## **Biological Sciences Student Guide 2022-2023**







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Follow the department on social media to stay up to date on unique opportunities, deadlines, upcoming department events, and more!

Facebook Group: DePaulBio



Twitter and Instagram: @depaulbiodept

in LinkedIn Group: DePaul University Department of Biological Sciences

~For more information, please visit: http://go.depaul.edu/biology~

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Welcome to the Biological Sciences Student Guide! This guide is intended to aid Biology students (both majors and minors) to successfully carry out their programs. We have tried to include a lot of the information students would find useful in scheduling their courses, understanding their requirements, knowing what resources exist to help in their academics, and beyond! Since there are always ongoing changes and last-minute substitutions, we apologize in advance for any errors or mistakes that are in the booklet. Please let us know of any errors you find, as well as any additional types of information you would like us to include. Our goal is to make sure every student has access to all of the information needed to complete our program and to help students succeed in their academic careers.

#### **Contacting the Biological Sciences Department**

Main Office: McGowan North, room 118Phone: 773-325-7595Hours: Monday-Friday, 9-5pm

#### **Academic Advising**

Be sure to meet with your academic advisor at least once a quarter to ensure you are on track for completing the Biological Science major at your desired graduation time. **Current Biological Science majors** (except those in Pathways Honors\*) will meet with the Departmental Academic Advisor, Jaimie Engle. Appointments can be made through <u>BlueStar</u>, by visiting the office, or by contacting <u>CSHAdvising@depaul.edu</u> or (773) 325-8490. \**Pathways Honors students are advised by Lauren Paez, and may schedule with her via BlueStar, or by contacting the CSH Advising Office at the email or phone number above.* 

<u>Click here</u> for step-by-step BlueStar scheduling instructions for BIO/NEU students specifically.

Advising for new or exploring students: Contact the Office for Academic Advising Support (OAAS)

Students also have assigned **BIO faculty advisors**, and are encouraged to meet with Career Advisors as well. Your assigned faculty advisor appears in your BlueStar Student Success Network. Please contact Jaimie at <u>jengle@depaul.edu</u> if you do not have a faculty advisor assigned, or would like to request a certain faculty advisor. **Please see the Advising Umbrella** on page 23 at the end of this document to better understand how each of your advisors can help you!

**Career Advising:** DePaul's Career Center has a Health Care & Science Career Community! Start working with the career center early on for assistance exploring and preparing for your post-grad endeavors: <u>https://resources.depaul.edu/career-center/career-advising/communities/health-care-science/Pages/default.aspx</u>.

**Pre-Health Advising:** Interested in a health related career? There are many forms of Pre-Health Advising at DePaul. There is the Pre-health Advising Committee (PAC), which is comprised of an interdisciplinary body of faculty and staff whose primary function is the academic advising of students intending to pursue a career in one of the health professions. We also have dedicated Pre-Health advisors. To learn more about the PAC and our Pre-Health Advisors, Lindsey Burdick or Melissa Smith, and to obtain information about upcoming events and speakers that the PAC organizes, we encourage you to visit their website and register for their services at: <a href="http://csh.depaul.edu/student-resources/advising-student-services/pre-health-advising">http://csh.depaul.edu/student-resources/advising-student-services/pre-health-advising</a>. Email <a href="http://csh.depaul.edu">CSHAdvising@depaul.edu</a> to get in touch with Pre-Health Advisors.

See the final page of this document for the BIO Advising Umbrella! It provides clarification about how different advisors can help you!





#### **Cover Photo Captions**

(Top Left): BIO Students attend Midwest Ecology & Evolution Conference (MEEC). Read about their research below! Jonathan Allen (BIO: with Kenshu Shimada). A marine bonebed of the Upper Cretaceous Niobrara Chalk, western Kansas.

Jessica Barton (BIO: with Kattie Morris, Dennis Merritt, Seth Magle, and Jalene LaMontagne). Does urbanization influence population trends of European starlings and their relationships with cavity-nesting birds?

Isaac Bruns (BIO: with Timothy Sparkes). Host-specificity of Posthodiplostomum parasites in sympatry and potential spillover effects.

Roberto Cucalon (BIO: with Windsor Aguirre and Jalene LaMontagne). Is white spruce population genetic structure related to mast seeding?

Cristian Corona (BIO: with Abigail Leeper and Jalene LaMontagne). Eastern spruce budworm defoliation of white spruce over balsam fir in northern Wisconsin.

Timothy Cronin (BIO: with Timothy Sparkes). Parasite infection, host predation, and transmission in a complex habitat. Daniela Garza (BIO: with Bruce Schumacher and Kenshu Shimada). Fossil marine vertebrates from the Juana Lopez Member of the Upper Cretaceous Carlile Shale in southeastern Colorado

Riley Hacker (BIO: with Kenshu Shimada). An ichthyodectiform fish (Osteichthyes: Actinopterygii) from the Arlington Member (mid-Cenomanian) of the Upper Cretaceous Woodbine Formation in Texas.

Dana Hundrieser (BIO: with Kenshu Shimada). Marine vertebrate fauna of the Upper Cretaceous Fairport Chalk in Russel County, Kansas.

Alexandra Krak (BIO: with Kenshu Shimada). On the dentition of the extinct megamouth shark, Megachasma applegatei, from the late Oligocene-early Miocene of southern California, U.S.A.

Andres Lafuente S. (BIO: with Kenshu Shimada). Pectoral fin radials in lamniform sharks (Elasmobranchii:

Lamniformes) with special reference to their segmentation patters in lamnid taxa.

Abigail Leeper (BIO: with Jalene LaMontagne). Mast seeding and a spruce budworm outbreak: a lesson in peer pressure. Maria Jazmin Rios (BIO: with Seth Magle and Jalene LaMontagne). The rat wins the race? Spatio-temporal patterns of brown rat populations in the Chicago.

Kristin Staub (BIO: with Windsor Aguirre). Correlation between altitude and morphological variation of fishes in Andean mountain streams.

Myles Walsh (BIO: with Kenshu Shimada). Examination of torso morphology in extant terrestrial amniotes to infer the body morphology of quadrupedal non-avian dinosaurs.

(**Top Middle**): A photograph of the RNA lab for Dr. Kipp's lab research. Research in the Kipp laboratory spotlights hormone signaling and gene regulation in the regulation of ovary development in the mouse.

(**Top Right**): Dr. Shimada photographed with the tooth of the extinct shark, Otodus megalodon. Dr. Shimada recently appeared in journals and news articles discussing the enormous tooth size of the shark. Dr. Shimada is a paleobiologist, with a specialty in a group of sharks known as lamniforms.

## **BIOLOGICAL SCIENCES DEPARTMENT**

#### Faculty and Staff Contact Information

Name	McGowan Office	Extension	E-mail
Dr. Windsor Aguirre (Evolutionary Biology)	McGSo 221A	x58005	waguirre@depaul.edu
Ms. Rima Barkauskas (Senior Instructor)	McG 116	x51891	<u>rbarkaus@depaul.edu</u>
Dr. Margaret Bell (Neuroendocrinologist)	McG 122	x57066	<u>margaret.bell@depaul.edu</u>
Dr. Joanna Brooke (Microbiologist)	McG 203	x51161	jbrooke@depaul.edu
Dr. Jason Bystriansky (Physiologist)	McGSo 412F	x58726	jbystria@depaul.edu
Dr. Sarah Connolly (Microbiologist)			
(Joint-appointment with Health Sciences)	McGSo 411D	x54498	<u>sconnol6@depaul.edu</u>
Dr. John Dean ( <i>Plant Physiology</i> )	McG 209	x52188	jdean@depaul.edu
Dr. Phillip Funk ( <i>Immunology)</i>	McGSo 403J	x58479	<u>pfunk@depaul.edu</u>
Dr. William Gilliland (Genetics)	McGSo 219A	x57464	wgillila@depaul.edu
Dr. JingJing Kipp (Physiologist)	McG 206	x54646	jkipp@depaul.edu
Dr. Dorothy Kozlowski ( <i>Neurobiologist)</i>	McG 106	x52191	<u>dkozlows@depaul.edu</u>
Dr. Jalene LaMontagne (Ecologist)	McG 123	x57272	jlamont1@depaul.edu
Dr. Carolyn Martineau (Senior Instructor)	McG 114	x57198	<u>cmart107@depaul.edu</u>
Dr. Eric Norstrom (Neurobiologist)	McG 124	x52091	<u>enorstro@depaul.edu</u>
Dr. Talitha Rajah ( <i>Cancer Biology)</i>	McGSo 223A	x58006	trajah@depaul.edu
Dr. Megan Schrementi <i>(Laboratorian)</i>	McG 113	x52184	mschreme@depaul.edu
Dr. Kenshu Shimada ( <i>Paleobiology</i> )	McGSo 203	x53697	kshimada@depaul.edu
(Joint-appointment with Env. Science)			
Graduate Program Director			
Dr. Timothy Sparkes (Aquatic Biology)	McG 115 &		
(Department Chair)	McG 236	x54749	tsparkes@depaul.edu
Adjunct Faculty			
Mrs. Claire Behrens, M.S.	McG 306	x51557	<u>cbehren1@depaul.edu</u>
Dr. Terry Fitzpatrick	McG 109	x57462	tfitzpat@depaul.edu
Dr. Richard Hudson	McG 111	x54787	<u>rhudson5@depaul.edu</u>
Dr. Sean Austin Lim	McG 131	x54937	slim21@depaul.edu
Dr. Jessica Pamment	McG 111	x57272	jpamment@depaul.edu
Dr. Sarah Richardson	McG 111	x51567	sricha10@depaul.edu
Dr. Kate Soderstrom	McG 243	x57692	ksoderst@depaul.edu
Dr. Timothy Sosa	McG 213	x57597	tsosa@depaul.edu
<b>Recently Retired Faculty</b>			
Stanley Cohn			<u>scohn@depaul.edu</u>
Margaret Silliker			msillike@depaul.edu
Academic Advisor			
Ms. Jaimie Engle, M.S.	McG 121	x57595	jengle@depaul.edu
Department Assistant	McG 118	x57595	

