# THE BIOMIMICRY CENTER AT ARIZONA STATE UNIVERSITY

# Biomimicry Graduate Student Handbook

## Master's of Science | Graduate Certificate
## V1(2151) RELEASE DATE: DECEMBER 18, 2016

*All edits made between the release date and the next version will be documented using track changes within the Google doc. Versions will be updated at the end of each semester. It is your responsibility to check back with this document to stay current of updates.*
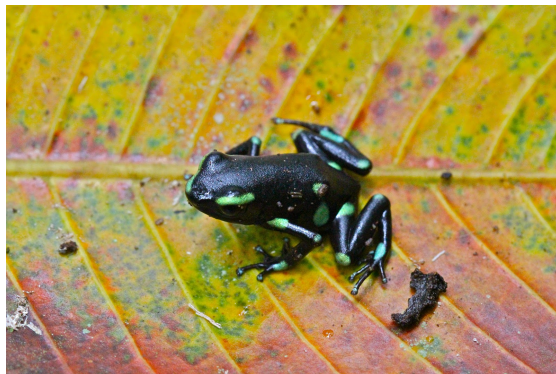
ASU online
ARIZONA STATE UNIVERSITY

ASU SCHOOL OF Life Sciences
ARIZONA STATE UNIVERSITY

# Table of Contents

# Welcome!

*Hello Future Biomimic!*

My name is Dayna Baumeister and on behalf of all of us at ASU through the School of Life Sciences and The Biomimicry Center, I would like to welcome you to the graduate biomimicry program. You are joining a unique group of individuals from around the world committed to bring biomimicry into their disciplines. We hope your journey will be exciting and rewarding.

This unique biomimicry program is designed for working professionals like you who want to make the practice of biomimicry central to their career. Our coursework is designed to help you learn the tools of biomimicry and find ways to apply your existing disciplinary knowledge to the practice and advancement of biomimicry.

There is a rapidly growing demand for biomimicry practitioners. We have designed our programs with the goal of graduating world-class professional practitioners.

Graduates of the Biomimicry Certificate can expect to be able to:

- Integrate biomimicry thinking into a sphere-specific opportunity resulting in biomimetic outcomes
- Apply Life's Principles to specific needs within your sphere
- Facilitate the integration of biology into design within your sphere using biomimicry thinking
- Guide processes in your sphere towards sustainability
- Interpret observations in nature with a functional lens for design applications
- Abstract design principles from biological observations for application to your sphere
- Communicate effectively through verbal and visual means how the process of biomimicry works in your sphere
- Initiate or transform one's practice to specialize in biomimicry
- Engage and lead others within your current company/organization to begin practicing biomimicry

Graduates of the MS program will additionally be qualified to do all of the above, independent of application, as well as:

- Lead in-house implementation of biomimicry across a variety of applications;
- Initiate or transform a consulting practice in the field of biomimicry;
- Incorporate biomimicry into education for the next generation of biomimics;
- Develop innovative and sustainable solutions to the most pressing global challenges.

We expect graduates from the program to transform the ways in which we conduct business, design buildings and products, run governments, provide healthcare, manufacture goods, grow food and educate future generations. We are thrilled this is a path you've chosen.

---

# What you need to know before your first day:

## Overarching University Policies
The policies outlined below are those consistent across ASU, ASU Online, Graduate Education, The Biomimicry Center, and the School of Life Sciences.

### Professional Ethics
As a graduate student, you have joined a larger community that is engaged in the scientific quest for truth, thus committing yourself to an honest, ethical, and cooperative style of learning and inquiry. You represent the university in this community in many ways. Please consider that responsibility in your conduct. All your work, including research and courses, must be original, accurate, and documented, and must reflect individual effort and integrity.

### Academic Integrity
Integrity is a character-driven commitment to honesty, doing what is right, and guiding others to do what is right. Arizona State University students and faculty are expected to act with integrity in their educational pursuits.

The Biomimicry Graduate Programs, SOLS and ASU maintain a zero tolerance policy regarding academic dishonesty and academic integrity violations. Students caught in acts of academic dishonesty as described below will face immediate dismissal from the program.

The ASU student academic integrity policy lists violations in detail. These violations fall into five broad areas that include but are not limited to:

- Plagiarism – using another's words, ideas, materials or work without properly acknowledging and documenting the source.
- Cheating on academic evaluation or assignment.
- Academic deceit, such as fabricating data or information.
- Falsifying academic work, research or records.
- Aiding academic integrity policy violations and inappropriately collaborating.

*Other consequences of non-compliance can be significant, including:*
- Reduced or failing grade for an assignment or course

- An "XE" grade which is usually permanent on the student's official transcript with the notation "failure due to academic dishonesty."
- Federal granting agencies have barred grant applicants who violated academic integrity standards from receiving grants or sitting on grant panels for up to three years.
- Expulsion or temporary removal from a major or program of study within an ASU school or college.

Serious violations can result in the revocation of a degree several years after it was granted. The pressure to finish a degree may be intense but it can't be as hard as picking up the pieces of your life when you are stripped of a degree that you worked hard and long to earn.

Additional information can be found in the ASU "Student Academic Integrity Policy" manual. Students are responsible for knowing the rules governing academic and research dishonesty.

*Following the Academic Integrity Policy and Avoiding Violations*
Academic integrity is a fundamental value because violations of it cause real harm to real people. Protecting the ASU community from this harm is everyone's responsibility.

- Students who suspect a policy violation are encouraged to discuss their concerns with their course instructor or academic advisor.

- Faculty, T.A.'s, and instructors are expected to address all violations of the ASU Academic Integrity Policy. Please become familiar with the university policy and the process for addressing violations of the policy within your College Specific Policies and Procedures

**Student Rights and Responsibilities**
Guided by ASU's commitment to excellence, access, and impact, the Office of Student Rights and Responsibilities (SRR) supports a safe and inclusive environment that fosters the intellectual, personal, social, ethical development of all students. In partnership with university departments and programs, we help students see themselves as responsible members in a diverse community. SRR provides students with the opportunity to consider the ways in which their conduct may define and impact their college experience-personally and in relationship with others.

SRR investigates allegations of student misconduct and determines whether a violation of the Student Code of Conduct has occurred. Students who are found responsible for violations of the Student Code of Conduct are encouraged to reflect on their behaviors through the use of educationally based sanctioning that assists the students in making informed choices and developing in a holistic manner.

For more information about SRR and FAQs for students and parents, please visit: https://eoss.asu.edu/dos/srr

## Student Responsibility

Graduate students are responsible for familiarizing themselves with all university and graduate policies and procedures as well as applicable deadlines. Each student should also communicate directly with the program manager and coordinators to be clear on its expectations for degree completion. **Graduate students are responsible for frequently checking their My ASU account and asu.edu email for the most up-to-date information regarding their status, holds, items to attend to and other important information.**

## Student Code of Conduct

The aim of education is the intellectual, personal, social, and ethical development of the individual. The educational process is ideally conducted in an environment that encourages reasoned discourse, intellectual honesty, openness to constructive change, and respect for the rights of all individuals. Self -discipline and a respect for the rights of others in the university community are necessary for the fulfillment of such goals. The Student Code of Conduct is designed to promote this environment at Arizona State University.

The Student Code of Conduct sets forth the standards of conduct expected of students who choose to join the university community. Students who violate these standards will be subject to disciplinary sanctions in order to promote their own personal development, to protect the university community, and to maintain order and stability on campus.

All Students are expected to adhere to the ABOR Student Code of Conduct.

## Title IX Compliance

Title IX of the Education Amendments of 1972 protects individuals from discrimination based on sex in any educational program or activity operated by recipients of federal financial assistance. Sexual harassment, which includes acts of sexual violence, is a form of sex discrimination prohibited by Title IX. ASU does not discriminate on the basis of sex in the employment, education programs or activities it operates. ASU is committed to providing an environment free from discrimination based on sex and provides a number of resources and services to assist students, faculty and staff in addressing issues involving sex discrimination, including sexual violence. For more details regarding Title IX, visit: https://cfo.asu.edu/titleIX

## Religious Beliefs and Practices

No employee, agent, or institution under the jurisdiction of the Arizona Board of Regents shall discriminate or retaliate against and student, employee, or other individual because of an individual's religious belief or practice or any absence thereof. Furthermore, administrators and faculty members must reasonable accommodate individual religious [practices. A refusal to accommodate is justified only when undue hardship will result from each available

alternative of reasonable accommodation. No administrator or faculty member shall retaliate or otherwise discriminate against any student, employee, or prospective employee because that individual sought a religious accommodation pursuant to this policy. More information is available at https://cfo.asu.edu/equity-and-inclusion.

## ASU Social Media Training & Guidelines for Students

ASU is an innovative, technologically advanced University and its students are encouraged to use all forms of communication — including social media — to better themselves and their communities. The messages we share on social media can have a powerful impact on our lives and the lives of others.

