendation</a>, the student will be dismissed from the program.

The results of the oral defense are conveyed to the student by the chair of the committee. The results are transmitted to the Graduate College on the "Pass/Fail" form via Adobe Sign following the approval of the chair of the student committee.

### **Absent Committee Members at Oral Thesis Defense**

While it is desirable that all members of a student's supervisory committee be physically present with the student at the final oral defense of a thesis or dissertation, there are situations (e.g., faculty travel, faculty emergencies and/or faculty leave) that may necessitate holding a defense with one or more committee member(s) absent. The Graduate College office has established the following policies and procedures for such cases, as described here:

- 1. A minimum of 50% of the student's official committee must be physically present with the student at the defense. If at least 50% of the committee cannot be physically present, the defense must be rescheduled.
- The chair or one co-chair must be physically present at the defense. If this is not possible, the defense must be rescheduled. The student cannot submit a committee change after the defense is scheduled.
- 3. A committee co-chair or member who cannot be physically present at the defense may participate in the defense in one of three ways. These options are listed in the order of preference:
  - a. The absent committee member videoconferences into the defense location.\*
  - b. The absent committee member teleconferences into the defense location.\*
  - c. The absent committee member provides a substitute to be physically present (approved by the committee chair, the head of the academic unit & the Graduate College) for the defense only. The substitute must be someone who is approved to serve on graduate supervisory committees for that program. The absent committee member should provide the substitute questions, in writing, to be asked at the defense. The substitute, although respecting the opinions expressed by the regular committee, must be free to use his/her judgment in voting on whether the student passes or fails the defense.

\*Students must provide a copy of their document and any other supporting presentation materials to the substitute committee member at least 5 working days in advance of the defense.

Absent Committee Member Signature Instructions: If a committee member will be absent from the defense, the academic advisor or committee chair/co-chair must notify the Graduate College as quickly as possible and before the defense takes place. In order to assign a substitute, please be prepared to provide the Graduate College with the full name and email address of the faculty member who will serve as the substitute.

<sup>\*</sup>The defense location must have the necessary equipment to accommodate video/teleconference materials.

Please contact the Graduate College office at (480) 965-3521 or send an email to Grad-GPS@asu.edu if you have questions or concerns regarding these procedures.

### **Applying for Graduation**

The student is eligible for graduation when the academic requirements are met, the final oral examination is passed, and the thesis is approved by the committee and accepted by the Chair of the committee and the Dean of the Graduate College.

Application for graduation should be made no later than the date specified in the <u>Graduate</u> <u>College calendar</u>. All fees are payable at this time. The student applies for graduation on their My ASU graduation tab. Steps for applying (as well as the fee schedules) are also provided on the <u>university registrar</u> website.

An <u>additional late fee</u> will be assessed if the student applies after the deadline. If a student does not complete all degree requirements by the date of graduation for which they have applied the graduation may be moved to a future term, thereby requiring enrolling in additional credits. The student should contact the graduation office to make this arrangement.

### **Thesis Option Enrollment**

Students must be enrolled for at least one hour of credit that appears on the iPOS or one hour of appropriate graduate-level credit during the semester or summer session in which they defend a thesis.

**Summer**: During the summer session, enrollment in any one of the summer sessions will fulfill the requirement.

**Break Period.** Students with an oral defense scheduled during a break period must be enrolled in both the proceeding semester and the following semester, including summer term. If the break is between the summer and fall, enrollment during any one of the summer sessions will fulfill the requirement.

# **Applied Project Option**

### Master of Science Degree – Non-thesis (Applied Project) Option

### **Admission Requirements**

The Master of Science degree in Biomedical Engineering provides an in-depth study of topics through advanced coursework and an introduction to research. The non-thesis, Applied Project option will be selected when completing your online Plan of Study (iPOS) after the first semester. All master's students are admitted under this option.

### **Course Requirements**

The student's program of study will consist of 30 credit hours as follows:

### Required Core (3 total credit hours) \*\*

BME 510: Biomechanics/Human Physical Capability (3)

### Advanced Biomedical Fundamentals (12 total credit hours)

Choose from the following options:

- BME 598: Advanced Modeling of Transport Phenomena for BME
- BME 598: Signals and Systems Mastery: Practical Applications in BME
- BME 598: Biomolecular and Genetic Engineering
- BME 598: Applied Programming: Data Modeling and Analysis
- BME 598: Biomaterials Design and Application

**General Electives (9 total credit hours).** The student must select 9 semester hours of electives from additional BME prefix graduate level courses.