Table I. Comparison of current BS and BA programs in Biology (differences highlighted in grey)
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Program Requirements BS	Quarter Hours	Program Requirements BA	Quarter Hours
Integrative Concentration			
Liberal Studies Requirements, 19courses	76	Liberal Studies Requirements,	80
Chicago Quarter (4)		21courses	
Focal Point Seminar (4)		Chicago Quarter (4)	
First-Year Writing (8)		Focal Point Seminar (4)	
Multiculturalism Seminar (4)		First-Year Writing (8)	
Experiential Learning (4)		Math & Computing (4)	
Capstone Seminar (4) [i.e. BIO 395]		Multiculturalism Seminar (4)	
Arts & Literature (12)		Experiential Learning (4)	
Philosophical Inquiry (8)		Capstone Seminar (4) [i.e. BIO	
Social, Cultural, and Behavior		395]	
Inquiry (12)		Arts & Literature (12)	
Religious Dimensions (8)		Philosophical Inquiry (8)	
Historical Inquiry (8)		Social, Cultural, and Behavior	
Waived:		Inquiry (12)	
Scientific Inquiry (8)		Religious Dimensions (8)	
Statistical Reasoning (4)		Historical Inquiry (8)	
Quantitative Reasoning (4)		Waived:	
Computational Reasoning (4)		Quantitative Reasoning (4)	
		Scientific Inquiry (8)	
		Statistical Reasoning (4)	
Major Requirements, 16 courses	72	Major Requirements, 11 courses	44
BIO 191-193 (Gen Bio sequence: 12)		BIO 191-193 (Gen Bio	
CHE 130-135 (Gen Chem sequence:		sequence: 12)	
12)		CHE 130-135 (Gen Chem	
CHE 230-233 (Org 1 & 2)*		sequence: 12)	
PHY 150-152 (12)		BIO 206 Biostatistics (4)	
MAT 150-151 (calculus 8)		BIO 250 Cell Biology (4)	
BIO 206 Biostatistics (4)		BIO 260 Genetics (4)	
BIO 260 Genetics (4)		BIO 215 or 235 Ecology or	
Concentration Requirements, 3 courses		Evolution (4)	
BIO 215 or 235 Ecology or		BIO 307 Animal Physiology, or	
Evolution (4)		BIO 308 Human Physiology, or	
BIO 307 Animal Physiology, or BIO		BIO 309 Plant Physiology (4)	
308 Human Physiology, or BIO 309			
Plant Physiology (4)			
BIO 250 Cell Biology (4)			
Major Advanced Electives, 6 courses	24	Major Advanced Electives, 3 courses	12
Six additional Biology courses. At least two		Three additional Biology	
of the Six must have a lab component and at		courses. Two of which must be	
least two of the five must be 300-level		300 level (3)	
courses			
Open Electives, 5 courses	20	Open Electives, 14 courses	56
		BA students are required to	
		complete the Modern Language	
		Requirement	
Total hours required	192	Total hours required	192

Students must earn a C- or better in all major coursework.

<u>\*Organic Chem requirement</u> – CHE 234/235 is no longer required under the BIO BS as of the 2021-2022 academic year. Many students here before 2021-2022 will still show this requirement on their BIO BS DPR. Those students may elect to substitute any *additional* 300-level BIO lab course in place of the CHE 234/235 requirement. Students that need the full year of Organic Chem for post-grad plans should plan to take CHE 234/235.

**BIO Senior Capstone:** Students with a primary major in Biology are required to complete the Capstone offered by the Biology department. Students double majoring or pursuing dual degrees with the primary major or primary degree in Biology are required to complete the Capstone offered by the Biology department. Biology students in the University Honors Program shall take the University Honors Capstone. They are not expected to take both the Honors Capstone and the primary major or primary degree Capstone.

**University Honors Students and Liberal Studies Requirements:** Liberal Studies Requirements differ for students in the Honors Program. Please meet with the CSH Honors Advisor, Nancy Grossman, for specific Honors Program inquiries. Nancy Grossman can be reached at ngrossma@depaul.edu.

#### **Additional Graduation Requirements**

- No grade lower than a C- is acceptable in a student's major, minor or allied field.
- Students must have a minimum of 2.000 cumulative grade point average.
- Students must have a minimum of 2.000 cumulative grade point average in the major, minor or allied field.
- Students must abide by the university residency requirement. The student must have completed the following work at DePaul University: the final 60 quarter hours of credit; one-half of the credit earned in the major area of concentration; one-half of the credit earned in the minor if applicable; all courses in the senior year.

#### **Bachelor of Science**

As a Biological Sciences BS major, you will take one year of introductory biology and chemistry followed by a core program in ecology, genetics and cell biology. You will also take 2 quarters of calculus, at least 2 quarters of organic chemistry, and a year of physics. Professors work directly with you in each lab section to develop and enhance your laboratory skills.

After you have gained a strong foundation of knowledge in biological science theories and practices, you may take electives in the following areas:

- ecological or evolutionary biology
- developmental biology
- molecular and cellular biology
- physiology
- neurobiology
- anatomy

Most faculty members direct their own research programs, giving you an opportunity to work on multiple research projects. Biological Sciences majors are encouraged to attend seminars and complete internships.

If you are interested in pursuing a career in education, the Department of Biological Sciences also partners with the College of Education to award teaching degrees.

We also offer a combined bachelor's and master's degree program in Biological Sciences as well as a combined bachelor's and master's in Biological Sciences and Secondary Education Biological Sciences. Both of these combined degree programs allow you to complete a bachelor's degree and a graduate degree in as few as five years.

#### **Bachelor of Arts**

The Liberal Studies Requirements for the BA are standard, with the exceptions of no Quantitative Reasoning or Scientific Inquiry courses and the Statistical Reasoning requirement being met by BIO 206 Biostatistics.

The General Biology sequence BIO 191-193, Biostatistics BIO 206, and Genetics BIO 260, comprises a core set of courses also required of all BS Biology majors. When joined with the additional requirements of a year of General Chemistry, Cell Biology BIO 250, Physiology (Plant or Animal), and Ecology or Evolution, the BA Major Requirements

will ensure that a BA Biology major will have knowledge of all the major branches of biology supported by a foundational understanding of chemistry. Three additional upper level Biology courses will provide additional development of biological thinking and practices, and the opportunity to fulfill some professional school requirements. The Biology Capstone course will allow for integration of this scientific knowledge with the student's Liberal Studies courses.

The 14 open electives in the BA will allow students to pursue one or two minors, since minors typically require 5-7 courses. Some possibilities include minors in business (5 courses), journalism (6 courses), data science (7 courses), marketing (5 courses), public policy studies (6 courses), public health studies (6 courses), and many more options complementary to a background in biology that will prepare graduates for interdisciplinary careers.

All students admitted to the College of Science and Health will be welcome to select the BA in biology major.

#### **Experiential Learning**

\*Experiential Learning is a LSP requirement that can be filled in several ways. A description of this requirement is found at <a href="https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-common-core/experiential-learning/">https://catalog.depaul.edu/undergraduate-core/liberal-studies-program/liberal-studies-common-core/experiential-learning/</a>. The important thing to remember is that you must be doing the experience (typically something meaningful outside the classroom, such as an internship, research, job, study abroad, etc.) while you're enrolled in the corresponding Experiential Learning course in order to actually receive credit for the EL requirement.

- CLD 250 Navigating the Workplace: (formerly UIP 250) <u>https://resources.depaul.edu/career-center/services-resources/career-courses/Pages/Work-and-Learn-Courses.aspx</u>. Complete the course application to see if your job or internship (doesn't have to be related to the field) is eligible for CLD 250. You'll work with <u>uip@depaul.edu</u> to get enrolled and with any other questions. This is the University Internship Program, which is part of the Career Center, so they can also help you find jobs and internships.
- Research: If you get a research opportunity in a DePaul professor's lab, you'll work with the professor and their department to get enrolled in the appropriate independent study and/or research course. For BIO, for example, that's BIO 397 Mentored Research Experience in Field Biology: <u>https://csh.depaul.edu/academics/biological-sciences/Pages/research.aspx</u>.
  - a. If you get a research opportunity outside of DePaul, it's treated like a job or internship and you would therefore refer back to bullet 1 and see if you can earn credit through CLD 250.
- 3. Study Abroad: <u>https://offices.depaul.edu/global-engagement/student-resources/study-abroad/Pages/default.aspx</u>.
- 4. Service-Learning Courses: These are DePaul courses that have some sort-of community service project/volunteer hours assigned, so unlike the options above, the experience and course are all rolled into one. You enroll, attend class, and fulfill your assigned role or hours. These can be tricky to find because they're listed among all other EL courses, which include many that are restricted upperclassmen in certain majors. So options like Internship in Accounting, or Field Work in , for example, are not service-learning courses. So when browsing the list, you want to look for titles with words and phrases like "community engagement," "social justice," "making a difference," etc. Those appropriate service-learning courses that are open to all students will typically have a clear community service, social justice, and/or multicultural theme to them.