In use of social media and all types of communication we follow the Code of Conduct and the Sun Devil Way

- The ASU Code of Conduct encourages "self discipline and a respect for the rights of others in the university community."
- The Sun Devil Way encourages achievement, engagement and responsibility in our educational endeavors.

Our university is part of a diverse, global community that includes people of varying backgrounds and belief systems; varying ethnicities and national origin; and varying sexual orientation. Part of your educational experience is to seek to understand people different than yourself and to have respect and empathy for them as fellow human beings. This need for respect and empathy extends to the way we communicate, especially on social media.

The university is also where you will begin to build your public and professional reputation and persona. The way you communicate and conduct yourself on social media can have a lasting impact — positive or negative — on your social, academic, and professional life. You should always think through the consequences of the messages you post. At this point you will be looked upon as an adult, making adult decisions, with adult consequences.

You will hear much more about this subject in orientation, classes, and job/career training. But here are a few simple guidelines to consider right now:

- Take your time. Think things through. Impulsively posting messages is never a good idea. Pause to reflect on the possible impact of what you are going to post.
- Think about the effect on others. How would you feel if the things you posted were said about you? In everything we do, including our communication, we should consider how our actions will impact others, including ourselves, our family members, our colleagues, and members of our community. Social media has a tremendous capacity to build up or to tear down. Think about how you will use it.
- Remember privacy is elusive. People have often posted regrettable material on social media platforms because they thought they were only posting to a small group of friends or even to one person, only to learn that "privacy" in electronic media is never

guaranteed. Consider the consequences if your "private" message were revealed to the public.

- Be careful when you are not at your best. If your capacity to make good decisions is impaired in any way — by drugs or alcohol, stress, or emotional strain, be very careful with social media. Seek help and support from trusted sources before posting something you might regret. On the other hand do not feel bad about asking for help and support through social media.
- Don't feel pressured to post. At times you might feel like you are missing out or not accepted by your peers if you don't engage with them on social media. But it is OK to take a break or opt out of certain conversations or activities if you feel they might impact you negatively. True friends will support that kind of decision.
- Get connected. Social media is a great way to learn about and connect with new people and communities. Search out those people and groups that you want to learn more about and connect with them. You can use social media to better understand a subject you're interested or to explore your interests, creative endeavors, and career goals.
- Move ahead. Social media can be a both a help and a hindrance in advancing your career. Many potential employers will look you up online and review your social media accounts before making a hiring decision. Think about the impression your digital footprint will make on them.
- When things go wrong. Inevitably you will post something you regret. This consequences can range from mild to very serious. There are people here at ASU that can help you deal with these issues. Reach out to a trusted teacher, adviser or to one of ASU's student advocates or counselors for help and advice.

# Biomimicry at ASU

Biomimicry is an emerging discipline that seeks to emulate nature's strategies and principles to create sustainable solutions to human challenges. By asking the question: "How would nature do this?", biomimics around the world are creating products, processes, companies and policies that are well adapted to life on earth over the long haul. Examples include turbine blades designed like whale fins to reduce drag and stronger fiber optics produced like sea sponges. (See seven more examples explained on Mother Nature Network.)

Humans have turned to nature for inspiration and solutions for a long time. But a formal methodology—drawing on peer-reviewed biological research–has only evolved over the last several decades. Following the publication of her seminal 1997 book *Biomimicry: Innovation Inspired by Nature*, Janine Benyus and Dr. Dayna Baumeister created the Biomimicry Guild, which formalized the practice of biomimicry as a methodical tool for innovating sustainability solutions.

As demand grew for biomimicry education and consulting, Benyus and Baumeister founded the nonprofit Biomimicry Institute and the innovation firm Biomimicry 3.8, which has worked with notable clients like Interface, HOK, Nike and Coca-Cola.

ASU's involvement with biomimicry started taking shape in Fall 2008 when InnovationSpace Co-Director Adelheid Fischer began incorporating principles and methodologies of biomimicry into the program's curriculum.

InnovationSpace is an entrepreneurial joint venture among the Herberger Institute for Design and the Arts, Ira A. Fulton School of Engineering, W. P. Carey School of Business and School of Sustainability at ASU. The goal of InnovationSpace's transdisciplinary education and research lab is to teach students how to develop product-service systems that create market value while serving real societal needs and minimizing impacts on the environment. InnovationSpace has collaborated on product concepts with corporations including Herman Miller, Intel, P&G and Dow Corning, and with other ASU research centers like the Center for Cognitive Ubiquitous Computing, the Center for Nanotechnology in Society and the Flexible Display Center.

Fischer, along with InnovationSpace Director Prasad Boradkar and PhD students from ASU's School of Life Sciences worked closely with the biomimicry institute in developing educational materials to teach biomimicry to undergraduate students in design, business and engineering. In 2010, ASU became the first U.S. affiliate institution of The Biomimicry Institute, an agreement that laid the groundwork for joint development of biomimicry-based courses and

other educational opportunities. At this time, Fischer was named Biomimicry Fellow by the institute.

In 2013, a team including Boradkar and Baumeister proposed the creation of the Biomimicry Center at ASU, which would naturally align with the eight design aspirations of the New American University as outlined by university president Dr. Michael Crow. The Biomimicry Center is a joint initiative of ASU and Biomimicry 3.8. ASU Provost Dr. Robert Page provided support for this initiative and led a university wide effort to raise funds for the new center.

The proposal was approved in spring 2014 with funding from several units across campus including the Herberger Institute for Design and the Arts, College of Liberal Arts and Sciences, School of Sustainability, W.P. Carey School of Business, and the Ira A. Fulton Schools of Engineering, as well as the Provost's Office and the Office of Knowledge and Enterprise Development.

## Biomimicry and the School of Life Sciences

The Biomimicry Center has partnered with the School of Life Sciences (SoLS) to offer the Biomimicry graduate certificate and the Master of Science degree. These programs are offered through SoLS because of the critical role that biology plays in biomimicry. While it is an emerging discipline in its own right, while simultaneously thriving in the inter- and transdisciplinary space, without the field of biology and the knowledge about the life sciences, biomimicry could not be practiced. Additionally, the integrity of the science behind the biology from which biomimics draw inspiration is fundamental to the successful implementation of bio-inspired ideas. Through our partnership with SoLS, we strengthen our commitment to the science and the faculty and researchers in the biological sciences.

For more information about the School of Life Sciences, visit: https://sols.asu.edu/

# Overview of the Biomimicry Programs

The online Master of Science (MS) in Biomimicry Degree at ASU and the Graduate Certificate are the first of their kind in biomimicry, an emerging discipline that seeks to apply life's strategies to human design. Both are offered through ASU's School of Life Sciences, the Biomimicry Center at ASU and by the leadership of Biomimicry 3.8 – a globally-recognized social enterprise in the field of biomimicry. The MS also complements the Certified Biomimicry Professional program and the certificate in Biomimicry Specialist program, offered by Biomimicry 3.8.

The programs are designed for working professionals like you who want to make the practice of biomimicry central to their careers, most of which include the fields of biology, design, business and engineering. Applicants to the program typically are **not** interested in additional graduate work in their primary disciplines. Instead, students are looking for the opportunity to apply their existing disciplinary knowledge to the practice and advancement of biomimicry.

Through these degree programs, you will learn the methodology and practice of the discipline and how to facilitate its application across a wide-variety of applications. The biomimicry programs are ideal if you are interested in innovative, transdisciplinary learning and the opportunity to work with students from around the globe to advance the field and develop sustainable, real-world applications. You will also apply the fundamentals of your training during a series of practicums, including a self-designed "Biomimicry Virtual Design Lab."

Because of the practical application emphasis of the program, you will benefit the most from your training with at least a 3–5 years of experience after your undergraduate degree. Others who have studied biomimicry have applied their knowledge globally in areas like sustainability, transportation, product design, architecture, economics, and nonprofit ventures.

The Biomimicry Center website is a great resource for information. http://biomimicry.asu.edu

Additional biomimicry MS program information is on the School of Life Sciences website: https://sols.asu.edu/graduate/biomimicry-online-masters-science

## Organization and Administration of Programs
The Directors of the Biomimicry Center and the Directors of the School of Life Sciences (SOLS) are the representative to the administration and are responsible for implementing university policies. Although the Directors have final authority on many issues students are encouraged to consult with program coordinators first about procedures and policies.

