



STUDENT HANDBOOK

2023-2024

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Mission Statement

The Biology Department of Lewis University, in recognition of the long-standing tradition of academic rigor, discipline, and service of Catholic higher education, strives to fulfill the mission of Lewis University by

- developing the understanding and mastery of the concepts of our discipline (Knowledge)
- initiating students into the philosophy, traditions, and practices of the scientific ways of knowing (Fidelity)
- encouraging reflection on biological concepts to increase critical understanding of the discipline and the ability to apply it concepts (Wisdom)
- fostering respect for and recognition of the dignity of all components of the biosphere (Justice)
- promoting collegial learning communities within the department, college, and university (Association)

The Biology department will maintain its tradition of mentoring students in- and outside of classrooms, facilitating frequent and effective personal interaction between students and instructors. Our department will prepare the students we teach to make contributions to their local communities and the world beyond as educators, researchers, professionals, and citizens. These goals will be supported through the incorporation and integration of student-centered instruction utilizing appropriate technological advances in both the classroom and laboratory. The Biology department will continue its commitment to serving the needs of its students and society through the development of appropriate partnerships and associations within the scientific and educational community.



Vision Statement

The Biology Department of Lewis University will be recognized as one of the premier pre-professional, allied health, and environmental science departments in the Midwest. We will also endeavor to provide high quality general education experiences for all Lewis University students in addition to exemplary support courses for multiple programs across the colleges. As a department, we will build upon our current strengths and expertise and, when combined with the addition of highly qualified faculty and the expansion of our facilities, our department will grow to meet the demands and expectations that our institution's unique environment, development, and potential will provide. With the prospective development of a wetlands preserve on campus, coupled with the natural resources at our doorstep, the Lewis University Environmental Science majors will be distinguished from all other regional programs. Graduates of our department will be recognized as excellent scholars and practitioners and we will constantly strive to enhance the placement of our graduates in high-profile, well-respected institutions.



Department Goals

Graduates of the Lewis University Biology department should be able to:

1. Understand that the diversity of life stems from a common biochemistry and physiology
2. Analyze and succinctly describe results from scientific endeavors
3. Demonstrate communication skills
4. Appreciate the interactions between biological entities and their environment
5. Demonstrate critical thinking skills

Department Information

Location

The Biology Department is located on the second floor of the Science Center.

	<u>Room</u>
Department Office	AS-107-S

Laboratories

Anatomy & Physiology	AS-204-L
General Biology/ Environmental Science/ Ecology	AS-208-L
Microbiology	AS-214-L
Biochemistry/Genetics	AS-218-L
Cadaver Lab	AS-134-S

Faculty

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B.S. Biology, Lewis University

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Ph.D. Microbiology, University of Wisconsin
M.S. Microbiology, University of Wisconsin
B.S. Biochemistry and Molecular Biology, University of Wisconsin

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M.S., Biology, DePaul University
B.S., Biology, University of St. Francis

Advising

Students in the Biology Department are assigned to a faculty member who will serve as their advisor. Faculty advisor duties include meeting with students to discuss their progress in the program and selecting courses for registration each semester. Advisors monitor the completion of general education courses as well as major courses so as to ensure that each student can complete their degree within the desired time course. Students however also bear the responsibility of ensuring that they have met all of the requirements for graduation. Advisors will have a signup sheet prior to the pre-registration period so that students may schedule a time. It is expected that students will come prepared with a tentative schedule. Students who do not show up for their appointment or who fail to register for classes in a timely fashion will be responsible for any problems that ensue, such as a delay in graduation.

The assignment of advisors is based on the expertise of the faculty member and the desired objectives of the student. Students who are majors in any of the allied health, environmental science, or secondary education programs will be automatically assigned to the department's director/advisor of those programs. Students seeking entrance into professional and/or graduate schools can be assigned to any faculty member; however, those students accepted into the Dual Admission Program for Pharmacy will automatically be assigned to the health professions director. Students should consult their advisors about any programmatic or curricular questions that they may have.