**Applied Project (4 total credit hours).** Students admitted to the non-thesis option must also register for 4 semester hours of BME 593 Applied Project. Students are required to complete a device design/process/research project in some aspect of Biomedical Engineering resulting in a written report and a poster or oral presentation.

**Seminar (2 total credit hours).** All students must have a minimum of 2 semester hours of credit in seminar (BME 591) included in the program of study. BME 591 is offered for 1 credit each term and multiple instances of the course cannot be enrolled in concurrently.

### **Selecting and Completing the Applied Project**

Students have three options for completing the Applied Project requirement:

- 1) Be paired with an industry partner to work on a project submitted by the industry partner
- 2) Collaborate with an ASU faculty member to determine an Applied Project
- 3) Utilize an internship experience as an Applied Project

At the end of each academic year, a survey will be distributed for the following academic year for students who plan to complete the applied project requirement in either the upcoming Fall or

<sup>\*\*</sup>The required core course (3 credit hours) can be replaced by a different course from the Advanced Biomedical Fundamentals category.

Spring term. That intake form will have students identify which of the above three options they would like to pursue for their culminating experience.

Students will complete their applied project during the semester in which they are enrolled in BME 593 (4 credit hours). Students may do so at any point during their MS degree, and are not limited to doing so in the last semester of their degree. In BME 593, students will complete milestones throughout the semester to ensure timely progress on their applied projects, which are overseen and monitored by the BME 593 instructor and their Applied Project mentor. A written report of the project is submitted to the student's faculty advisor at the end of the semester, accompanied by a poster presentation to engage the candidate's mentor(s) and/or the general community in a critical analytical discussion of the applied project. The poster defense should be in coordination with the Senior Capstone or BME day poster sessions. In the extraordinary instance where an applied project needs to be presented on an alternate date, justification for the alternative presentation needs to be provided to the SBHSE Advising Office and an alternative date needs to be agreed upon by the student's faculty mentor(s) and BME 593 instructor. Following the poster defense, the student will be evaluated by their mentor(s) using a rubric and given a letter grade for the Applied Project. The student must earn a 'B' or better in BME 593 for the MS degree to be conferred. If a student does not do so, they must enroll in additional continuing registration credit (typically research credits) to continue to work on their project or complete a new one.

### **Option 1: Industry partnership**

Students completing an applied project through an **industry partnership** will go through a matching process taking into consideration the student's areas of interest as identified on the intake form as well as available industry projects. All available industry projects will have been vetted by a team of faculty and staff for initial determination of applicability and discussions of appropriate scope of work.

A student will be matched with an industry partner close to the start of the Fall semester, at which point it is **highly recommended** for the student to contact their partner and engage in dialogue about the project to ensure that each party feels like the partnership and project are the right fit. Once the semester begins, the partnership pairing is finalized and students begin their work on the project. While we do want students reaching out to industry paired partners prior to the semester start, it is <u>not expected</u> that students start work on the project until the official first day of the semester.

### **Option 2: Faculty collaboration**

Students have the option of working one-on-one with a faculty member on a project agreed upon by the student and faculty mentor. This may, but is not required to, involve an independent research project or a research experience. For example, a student may use the laboratory experience to hone additional technical skills under faculty supervision. Students can seek mentorship from non-SBHSE faculty, but in that instance, a co-mentor from among the

tenured/tenure track SBHSE faculty must be appointed, preferably one with knowledge of the student's project area. This is to allow flexibility and breadth of the topics focused on by the applied project, so long as they address a topic relevant to the field of biomedical engineering and allows the student to clearly demonstrate the application of skills or foundational knowledge gained during the MS program. The overall goal is, as indicated by the name, for the project to be an application of the student's knowledge and coursework to a biomedical problem or research question as a culminating experience.

Students interested in pursuing this option for their applied project are encouraged to interact with potential mentors early on in their degree, ideally in their first or second semester taking graduate courses, to help identify possible project opportunities that align with their career interests and that can be feasibly completed in the appropriate timeframe for the Applied Project. It is the student's responsibility to initiate communication with potential mentors and to be actively engaged in the process leading up to the project. Again, students are encouraged to begin the selection process early in (or even prior to) their MS program to ensure a thoughtful and timely completion. To learn more about possible mentors, students can visit the <a href="https://sbhse.engineering.asu.edu/faculty/">https://sbhse.engineering.asu.edu/faculty/</a> or other relevant departmental websites at ASU. Student-initiated discussions with potential mentors can occur a number of ways, such as informally and professionally approaching faculty before/after class, sending an email (with 1-2 follow-up emails if necessary), and/or requesting to attend a lab meeting to learn more about their research.