**Michelle Fehler**
Graduate Program Coordinator for The Biomimicry Center
Please contact Michelle for all questions regarding your program. She can redirect and/or ask internally for you as needed.
mfehler@asu.edu

**Dayna Baumeister**
Co-Director of the Biomimicry Center
Biomimicry Education Program Director
Professor of Practice, School of Life Sciences
Partner, Biomimicry 3.8
Dayna.Baumeister@asu.edu

**Susanne Neuer**
Professor and Associate Director
Graduate Programs
School of Life Sciences
Susanne.Neuer@asu.edu

**Wendi Simonson**
School of Life Sciences
Graduate Program Student Service Support Coordinator
Wendi.Simonson@asu.edu
(480)965-7490

**Mary Kivioja**
Business Operations Specialist for the Biomimicry Center
Admissions Coordinator for the Biomimicry Programs
Mary.Kivioja@asu.edu
(480)727-0478

**ASU Online Contacts**
**General Inquiries**
Email: asuonline@asu.edu
Phone: (480) 884-1525

**Louis Deroon**
Student Support Coordinator ASU Online at EdPlus
Phone: 480-884-1969
Louis.Deroon@asu.ed

## Student Success Teams

**Enrollment Counselors:** Finding the best program for your goals, application assistance, guidance and updates throughout the admissions process, and preparing you for your first day of classes. Request Info at: asuonline.asu.edu/become-student/admission

**Academic Advisors:** Course scheduling, requirements for majors and certificates, staying on track to graduate, academic policies, and transferable credits. To connect, visit: My ASU > eAdvisor > Advising or http://asuonline.asu.edu/become-student/academic-advising

**Success Coach:** identify and overcome obstacles, navigate ASU resources, short-term and long-term planning, strengths-based approach, and personal connection to ASU. To connect with your coach, visit: My ASU > eAdvisor > Success Coaching

## Social Media Connections

We are working on creating a way that students can connect with each other through a platform that works for everyone but for now, check out our the Biomimicry Center Facebook page as well as the group page of alumni students of the programs. You can also follow us on Twitter. Please follow ASU's social media guidelines when communicating with other via social media. These guidelines can be found here :
https://eoss.asu.edu/dos/srr/SocialNetworkingGuidelines

**Facebook:** https://www.facebook.com/asubiomimicrycenter/
https://www.facebook.com/groups/190241510997411/

**Twitter:** @BiomimicryASU

**Biomimicry Watering Hole:** All students upon enrollment are registered in the Blackboard course called Biomimicry Watering Hole. Here you will find a link to "YellowDig" which serves as our virtual "student lounge". There you can find information and updates about the program from program staff, as well as biomimicry in the news, and opportunities to network with fellow students.

# Admissions

### Admission types

- **Regular Admission** Applicant satisfies all requirements for admission and is academically acceptable to both the degree program and the office for Graduate Education.

- **Regular Admission with Deficiencies** Applicant's grades and test scores are at an acceptable level but applicant does not have the academic background expected by the degree program and the university. Required deficiency courses are taken and monitored by the academic unit. Required courses are: BMY 501, 502, 503, and 504 which can be taken in any order with the exception of BMY 501 which must be taken in the first semester. All four courses need to be taken within three semesters of enrollment and the student must hold at least a 3.0 GPA. At the end of each semester, SOLS and the Biomimicry Center reviews students that have been admitted with deficiencies. If a student has not successfully met the deficiency requirements, then Grad AD will notify the Graduate College that the student did not meet the conditions of admission and recommend the student for dismissal from the Program. The student can petition this decision and request to extend the probationary period by one more semester.

### Defer Admission

Applicants must register and enroll in courses in the semester they applied to. To change the starting semester, the student must notify the The Biomimicry Center, mary.kivioja@asu.edu and request the change through their myASU page. The only opportunity to change the starting semester, without a fee, is before the student is officially accepted into the program.

### Enrollment Verification Guidelines for Graduate Students

These are federally established rates, relevant for financial aid considerations.

|  | Fall & Spring | Summer |
| --- | --- | --- |
| **Full Time** | 9+ credit hours | 3+ credit hours |
| **¾ Time** | 7-8 credit hours | |
| **Half Time** | 5-6 credit hours | 2 credit hours |
| **Less than half time** | 1-4 credit hours | 1 credit hour |

## Research and Teaching Assistants

For fall and spring semesters research and teaching assistants must be enrolled in at least six credit hours to be considered full time. For summer sessions they must be enrolled in at least two credit hours to be considered full time and one credit hour to be considered half time.

## Financial Aid Recipients

Full-time and half-time credit requirements may be different for financial aid disbursement purposes. Please review the Award Disbursement Rules to determine the required enrolled hours needed for financial aid disbursement.

## Late Registration

Registering for any class after the deadline requires approval from the college or school offering the course and is an exception to university policy. There is no guarantee that a late request will be approved.

Courses for which the deadline to register has passed are marked in the schedule of classes by a red "add" button.

When this button is selected, students are directed to a page that prompts them to select the appropriate link for the college offering the course. The link connects the student to a customized page with step-by-step instructions on how to request a late add for that particular course. Policies and procedures vary by college/school. See the list below for detailed information and instructions.

For specific policies and instructions on late registration, visit:
https://students.asu.edu/lateregistration/graduate
https://students.asu.edu/lateregistration/clas

# Program Content

## Faculty

Faculty members have significant expertise in many of the most important challenges that society faces. Many members of the faculty bring considerable industrial experience to bear on their teaching and research. Some of the following faculty teach the BMY courses, whereas others are available to serve on practicum committees.

**Karen Allen**, **MS**
Faculty Associate (biology), SOLS

**Laurel Anderson**, **MBA**
Associate Professor (business), W.P. Carey School of Business

**Zeynep Arhon**, **MBA**
Faculty Associate (business), SOLS

**Dayna Baumeister**, **PhD**
Co-Director of the Biomimicry Center, Professor of Practice (biomimicry), SOLS

**Thomas Baumeister**, **PhD**
Faculty Associate (conservation psychology & biology), SOLS

**Prasad Boradkar**, **MS**
Co-Director of the Biomimicry Center, Professor (design), HIDA, Design School

**Marie Bourgeois**, **MEng**
Faculty Associate (engineering), SOLS

**Michelle Fehler**, **MS**
Lecturer, The Design School and Faculty Associate, SOLS

**Jo Fleming,** **MS**
Faculty Associate (design), SOLS

**Juergen Gadau**, **PhD**
Professor (biology), SOLS

**Tirupalavanam Ganesh**, **PhD**

Associate Research Professor (engineering & education), Ira A. Fulton Schools of Engineering

**Ximin He, PhD**
Assistant Professor (materials science), Ira P. Fulton Schools of Engineering

**Erin Rovalo, MS**
Faculty Associate (design), SOLS

**Ted Pavlic, PhD**
Assistant Professor (engineering), School of Sustainability

# Course Information – Graduate Certificate

## Required Core Courses (13 credit hours):

BMY 501 Essentials of Biomimicry (1)
BMY 502 Life's Principles (4)
BMY 503 Biology Taught Functionally (4)
BMY 504 Biomimicry Thinking (4)
BMY 530 Virtual Design Lab Practicum (2) (to be taken last)

*Total required credit hours: 15 credits*

# Course Information – Master's Degree

## Required Core Courses (13 credit hours)
BMY 501 Essentials of Biomimicry (1)
BMY 502 Life's Principles (4)
BMY 503 Biology Taught Functionally (4)
BMY 504 Biomimicry Thinking (4)

## Elective Courses (11 credit hours)
BMY 511 Biomimicry and Design (3)
BMY 512 Biomimicry and Engineering (3)
BMY 516 Biomimicry and Business (3)
*Note: For students enrolling in Spring 2017 or later, you must choose at least two courses of 511, 512, and 516.*
BMY 517 Human-Nature Connection (2)
BMY 591 Biomimicry Ethos (1)
BMY 598 Topic: iSites (1)
BMY 598 Topic: Communicating Biomimicry (1)

BMY 598 Topic: Facilitating Biomimicry (1)
BMY 598 Topic: Teaching Biomimicry (1)

**Culminating Experience: Practicum Courses (6 credit hours; choose 3):**
BMY 530 Virtual Design Lab Practicum (2)
BMY 580 Topic: BioBrainstorm Practicum (2)
BMY 580 Topic: Biomimicry Case Study Practicum (2)
BMY 580 Topic: Biomimicry Genius of Place Practicum (2)

*Total required credit hours: minimum of 30 credits*


# Course Descriptions
**Graduate Certificate [Download as PDF]**
**MS in Biomimicry [Download as PDF]**

**Essentials of Biomimicry BMY 501 | 1 Credit**
The Essentials of Biomimicry is a one-quarter class (7.5 weeks) offered as an introductory sampler to the various topics (discipline, emulate, ethos, (re)connect & iSites, human-nature connection, Biomimicry Thinking, and Life's Principles) within the discipline of biomimicry. Each week is devoted to a specific topic and is led by a different instructor. The course is intended to provide a basic overview of each aspect of the discipline with ample opportunity for conversation and dialogue around the specific components, with an understanding that greater depth into each topic can be earned by taking the advanced BMY courses.
Faculty: Baumeister, D., Arhon, Rovalo, Baumeister, T.

**Life's Principles BMY 502 | 4 Credits**
Life's Principles are nature's universal design guidelines based on 3.8 billion years of successful strategies across all life with instruction by Dr. Dayna Baumeister, this 15-week course on-line takes a participants on a deep dive of Life's Principles. It includes the review and study of life's operating conditions on Earth, the six primary principles, and their related sub-principles. This course gives participants the knowledge necessary to bring these design guidelines into practice and provides opportunity to integrate them into one's discipline.
Faculty: Baumeister, D.