**Lewis University
Department of Biology
Graduation “Checklist”**

Question	Should be done/monitored...	Y/N
Will you have the 128 (minimum) total credit hours needed to graduate?	Every semester starting fall semester of second to last year	
Will you complete 32 credit hours at Lewis?	During your last year	
Will both your departmental and overall GPA stay above 2.0?	Every semester	
Are you on track to finish all of the coursework for any other majors/minors (if desired)?	Every semester (depends on major/minor – check with other departments as needed)	
Did you apply for course credit for internships (if appropriate)?	The semester prior to your internship	
Have you taken a section of Journal Club?	Starting fall semester third year	
Did you sign up to take Senior Thesis?	During your last year	
Did you apply for any pre-professional programs/tests (if necessary)?	Where appropriate – may vary depending on pre-professional program	
Did you apply for graduation?	By the start of your last semester	
Did you get a copy of your Degree Audit Form?	Sometime before graduation	

Tutoring

Tutoring services are available in the Academic Resource Center which is located in the Learning Resource Center. Tutoring is provided free of charge, appointments are necessary as they have limited space.

Coursework Away from Lewis

Once a student becomes full-time at Lewis University, they may transfer in classes from another institution. The student must petition the Dean of the College of Aviation, Science and Technology to do so – forms are available from your advisor, which will be emailed to be completed electronically before sending to the College of Aviation, Science and Technology Deans Office. The department chair’s signature is not required for most forms prior to being forwarded to the Dean. Biology majors do need to be aware that we **DO NOT** allow students to take Biology classes required for the major at other institutions. In addition, the University may place limits on the number of credits that may be transferred.

Departmental Policies

Advanced Placement Credit

The Biology Department will award 3 hours of credit for BIOL 10000 (Introduction to Biology) when students have received a score of 4 or 5 on AP tests. We do not award any credit for major classes based on AP scores.

Prerequisite Courses

Biology majors must take classes in the appropriate sequence, satisfying all of the prerequisite coursework. Prerequisite coursework not only includes the classes listed in the course catalog but also any required work for those classes. For example, to take BIOL 22000 - Genetics, a student must successfully complete BIOL 11500 - General Biology II. In order to take General Biology II, a student must successfully complete BIOL 11000 - General Biology I. Therefore, a student must successfully complete **both** General Biology I and II before Genetics can be taken.

Minimum Grade Requirements

Biology majors must earn a grade of **C** - or better in a prerequisite course to advance to the next course in the sequence. This policy applies only to General Biology I & II, Genetics, and Microbiology lectures and labs. If the minimum grade of **C-** is not achieved in the first attempt, then the class must be repeated. Students may petition the department chair to be exempted from this requirement but there is no expectation that the exemption will be granted. The petition must be in writing (form available in the Biology office) and must include the reasons as to why the student should be allowed the exception from this policy. This exemption can only be granted once per student and is only an option for the first time the student takes the course.

Students should be aware of the policy of many professional schools to view grades of **W** (Withdrawal) as failing grades when applications are evaluated. Every effort should be made on the part of the student to successfully complete their coursework the first time that the class is taken.

Repetition of Courses

Biology majors and minors may take a biology class only two times. If a student has not achieved a minimum of a **C** – after the second attempt, the student may not repeat the class. The inability to complete a biology class with the minimum acceptable grade will require the student to change their major/minor to one outside of the Biology department. Students will receive notification by mail from the department chair when this occurs.

Experiential Learning Courses

The completion of three of the following laboratory courses satisfies the Experiential Learning requirement at Lewis University: General Biology 1 Lab, Genetics Lab, General Microbiology Lab, and Ecology Lab.

Extended Absence

Students are expected to follow the attendance policy put forth by the University. Students who know that they will be absent for extended periods of time should inform their instructors in advance and should complete a departmental absence form (available in the Biology office) prior to the absence.

Grade Appeal

If a student wishes to appeal a final grade for a course, the student must, prior to the third week of the subsequent fall or spring semester, contact the instructor of the course to express concern. Once the appeal has been resolved, the student will be required to sign a Grade Appeal Resolution form.

Sophomore Review Process

Description: The Sophomore Review is a process designed to assist students and their advisors in the planning of a thoughtful, student-focused educational and professional plan while at Lewis University. Students are asked to review their courses and extra-curricular activities during the first two years, evaluating their performance to date and how it compliments their career goals. Students are required to include elements in their review that they will need to incorporate or consider into their final two years of undergraduate education. These are elements that are essential for the student to be competitive in the profession(s) they wish to pursue.