#### **BIO Department Experiential Learning\* Courses**

We currently have the following courses specifically for Biological Sciences students:

- **BIO 302 Student Laboratory Instruction** Completion of course requires student to serve as teaching assistant for biology laboratory course in the following quarter.
- BIO 303 Intro to Scientific Research Course requires that student has had (or currently having) experience in scientific research.
- BIO 318 Field Studies in Marine and Estuarine Biology (aka unofficially "the South Carolina trip course.") This course is designed for science majors with an interest in marine and estuarine biology and will examine this subject from an ecological perspective. The primary objectives of the course are: 1) to explore the diversity of marine and estuarine life; 2) to understand the manner in which physical and biological factors influence biological diversity in marine systems; 3) to understand the role that humans play in shaping these dynamics; and 4) to develop professional connections and gain real-life experiences in marine science. *Reach out to Dr. Sparkes (tsparkes@depaul.edu) with questions about joining this course. Offered in December Sessions.*
- BIO 369 Stem Peer Mentoring This course is designed for undergraduates who will be mentoring students in the College
  of Science and Health. The purpose of the course is to prepare mentors to welcome STEM students into the culture of the
  scientific community at DePaul. Mentors will encourage their peers to use tools and resources designed to help them build a

sense of belonging and achieve academic success. The course will include readings, presentations, and activities, which will support the student's development as a peer mentor. Students will reflect on their experiences to inform their efforts in creating a supportive learning environment for their peers. *By approval – contact Erin Berkowitz (<u>eberkowi@depaul.edu</u>.)* 

- **BIO 388 Research Methods In Biology** \**Please note this course is not currently pre-approved for Experiential Learning* Credit, so students complete the LSP Exceptions Request form found at https://academics.depaul.edu/liberal-studies/currentstudent-resources/Pages/LSP-Exception-Policies.aspx, and submit to liberalstudies@depaul.edu. Research Methods in Biology is a methods-based course designed for science majors that will focus on learning a variety of cutting edge methods used by biologists to carry out research. Throughout the course, students will develop an in-depth understanding and appreciation for one or two research methods which are associated with projects they will undertake as part of BIO 389 (Research in Field Biology). Biology is a very broad field, so your chosen method(s) may end up being based in any of a variety of sub-fields including cell biology, physiology, biochemistry, molecular biology, ecology or evolution. In order to utilize methods to collect biological data you will need to 'become an expert'. In this course you will learn that being an expert means more than just 'following a recipe'. An expert will also understand the theory behind how their method works and appreciate the history of how the method was developed over time (and by whom). An expert will also understand the specifics of how all of the required equipment works (including how it is properly maintained and calibrated) and how to properly collect or prepare any samples/chemicals needed to carry out the process. Finally you will learn how to analyze the data you collect and how to interpret it while acknowledging what limitations may be associated with your data. Research Methods in Biology in a hands-on course. You will learn your method(s), you will practice and you will become an expert. To test whether you are an expert, you will be challenged to teach the method to your peers and produce a detailed methods handout which others can use to carry out the method on their own. This means you will also be taught the methods selected by your peers. Finally, you will collect data utilizing your method to complete your chosen research project in BIO 389.
- BIO 389 Research in Field Biology (study abroad course) is a research-intensive course designed for science majors and graduate students that will focus on developing skills of collaborative field-based research. Throughout the course, students (working in groups of 2 or 3) will utilize the scientific method to develop and carry out an original research project. Students will utilize the primary literature to learn the current state of research in an area that interests them, then use that knowledge to develop a novel question they can test with a field-based experiment. Data collected will be analyzed and results compiled into a publication quality paper. Students will then present their study to their peers in the form of an oral or poster presentation. \*Please note this course is not currently pre-approved for Experiential Learning Credit, so students complete the LSP Exceptions Request form found at <a href="https://academics.depaul.edu/liberal-studies/current-student-resources/Pages/LSP-Exception-Policies.aspx">https://academics.depaul.edu/liberal-studies/current-student-resources/Pages/LSP-Exception-Policies.aspx</a>, and submit to <a href="https://academics.depaul.edu/liberal-studies@depaul.edu">https://academics.depaul.edu/liberal-studies@depaul.edu</a>.
- BIO 397 Mentored Research in Field Biology: For students participating in research with a faculty member and wishing to receive Experiential Learning credit, you can complete the Course Application for BIO 397: Mentored Research Experience in Biology. The faculty research mentor and student will work together to formulate a research question based on current biological knowledge and the scientific literature. They will develop hypotheses to guide designing and conducting experiments to test the hypotheses. Under faculty supervision, the student will analyze their data and propose follow up experiments. The results and conclusions will be reported in a final project which may be a poster or oral presentation, or research manuscript. In addition, the student will reflect on how the project activities and experiences have contributed to their personal growth as a scientist and their future career plans. Relevant safety and ethical training will be based on the specific proposed research. Enrollment: Students interested in earning Experiential Learning credit for research done with a Biological Sciences faculty member should enroll in BIO 397 Mentored Research Experiential Learning Research done with a Biological Sciences faculty member should enroll in the course. Students can also obtain Independent Study credit (BIO 399) for their research with faculty consent.



#### **Recommended Timeline for Entering Students in BS**

(Wost Applicable for integrative concentrations)				
	Autumn Quarter	Winter Quarter	Spring Quarter	
	BIO 191	BIO 192	BIO 193	
YEAR 1	CHE 130/131	CHE 132/133	CHE 134/135	
	WRD 103	WRD 104	Learning Domain	
	LSP 110/111 Explore/Discover	LSP 112 Focal Point	LD or Math Pre-requisite	
	Chicago			
	BIO 206 Statistics	BIO 250 Cell Bio	BIO 260 Genetics	
YEAR 2	CHE 230/231	CHE 232/233	BIO Elective (CHE 234/235 if needed)	
	BIO 215 or 235	Learning Domain	Learning Domain	
	Learning Domain	LSP 200 Sem Multicultural	Learning Domain	
	BIO Elective	BIO Elective	BIO Elective	
YEAR 3	PHY 150*	PHY 151	PHY 152	
	Calculus I	Calculus II	Learning Domain	
	Learning Domain	Experiential Learning	Open Elective	
	BIO Elective	BIO Elective	BIO Elective	
YEAR 4	Learning Domain	BIO Elective	Learning Domain	
	Learning Domain	Learning Domain	Open Elective	
	Open Elective	Open Elective	BIO 395 Senior Capstone	

(Most Applicable for Integrative Concentrations)

\*Students who wish to enter **medical school** directly after graduation should take physics during sophomore year. This timeline may not be applicable to other concentrations. See your advisor to create a long-term plan specific to your academic needs and career goals.

<u>goals.</u>			
	Recommended Timeline f	or Entering Students in I	BA
	Autumn Quarter	Winter Quarter	Spring Quarter
	BIO 191	BIO 192	BIO 193
YEAR 1	CHE 130/131	CHE 132/133	CHE 134/135
	WRD 103	WRD 104	Learning Domain
	LSP 110/111 Explore/Discover	LSP 112 Focal Point	Learning Domain
	Chicago		-
	BIO 206 Statistics	BIO 250 Cell Bio	BIO 260 Genetics
YEAR 2	BIO 215 or 235	LSP 200 Sem Race, Cult, Res	BIO 308*
	Learning Domain	Math & Computing Domain	Learning Domain
	Learning Domain	Open Elective	Open Elective
	BIO Elective**	BIO Elective**	BIO Elective**
YEAR 3	Learning Domain	Learning Domain	Learning Domain
	Open Elective	Experiential Learning	Open Elective
	Open Elective	Open Elective	Open Elective
	Learning Domain	Learning Domain	BIO 395 Senior
YEAR 4	Learning Domain	Open Elective	Capstone Learning
	Open Elective	Open Elective	Domain
	Open Elective	Open Elective	Open Elective
			Open Elective

\*Students may take either BIO 307, 308, or 309 to complete BIO Physiology requirement. 308 is listed in this plan simply because BIO 250 is the pre-req for all 3 of these options, so spring of 2<sup>nd</sup> year would be the soonest you can take a Phys class as long as BIO 250 is done by then. But you can instead take BIO 307 in autumn or 309 in the following winter, depending on your interests. \*\*Remember that 2 of your 3 upper level BIO electives must be at the 300-level. Use your DPR to see eligible options.

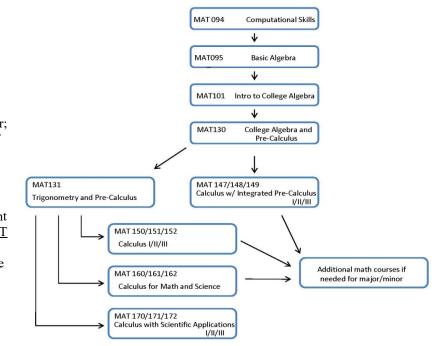
## Math Placement for B.S.\*

Below is a math path that is useful in determining your math placement. Some pre-requisite notes:

- MAT 130 is the pre-requisite for General Biology I and General Chemistry I
- MAT 131 is the pre-requisite for Calculus I and Physics I
- MAT 147/148/149 Calculus with integrated precalculus. MAT 131 is not needed before taking this sequence. MAT 147 is only offered in the fall quarter; MAT 148 is only offered in the winter quarter; MAT 149 is only offered in the spring quarter. Note: some graduate programs will not take this sequence as the calculus pre-requisite.
- Students only need to complete two calculus courses (i.e. MAT 150/151) to complete the math requirement for the biology major. <u>If students choose to take MAT 147</u>, they must complete 148 and 149.
- MAT 150/151– Standard calculus. MAT 150/151 are each offered every quarter
- The MAT 160/170 sequences are offered infrequently.