**Biology Taught Functionally BMY 503 | 4 Credits**
Biomimicry teaches biology through the lens of function, thereby providing a core understanding in biology for all students, no matter their background. This 15-week course explores how biologists gather and research information and how that knowledge can inform other disciplines. It also introduces the art of translating biological concepts into strategies for application, which is then carried throughout all the courses. You will learn how to work with biologists on a biomimicry team and how to weave biology and biomimicry together. You will

learn to look at nature through the function lens, and how to identify subject matter experts needed for interdisciplinary teams.
Faculty: Allen, K.

## Biomimicry Thinking BMY 504 | 4 Credits

Biomimicry Thinking is the practice of biomimicry from a methodology-based approach. Led by Dr. Dayna Baumeister, this 15-week exploration into the Biomimicry methodology reviews how biology and biomimicry can be can be incorporated into the four major phases of any design process: scoping, discovering, creating, and evaluation. It introduces the art of translating biological concepts into strategies for application and building a taxonomy of design principles. The course includes a practicing tools component and a final multi-week group project.
Faculty: Baumeister, D.

## Biomimicry Virtual Design Lab BMY 530 | 2 Credits

This practicum is designed to allow participants to dive deep into the biomimicry tools and resources presented during the program and to apply them selectively to a specific and unique opportunity of the student's choosing. Projects should have a meaningful outcome achievable within the semester, and should engage the scoping, discovering, creating and evaluation phases of Biomimicry Thinking. Deliverables are milestone based, and the final deliverable should have application in a real-world setting.
Faculty: Fehler, Baumeister, D. (advisory)

## Biomimicry and Design BMY 511 | 3 Credits

The Biomimicry and Design course will prepare participants to design sustainable innovations using the biomimicry philosophy and methodology. Participants will complete a 15-week series of lectures and assignments to demystify the design thinking process, understand how to harness the potential of approaching challenges with a design mind, distill a design challenge, understand user needs, build a bridge between biology and design, use a methodology for discovering models from nature, abstract design principles from bio-inspired strategies, and translate those principles into sustainable innovations. The course is not designed to teach one how to be a designer per se, but rather how the discipline works in order to facilitate involvement of designers into the practice of biomimicry.
Faculty: Rovalo, E., Fleming, J.

## Biomimicry and Engineering BMY 512 | 3 Credits

Biomimicry and Engineering will prepare participants to understand the field of engineering, identify the types of engineers and what each does, what constraints engineers work under, materials selected by engineers, how to present biological ideas to engineers and how to integrate ideas from their discipline into sustainable engineering designs using biomimicry principles. The course is not designed to teach one how to be an engineer, but rather how the discipline works in order to facilitate involvement of engineers in the practice of biomimicry. A

final team project designed to put these ideas in practice is required.
Faculty: Bourgeois, M

## **Biomimicry and Business** BMY 516 | 3 Credits

BMY 516 is an elective course for students who are interested in applying biomimicry in business in order to generate process- and system-level change. The course addresses business topics from a biomimicry point of view; it challenges students to question conventional ways of conducting business and come up with new approaches based on nature's strategies. Content focuses on the "design of business" rather than product design. Learning from nature how to innovate and collaborate, assessing and improving existing business models with Life's Principles, and Open Innovation are examples of topics covered.
Faculty: Arhon, Z.

## **Human-Nature Connection** BMY 517 | 2 Credits

This 15-week course seeks to ground the emerging discipline of biomimicry as a continuation of our ancestral connection with nature. Human-Nature Connection engages participants in an exploration of the meaning and value of connecting with nature. Topics include defining humans, nature, and our connection with nature; establishing the evolutionary, personal, and sociocultural influences on the different expressions of this connection; and illustrating the relevance of biomimicry to the human-nature connection.
Faculty: Baumeister, T.

## **Biomimicry Ethos** BMY 591 | 1 Credit

Biomimicry offers us with us a new and exciting way to (re)examine our relationship with the natural world of which we are a part of, and encourages us to commit to a more harmonious and sustainable way of being and living on this planet. The *Biomimicry Ethos* course explores the natural pathway that leads from experiencing and understanding life, to connecting with life, to committing to care for life. Course participants are presented with a practical toolkit to facilitate a personal journey of discovery. Drawing from diverse academic disciplines as well as various social practices, the course provides practitioners with tangible approaches to care for non-human biological life on the basis of respect and gratitude. Through guided inquiry, analysis, critique, and reflection, participants develop and express a rational justification for our obligations to life on this planet. Students will be able to articulate the manner in which the practice of biomimicry embodies and advances the core tenets of sustainability.
Faculty: Baumeister, T.

## **Topic: iSites** BMY 598 | 1 Credit

The iSties: Biomimetic Nature Journaling course offers a kick-start to the lifelong practice of nature journaling with a biomimetic intention. Tutorials for becoming a biomimetic nature journalist include drawing techniques, materials selection, and development of observation skills. A series of nature journaling assignments are designed to offer a variety of approaches to nature journaling while also requiring that getting outside and into the natural world

becomes a very comfortable experience and a source of inspiration. It is important to understand that this course will require going outside for 30 minutes on a daily basis for the 7.5 weeks of the course-participants should plan accordingly.

Faculty: Rovalo, E.


### Topic: Communicating Biomimicry BMY 598 | 1 Credit

The ability to articulate the practice and potential of biomimicry to a wide variety of audiences across many disciplines, venues, and situations is a critical skill for a Biomimicry Professional. The Communication Biomimicry course develops this skill through a wide variety of exercises, trainings, and feedback. Students will learn how to develop visual, written, and auditory presentations and how to customize those for different kinds of audiences and situations, including cross-disciplinary applications and public and organization specific settings. Students will assemble course deliverables into a portfolio demonstrating their communication skills.

Faculty: Baumeister, D.


### Topic: Teaching Biomimicry BMY 530 | 1 Credit

The ability to teach the practice of biomimicry to a wide variety of audiences across many disciplines, venues, and situations is a critical skill set for a Biomimicry Professional. The Teaching Biomimicry course develops these skills through a wide variety of exercises, trainings, and feedback. Students learn how to create and execute meaningful learning experiences in biomimicry. Students will assemble course deliverables into a portfolio demonstrating their teaching skills. Course is structured more heavily towards feedback rather than lectures.

Faculty: Baumeister, D.


### Topic: Facilitating Biomimicry BMY 530 | 21 Credits

The ability to facilitate the practice of biomimicry to a wide variety of audiences across many disciplines, venues, and situations is a critical skill set for a Biomimicry Professional. The Facilitating Biomimicry course develops these skills through a wide variety of exercises, trainings, and feedback. Students will learn how to facilitate the implementation of biomimicry within organizations. Students will assemble course deliverables into a portfolio demonstrating their facilitating skills.

Faculty: Baumeister, D.


### Topic: Book Club BMY 591 | 1 Credit Seminar

Optional 1 credit course that is designed to specifically help students who are required to be enrolled in 5 credits per semester for financial aid reasons. Structured like an online book club. Reading and analyzing books to then work collaboratively to write a synopsis. This course is open to anyone who is interested, however, it will not count toward the 30 minimum credits to complete the program.

Faculty: rotating

**Biomimicry Case Study Practicum** BMY 580 | 2 Credits

This practicum is designed to allow participants to dive deep into the business case for biomimicry, by doing an in-depth case study analysis of a specific biomimicry example. During the 15-week semester, each individual will identify, research, and write up a case study from the business perspective. At the conclusion of the practicum and the receipt of everyone's final and polished version, we will compile these case studies for a specific release in a format TBD.
Faculty: Arhon, Z.

**BioBrainstorm Practicum** BMY 580 | 2 Credits

This practicum is designed to allow participants to dive deep into the specific biomimicry tools and techniques of a BioBrainstorm. Working in teams, each team will identify a challenge, discover relevant strategies from the biological literature, interpret and translate the scientific information including creating illustrative graphics, summarize the findings, build a taxonomy, and learn how to present the information in a biomimicry context so that it is relevant to design.
Faculty: Allen, K.

**Biomimicry Genius of Place Practicum** BMY 580 | 2 Credits

This practicum is designed to allow participants to dive deep into the specific biomimicry tools and techniques of a Genius Place. During the 15-week period, each team will identify a biome of interest, research place-specific strategies from the biological literature for that biome, interpret and translate the scientific information including creating illustrative graphics, summarize the findings, build a taxonomy, and learn how to present the information in a biomimicry context so that it is relevant to place-based design.
Faculty: Bourgeois, M.

---

### Duration of Program

Full-time graduate students could aim to finish a master's program within 5 semesters (about 2 years). However, the program is designed for working professionals, who likely will be taking just 3–4 credits/semester. In this latter case, you can expect up to 10 semesters (3 ⅓ years) to graduate. You have six years to complete your MS degree.