Elements that are required components of the Sophomore Review include, but are not limited to:

1. Professional (or related) programs of interest (EX: Medical – Allopathic and/or Osteopathic, Podiatry, Optometry, Physical Therapy, Physician Assistant, Veterinary Medicine, Pharmacy, Occupational Therapy, Graduate Studies)
2. Centralized application services associated with these programs; students must include:
 - a. date(s) that each service opens for student applications
 - b. the costs associated with the program
3. Standardized test(s) required by programs; must include:
 - a. cost of the test
 - b. date(s) the test is offered
 - c. format of the test (i.e., computer based, instant score report/delayed score report, etc.)
4. Professional programs the student is interested in (specific institutions). Details for EACH program should include:
 - a. Average standardized test score for admitted students (NOT minimum score)
 - b. Average GPA (science and cumulative) for admitted students (NOT minimum)
 - c. Coursework required for consideration (with the strong suggestion to also evaluate “(highly) recommended” coursework)
 - d. Cost for applying to the program
5. The student should, based upon the aforementioned information, develop a plan with his/her advisor to meet the programmatic expectations in the remainder of his/her undergraduate education.

Students are required to submit this review by the end of their sophomore/second year. Transfer students who come to Lewis with more than 55 credit hours would be required to complete this process during their first semester at the university. Transfer students with less than 55 credit hours would be required to complete the process by the end of their first academic year (second semester) at Lewis University. Biomedical Science students are required to complete the process by the first day of classes during their first semester at Lewis. The Sophomore Review is not required for a student to graduate from Lewis University. However, students who fail to complete the review cannot have letters of recommendation written by the Pre-Professional Council or any faculty in the Natural Sciences or Mathematics/Computer Sciences, regardless of the situation.

Letters of Recommendation

Students who wish a faculty member to write them a letter of recommendation should provide the faculty member with all of the pertinent information at least one month in advance of the due date (see page 15). Students should also understand that a faculty member may decline the request for any of a variety of reasons. Students who are applying for professional programs of any type must follow the guidelines for letters of recommendation outlined in the Pre Health Professions Handbook.

Students should also be aware of the distinction between a letter of reference versus a letter of recommendation. Professional and graduate schools require letters of recommendation in which the faculty member must compare the applicant to the standards for acceptance as well to the students who have been successful in gaining acceptance to that particular institution. A letter of reference however does not require such comparison and is simply an indication of the personal qualities of that individual.

It is the policy of the Biology department to support with letters of recommendation for professional school applications, only those students who have achieved a cumulative and science GPA of 3.25 by the time they complete BIOL 35500 Biochemistry I and have no withdrawals in their records. For students applying to graduate schools, the minimum cumulative and science GPA is 3.0 by the time they complete BIOL 35500 Biochemistry I. For further information on minimum GPA and test scores, please see page 14. If there is a required exam for the program to which the student is applying, the student must supply an official copy of the scores to the faculty before letters can be written. In the event that a student has his/her request for letters of recommendation denied, he/she has the right to petition for reconsideration with the understanding that there is no guarantee that the petition will be successful. Acceptance into any professional or graduate school is solely determined by the admission committee of that school. All faculty members have the right to decline a request to write a letter of recommendation for any student.

Minimum Requirements

EFFECTIVE SPRING 2015 - Recognizing the central importance of standardized scores as well as undergraduate GPA in the health professions application process, letters of support from faculty in the Natural Sciences and Math will require that students achieve the following minimum criteria. These criteria do not reflect “competitive” applicant scores but, rather, “threshold” scores to meet minimum expectations.