### \*BA Students do not need Calculus

(unless required for any post-grad plans)



## **Everything You Need to Know About Enrollment**

The biggest enrollment mistake you can make, is waiting to enroll! Do not wait till enrollment opens to begin looking at classes or trying to meet with your advisor. Look at the classes as soon as Course Carts open, and put those you think you need in your course cart, and schedule a meeting right away with your advisor if you need to meet. Do this at least a week before your enrollment opens since advisors schedules always book up quickly and pretty far in advance during enrollment seasons. You should have the classes confirmed and in your course cart ready to enroll the minute your enrollment opens.

#### Registering for Classes: https://offices.depaul.edu/depaul-central/registration/Pages/add-drop-swap.aspx.

<u>Waitlists</u> are automatic within our system. If you are on the waitlist for a class, you will need to wait until the appropriate amount of people drop from the class to which then our system will automatically add you to the class from the waitlist. You must ensure there are no time conflicts, and that you're not already at the maximum credit hours allowed in a term, or else the waitlist process will skip you and enroll the next student in line, and that will continue to happen each time a seat opens until you resolve that conflict. (See below about using the **Swap Function** to avoid this problem!) There is little to nothing your advisor or the professor can do to get you into a class you are waitlisted for, especially lab based classes. This is due to space and safety issues.

<u>Swap Function</u>: If you are enrolled in a class that has a time conflict with a waitlisted course, or if you are already enrolled in the maximum amount of hours, the automatic waitlist process will skip over you until the conflict is resolved. Therefore, you are advised to use the "Swap" function any time you add yourself to a waitlist. First, enroll in the "backup" course. Then choose "Swap Classes" from the menu on the left within Manage Classes. You'll go through and find the class that you want to waitlist for, and will initiate a Swap between that and the "backup" course. Then, if a seat opens up and you are next on the waitlist, you will be dropped from the "backup" course and added to the waitlist. The Swap function can also be used any time you are dropping and adding classes – not just for wait listing. Please contact your academic advisor with any questions or for assistance with this.

<u>Help Videos and Documents</u> for enrollment, waitlist, swapping classes, and more, can be found at <u>https://offices.depaul.edu/depaul-central/student-resources/learning-center/Pages/default.aspx</u>.

<u>Chemistry Enrollment Instructions:</u> Please note that Chemistry lists their lectures and lab separately, but require they be taken together. They're what we call **co-requisites** for each other. This means you cannot enroll in one without the other. So for all Chemistry classes, you must put both the lecture and lab in your course cart first, so that you can then enroll at the exact same time from there. In this case, 120 and 131 are the lecture and lab you would enroll in (unless you retest and place into CHE 130.) Chemistry also has pre-requisites. The pre-requisites for CHE 120 and 130 are placement via the Chemistry placement exam. This means you must take that exam before you'll be allowed to register for CHE 120 or 130 and the corresponding 131 lab co-requisite. Then, each Chem lecture and lab is a pre-requisite for the next in the sequence. You need only have the pre-requisite enrolled/in-progress, to be eligible to enroll in the next Chemistry class for the following term. You do not have to wait until you finish the pre-requisite before you can enroll. Then, if by chance you do not pass that pre-req, you will need to drop the next course or you will be dropped from it when the university runs the pre-requisite check (aka PERC) just before the start of each term.

Transfer Students with Chem Credit: You will most likely need a requisite override the first time you enroll in a DePaul Chemistry course, if you transferred in a Chemistry pre-requisite. This is because most transfer credits come in as just 1 course, whereas DePaul's Chemistry lists lecture and lab separately, though they must be taken together. So while your Chem transfer credit is applied to your DPR, the system has a hard time recognizing it as counting for both the lecture and the lab pre-requisite. So this simply means that you'll need to contact your assigned academic advisor, providing the specific section or class numbers for the Chemistry lecture and lab you want, so that a requisite override can be entered in order for you to enroll. This will only be required for the first Chemistry class you as a transfer student take at DePaul. After you complete a Chem class here, the pre-requisites will correctly register in the system, and you'll be able to enroll in any additional Chem classes on your own (as long as you remember the correct way to enroll in them at the same time from your course cart, as instructed above.)

<u>CHE 120 v. 130:</u> These are the options for Gen Chem 1 lecture. You take 1 of those, along with CHE 131 lab. CHE 120 is a slower paced lecture designed for students that do not have a solid Chem knowledge base right now. It spends more time on mastering concepts and problem-solving skills, which means it's a 5 credit hours class that meets about 2 more hours/week than do the other lectures which are 3 credit hour classes. CHE 130 goes at a regular pace and is for students that are assumed to have some knowledge of Chem, and have passed a high school or college Chem class in the past 2 years. So based on that, you should have an idea of which Chem sounds more appropriate for you, but can ultimately let the placement exam confirm for us. Chemistry labs will always be 1 credit. So if taking CHE 120 and 131, that will be 6 total credit hours, but all other Chem lectures and labs after that will be 4 total credit hours.

**Enrolling in Classes with Pre-Requisites:** You do not need to fully complete a pre-req before you can enroll in the next class. The system recognizes your pre-req as in progress and lets you enroll in the next class. So if you're getting a missing requisite error message and have the pre-req in progress, that means you are probably missing a co-requisite or different pre-req.

- This info is important for Chem, and for any summer enrollment. This is because students often mistake the "missing requisites" error message in Chem to mean pre-req, even though they're in the pre-req. The full message also mentions co-reqs, which for Chem are lecture and lab. So if you have the pre-req in progress, but are trying to enroll in either lecture or lab without the other, it is the co-requisite you're missing.
- **Taking pre-reqs over summer for autumn:** This is relevant for summer because many students try to enroll in autumn classes that might require pre-reqs they intend to take over summer. You must first enroll in the summer classes, which will then show as in progress, and can then enroll in autumn classes

**Instructor, Department, or other Special Permissions:** Whether you're trying to enroll in a full class, or a class for which you don't have the pre-requisite met or in-progress, or any other special permission, it can only come from the instructor of the course. You must email the instructor directly asking for this permission, and if they approve, either you or the instructor should then CC your assigned academic advisor to process the permission. I (Jaimie) will always enter the override so that you can enroll, which means it will still be your responsibility to enroll once that permission is entered.

#### Textbooks & I-Clickers

You can locate, buy and rent the textbooks you need through the DePaul Bookstore's Website or visit in person. You can also check at the DePaul library, or the library's Textbook I-sharing program, to see if books are available there to rent out, free of charge. <u>https://library.depaul.edu/Pages/default.aspx</u>

I-Clickers are needed for the General Biology sequence, as well as some of the upper level biology courses, so do not get rid of them!

AUTUMN QUARTER	WINTER QUARTER	SPRING QUARTER
BIO 191 General Biology I	BIO 191 General Biology I	BIO 192 General Biology II
BIO 193 General Biology III	BIO 192 General Biology II	BIO 193 General Biology III
BIO 206 Biostatistics**	BIO 202 Human Physiology	BIO 201 Human Anatomy
BIO 210 Microbiology	BIO 206 Biostatistics**	BIO 206 Biostatistics**
BIO 215 Ecology	BIO 210 Microbiology	BIO 210 Microbiology
BIO 235 Evolution	BIO 220 Biotechnology	BIO 250 Cell Biology
BIO 250 Cell Biology	BIO 250 Cell Biology	BIO 260 Genetics
BIO 270 Comparative Vertebrate Anatomy	BIO 260 Genetics***	BIO 3XX/4XX Advanced Genetic Analysis
BIO 307 Animal Physiology	BIO 309/409 Plant Physiology	BIO 308 Human Physiology
BIO 339/439 Cellular Neurobiology	BIO 318 Field Studies Marine & Estuarine Bio	BIO 335/435 Concepts in Evolution
BIO 342/442 Cognitive Neuroscience	BIO 320/420 Advanced Microbiology	BIO 342/442 Cognitive Neuroscience
BIO 380/480 Cancer Biology	BIO 340/440 Behavioral Neuroscience	BIO 350 Animal Adaptations
BIO 395 Capstone Seminar	BIO 370/471 Immunobiology (no lab this year)	BIO 349/449 Topics in Microbiology and Biotechno
	BIO 381/481 Topics in Cancer	BIO 352/452 Advanced Comparative Physiology
	BIO 385/485 Mammalian Reproduction	BIO 360/460 Molecular Biology
	BIO 395 Capstone Seminar	BIO 390/490 Vertebrate Zoology (lecture only)
	·	BIO 395 Capstone Seminar

All course offerings are subject to change. Contact the BIO Department Advisor at jengle@depaul.edu to confirm any course offerings.

400-level indicates courses that have a cross-listed graduate section (of interest for BIO BS/MS Combined Degree students.)

#### **Biology Minors**

To earn a minor in Biology, students must take:

- BIO 191, 192, and 193
- Three courses designed for Biology majors
- Courses that will **not** apply to the Biology Minor:
  - SI courses that are designed for non-science majors (e.g. BIO 115, BIO 126, BIO 155, BIO 162, etc.)
  - BIO 206 Biostatistics, will not apply to the Biology minor. The selection of the three elective courses is up to the student and their academic advisor, based on their interests and career goals. Students are free to contact the Biology academic advisor, Jaimie Engle at jengle@depaul.edu on any questions or suggestions for courses they should take to fulfill the Biology minor requirements.