Once a student has selected their project mentor (and co-mentor, if applicable) for their Applied Project, the student will need to complete the intake form for the appropriate academic year. This is to allow the student to have ample time to enroll in BME 593 for four credits for the semester in which they end up completing their Applied Project. The iPOS will reflect the program chair as the faculty committee chair. No supervisory committee is required for the Applied Project.

### **Option 3: Internship experience**

Students have the option of engaging in real-world experience and applying that back to their plan of study as an Applied Project. Students are responsible for making connections and securing their own placement with an internship. Once an internship is secured, students will need to complete the Applied Project intake form to request approval for their internship to count as an applied project. Because it's possible for a request to be denied, it is **highly encouraged** for students to have a contingency plan and have made initial connections with faculty or industry partners for an alternative applied project experience.

If an internship experience is approved as an applied project, students will still register in the 4-credit BME 593 class and need to complete all associated deliverables of that class. Students are <u>not</u> eligible to receive credit for both BME 584 (the graduate level internship course) and BME 593 in the same semester. If a student has an internship that spans more than one semester, they could potentially enroll in BME 584 for the first term and then continue their work into the Applied Project course in the second term. One semester (maximum 3 credits) of BME 584 can apply to the general elective category of the MS curriculum.

Please note that the number of credits a course is worth corresponds to the contact hours needed to earn those credits. Per the Arizona Board of Regents' definition, one credit hour is equivalent to 45 hours of work. A 4-credit class would require a minimum of 180 contact hours at the internship, which equals about 12 hours a week over the course of a 15-week semester.

### **Interactive Plan of Study**

The student is required to file an interactive plan of study (iPOS) with SBHSE and the Graduate College no later than after 50% completion of their degree plan credit hours. It is highly recommended to file the iPOS after the first semester. The iPOS will be available on MyASU. Changes in the planned program may be made with the approval. A step-by-step guide from the Graduate College for creating your iPOS is available <a href="https://example.com/here-example

### Sample Plan of Study

The sample plan of study included in this handbook is intended for **informational purposes only**. It serves as a general guide to help students understand the typical course sequencing and timeline within the program. Each student's academic journey is unique, and individual plans may vary based on course availability, prior coursework, research interests, and academic progress. Students should consult regularly with academic advising to develop and maintain an individualized plan of study that aligns with their goals, circumstances, and curricular requirements.

Term	Requirement	Credits
Year 1, Fall (semester 1)	BME 510	3
	Advanced BME course	3
	Advanced BME course	3
	BME 591	1
Milestone:	Submit initial iPOS with courses	By end of first semester
Year 1, Spring (semester 2)	Advanced BME course	3
	Advanced BME course	3
	General elective	3
	BME 591	1
Year 2, Fall (semester 3)	General elective	3
	General elective	3

Term	Requirement	Credits
	BME 593	4
Milestone:	Present poster @ Symposium	Last day of classes for the term

The MS in Biomedical Engineering is typically completed in 18-24 months. Part-time attendance is an option, if desired by the student. As long as the student maintains continuous enrollment (at least 1 credit per Fall and Spring terms) and can complete the degree within the maximum allowable time frame (6 years), the student can take coursework at their own pace within these parameters.

# **Applying for Graduation**

The student is eligible for graduation when all coursework is successfully completed and a final program of study is approved and filed with the Graduation Office; the Graduate College scholarship requirements are met; and the applied project is approved by the applied project chair and passed with a B grade or better and accepted by the head of the School of Biological and Health Systems Engineering and the Dean of the Graduate College.

Application for graduation should be made no later than the date specified in the <u>Graduate</u> <u>College calendar</u>. All fees are payable at this time. The student applies for graduation on their My ASU graduation tab. Steps for applying (as well as the fee schedules) are also provided on the <u>university registrar</u> website.

An <u>additional late fee</u> will be assessed if the student applies after the deadline. If a student does not complete all degree requirements by the date of graduation for which they have applied the graduation may be moved to a future term, thereby requiring enrolling in additional credits. The student should contact the graduation office to make this arrangement.

# **Admission to the PhD Program**

If the student wishes to enter the PhD program after completing the requirements for the master's degree, the application procedure will be the same as if the student were applying for the PhD degree directly out of a BSE. The Graduate College will allow a "blanket transfer" of 30 credit hours toward the PhD from an earned MS degree.

# Other Enrollment Information

International Students in the Final Semester

F1/J1 visa students who have less than 9 credits remaining in their final semester should submit a reduced course load e-form available at https://issc.asu.edu/f-1j-1-students/reduced-load.