Students pursuing the Graduate Certificate can expect to finish in as few as three semesters (including summer), taking one class per semester, but if continuously enrolled may take up to five semesters.
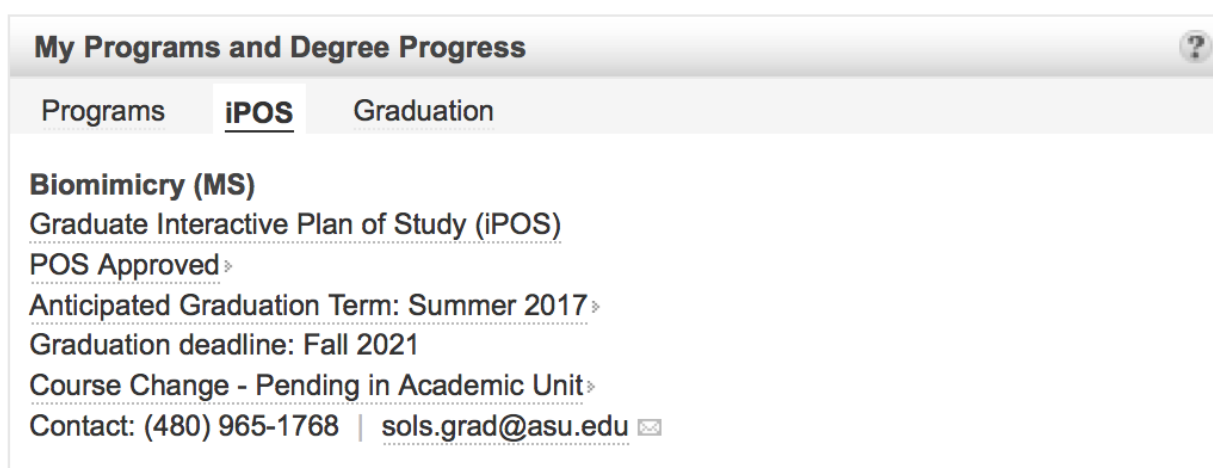
## Plan of Study (iPOS)

The Plan of Study (iPOS) is an agreement between the student and ASU about the course work to be completed for the graduate degree. The academic unit's graduate support staff should be the primary contact regarding iPOS and degree requirements. It contains certain degree

requirements such as core and elective coursework, as well as, a culminating experience which must be included before it can be approved. Your advisory committee should consist of the faculty of each of your practicums, plus Dayna Baumeister.

While completing the iPOS, keep in mind that this is a "plan" for completing Program requirements and changes, most likely, will need to be made in future semesters.

The iPOS is completed through the online system called the Interactive Plan of Study accessed through MyASU. Revisions to the iPOS are easily made online and should be made each semester if needed. You can access your iPOS by visiting your My ASU > My Programs and Degree Progress > iPOS > Graduate Interactive Plan of Study (iPOS).



Step-by-step instructions for completing the iPOS are available in "How to submit your interactive Plan of Study (iPOS)".

The Graduate College requires that students file an iPOS no later than when they have completed half of the hours required for their degree (15 hours for master's degree students). We highly recommend that you complete your iPOS during your first semester. **A student is not eligible to apply for graduation without an approved iPOS.**

After filling out the iPOS online, please inform the SOLS graduate program office that you have completed your iPOS so we can go in and look through the iPOS and send it to the Director for approval. If there are changes that need to be made we will email you with instructions on what to do.

Students should check the iPOS each semester. If you have a change in plans, or if the computer system identifies errors, update your iPOS. To update an iPOS, submit a Course

Change request in the my.asu.edu online system. Students can remove courses not taken from the iPOS and/or add courses taken that were not originally listed on the iPOS.

## Recommended Plan of Study for Graduate Certificate

The following is more specific information regarding the recommended (and in some cases required) ordering and timing of courses. This information should be taken into consideration when building a iPOS. Under current policy, these are the only courses open to Certificate students.

**BMY 501** This course should be taken first, ideally before all other courses, but co-enrollment with BMY 502, BMY 503 and BMY 504 is possible.

**BMY 502, BMY 503, and BMY 504** These courses can be taken in any order depending on when you begin your studies at ASUOnline. We recommend taking these courses in sequential semesters.

**BMY 530** For graduate certificate students, completion of BMY 501, 502, 503, and 504 is required before enrolling in BMY 530 (VDL) (this is your culminating class). You can petition for co-enrollment in 530 and your final course, but only in extenuating circumstance will an exception be granted.

## Recommended Plan of Study for Master's degree

The following is more specific information regarding the recommended (and in some cases required) ordering and timing of courses. This information should be taken into consideration when building your iPOS. Please note that the classes are scheduled to accommodate part-time enrollment. We encourage people to complete their studies at a half-time basis in order to experience the highest quality the program has to offer. You are allowed to move along faster, however, each course, with exception of BMY 530 is offered only once a year.

**BMY 501** This course should be taken first, ideally before all other courses, but co-enrollment with BMY 502, BMY 503 and BMY 504 is possible.

**BMY 502, BMY 503, and BMY 504** These courses can be taken in any order depending on when you begin your studies at ASUOnline. However, we highly recommend that these courses be taken as early in the program as possible and ideally before any electives are taken, as they form the foundational work for these electives. While this is preferred, specific recommendations for each elective are below.

**BMY 511** BMY 504 is a required prerequisite unless written exception by instructor.

**BMY 512** Ideally, BMY 504 is taken prior to this course. Recommended, not required.

**BMY 516** Completion of BMY 501 is required. Ideally, BMY 502 and BMY 504 are taken prior to this course. Recommended, not required.

**BMY 517** No pre-requisites.

**BMY 591** Ideally, BMY 517 is taken prior to this course. Recommended, not required.

**BMY 598** Topic iSites. No prerequisites, although if you've taken BMY 502 or 503 first you'll understand more of what you observe during your assignments.

**BMY 598** Topic Communicating Biomimicry. BMY 501, 502, and 504 required pre-requisites (or co-enrollment). BMY 517 and BMY 580 recommended.

**BMY 598** Topic Teaching Biomimicry. BMY 501, 502, and 504 required pre-requisites. BMY 503 and BMY 598 iSites recommended.

**BMY 598** Topic Facilitating Biomimicry. BMY 501, 502, and 504 required pre-requisites. BMY 516 recommended.

**BMY 530** This is a self-designed practicum, and as such it is highly recommended that this be in your last semester. BMY 501, 502, 503 and 504 are pre-requisites. MS students are eligible to take this course after they have completed at least 20 credits of their program.

**BMY 580** Biomimicry Case Study Practicum. BMY 516, not required, but recommended prerequisite or co-enrollment. Could be completed earlier in program.

**BMY 580** BioBrainstorm Practicum. BMY 503 and BMY 504 required.

**BMY 580** Genius of Biome Practicum. BMY 503 and BMY 504 required. BMY 512 recommended.

## Expected Course Workload

The programs are designed specifically for working professionals, rather than full-time students. In this way, the course availability assumes most students will take 1–2 courses/semester. The amount of workload in a given week corresponds with the number of credits you are enrolled in. A good rule of thumb is 3–4 hours/week/credit enrolled. This is an

average, and some weeks will have more or less. If it is a subject you have less familiarity in, or if English is a second language, please anticipate spending more hours/week.

Keep in mind that 1 credit in a 7.5 week semester is the same workload as 2 credits in 15 week semester. Likewise, a 2 credit 7.5 week course has the same workload as a 4 credit 15 week course. BMY 504 and BMY 516 are compressed into 12 weeks during the summer, in which case you can expect a minimum 4–5 hours/credit/week for those 12 weeks.

Each course is asynchronous, with no set meeting times, but you will have weekly expectations. Almost all weeks will have weekly assignments to turn in as well as forum participation. Additionally, there is required videos and readings. Most courses incorporate some assignments that require team participation.

## Academic Calendar

It is the student's responsibility to know and regularly check deadlines. ASU Online regularly offers classes in the fall, spring, and summer terms with the following components:

Fall/Spring Session A: first 7.5 week session
Fall/Spring Session B: second 7.5 week session
Fall/Spring Session C: full semester (15 weeks)

Summer Session A: first 6-week session
Summer Session B: second 6-week session

Summer Session A + B: 12-week session
Summer Session C: 8 week session

Note: The Biomimicry program treats the summer semester similar to Fall and Spring. We expect that students stay enrolled and engaged in classes for all semesters.  To view the full academic calendar, visit: https://students.asu.edu/academic-calendar

# Finances

## Cost

The cost of this program is $750 per credit hour, with no additional program fees (ASU and other AZ based university employees are eligible for tuition reduction. Please check the tuition waiver rules and application for details.) This fee is inclusive of tuition and BMY program fees. If you are receiving a tuition waiver from outside sources, please be aware that your waiver may not cover the full $750. Technology, Financial Aid Trust and other mandatory university fees will apply.