		· · · · · · · · · · · · · · · · · · ·	logy Courses by Concentratior			
Integrative	Cell & Molecular		not include core major requirements; only Medicine & Health*		Neuroscience	Dhusialaat
Integrative		Ecology & Evolution		Microbiology & Biotechnology		Physiology
Required Concentration Courses (12 hours):	Required Concentration Courses (12 hours):	Required Concentration Courses (8 hours):	Required Concentration Courses (4 hours):	Required Concentration Courses (16 hours):	Required Concentration Courses (16 hours):	Required Concentration Courses (8 hours
BIO 215 Ecology or BIO 235 Evolution	BIO 210 Microbiology	BIO 215 Ecology	BIO 250 Cell Biology	BIO 210 Microbiology	BIO 250 Cell Biology	BIO 250 Cell Biology
BIO 250 Cell Biology	BIO 250 Cell Biology	BIO 325 Evolution		BIO 220 Prin. Of Biotechnology	BIO 339 Cellular Neurobiology	BIO 307 Animal Phys. or BIO 308 Human Ph
IO 307 Animal Phys. or BIO 308 Human Phys.	BIO 360 Molecular Biology			BIO 250 Cell Biology	BIO 307 Animal Phys. or BIO 308 Human Phys.	BIO 309 Plant Physiology
BIO 309 Plant Physiology				BIO 349 Topics/Microbio. & Biotech.	BIO 340 Behavioral Neuroscience	
x Additional Major Level Courses (24 hours):	One Advanced Topics Course (4 hours):	Three Upper Level Courses From	Two Courses From Approved List (8 hours):	Two Course From Approved List (8 hours).	One Course From Approved List (4 hours):	Three Upper Level Courses From
Any Six of approved Biology courses.	BIO 315 Topics in Ecology	Approved List (12 hours). One Must Be A Lab.	BIO 201 Human Anatomy*	One Must Be A Lab.	BIO 341 Topics in Neurobiology	Approved List (12 hours). One Must Be A I
Two must have labs and two must be	BIO 319 Topics in Behavioral Parasitology	BIO 270 Comparative Vert Anatomy	BIO 210 Microbiology	BIO 235 Evolution	BIO 342 Cognitive Neuroscience	BIO 201 Human Anatomy or BIO 270
at least 300-level.	BIO 335 Concepts in Evolution	BIO 301 Animal Behavior	CHE 340/341 BioChem & Exp BioCh	BIO 320 Advanced Microbiology	BIO 360 Molecular Biology	Comparative Vertebrate Anatomy
e note 1 for additional approved courses.	BIO 341 Topics in Neurobiology	BIO 304 Field Methods for Biologists	BIO 307 Animal Phys. or BIO 308 Human Phys.*	BIO 321 Molecular Methods/Eco/Evo	BIO 375 Intro to Pharmacology	BIO 307 Animal Phys. or BIO 308 Human F
	BIO 345 Topics in Paleobiology	BIO 306 Research Methods & Applied Biostats	CHE 342/343 BioChem II	BIO 347 Topics/Med. Bacteriology	BIO 386 Intro to Endocrinology	BIO 309 Plant Physiology
	BIO 349 Topics in Microbiology & Biotech	BIO 315 Topics in Ecology	Three Upper Level Courses From	BIO 348 The Biology of Infection	Four Upper Level Biology Courses (16 hours).	BIO 312 Topics in Exercise Physiology
	BIO 347 Topics in Medical Bacteriology	BIO 318 Field Studies in Marine Biology	Approved List (12 hours). One Must Be A Lab.	BIO 360 Molecular Biology	2/5 BIO Electives Must Be A Lab.	BIO 339 Cellular Neurobiology
	BIO 361 Topics in Molecular Biology	BIO 319 Topics in Behavioral Parasitology	BIO 201 Human Anatomy	BIO 362 Bioinformatics/Bench Sci.	See note 1 for additional approved courses.	BIO 352 Advanced Comp. Physiology
	BIO 390 Special Topics (as appropriate)	BIO 321 Molec. Methods in Eco & Evo	BIO 210 Microbiology	BIO 370 Immunobiology	see note 1 for dualitorial approved coarses	BIO 360 Molecular Biology
	Two Upper Level Electives From Approved	BIO 325 Paleobiology	BIO 220 Prin. Of Biotechnology	BIO 375 Intro to Pharmacology		BIO 385 Mammalian Reproduction
	List (8 hours). One Must Be A Lab.	BIO 332 Population Ecology	BIO 270 Compar. Vert. Anatomy	CHE 340/341 Biochemistry I		BIO 386 Intro to Endocrinology
	BIO 309 Plant Physiology	BIO 335 Concepts in Evolution	BIO 307 Animal Phys. or BIO 308 Human Phys.	CHE 342/343 Biochemistry II		CHE 340/341 Biochemistry I
	BIO 315 Topics in Ecology	BIO 345 Topics in Paelobiology	BIO S07 Annual Phys. of BIO S08 Human Phys. BIO 311 Histology	HLTH 320 Molecular Virology		4 Additional Majors-Level Biology Courses (1
	BIO 321 Molecular Methods in Eco & Evo	BIO 389 Research in Field Biology	BIO 330 Developmental Biology			One Must Be A Lab.
	BIO 330 Developmental Biology	BIO 390 Special Topics	BIO 339 Cellular Biology	BIO 390 Special Topics Three Additional Major Level Courses (12 hours).		See note 1 for additional approved cour
	BIO 335 Concepts in Evolution	Four Additional Majors-Level Courses (16 hours.)	BIO 340 Behavioral Neuroscience	Any three Approved Bio Major Level Courses.		See note 1 for additional approved cour
		Two of the seven total electives must have a lab.				
	BIO 339 Cellular Neurobiology BIO 341 Topics in Neurobiology	See note 1 for additional approved courses.	BIO 341 Topics in Neurobiology BIO 342 Cognitive Neuroscience	See note 1 for additional approved courses.		
	BIO 345 Topics in Paleobiology	See note 1 for additional approved courses.	BIO 347 Topics/Med. Bacteriology			
	BIO 347 Topics in Medical Bacteriology		BIO 348 The Biology Of Infection			
	BIO 348 The Biology of Infection		BIO 349 Topics/Microbio. & Biotech.			
	BIO 355 Genetic Toxicology BIO 361 Topics in Molecular Biology		BIO 352 Advanced Comp. Physiol. BIO 360 Molecular Biology			
			0,			
	BIO 362 Bioinformatics/Bench Sci.		BIO 362 Bioinformatics/Bench Sci.			
	BIO 365 Principles of Toxicology		BIO 370 Immunobiology			
	BIO 370 Immunobiology		BIO 375 Intro to Pharmacology BIO 380 Cancer Biology			
	BIO 375 Intro to Pharmacology BIO 380 Cancer Biology		0,			
	5,		BIO 381 Topics in Cancer			
	BIO 381 Topics in Cancer		BIO 385 Mammalian Reproduction			
	BIO 385/485 Mammalian Reproduction		BIO 386 Intro to Endocrinology			
	BIO 386 Intro to Endocrinology		CHE 340/341 Biochemistry I			
	CHE 340/341 Biochemistry I		CHE 342/343 Biochemistry II			
	BIO 390 Special Topics		BIO 390 Special Topics			
	Three Additional Major Level Courses (12 hours): Any three approved Biology courses. See note		Three Additional Major Level Courses (12 hours): Any three approved Biology courses. See note 1			
	1 for additional approved courses.		for additional approved courses.			
	One must be a lab course.		One must be a lab course.			
	At least 2 of the 5 total biology electives must		See note 3 regarding the requirements for			
	have a lab.		different health programs.			
	2 for BIO 201 AND BIO 307 or BIO 201 AND BIO 308 820, and NEU 201 also fulfills this requirement.	<ol><li>Students who opt to take HLTH 301 AND HLTH 302</li></ol>	cannot receive credit for any of the following cour	ses: BIO 201, BIO 307, and BIO 308. BIO 201 and 307	ог ыо 308 do not need to be taken as a combinat	ion.
	rtment to have a BIO 390 class count for one of th					