MEDICAL (Allopathic/M.D. and Osteopathic/D.O.):

1. MCAT – 24 (three 8s on the past test); 497 on new exam (40th percentile; subsections of 125 or higher in the “science” components)
2. GPA – 3.0 or above

PODIATRY:

1. MCAT – 20 (no score less than a 6); 492 (“science” subsections 124 or higher)
2. GPA – 3.0 or above

PHARMACY:

1. PCAT- 45th percentile or higher (or 40th percentile with Science subsections 60th percentile+)
2. GPA – 2.75 or above

PHYSICAL THERAPY:

1. GRE – 40th percentile or higher (preferred 150+ in each subsection)
2. GPA – 3.0 or above

DENTAL:

1. DAT – 17 on Academic Average as well as Total Science
2. GPA – 3.0 or above

VETERINARY:

1. GRE – 50th percentile or higher on all subsections
2. GPA – 3.0 or above

OPTOMETRY:

1. OAT – 290 or higher (300 = 50th percentile; competitive = 315 or above)
2. GPA – 3.0 or above

PHYSICIAN ASSISTANT:

1. GRE – 40th percentile or higher (preferred 150+ in each subsection)
2. GPA – 3.0 or above

CHIROPRACTIC:

1. NO standardized test is required
2. GPA – 2.75 or above



Pre-Professional Letter of Recommendation Request Form

All students seeking letters of recommendation for post-graduate education in any Health Profession need to complete this form and submit it, along with an official copy of standardized test scores (*i.e.*, MCAT, OAT, GRE, PCAT, DAT, or other) to the Health Professions Advisor no less than 30 days prior to the due date of the letter. Late requests may not be honored.

NAME: _____
GPA: Cumulative _____ **GPA-Major (Majors' classes only):** _____
Hours completed toward degree: _____

Program(s) to which the student will be applying: Since centralized application services are the “norm” for most programs, please list the service (e.g., PharmCAS, AMCAS, etc.), the method of submission that the student will use (on-line to service, Interfolio, etc.), as well as pertinent deadlines for submission (keeping in mind the 30 day turn around period). For our record keeping purposes, we ask that you also include the institutions you will be submitting your application to via the centralized service.

Centralized Service(s):

Programs:

Faculty member(s) requested by student to write letter(s): Please fill in the blanks ONLY as needed (i.e., if your school requires two letters, fill in two faculty requests).

**Please be mindful that individual letters are generally not preferred for Medical/Podiatric School applicants. In these cases, the applicant is encouraged to request a committee letter (committee members: Pre-Professional Director, Biology faculty/chair, Chemistry faculty/chair, Physics faculty/chair, and Mathematics professor).

Has the student included a copy of standardized test scores?
 YES **NO** (no letter will be written without scores)

Academic Dishonesty Policy

Scholastic integrity lies at the heart of Lewis University. Plagiarism, collusion and other forms of cheating or scholastic dishonesty are incompatible with the principles of the University. Students engaging in such activities will lose credit and potentially will be dismissed from the University. The instructor will assign a grade of zero points to any exam, quiz, presentation, or assignment in which the student has compromised scholastic integrity. The student's advisor and Chair of the Department of Biology will be notified. A second violation of this policy in this or any course will result in a final grade of "F". For students in a program offered by the Biology Department, the second violation will result in dismissal from the program. Students have the right to appeal the decision according to the policy outlined in the Undergraduate Catalog.

"Plagiarism ¹" is defined to be submitting work as your own that is in reality someone else's. Plagiarism is also illegal and can be criminally punishable. This behavior includes:

- Copying words verbatim from a book, article, Internet source or any other written document without **properly** acknowledging the true source
- The use of another author's idea, even when paraphrasing has been done to minimize improper citing
- Purchasing an assignment from any source

"Improper citations" is defined as the failure to give appropriate credit to the source of an idea, a quotation, a paraphrase, an opinion, a visual, or a graphic, by properly providing the name, title, and page number(s) of the source of the information. Citations should provide readers with the information necessary to locate the source. The use of three or more words in a line from a source must be quoted, while all quotations must be the author's exact words. In addition, all paraphrases must be in the student's own words and **sentence structure**.