Additional tuition information: http://asuonline.asu.edu/what-it-costs

## Financial Support
Students can apply for financial aid before they apply for admission to the university; however, students must be admitted to a degree-seeking program of study in order to be offered financial aid. See graduate admission information. **Please note that only US students are eligible for loans or teaching and research assistantships however, all students are eligible for scholarships.**

You can find information about financial aid from The Biomimicry Center here:
http://biomimicry.asu.edu/education/financial-support/

Additional Financial Aid information can be found at:
https://students.asu.edu/financialaid/apply/graduate

Financial Aid Contact: 855-278-5080 (toll free)

Financial Aid for International Students:
https://students.asu.edu/financialaid/apply/international

## Scholarships
A limited number of merit + need based scholarships are available for enrolling students and those who are in their first semester. You must apply before the end of your first semester. Two levels of scholarships are offered, $2000 per semester (up to 5 semesters – for MS students only) or $1500 per semester (up to 3 semesters). Up to 4 scholarships are awarded each semester.

### Scholarship Details
You can apply for a scholarship at any time between your acceptance into the program and the end of your 1st semester.

To be eligible for a scholarship and to maintain your eligibility, the following is required:

- Have and maintain a cumulative GPA of 3.0 or higher. If you drop below a 3.0, you then forfeit funds for every subsequent semester you are below 3.0.
- You must be enrolled in at least 3 credits to apply your scholarship funds to that semester. If you plan to enroll in less than 3 credits, your funds will not disburse.
- You must notify Mary Kivioja (Mary.Kivioja@asu.edu) if you plan to not take courses for a semester, you drop below a 3.0, or you withdraw from your program. Failure to

provide this information before your funds are disbursed will make you ineligible to continue your scholarship.

*If you withdraw from the program, you may be responsible for paying back the funds that were awarded to you. Please contact Mary Kivioja (mary.kivioja@asu.edu), immediately, if you plan to withdraw from the program.*

Funds will disburse to student accounts the week before [tuition deadlines](#).

*Scholarship Application Process:*
1. If you are a US citizen or resident eligible for federal financial aid, fill out the [FAFSA form](#) to determine your need score.
2. Fill out the [application form](#) and submit by deadline.
    ○ For summer entry, apply by March 1st.
    ○ For fall entry, apply for June 1st.
    ○ For spring entry, apply by November 1st.
3. Awards will be announced no later than 4 weeks before the start of classes each semester.
4. Register for classes by [University deadlines](#).
5. Pay tuition (less your scholarship) no later than [University deadlines](#).
6. Your scholarship will be credited to your student account one week before tuition deadlines each semester.

---

## Teaching and Research Assistantships
Students with regular admission to a graduate program in Biomimicry, as well as proof of citizenship or right to work in the US , are eligible to apply for Graduate Teaching or Research Assistantships.

### Research Assistants/Associates (RAs)
A graduate research assistant is a student appointed part-time by the university whose primary responsibilities are research related. Graduate research assistants may assist faculty members in research and creative activities, perform administrative or editorial duties directly connected to research and creative activities, develop and evaluate instructional materials and/or curricula, or assume responsibilities for a designated research area under the direct supervision of a faculty member. Research Assistantship appointments are available one time per year and extend through the entire academic year (fall and spring). RA appointments may be extended through a summer semester but this is dependent upon the project and the availability of supervisors. Research assistantships are awarded on a competitive basis and are funded by The Biomimicry Center. Your hire will be processed by the School of Life Sciences

and managed by the Biomimicry Program leads and faculty. The positions are offered as 0.25 FTE (10 hours/week). Compensation is $4000/semester, plus 50% of tuition.

*Teaching Assistants/Associates (TAs)*
A graduate teaching assistant is a graduate student appointed part-time by the university whose primary responsibility is in an instructional capacity. Graduate teaching assistants may tutor students, proctor examinations, grade tests and papers, and provide general assistance in the instructional process under the direct supervision of a faculty member. Teaching Assistantships (TAs) are awarded by invitation only and are offered as 0.25 FTE (10 hours/week). Compensation is $4000/semester, plus 50% of tuition.

Assignments are based on the School's needs, faculty requests, and students' previous performance in the class to be assisted. Notification of appointments and rejections usually are given by December 15 for the following Spring semester, April 15 for the Summer semester, and  August 1 for the Fall semester. Teaching Assistantship appointments are available each semester. Your hire will be processed by the School of Life Sciences and managed by the Biomimicry Program leads and faculty.

For more detailed information about Teaching Assistantships and Research Assistantships, please refer to the handbook: https://graduate.asu.edu/ta-ra-handbook

*TA/RA Eligibility*
In order to be eligible to receive an appointment as a TA/RA, a student must be regularly admitted to and enrolled in a graduate program in biomimicry. During the fall and spring semester, a TA/RA must be enrolled for a minimum of six hours. During the summer session(s) a TA/RA must be enrolled for a minimum of one hour. Audited courses may not be used to fulfill this requirement.

Federal regulations require that all new ASU employees, including TAs/RAs show proof of citizenship or right to work in the United States. You will be asked to verify this information in your hiring paperwork.

# Once you are enrolled:

## Satisfactory Progress
Students are responsible for reading and following satisfactory academic progress policies for the ASU Graduate College, SOLS, and the Biomimicry Center

## Graduate College Satisfactory Academic Progress Policy
All graduate students are expected to make systematic progress toward completion of their

degree. This progress includes satisfying the conditions listed below, and achieving the benchmarks and requirements set by the individual Degree Programs. If a student fails to satisfy the requirements of their Degree Program and/or the benchmarks outlined below, the student may be dismissed from their Program based on the Academic Unit's recommendation to the Graduate College. The Graduate College Dean makes the final determination.

1. Maintain a minimum of 3.00 GPA on both the iPOS and Graduate GPAs. If either GPA falls below 3.00, the student must develop, with their advisor, an academic performance improvement plan that includes the conditions and timeframes for making satisfactory academic progress in their Degree Program.
2. Satisfy all requirements of the Graduate Degree Program.
   - The iPOS GPA is calculated from all courses that appear on the student's approved iPOS.
   - The Graduate GPA is calculated from all courses numbered 500 or higher that appear on the transcript, with the exception of courses counted toward an undergraduate degree at ASU (unless shared with a master's degree in an approved bachelor's/master's Degree Program); and courses identified as deficiencies in the original letter of admission. The student is considered to be on academic probation until the conditions specified in the academic performance improvement plan are met and both GPAs are above 3.00.
3. Satisfy the maximum time limit for graduation from the student's graduate Degree Program (six years for master's.).
4. Successfully complete the culminating experience of a portfolio (i.e. complete satisfactorally three practicums).
5. Graduate students must stay continuously enrolled in their Degree Program. Failing to do so without a Graduate College-approved _Request_ to _Maintain Continuous Enrollment_ is considered lack of academic progress and may lead to automatic dismissal of the student from the Degree Program. Persistent "w" and "I" grades during multiple semesters on an iPOS or transcript may reflect lack of academic progress.

Full Graduate College Policies and Procedures: https://graduate.asu.edu/policies-procedures

Students who are not able to fulfill a requirement by its deadline may submit a petition in writing to their Program Director and the Grad AD requesting an extension to complete the requirement. The petition must:

- Explain extenuating circumstances as to why the requirement cannot be met
- Describe what has been done and will be done to get back on track
- Give the date(s) as to when the requirement will be completed
- Include a letter of support from the student's advisor

Students will be notified whether or not the Program Director and the Grad Associate Director have granted an extension by email or letter. Consequences of unsatisfactory performance and progress will directly affect consideration of eligibility for BMY academic year TA and RA positions. Programs and individual faculty in addition may use progress determinations to inform funding decisions.

## Continuous Enrollment

All graduate students must enroll EACH Fall and Spring semester (does not include Summer) until they graduate. Further, students must be enrolled in courses that meet the Program requirements. If no additional credit is required toward the degree, the student may enroll in BMY 591 (This course will not count towards your degree requirements) or petition for continuous enrollment (see below).

If the student fails to enroll for a semester, the Graduate College automatically drops the student from the Program and University. The student would have to reapply, pay the application fees, and be readmitted to continue the Degree Program. There are no special considerations for the new application – the application for readmission is evaluated against the pool of current applications for that year and readmission is NOT guaranteed.

### *Request to Maintain Continuous Enrollment*

Graduate students planning to discontinue registration for a semester or more must submit a [Request to Maintain Continuous Enrollment form](). This request must be submitted and approved **before** the anticipated semester of non-registration. Students may request to maintain continuous enrollment without course registration for a maximum of **two** semesters during their entire program.

To submit a petition to maintain continuous enrollment, please fill out the form and send to Wendi Simonson ([wendi.simonson@asu.edu](mailto:wendi.simonson@asu.edu)) and Mary Kivioja (mary.kivioja@asu.edu). Form will need to be signed by the Program Manager and then sent to Graduate Education for approval. Once your request has been approved or unapproved by Graduate Education, you will receive an email from them letting you know the decision.

*Please note: you are allowed to make one change throughout your program when it comes to continuous enrollment or deferring to start at a later term. For instance, you can not defer your starting semester and then later request to maintain continuous enrollment.*

A student with a Graduate Education approved Request to Maintain Continuous Enrollment is not required to pay tuition and/or fees, but in turn is not permitted to place any demands on university faculty or use any university resources. These resources include university libraries, laboratories, recreation facilities or faculty time.