## All BIO Courses, Pre-Requisites, and whether they have Labs. Major Courses Require C- or Better.

Re Bio Mentored	Special Topics ology Capstone Seminar Research Experience in Biology Independent Study	Junior or senior standing Senior standing BIO 397 course application S. Please note must complete both HLTH 301 AN	Offered occasionally worked out through individual faculty Worked out through individual faculty
Re Bio	Special Topics ology Capstone Seminar	Senior standing	
Re	Special Topics		
		JUNOLOI SENIOL STANDING	
	esearch in Field Biology	Instructor consent	Corequisite for BIO 388
	earch Methods in Biology	Gen Bio Sequence, 1 BIO Elec** From List	Corequisite for BIO 389
	oduction to Endocrinology	BIO 250 & BIO 307 or 308*	Cross-listed with BIO 486
	opics in Cancer Biology ammalian Reproduction	BIO 250 BIO 250 & BIO 307 or 308*	Cross-listed with BIO 481 Cross-listed with BIO 485
т.	Cancer Biology	BIO 250 and BIO 260 BIO 250	Cross-listed with BIO 481 Cross-listed with BIO 481
Intro	oduction to Pharmacology	BIO 250 & BIO 307 or 308*	Cross-listed with BIO 475
	Immunology	BIO 250 or 260	Cross-listed with BIO 471
	o to Stem Peer Mentoring	Instructor consent	
	ormatics for Bench Scientists rinciples of Toxicology	Gen BIO sequence and Bio 260 BIO 193 and CHE 234 or 238	Cross-listed with BIO 462 Cross-listed with BIO 465
	pics in Molecular Biology	BIO 360 Gen BIO sequence and Bio 260	Cross-listed with BIO 361 Cross-listed with BIO 462
	Molecular Biology	BIO 250 and BIO 260	Cross-listed with BIO 460
	Genetic Toxicology	BIO 260	Cross-listed with BIO 455
	ced Comparative Physiology	BIO 250	Cross-listed with BIO 452
Topics in N	Aicrobiology and Biotechnology	BIO 210 and 370 BIO 210 or BIO 220	
Торі	cs in Medical Bacteriology Biology of Infection	BIO 210 or 250 & Junior Standing BIO 210 and 370	Cross-listed with BIO 447 Cross-listed with BIO 448
	inciples of Biochemistry	CHE 232 or CHE 238	Crease lists double DIO 447
	Topics in Paleobiology	Gen BIO sequence and BIO 215 or 235	Cross-listed with BIO 445
	ognitive Neuroscience	NEU 201 or BIO 339, 340, or 341, or PSY 377	
Т	opics in Neurobiology	BIO 340 or BIO 339 or PSY 377	Cross-listed with BIO 441
	Biochemistry I Biochemistry II	CHE 234/235 or CHE 238/239 CHE 340/341	
Be	ehavioral Neuroscience	NEU 201, BIO 339, BIO 310, or PSY 377	
	Cellular Neurobiology	BIO 250 or PSY 377 or HLTH 301	Cross-listed with BIO 439
	Concepts in Evolution	BIO 235 or 215 and BIO 260	Cross-listed with BIO 435
Topics	Population Ecology	BIO 215 or ENV 250	Cross-instea with bio 451
	evelopmental Biology s in Developmental Biology	BIO 250 and BIO 260 BIO 250 and BIO 260	Cross-listed with BIO 430 Cross-listed with BIO 431
	Paleobiology	BIO 191/192/193 and BIO 215 or 335	Crease lists d with DIO 420
Molecular N	Methods in Ecology and Evolution	BIO 215 and BIO 235	Cross-listed with BIO 421
	Molecular Virology	BIO 210 or BIO 250	
	Advanced Microbiology	BIO 191/192/193 and BIO 215 of 235 BIO 210 and junior standing	Cross-listed with BIO 420
	es in Marine and Estuarine Biology s in Behavioral Parasitology	BIO 191/192/193 and BIO 215 or 235 BIO 191/192/193 and BIO 215 or 235	Trip to South Carolina in Dec Session Cross-listed with BIO 419
read on the	Aquatic Biology	BIO 191/192/193 and BIO 215	Cross-listed with BIO 417
	Phycology	BIO 191/192/193	Cross-listed with BIO 416
	Topics in Ecology	BIO 191/192/193 and BIO 215	Cross-listed with BIO 415
Тор	ics in Exercise Physiology	BIO 250	Cross-listed with BIO 412
	Plant Physiology Histology	BIO 250 BIO 250	Cross-listed with BIO 409
	Human Physiology	BIO 250	Can't receive credit if already taken BIO 310 or
	Animal Physiology	BIO 250	Can't receive credit if already taken BIO 310 or
	lethods and Applied Biostatistics	BIO 206	
Fie	Id Methods for Biologists	Junior standing or above	
	Animal Behavior	Pre Requisites Gen BIO Seq, BIO 206, and BIO 215 or BIO 235	Notes
	Topics in Biology	Sophomore standing	Offered occasionally, 2 - 4 hours
Compa	arative Vertebrate Anatomy	BIO 191/192/193	
	Genetics	BIO 191/192/193	
	Evolution Cell Biology	BIO 191/192/193 General BIO sequence and CHE 134 or 138	
	Epidemiology	BIO 206	
	Physiology of Poverty	BIO 193, and Junior standing	
Pri	nciples of Biotechnology	BIO 210 and BIO 250	
	Microbiology Ecology	BIO 191/192/193 BIO 191/192/193	
	Plant Biology	BIO 191/192/193	
			a Biology major or minor elective
	Biostatistics	BIO 191/192/193	Counts as statistics credit- will not apply
	Human Physiology	Sophomore standing	Cannot receive credit for both 202 & 134
Intro	oduction to Neuroscience Human Anatomy	BIO 191 Sophomore standing	
		Pre Requisites	Notes
	Human Anatomy	Sophomore standing	
	Biology III for Science Majors	BIO 191	General Biology courses can also count as
	l Biology I for Science Majors I Biology II for Science Majors	BIO 191	General Biology courses can also count as General Biology courses can also count as

## **Research**

#### How to Get Started

Getting started with research as an undergrad can be overwhelming and intimidating to say the least. This will serve as your guide to navigating the initial stages of getting involved with a lab on campus!

*Review this video from CSH Professors about how to approach getting into a research lab: https://www.youtube.com/watch?v=FjJRWfnXFOM.* 

#### **Identify Research Interest**

Before even beginning to look at potential labs, it's important to consider what research topics will align with your academic and future career goals. Begin to ask yourself questions like:

- What classes/topics most interest you?
- What kind of skills do you have? What skills are you hoping to gain from research?
- Are you planning on continuing this research in grad school?

Your faculty advisor can help guide you through some of these questions and especially help pinpoint what classes/topics you may be interested in early on.

#### **Explore Lab Options**

Once you have some direction with what type of research you want to get involved with you can begin looking into specific labs and faculty members. Check out DePaul's Faculty Bio Page to find out what professors align with your research interests. On this page you can find some biographical info, descriptions of their research, and even recent publications!

It again may be a good idea to talk to your academic advisor about this step as well, they may have helpful insight about the specific work faculty does, for example what type of lab work might be better for someone who plans to apply to medical school or who might be a better fit if you have more of an interest in math.

You can also reach out to TAs, other faculty members, or students involved in research to ask questions or learn more about professors or labs.

#### **Reach Out**

Now comes the hard part: reaching out! One of the best ways to get in contact with professors is simply by sending an email. Keep in mind that the professor can be very busy so be patient when awaiting email responses.

One tip that many undergrads involved in research recommend is to find out when a professor has office hours or free time and just stop in to introduce yourself!

When contacting a faculty member about research whether via email or in person introduce yourself and ask them if they can set aside some time to sit and talk with you about their lab. Come prepared with questions you may have about any part of the research process.

#### **Advice from Current Students**

"Sometimes profs can be hard to pin down over email, but don't give up! Send follow up emails if you don't hear back, emails get buried and many of them appreciate the reminder!"

"Make sure you talk with the professor and get to know them and their research to make sure it's a good fit for everyone before committing."

"Don't be afraid if you have zero experience or you haven't taken a ton of science classes yet, they're here to help you learn and they were once undergraduates with no experience too!"

#### **Research Opportunities**

Faculty within the Biological Sciences Department often have positions available for undergraduates seeking research experience. We encourage students to contact faculty and explore the opportunity for research here at DePaul:

- Visit our website and read through faculty profiles to see the current research projects of our faculty members: <u>https://csh.depaul.edu/academics/biological-sciences/Pages/faculty-staff.aspx</u>
- This link lists out some of the internal and external opportunities we have: <u>http://go.depaul.edu/cshstudentresearch</u>
- Handshake is our online hub for all things college to career jobs, internships, career fairs, events, mentors and more. Goal in mind: to help connect students to their dream career: <u>https://depaul.joinhandshake.com/</u>
- If you land a research opportunity, be sure to check with your advisor to see how the research could apply to your experiential learning requirement. See the Experiential Learning section earlier in this guide to learn about research courses for credit.

## **Getting Involved**

## **Student Groups**

There are many science-related student groups available for students wishing to get involved in leadership opportunities on campus. Many of those can be found at <u>https://csh.depaul.edu/academics/biological-sciences/student-resources/Pages/student-orgs.aspx</u>. But please also visit the Student Involvement website to join and to learn more about all of the below student organizations: <u>http://studentaffairs.depaul.edu/involvement</u>.