"Cheating ¹" is defined as obtaining unauthorized help on an assignment, quiz or examination. This includes:

- Giving *or* receiving answers on an assignment, quiz or examination during the examination
- Giving *or* receiving answers on an assignment, quiz or examination *after* the examination. **This particularly applies to students that are in different sections of the same class.**
- Looking at another student's answers during an examination or quiz.
- Using unauthorized sources (books, articles, notes, the internet, **any electronic devices**) on an assignment, quiz or an examination
- Obtaining quizzes or examinations illegally before the testing date. This includes stealing an examination as well as any other method that will allow you to obtain an examination prior to its official administration.
- Distributing an examination or quiz to others prior to its administration
- Changing assignment, quiz or examination answers after it has been graded and returned
- Retaining or photocopying previously administered examinations or quizzes when it has been clearly stated that such materials must be returned to the professor

“Fabrication¹” is defined as generating data without experimentation. This includes:

- Falsifying or inventing any information, data or citation
- Presenting data that were collected in an unorthodox or questionable manner
- Failing to include an accurate account of the method by which the data were gathered or collected

How do you prevent academic dishonesty?

1. Follow the guides set forth by your professor. If group projects are permissible for a given assignment, she will clearly inform you of this.
2. If you copy an author’s words exactly, treat the passage as a quotation by putting quotation marks around the passage and then reference the source.
3. If you use someone else's ideas, even if you paraphrase the wording, appropriate credit should be given to the original author. This is a gray zone that may leave the student perplexed. If that occurs, cite. Better to be safe than sorry.
4. Ask your professor if certain assignments, for example laboratory assignments, can be done as a group.
5. Inform your instructor if you are aware of academic dishonesty occurring in the classroom.

Examples:

Consider the following text:

In response to adverse environmental conditions, the Gram + soil bacterium *Bacillus subtilis* will undergo an alternative developmental pathway called sporulation. This process results in a highly resistant cell type called a spore, which is capable of withstanding extreme temperatures, chemicals and even UV light. These amazing resistance properties are due primarily to two structures, the spore coat and the spore cortex. The spore coat is comprised of several layers of tightly cross-linked proteins that act as a physical barrier against noxious agents. The cortex acts to keep the core of the spore dehydrated and thus dormant.

This following rephrasing is considered plagiarism!

Bacillus subtilis, which is a Gram + soil bacterium; will undergo a process called sporulation in response to adverse environmental conditions. This results in a cell called a spore, which can survive extreme situations like temperatures, chemicals and UV light. The two structures of the spore that allow for these resistances are called the coat and the cortex. The coat, which is made up of proteins, acts as a barrier to prevent things from entering the cell. The cortex dehydrates the cell.

How do you get around this? Cite. Cite the original source **after every sentence** that has three or more words in common with your source. You may think that this may get cumbersome when discussing background information like in the introduction of a scientific paper. However, that is what is done because there are only so many ways to restate the same set of facts in an efficient manner.

¹ “Definitions of Academic Dishonesty” <http://www.northwestern.edu/uacc/defines.html>

Here is a paraphrase that is not plagiarism:

Sporulation is process certain bacteria undergo when environmental conditions become less than favorable that results in a cell type able to withstand most environmental stressors. This cell, called a spore, has two structures that are integral for these resistance properties. The first structure, the spore coat, is protein based, and serves to prevent the entry of chemicals and solvents into the cell. The second structure, the cortex, is involved in removing water from the interior of the spore, which allows the spore to remain dormant.

This paraphrase doesn't really flow as well as the original; that is why people often choose to cite sentences that have been finely drafted and work well.

Remember that it is perfectly okay to use the author's exact words as long as you put quotations marks around the sentence or passage and then cite. Failure to do this is considered a miss-citation and may land you in trouble.

The Biology Department is grateful to Dr. Francesca Catalano who wrote the original draft of this policy and to Dr. Christopher Wielgos who edited this policy for us.

Department Organizations

Omega Omicron Chapter of the Beta Beta Beta Biological Honor Society

Beta Beta Beta (Tri-Beta) is a society for students, particularly undergraduates, dedicated to improving the understanding and appreciation of biological study and extending boundaries of human knowledge through scientific research. Since its founding in 1922, more than 175,000 persons have been accepted into lifetime membership, and more than 430 chapters have been established throughout the United States and Puerto Rico.