### Academic Record Changes

A student may apply for an academic record change for a prior semester when application for a grade change is inappropriate to correct the student's records. An academic record change includes adding or dropping a class, changing grade options, or adjusting semester hours.

An academic record change is subject to the approval of:
1. the class instructor
2. the chair of the department offering the course, AND
3. the standards committee of the college offering the course.

### Withdrawing from a program

If a student wishes to withdraw from his/her graduate degree program and the university, they must complete the Voluntary Withdrawal form. Students must separately complete the appropriate forms with the University Registrar to withdraw from their courses.

### Drop/Add and Withdrawal Deadlines

Registration deadlines determine the last day you are able to add, drop or withdraw from classes. Each class has its own set of registration deadlines which are based on the length of the class as well as the session in which the class is held. The drop/add/withdrawal deadlines listed on the Academic Calendar apply to classes scheduled in the regular A/B/C sessions. If your class does not follow the A/B/C session timelines, the drop/add/withdrawal deadlines are prorated. The best way to determine the registration deadlines for a class you are registered for is to sign in to My ASU and click on the calendar icon 📆 next to the class in the My Classes box. To determine the registration deadlines for a class you have not yet registered for, use the online Class Search and Course Catalog to search for the class and click on the Dates column in the search results.

### Drop/add deadline

This is the last day to add a class or to drop a class without receiving a grade of "W" on your transcript. Adding a class after the drop/add deadline is considered a Late Add and requires instructor, department, and college approval. All withdrawals after this date will result in a grade of "W" on your transcript for each class withdrawn.

### Course withdrawal deadline

This is the last day to request a withdrawal from a class while staying enrolled in other classes in the same session. A withdrawal from a class after this date is only available as part of a complete session withdrawal (see below).

### Complete session withdrawal deadline

This is the last day to request a complete withdrawal from a session. As part of a complete session withdrawal you must withdraw from all of your classes in the session.

### Other Types of Drops/Withdrawal

There are appropriate circumstances when students may need to withdraw from the university (i.e. medical withdrawal, compassionate leave). The policies for such withdrawals are the same for both undergraduate and graduate students.

For information about these types of withdrawal, please visit:
https://students.asu.edu/drop-add

- Medical and Compassionate Withdrawal
- Military Activation Withdrawal
- Instructor-initiated Drop
- Instructor-initiated Withdrawal

## Dual or Transfer Enrollment in the Graduate Certificate and the Master's degree

*Please pay close attention to the following options pertaining to the relationship between the programs if you anticipate changing programs or earning both credentials*

### Option 1: Earn both credentials by enrolling in both programs from the start

If you know for sure you want to do both, your easiest logistical path is to enroll in both the certificate and MS right from the start together (or as soon as possible after admission to one), then there will never be a pre-admission issue.

The programs are designed to be nested, the first 13 credits of the 15 credit certificate are the same as the MS program. The last 2-credits of the Certificate earned for BMY 530, however, will not count towards the MS requirement of 30 credits. (You can either take BMY 530 again with a new topic near the end of your MS or choose the other three practicums).

If you are enrolled in both programs and then choose not to go on for the MS you can leave once the certificate is complete, OR continue on and earn both credentials.

To withdraw from either the Graduate Certificate or the Master's Degree Program, you are required to fill out and submit the "Voluntary Complete Withdrawal from a Graduate Degree Program" form (see appendix).

**Option 2: Switch to the MS after you started the Certificate program**
If you want to switch from the certificate to the MS, the earlier you apply to the MS the better, since there is a 12 credit pre-admission policy to degree programs. This means that you can transfer up to 12 credits from one program to another without asking special permission. As soon as you switch, you can bring your credits over. If you wait until after you have earned 13 credits, you will have to petition to bring over the last credit.

**Option 3:  Switch to the Certificate after you started the MS Program**
If you started the MS program, but decide to complete the Certificate instead, you have to withdraw from the MS and enroll in the Certificate <u>before you complete your first 6 credits</u>.

There is a 40% rule for pre-admission to a certificate, so having a MS student apply to a certificate after all the required credits are earned would be against policy.

To withdraw from the MS program, you are required to fill out and submit the "Voluntary Complete Withdrawal from a Graduate Degree Program" for (see appendix).

# Once you're close to graduating:

## Degree Completion

### Culminating Experience
The culminating experience for the MS degree consists of the completion of 3 of the 4 Practicum courses. For the graduate certificate, the culminating experience is successful completion of BMY 530. These are original works of research and scholarship performed at the graduate level.

You must select one chair and two additional members for your portfolio and listing on your iPoS. You should choose the lead instructor for any BMY 580 courses that you take, and if you are including BMY 530, then your primary support faculty for that project as well.

## Graduation

**Students must apply for graduation** through MyASU in accordance with the University Registrar policies. See Application for Graduation. Students must meet all University and Graduate Education degree requirements prior to the conferral of their degree.

The graduation deadlines and procedures are set by the office for Graduate Education and are available online at graduate.asu.edu/completing-your-degree. Deadline dates vary slightly depending on the calendar year, so students should check them carefully in advance of the semester they plan to defend their thesis/dissertation. It is very important that students become familiar with these deadlines so that graduation can occur during the expected term.

Several steps must be completed in order to ensure you can graduate successfully. There is a checklist of requirements at the following links:

- o Checklist to ensure graduation
- o How to graduate: Master's with Portfolio

*Basic steps in completing a graduate degree*
1. **Register**. Students MUST register for at least one credit hour during the semester in which they plan to graduate. For students graduating during the summer, enrollment in any one summer session (8-week, 1st 5-week, or 2nd 5-week) fulfills the requirement. If
2. **Update the iPOS**. See "Plans of Study" above.
3. **Apply for graduation**. Apply for graduation through the MyASU graduation tab. If application for graduation is made after the deadline, the student is assessed a late fee and his/her name does not appear in the commencement program.
4. **Register for commencement.** If planning to attend, sign up via MyASU. Get academic regalia at ASU's Bookstore or find online.
5. **Attend commencement**, if desired.
6. **Receive official degree or certificate.** Once the Registrar's Office confers your completion of the program, students will be mailed their official degree. This takes anywhere between 8–10 weeks.

### Awarding of a Graduate Certificate
A student will be eligible for the official posting of the graduate certificate to their transcripts when all applicable coursework has been successfully completed and the office for Graduate Education scholarship requirements have been met. Students must submit an iPOS for the graduate certificate program, and apply for graduation.

# Special Circumstances

### Appeals
SOLS and the Biomimicry Program Manager provides the College of Liberal Arts and Sciences (CLAS) Associate Dean of Graduate Programs with a copy of the letter recommending dismissal of the student, along with supporting documentation. Appeals must be made within 10 days of

the notification date. CLAS then notifies students who appeal in writing that the College appeal has been received and will be reviewed. Possible outcomes of an appeal are:

1. The CLAS Associate Dean notifies student in writing of a successful appeal. The letter will include any stipulations or restrictions (e.g., continuation in Program is under the condition of academic probation, contingent on corrections within a time frame).
2. The CLAS Associate Dean notifies students in writing of an unsuccessful appeal and that they will be recommended to the Graduate College for dismissal.

Possible reasons for a dismissal are:
- GPA is lower than a 3.0
- Non-satisfactory progress
- Requirements for admittance with deficiencies are not met

## Academic Probation

Academic probation affects the student's status but is not reported to the Graduate College or put on a student's permanent academic record. Students can be placed on probation for academic dishonesty or unsatisfactory progress. Students should take being placed on probation as a strong warning that their continuing status in the program is in jeopardy unless corrective action is taken.

Students on probation are notified in writing. The probation letter includes:

- Academic performance and/or Program requirements to be met
- Deadlines for meeting requirements
- Consequences of not meeting requirements

Students on probation may not be eligible for financial support, including graduate assistantships. If so, the probation letter will specify any conditions on financial support.

After probation, students can be returned to a status of Satisfactory Progress or recommended for Program Dismissal. Students who meet the academic performance and/or Program requirements by probation deadlines are considered to be making Satisfactory Progress.

## Involuntary withdrawal by the office for graduate education

Any student who does not comply with the office for Graduate Education policies may be withdrawn from their graduate program after review by the Vice Provost for Graduate Education.

In addition, an academic unit may recommend withdrawal of a student from a graduate program for lack of compliance with published departmental policies or lack of satisfactory academic progress. All such recommendations must be submitted to the office for Graduate Education with appropriate documentation (e.g., nature of issue, communications with student). Only the Vice Provost for Graduate Education may withdraw a student from a graduate program due to lack of compliance with satisfactory academic progress policies.

A student who has been withdrawn from a graduate program due to lack of compliance with published departmental or Graduate Education policies, or lack of satisfactory academic progress is eligible to apply for admission to the same program only after one year has passed from the term of the withdrawal.