American Statistical Association- Statistics in the Community Combined Student Chapter (ASA- STATCOM)Yiou Li: YL1139@depaul.eduBiotechnology ClubBiotechnologyclubdepaul@gmail.com mJustin Bodner: jbodne7@gmail.comDePaul Ecology, Evolution, & Physiology (DEEP)deep.depaul@gmail.com depaulpremed@gmail.comFiryal Maha Khan: Firyal Maha Khan: Firyal Maha Khan: Firyal Maha Khan: Guesting and the sociation clubDePaul Public Health Association clubdepaulpremed@gmail.com, Firyal Maha Khan: Firyalmaha@gmail.comDePaul Public Health Association clubdepaul.dsna@gmail.com, Firyalmaha@gmail.comDePaul Neuroscience Clubdepaulneuro@gmailDeversity in Science Clubdepaul.gmail.com, depaul.gmail.comDeSACNASdesacnas@gmail.comGlobal Brigadesdepaulgbpresidents@gmail.comLaboratory Workshop ClubGroogle form: Imperide seegle.comformed/clTEAlfOLSddg, actuation/withoutBordersNu Rho Psidepaulnurhopsi@gmail.comPre-Dental Clubdepaulnurhopsi@gmail.comPre-Dental Clubdepaulnurhopsi@gmail.comPre-Dental Clubdepaulnurhopsi@gmail.comPre-Health Advising Committee pascodepaul@gmail.comFiryal Maha Khan: Firyal Maha Khan: Fir	CSH Student Clubs and Organizations Contact Information					
American Statistical Association- Statistics in the Community Combined Student Chapter (ASA- STATCOM)       Yiou Li: YL1139@depaul.edu         Biomedical Sciences Journal Club       Justin Bodner: jbodne?@gmail.com         Biotechnology Club       Biotechnologyclubdepaul@gmail.co         DePaul Ecology, Evolution, & Physiology (DEEP)       depaulpremed@gmail.com         DePaul Ecology, Evolution, & Physiology (DEEP)       depaulpremed@gmail.com         DePaul Public Health Association club       depaul.dsna@gmail.com.         DePaul Nurses Association club       depaul.dsna@gmail.com.         DePaul Nurses Association club       depaul.dsna@gmail.com.         DeVaul Nurses Association club       depaul.euro@gmail         Doctors Without Borders       Bajeel Syeda: syeda.bajeel@gmail.com         DeSACNAS       desacnas@gmail.com         Global Brigades       depaulgbpresidents@gmail.com         Laboratory Workshop Club       Ross Kaine: RKAINE2@depaul.edu abBCite - actuative: weak-apple.com/omside/TRApOLS00; abBCite - actuative: weak-apple.com/omside/TRApOLS00; abBCite - actuative: weak-apple.com/omside/TRApOLS00; abBCite - actuative: weak-apple.com/omside/TRApOLS00; abBCite - actuative: weak-apple.com         Nu Rho Psi       depaulosten@gmail.com         O-STEM       depaulosten@gmail.com         Pre-Dental Club       depaulosten@gmail.com         Pre-Dental Club       depaulosten@gmail.com         <	Club/Organization	Email	Student Contact (Presidents or Faculty			
Statistics in the Community Combined Student Chapter (ASA- STATCOM)Justin Bodner: jbodne7/@gmail.comBiomedical Sciences Journal ClubBiotechnologyclubdepaul@gmail.co mJustin Bodner: jbodne7/@gmail.comBiotechnology ClubBiotechnologyclubdepaul@gmail.com mImage: communityDePaul Ecology, Evolution, & Physiology (DEEP)deep.depaul@gmail.com Firyal Maha Khan: Firyal Maha Khan: 						
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Mentorship Program (PUMP) <u>mschreme@depaul.edu</u>						
	Pre-Pharmacology Club	depaulprepharmacy@gmail.com				

CSH Student Clubs and Organizations Contact Information

Pre-Physician's Assistant Club		Brooklyn Gunnare: bgunnare@depaul.edu
Pre-optometry Club	depaulpreoptometry@gmail.com	
Pre-Vet & Animal Science Club (Aminology club)	prevet.depaul@gmail.com	
Psi Chi Honor Society/ Psychology Club	depaulpsichi@gmail.com	
Red Cross Club	depaulredcrossclub@gmail.com	Simone Rhodes: simonetrhodes@gmail.com
Society of Physics Students		Faculty: Jesus Pando jpando@depaul.edu

Contact jengle@depaul.edu if any of this info is inaccurate and in need of updates, or if you want your student org added to this list!

## **BIO Department Alumni Newsletter: The Niche**

The Niche is the DePaul Department of Biological Sciences alumni newsletter. We hope to present you with information about our future plans and programs, our faculty, students, staff, alumni, and all the activities that make our department such an exciting community to be a part of. We are anxious to share news with you and we hope you find our newsletter both useful and informative. You can find our newsletter here: <u>https://csh.depaul.edu/academics/biological-sciences/about/Pages/niche-newsletter.aspx</u>

## **Career Center**

When is the best time to start using the Career Center? Right away! <u>https://resources.depaul.edu/career-center/Pages/default.aspx</u>

There's even a dedicated Health Care & Science Career Community! Start using their many resources early on to gain experiences, learn how to market yourself, and overall prepare for your post-grad endeavors: https://resources.depaul.edu/career-center/career-advising/communities/health-care-science/Pages/default.aspx

- Career Advising: <u>https://resources.depaul.edu/career-center/career-advising/Pages/default.aspx</u>.
   Career Communities, Career Coaching & Resume Reviews, Alumni Career Services
- Resumes & Interviews: <u>https://resources.depaul.edu/career-center/resumes-interviews/Pages/default.aspx</u>.
  - Resumes, Cover Letters, Personal Statements, Portfolios, Interviews, Salary & Negotiation
- Jobs & Internships: <u>https://resources.depaul.edu/career-center/jobs-internships/Pages/default.aspx</u>.
  - Internship Plus Scholarship, Job Search Basics, Finding an Internship, Handshake (job search board), On-Campus Jobs, Job Fairs & Events, Working Abroad
- Networking: <u>https://resources.depaul.edu/career-center/networking/Pages/default.aspx</u>.
  - Networking 101, Your Personal Brand, LindedIn Basics, Informational Interviews, Job Shadowing, Alumni Sharing Knowledge (ASK)
- Resources: <u>https://resources.depaul.edu/career-center/services-resources/Pages/default.aspx</u>.
  - Career Library, Career & Life Design, Career Closet, Graduate School Guide, Diversity Resources, Services for International Students, Services for New & Incoming Students, Career Readiness & Experience Fund

## **Transferring Credits at DePaul University**

#### **Transfer Students**

We are aware that many of our Biology students have transferred in credits from other colleges and universities. Many have transferred from majors other than Biology. Because the number and type of courses transferred varies considerably, we strongly urge transfer students to see your staff academic advisor (Jaimie Engle, jengle@depaul.edu) as soon as possible. We want to make sure you are on track to take the proper courses and to establish an appropriate timeline for graduating from the program.

Students transferring from another major, or from backgrounds with little or no science coursework, should realize it might take longer to complete the degree than expected due to the required sequencing of courses. In talking with your advisor, make sure you both understand and are comfortable with any outlined timeline for completion of the Biology program. Especially if transferring any of your required science or math sequences from a semester-system institution, keep in mind these do not match up perfectly with DePaul's quarter-system sequences. For example, if you transferred in Biology 121 from Harold Washington College, it would cover all of BIO 191 at DePaul and part of the content covered in BIO 192 at DePaul. But you would still have to take BIO 192 at DePaul before you could finish the sequence with BIO 193. You would have to take both BIO 121 and 122 at Harold Washington to cover BIO 191, 192, and 193 at DePaul.

#### **Transferring Courses into DePaul**

As a DePaul student, if you are considering taking a course outside of the university and transferring in the credits, you should be aware of the policies and guidelines regarding transfer credit. See the Transfer Credit Approval info on the **Transfer Credit Approval form**: <u>https://csh.depaul.edu/student-resources/advising-student-services/undergraduate-advising/Forms/Pages/transfer-credit-approval.aspx.</u>

Please be sure to read these policies carefully. **STUDENTS MUST SUBMIT A COMPLETED TRANSFER CREDIT APPROVAL FORM TO <u>CSHADVISING@DEPAUL.EDU</u> PRIOR TO TAKING ANY COURSES AT AN <b>OUTSIDE INSTITUTION.** The College of Science and Health will notify you if your request has been approved or denied.

#### NOTE: Last 60 credits must be taken at DePaul University.

**The Undergraduate Residency Requirement** mandates your final 60 hours be taken here. If wanting to transfer any additional credits within your final 60 hours, you must complete the CSH Residency Waiver Request form, and attach the Transfer Credit Approval form to the Residency Waiver. CSH Exceptions will consider your request before approving or denying.

- CSH Residency Waiver Request form: <u>https://csh.depaul.edu/student-resources/advising-student-services/undergraduate-advising/Forms/Pages/Exceptions/CSH-Residency-Waiver-Request.aspx.</u>
- **CSH Transfer Credit Approval form:** <u>https://csh.depaul.edu/student-resources/advising-student-services/undergraduate-advising/Forms/Pages/transfer-credit-approval.aspx</u>.

**Determining transfer credit equivalents:** The **Transfer Course List tool** is helpful in determining how transfer credit will be applied to a DePaul degree: <u>https://www.depaul.edu/admission-and-aid/types-of-admission/transfer-student/transferring-your-courses/Pages/course-lists.aspx.</u>

There are also **Transfer Guides** set up with various local community colleges: <u>https://www.depaul.edu/admission-and-aid/types-of-admission/transfer-student/transferring-your-courses/Pages/transfer-guides.aspx</u>.

Be sure to see your advisor if you have questions about transferring credit into DePaul!

## **AP Credit from High School**

Currently, students get academic credit for AP test scores as follows:

- Score of 3 = BIO 191 (an AP score of 3 is a weak score. Students should take BIO 191)
- Score of 4 = BIO 191 and 192
- Score of 5 = BIO 191, 192, and 193

Many professional school programs <u>do not</u> accept AP credit for science courses. Students who are considering applying to professional programs (e.g. medical, dental, pharmacy, optometry, etc.) should take BIO 191, 192, and 193 at DePaul. For a full list of accepted AP credit, visit this link: <u>https://www.depaul.edu/admission-and-aid/test-credit-and-placement/credit-given-by-exam/Pages/ap.aspx.</u> To clarify, DePaul <u>does</u> accept AP credit for eligible AP scores.

## 2022-23 Course Modalities

The COVID-19 pandemic changed our lives in profound ways, including the ways in which we are able to gather as a learning community. We learned that we can offer classes in multiple modalities, both on-campus and online. While most classes will be offered on-campus, we will be offering a number of classes online. In some instances, these classes will be offered as part of degrees that are now fully online; in other instances, courses that have multiple sections may include both online and on-campus options. In addition, thanks to new technology, some on-campus classes will also give students the option to participate remotely.

As you are building your schedule for the upcoming terms, please learn about the available modalities. Not every class will be available in every modality, but be aware of the options and of how to identify them in Campus Connect.

Please visit this page for all you need to know about how to identify course modalities in Campus Connect when choosing your classes, and much more: <u>https://resources.depaul.edu/student-success/success-strategies/Pages/course-modalities.aspx#identify-modalities</u>.