Tri-Beta was founded in 1922 at Oklahoma City University--the Alpha Chapter--by Dr. Frank G. Brooks and a group of his students. The idea of an honor and professional society for biology students spread rapidly and by 1925, the society was a national organization. Biennial national conventions of student and faculty members began in that year and in 1930 the society journal, BIOS, began publication of student research, articles of interest to biologists, and society news.

The Omega Omicron Chapter of Tri-Beta was established at Lewis University in the fall of 1999. Since its inception, members of the Omega Omicron chapter have been involved in a wide variety of scientific and research oriented activities. These range from summer research programs at area medical centers to organization of an annual 10K walk whose proceeds benefit research in the area of Cystic Fibrosis. Students organize alumni and health professions speaker series each year, have established numerous charitable drives (beneficiaries include Ronald McDonald House and Chicago Public Schools), and are extremely visible in all aspects of academic and student life across the university.

Acceptance to full membership in Tri-Beta requires that the student meet the following criteria:

1. Declare a major in Biology
2. Attend Lewis University for 3 semesters (with coursework in the major)
3. Have a 3.0 GPA in the major (with no less than a "C" in all courses)

Tri-Beta also offers Associate membership to anyone who is interested in participating in group activities and promoting scientific scholarship and literacy. Both the full and associate members are inducted to the society in a ceremony that occurs each spring on campus.

Graduate Placement

Professional Schools

Allopathic

James Fitman

Des Moines University

Chiropractic

Deborah Johnson

Cleveland College

Dale Mraz

Davenport University

Matt Schultz

Logan College

Keith Engler

Logan College

Kimbra Runyan

Logan College

Larry Hopkins

National College

Dominic Anco

National College

Zachary Lindemann

National Univ. of Health Sciences

Fallon Biederman

National Univ. of Health Sciences

Jason Domico

National Univ. of Health Sciences

Daniel Nelson

National Univ. of Health Sciences

Vilija Schreiner

National Univ. of Health Sciences

Erin Blazina

National Univ. of Health Sciences

Wala Abu-Mallouh

National Univ. of Health Sciences

Kris Nadarajah

National Univ. of Health Sciences

Andrew Vlosak

National Univ. of Health Sciences

Catherine Reczek

National Univ. of Health Sciences

Angelika Wujcik

Palmer College

Ramica Ford

Palmer College of Chiropractic

Gavin Weir

Palmer University

Dental

Ted Marko

Kornberg School of Dentistry

Norbert Bora

Loyola University

Terry Kavanaugh

Loyola University

Rich Pellegrini

Loyola University

Nick Meyer

Loyola University

Sam Cicarelli

Loyola University

Emil Verban

Loyola University

Steve Sewall

Loyola University

Dawn Swenson

Loyola University

Bob McGonicle

Loyola University

John Mantanez

Loyola University

Sara Hunter

Southern Illinois University

Brian Habas

Southern Illinois University

Ted Hughes

Southern Illinois University

Jesse Zavala

Southern Illinois University

Mutasem Daineh

Tufts University

Dental

Kaitlin Mach

Midwestern University

Medical

Andy Kommineni
Robert Marker
Inez Brown Kelleher
Joseph Nemeth
Allison Gritzman
Sydnie Rizaldo
Sultan Ahmed
Afrah Ali
Nabeel Ghani
Aiman Khan
Brandon Popp
Saniya Qadir
Mary Martino
Robert Schuster
Lisa Pocius
John Ngwe
Michael Bonin
Erika Young
Elise Bowler
Nicholas Pietrek
Lauren Stevens
Alexis Borelli
CJ Koeller
Anndrea Distor
Joseph Shega
Todd Mitchell
Mark Drendel
Alvi Renzyl Cortes
Kevin Burke
Akachi Ajiere
Scott Sorensen
Robin Robertson
Anna Kilboy
Michael Heniff
Matthew Christophersen
Okey Enyia
Winnie Adams
Anton Uhlen
Donald Laasch
Edward Logman
Charles Slack
John Danielson