### Requesting a Leave of Absence

Graduate students planning to discontinue registration for a semester or more must submit a leave of absence request via their Interactive Plan of Study (iPOS). This request must be submitted and approved before the anticipated semester of non-registration. Students may request a maximum of two semesters of leave during their entire program. Students with a Graduate College-approved leave of absence are not required to pay tuition or fees, but in turn are not permitted to place any demands on university faculty or use any university resources. These resources include university libraries, laboratories, recreation facilities or faculty and staff time. For more information, please contact sbhse@asu.edu.

### **Medical/Compassionate Withdrawal**

The medical and compassionate withdrawal process is focused on the student's academic record as it relates to the student's health and wellness. Tuition refunds are not guaranteed, even with approval. A medical/compassionate withdrawal request may be made in extraordinary cases in which serious illness or injury (medical) or another significant personal situation (compassionate) prevents a student from continuing his or her classes, and <u>incompletes</u> or other arrangements with the instructors are not possible.

If you experienced other challenges during the semester, such as difficulty with classes, time management, work or family responsibilities, or other co-curricular commitments, be aware that these are not considered extenuating circumstances. In these cases, consult your academic advisor and utilize ASU resources to ensure that you receive the guidance and assistance necessary to remain on track to graduate.

Medical and compassionate withdrawal requests are reserved for extraordinary and emergency circumstances that prevent a student from completing their classes. All requests require specific and relevant professional documentation for consideration, and approval is not guaranteed. The decision is based on the specific circumstances and the professional documentation provided. Approval is made on a case-by-case basis and is made at the discretion of the college. *The decision of the college is final.* More information can be found here on the College website.

**Financial Support** 

Graduate Research Assistant and Teaching Associate (GRA/TA) positions in SBHSE are typically reserved for PhD students. For more information on these position, please refer to the 2025-26 PhD Handbook. However, MS students are encouraged to explore financial opportunities and scholarships offered by FSE and ASU Graduate College, as described below. Students are discouraged from approaching individual SBHSE faculty regarding financial opportunities or positions within their labs, and should instead let faculty initiate any such discussion. Students may, however, reach out to faculty in other units in FSE if they so choose.

### **Scholarships**

The Graduate College provides a variety of mechanisms to support funding for outstanding graduate students recommended by the program if funds are available (see <a href="http://graduate.asu.edu/financing">http://graduate.asu.edu/financing</a>). Students may apply for these awards provided by the Graduate College. Generally students receiving research assistantships or teaching assistantships qualify for out-of-state tuition waivers. Only a very limited amount of support is available. These are awarded to the students with the most outstanding academic credentials. The Fulton Schools of Engineering also provides <a href="scholarship opportunities">scholarship opportunities</a>, for which the applications typically close mid-Spring.

### **Intellectual Property**

Key intellectual property policies can be found within the Arizona Board of Regents Policy Manual as well as ASU's Research and Sponsored Projects Manual. It is both the student's and faculty advisor's responsibilities to understand and remain in compliance with these key policies. These policies confirm and clarify ownership of research data and materials. For additional information, visit <a href="https://www.asu.edu/aad/manuals/rsp/rsp604.html">https://www.asu.edu/aad/manuals/rsp/rsp604.html</a>

### **Conflict of Interest**

In some cases, students can find themselves working on projects which are part of a commercial development, either of their own, or associated with a faculty member. Once a conflict of interest has been identified, the student and faculty member must complete the necessary COI steps in the MyDisclosures portal in the Enterprise Research Administration (ERA) system. Individuals should contact **MyDisclosures@asu.edu** with any further questions. Please note that University Counsel may also be involved, depending on the nature of the commercial development.

# **Access to SBHSE Staff and Facilities**

### **ISAAC** and Building Access

ISAAC (key card) provides access for the offices and laboratories in the Ira A. Fulton Schools of Engineering: Engineering Research Center (ERC), ISTB1, ISTB4, PEBE, Schwada (SCOB) Classroom Office Building, and Goldwater Center (GWC) are obtained by completing an online application, available at https://fultonapps.asu.edu/isaac/.

Please note that you must be either located on campus or logged in via an ASU recognized VPN program to access this website. The student's research advisor and an authorized

department signor must approve the online form. ISAAC access will be granted to your <u>ASU Sun Devil ID Card</u>.

### Office Equipment

Graduate students are not permitted to use office resources (computers, printers) without departmental approval. Students are urged to familiarize themselves with the extensive free computer facilities on campus available for word processing.