You can view the modality of your classes in Campus Connect. Campus Connect > Manage Classes > View My Classes > Select the course you wish to view > Class Details > here you will find the section titled "Instruction Mode", and the course modality will be listed beneath this.

#### **Academic Support Resources**

#### Supplemental Instruction, Tutoring, Office Hours, Counseling, and So. Much. More!

I (Jaimie) have created a "resource grid" wherein I'm collecting all DePaul student support resources I'm aware of, and indicating for which matters, which student groups, etc., they're helpful. Please notify me if anything on this grid needs updated, or if you have any additions, as this is an ongoing project! <u>DePaul Student Resources Grid: Click here!</u>

**Instructor Office Hours:** This might be one of the most under-utilized and important resources! Your professors want you to come see them! We mean it! Students are encouraged to attend both their Instructors Office hours, and their Teaching Assistant's office hours for assistance outside of class. This information should be in your course syllabus.

Supplemental Instruction (SI) lessons are a great way to review material learned in the classroom. Supplemental Instruction (SI) is a free program operating out of the Office for Teaching, Learning, and Assessment. Students who are enrolled in SI-supported courses are highly encouraged to attend peer-assisted review sessions led by SI Leaders. SI Leaders are students selected by the faculty to help review class material who successfully completed the course themselves. Sessions are typically held in the Richardson Library in Lincoln Park. For the SI Schedule, click here: https://resources.depaul.edu/supplemental-instruction/session-schedule/Pages/default.aspx

<u>Tutoring by Subject</u>: Visit the Student Success webpages to find Tutoring by Subject, and other support resources: <u>https://resources.depaul.edu/student-success/tutoring/Pages/default.aspx</u>.

<u>Online Learning Support</u>: With the University's recent transition to mostly online education, Academic Success Center is particularly focused on helping students prepare to be successful in online learning. The following webpage has some strategies for being successful in online courses: <u>https://resources.depaul.edu/student-success/success-strategies/Pages/default.aspx</u>. Or, visit the Academic Success Center webpages for a more comprehensive look at the resources and services they offer: <u>https://education.depaul.edu/student-resources/academic-success-center/Pages/default.aspx</u>.

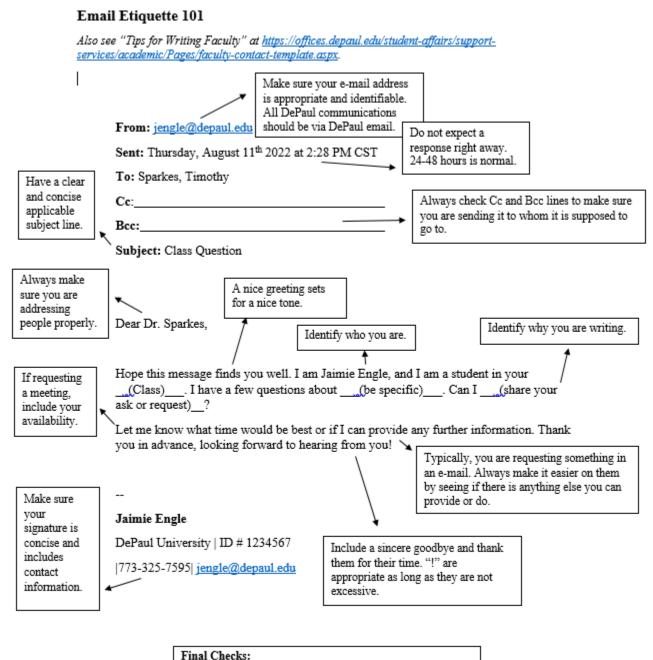
<u>University Counseling Services</u>: Your mental wellbeing is a critical part of your academic success. It is not uncommon for students to place their mental health on the backburner while trying to keep up with all the demands of school, work, and your personal life. But you owe it to yourself to take time to ensure your mental wellbeing.

DePaul's My Student Support Program (My SSP) provides brief, individual counseling for all currently enrolled students. Students can use MySSP to access confidential support anytime, anywhere.

- Call direct at 1-866-743-7732. (If calling from outside North America, dial 001.416.380.6578.)
- Or Download the My SSP app: Search 'My SSP' in either the Apple App store or Google Play.
- Through the app, all students can call or chat with a Student Support Counselor 24/7 in real-time or schedule a telephone or secure video session.
- For more information, go to <u>https://offices.depaul.edu/student-affairs/support-services/health-wellness/mental-well-being/Pages/my-ssp.aspx.</u>
- Phone/virtual consultations and referrals to outside services are available through DePaul's University Counseling Services (UCS). Call 1-773-325-7779 to schedule an initial phone consultation. If staff are on another call, please leave a message with your name, phone number, and student ID number, and your call will be returned as soon as possible.
- For ongoing counseling support, counseling staff will provide resources and referral support.

#### In case of an urgent or life-threatening emergency:

 Call 911, go to your nearest emergency room, or (if you are on campus) call Public Safety: 1-773-325-7777 (Lincoln Park) or 1-312-362-8400 (Loop). You should begin honing your professional written communication skills in college. Emails are a representation of you! Make a good impression with them, and also make the most of yours and others time, by including all pertinent info the first time. See below for tips!



mai Checks:

- Is this concise and to the point?
- Did I spell everything correctly?
   Did I use appropriate grammar?
- Did I use appropriate grammar?
- Is all relevant information included?
- How is my tone?

# **To Do List for 2022-23 Graduation and Commencement**

Participating in the commencement ceremony is optional and does not equate to degree completion. In some cases, students may be eligible to walk in the ceremony before completing all academic requirements. It is a student's responsibility to review their Degree Progress Report to ensure they are on track to complete the requirements and verify their completion term. Students may apply for degree conferral in Campus Connect; please be aware that submitting an online application does not guarantee a



conferral in Campus Connect; please be aware that submitting an online application does not guarantee a degree will be granted from DePaul University. Additionally, regardless of participation at commencement, students will not receive a diploma until all outstanding financial obligations have been fulfilled. Students should contact their Academic Advisors and DePaul Central with questions.

- 1. Check that you meet all <u>academic requirements</u>. Touch base with your major advisor to make sure you are on track to graduate. You can find your assigned Academic Advisor in BlueStar and can schedule an appointment with them through their listed contact information.
  - a. All students must graduate with a minimum of 192 credit hours (some transfer students graduate with more), at least a 2.0 cumulative GPA, and have finished all the requirements for their degree. See more info at <a href="https://catalog.depaul.edu/student-handbooks/undergraduate/undergraduate-academic-policies/graduation-requirements/">https://catalog.depaul.edu/student-handbooks/undergraduate/undergraduate-academic-policies/graduation-requirements/</a>.
- Apply for Degree Conferral on Campus Connect. Submitting this application lets the university know that you plan to finish your degree in a specific term. You cannot obtain a degree from DePaul without applying for degree <u>conferral (it is a very quick and easy process</u>). Follow this path in Campus Connect: Academic Progress > Apply for Graduation. You'll first submit your Diploma Address, and then select the term in which you intend to graduate, and then submit.
  - a. Deadlines for applying for Degree Conferral:
- Autumn Quarter (October 1<sup>st</sup>), Winter Quarter (January 15<sup>th</sup>), Spring Quarter (February 1<sup>st</sup>), Summer Session (July 15<sup>th</sup>)
- 3. **RSVP by April deadline if wanting to participate in the June Commencement Ceremony.** You must RSVP for the ceremony via Campus Connect to reserve your six guest tickets.
  - a. Follow this navigation: Student Homepage > Academic Progress > RSVP for Commencement.
  - b. For ticket information, visit the <u>ticket page</u> on this website. This link will not appear until you have applied for degree conferral (see Step 2 above).
  - Fill out the RSVP for commencement form. As part of this process, you will be asked to provide information on how to pronounce your name correctly. Use the <u>DePaul Phonetic Spelling Guide 2022.pdf</u> as reference.
- 4. Purchase your Cap and Gown
  - a. After you submit your RSVP (see Step 3 above), a link to the ordering site will automatically pop up. You are not able to <u>purchase</u> your cap and gown until you indicate you will attend the June ceremony. Please visit the <u>Cap and Gown</u> page for the deadline to <u>purchase</u> your cap and gown.
- 5. Attend Commencement Kickoff
  - a. Commencement Kickoff is the distribution of caps and gowns, and other important materials you will need for the day of your commencement ceremony. Visit the <u>Commencement Kickoff</u> page for more details.
- 6. Check the <u>Commencement ceremonies</u> schedule and find your college. Don't forget to share this information with <u>your guests</u>.
- 7. **Take out loans to finance school?** Schedule an appointment with an Advisor in our Financial Fitness Office to learn about loan consolidation and repayment plan options: <u>http://financialfitness.depaul.edu</u>.
- 8. **Need to make plans for after graduation?** Visit the Career Center and meet one-on-one with a career advisor: <u>https://resources.depaul.edu/career-center/Pages/default.aspx</u>

\*For questions regarding resume building, writing a cover letter, and career opportunities, please make an appointment with a Career Center Advisor in Schmitt Academic Center room 192. The Career Center staff can also be reached by phone at (773) 325-7431 and by e-mail at career\_center@depaul.edu. Lots of resources can also be found on the Career Center website: <a href="https://resources.depaul.edu/career-center/Pages/default.aspx">https://resources.depaul.edu/career-center@depaul.edu</a>.

## BIO Advising Umbrella – "We've Got You Covered!"

See below for how the various advisors available to you can each help.