## Discrimination Complaints and Equal Opportunity Policy Statement

ASU promotes equal opportunity through affirmative action in employment and educational programs and activities. Discrimination is prohibited on the basis of race, color, religion, national origin, citizenship, sex, sexual orientation, gender identity, age, disability, special disabled veteran, or Vietnam-era veteran status. Equal opportunity includes, but is not limited to, recruitment, hiring, promotion, termination, compensation, benefits, transfers, university-sponsored training, education, tuition assistance, and social and recreational programs. More information is available at https://cfo.asu.edu/equity-and-inclusion.

Any complaint of alleged discrimination or harassment may be filed with the Office of Equity & Inclusion for investigation and resolution. Any employee or student may visit with the Office's staff to discuss, in confidence, any concern without fear of jeopardizing job or academic standing within the University.  ASU's Office of Equity and Inclusion phone: (480) 965-5057

## Sexual Harassment

Sexual Harassment is defined as unwelcome behavior of a sexual nature that reasonably interferes with the working/learning environment and creates a hostile, intimidating, or offensive environment or takes the form of seeking sexual favors in exchange for a promise of a benefit or a threat of a penalty. Sexual harassment is a violation of ASU policy as well as a state and federal law. More information about this policy is available at https://sexualviolenceprevention.asu.edu/.

## Student Anti-Retaliation Statement

Students have the right to be free from retaliation. Threats or other forms of intimidation or retribution against a student who files a complaint or grievance, requests an administrative remedy, participates in an investigation, appears as a witness at an administrative hearing, or opposes an unlawful act, discriminatory practice, or policy are prohibited and subject to university disciplinary procedures. Students with complaints of retaliation should utilize the procedures available under the University Code of Conduct, the Student Code of Conduct, the Graduate Student Grievance Procedure, the Student Employee Grievance Procedure, the

Sexual Harassment Policy, nondiscrimination policies, or other available administrative procedures as appropriate. For assistance with procedures, students should contact the dean of the academic college if the circumstances relate to a course or academic evaluation, the Director of the Office of Equity and Inclusion if the circumstances relate to a claim or discrimination or harassment, or the Dean of Students for all other circumstances.

### Updating Student Name for Official Records
You can update your name both officially in the ASU system and specifically for your diploma.

To update your name on all official records you may submit the Name Change Application to the Outgoing Transcripts section of the University Registrar Services. Their email is academicfiles@asu.edu Here is a link to the form:
https://students.asu.edu/forms/name-change

To update your name on your diploma you may submit the Diploma Name form. Here is a link to this form: https://students.asu.edu/forms/diploma-name

# Need Help?

Online services available to ASU Online graduate students.

### Tutoring
https://tutoring.asu.edu/online-tutoring. Students can make appointments through the website or by calling 480-965-9072.

- Students can view subject are schedule and access drop-in subject area tutoring
- Students can access scheduling system for online writing, graduate writing, and mentoring services
- Students can access the online walk-in waiting space for online writing/graduate writing

Tutor Search: https://tutoring.asu.edu/tutor-search
- Students can use this tool to search by course what online tutors work during what time for their specific class

### Graduate Writing Center
ASU's Online Graduate Writing Center specifically serves students enrolled in 500, 600 and 700 level classes. Using Adobe Connect, this real-time, appointment-based assistance allows students to meet one-on-one with a graduate writing consultant to receive feedback on their writing projects at any stage in their development and writing process.

The center is open Sundays–Thursdays with appointments available between the hours of 2pm and 10pm.

**Academic Mentoring**
Using Adobe Connect, academic mentors meet with students one-on-one for a personalized approach to improving academic skills such as time management, blackboard reviews, test preparation, and more.

The Online Graduate Writing Center appointments will begin serving students with a light schedule on Monday, August 22, 2016. The full schedule of appointments will start Monday, August 29, 2016. Academic Mentor appointments will be available within the first few weeks as well. The schedules for these services, along with information on how students can make appointments can be found at https://tutoring.asu.edu/online-tutoring. Students can make appointments through the website or by calling 480-965-9072.

*Instructional Videos:*
Introduction to Online Writing Tutoring:
https://www.brainshark.com/arizonastateuniversity/asuowriting

Introduction to Online Graduate Writing Support:
https://www.brainshark.com/arizonastateuniversity/asuogradwriting

Introduction to Online Subject Area Tutoring:
https://www.brainshark.com/arizonastateuniversity/asuosubjecttutoring

# Student Resources

There are many perks to being a student ASU, click on this link to see some of the perks:
http://asuonline.asu.edu/student-resources/student-perks

Information about other student services such as libraries, online tutoring, career services, and disability resources can be found at the following website:
http://asuonline.asu.edu/student-resources/student-services

**Technical Support**
ASU provides a number of resources to help you plug in and stay connected to the technology you'll need to complete your degree online.

**ASU Help Center**

Visit contact.asu.edu for frequently requested information or visit the My ASU Service Center where you can easily search for answers to your questions using ASU's Knowledge Base or access 24/7 live chat with one of our ASU Help Desk agents. You can also request services or report an issue by creating a support case and our field of experts will route your request accordingly and follow-up by email or your preferred contact method.

*Troubleshooting Tips for Accessing Online Courses*
If you are having issues accessing your courses, here are a few things to try before you contact the ASU Help Center.

**First**: Try a different browser. If that doesn't work:
1. Sign out of My ASU (don't just close the browser window.)
2. Clear your browser cache. To find out how, google "clear cache" followed by the name of your browser for a list of websites with step-by-step instructions.
3. Disable your browser's pop-up blocker. To find out how, google "disable pop-up blocker" followed by the name of your browser. You'll get a list of sites with step-by-step instructions specific to your browser.
4. Log back in and try again.

**Other common questions and answers**

*Do I need a computer? Can I access my courses from a mobile device?*
You will need a desktop or laptop computer to access your classes. A mobile device will not provide the access and functionality necessary for ASU Online courses.

*Do I need high-speed internet?*
Yes. Most ASU Online courses use multimedia tools that are best viewed with high-speed internet, so having the proper connection is essential.

It is also important to have a reliable internet connection at home, or at a place where you can access the internet on a consistent basis. We also recommend having a back-up plan if your internet connection becomes unavailable, i.e. going to a library, friend/relative's house. Take this into consideration before enrolling in a fully online program.

*Are there requirements for web browsers?*
Students should have at least two browsers on their computer. Any browser will work, though preferred browsers are Firefox and Chrome, which can be downloaded for free online.

*Do I need to purchase software for ASU Online courses?*
In general, course access and assignments do not require any special software; however, certain degrees may require specific software programs. In the Biomimicry programs, several courses require submissions of PowerPoint files.

ASU students have access to Google Drive (My Drive via My ASU), where they can create and share Google documents, presentations, spreadsheets and more. Students also have access to hundreds of software titles at no cost through My Apps, also via My ASU.
Learn more about My ASU [here](#).

### The ASU Disability Resource Center
The DRC is a great resource for students with disabilities.It provides services to qualified students with disabilities on all ASU campuses. For convenience, students will find offices located at the Downtown, Polytechnic, Tempe, and West locations. You can contact any DRC office with the following information:

Phone: 480-965-1234
FAX: 480-965-0441
Email: [DRC@asu.edu](mailto:DRC@asu.edu)

### ASU Counseling Services
ASU Counseling Services offers confidential, personal counseling and crisis services for students experiencing emotional concerns, problems in adjusting, and other factors that affect their ability to achieve their academic and personal goals.

For more information visit: [https://eoss.asu.edu/counseling](https://eoss.asu.edu/counseling)

# Checklist of things to do: Timeline of benchmarks

- ❏ Apply to the program
    - ❏ Fill out application online
    - ❏ Submit letters of recommendations (MS 3, CERT 2)
    - ❏ Request official transcripts from your previous institutions
    - ❏ Submit personal statement
    - ❏ Submit curriculum vitae
    - ❏ Submit English proficiency test results TOEFL, ILETS, etc (International students only)
- ❏ Apply for scholarships and financial aid
- ❏ Review handbook and FAQ page on [Biomimicry.asu.edu](Biomimicry.asu.edu) website - understand all expectations and requirements
- ❏ Sign acceptance letter and return to [biomimicry@asu.edu](biomimicry@asu.edu)
- ❏ Set-up your ASU email and login/familiarize yourself with your MyASU account
- ❏ Develop your plan of study according to [Biomimicry course calendar](Biomimicry course calendar)
- ❏ Register for classes thru my.asu.edu
- ❏ Familiarize yourself with BlackBoard (access through my.asu.edu)
- ❏ Pay your tuition
- ❏ Submit your plan of study thru my.asu.edu (iPOS)
- ❏ Take required courses for program completion
- ❏ Adjust changes to your iPOS as you go through the program
- ❏ Stay enrolled in at least 1 credit per semester (summer excluded)
- ❏ Apply for graduation in the semester of your last course thru my.asu.edu
- ❏ Graduate!

**<u>Updates from v1 (2171) - v1 (2174):</u>**