### **Copier and other Office Resources**

The SBHSE copier is for faculty and staff use. Faculty may authorize their students to use the copier for teaching duties or for research. Large jobs (greater than 100 copies) require approval by the Business Operations Manager. No personal copying can be done on the SBHSE machine. Pay copiers are available at many locations on and off campus.

Misuse of departmental telephones, copiers, supplies, facilities is a serious offense that will lead to disciplinary action. At a minimum, students found to have used departmental resources for non- department approved purposes will be required to reimburse the department for such uses.

# **Additional University and Student Support Resources**

### **FSE Academic Program Support**

Graduate students in the SBHSE have access to the Fulton Schools of Engineering Graduate Programs <u>website</u>, which houses college resources and advising information. Graduate students are also encouraged to explore student organizations through the <u>Graduate and Professional Student Association</u> (GPSA). A <u>one-page guide</u> to Financial, Social, Emotional, and Physical Health and Wellness Resources for ASU Graduate Students, developed by the GPSA.

Student grade grievance appeals must be processed, by commencement, in the regular semester immediately following the issuance of the grade in dispute (fall or spring commencements only), regardless of whether the student is enrolled at the university. This process does not address academic integrity allegations, faculty misconduct or discrimination. The Fulton Schools of Engineering grade appeal procedures are based on the universities policy that can be found <a href="here">here</a>. Students must begin with and complete the informal process prior to any decision on whether a formal hearing is warranted.

# **University Resources**

- Graduate College
- Office of the University Provost

### **University-wide Academic and Career Support**

- ASU Libraries, including Noble Engineering Library
- Graduate Writing Center
- Career and Professional Development Services
- Graduate and Professional Student Association
- Fulton Schools of Engineering <u>Student Clubs and Organizations</u>

### **Business and Finance Services**

- <u>University Financial Aid and Scholarship Services</u> (financial aid)
- Student Business Services (tuition, fees, and payments)
- Parking and Transit Services (permits, shuttles, public transit)
- <u>Sun Devil Card Services</u> (ID cards)
- <u>University Technology Office</u> (technology assistance)
- Sun Devil Dining (meal plans, M&G, hours)

### **Counseling Services**

ASU Counseling Services provides confidential, time-limited counseling and crisis services for students experiencing emotional concerns or other factors that affect their ability to achieve their goals. Support is available 24/7.

In-person counseling: Monday-Friday 8 a.m. – 5 p.m ASU Counseling Services, Student Services Building 234 Tempe, AZ 85287 480-965-6146

After-hours/weekends

Call EMPACT's 24-hour ASU-dedicated crisis hotline: 480-921-1006

For life threatening emergencies: Call 911

The Grad College has also compiled a <u>one-page quick sheet</u> on 10 Best Practices in Graduate Student Wellbeing.

### **Disability Accommodations**

Reasonable accommodations are determined on a case-by-case, course-by-course basis to mitigate barriers experienced due to a disability (<u>SSM 701-02</u>). Students with disabilities who require accommodations must register with the <u>Student Accessibility and Inclusive Learning Services</u> and submit appropriate documentation. It is recommended students complete this process at the beginning of the term and communicate as appropriate with their instructor.

Email: Student.Accessibility@asu.edu

Phone: (480) 965-1234FAX: (480) 965-0441

Pregnancy: Students requesting services due to pregnancy (<u>SSM 701-10</u>) should be prepared to submit documentation regarding the pregnancy, any complications and clearance to return to school related activities. Student Accessibility can work with students to foster continued participation in a program, whether that be with academic accommodations such as absences or assistance requesting a leave, or through other requested accommodations.

### **Health and Fitness**

All ASU students enrolled in in-person programs have access to Sun Devil Fitness facilities on all campuses. For more information about facilities, membership and group fitness classes, please visit: <a href="https://fitness.asu.edu">https://fitness.asu.edu</a>

For information about health insurance and appointments with care providers, please see the ASU Health Services website: <a href="https://eoss.asu.edu/health">https://eoss.asu.edu/health</a>

### **International Students**

ASU's International Student and Scholars Center can provide support and answers to questions about visas, employment, scholarships and travel. To find more information or schedule an appointment with an ISSC adviser, visit the website: <a href="https://issc.asu.edu/">https://issc.asu.edu/</a>

### **Veterans and Military**

The Pat Tillman Veterans Center provides guidance and support for students who are veterans, active-duty military or military dependents. For more information, please call the office at 602 496-0152 or visit: <a href="https://veterans.asu.edu/">https://veterans.asu.edu/</a>