American University of Antigua
Des Moines University
Georgetown University
Indiana University
Indiana University
Lake Erie College of Osteopathic Medicine
Lake Erie College of Osteopathic Medicine
Lake Erie College of Osteopathic Medicine
Lake Erie College of Osteopathic Medicine
Lake Erie College of Osteopathic Medicine
Lake Erie College of Osteopathic Medicine
Lake Erie College of Osteopathic Medicine
LECOM (Bradenton)
Loyola University
Loyola University
Loyola University
Marquette University
Meharry Medical School, Nashville, TN
Midwestern University
Midwestern University (AZ)
Midwestern University (AZ)
Midwestern University (IL)
Midwestern University (IL)
Midwestern University (IL)
Northwestern University
Pennsylvania State University
Rosalind Franklin
Rosalind Franklin University
Rosalind Franklin University
Ross University
Rush University
Rush University
Rush University
Rush University
Southern Illinois University
Southern Illinois University
Stanford University
Touro University NY
University of Illinois
University of Illinois
University of Illinois
University of Illinois

Medical

Ted Dastych	University of Illinois
Stuart Gifford	University of Illinois
Sunette Varnardo	University of Illinois
Jeanette Kososki	University of Illinois
Mark Snyder	University of Illinois
Sergio Gonzalez	University of Illinois
Kevin Kline	Washington University, St. Louis
Reno Stramaglia	Rosalind Franklin University
Donatas Ruzys	University of Pikeville (KY)
Hannah Zuercher	University of South Florida

Occupational Therapy

Ashley McGaughy	Midwestern University
Haley Collins	Midwestern University

Optometry

Becky Baker	Illinois College of Optometry
Joe Ashenbrenner	Illinois College of Optometry
Deborah DiAgostini	Illinois College of Optometry
Lisa Wilson	Illinois College of Optometry
Joanna Kawecka	Illinois College of Optometry
Lori Navarro	Illinois College of Optometry
John Campbell	Illinois College of Optometry
Nicole Furr	Illinois College of Optometry
Vakishan Nadarajah	Illinois College of Optometry
Thara Abu-Mallouh	Midwestern University
Mitch Kanellis	Midwestern University
Elizabeth Shelus	State University New York

Osteopathic

Scott Cammack	A.T. Still Kirksville College
Zahra Ismail	A.T. Still Kirksville College
Shane O'Donnell	A.T. Still Kirksville College
Haleigh Saari	Campbell University
Ashley LeGrand	Des Moines University
Phillip Rathousky	Des Moines University
Steve Neubauer	Des Moines University
Xaverie Benedict	Kentucky College of Osteopathic Medicine
Chad Hietschold	Kirksville College of Osteopathic Medicine
Aleksandr Pecherek	Lake Erie College of Osteopathic Medicine
Yousuf Ahmad	Lake Erie College of Osteopathic Medicine
Nafisa Asad	Lake Erie College of Osteopathic Medicine
Mohammed (Musa) Khattak	Lake Erie College of Osteopathic Medicine
Rida Raziudin	Lake Erie College of Osteopathic Medicine
Maryam Yousuf	Lake Erie College of Osteopathic Medicine

Osteopathic

William Long

Midwestern University

Karla Shively

Midwestern University

Gregory Miller

Midwestern University

John Havlick

Midwestern University

Jeremy Lott

Midwestern University

Peter Waller

Midwestern University

Jennifer Cho

Midwestern University

Michael Hegazin

Midwestern University

Christian Yasmine

Midwestern University

Pathologist Assistant

Angel Dominici

Rosalind Franklin University

Perfusion Technology

Adrian Guzik

Rush University

Pharmacy

Cassidy Domagalla

Belmont University

Erin Watterson

Butler University

Joelle Ataessien

Chicago State University

Diana Hegazin

Chicago State University

Nicole Serafin

Chicago State University

Amanda Buskine

Midwestern

Meghan Von Schaumburg

Midwestern

Amanda Weller

Midwestern

Camille Cabas

Midwestern University

Maria Cherry

Midwestern University

Eujean Kang

Midwestern University

Taylor Kenny

Midwestern University

Andrew Wachs

Midwestern University

Linda Ngwe

Midwestern University

Danielle Winchester

Midwestern University

Sara Morfoot

Midwestern University

Jimica Hedge

Midwestern University

Lina Shlikas

Midwestern University

Tim Cole

Midwestern University

Brian French

Midwestern University

Mary Beth Tinsley

Midwestern University

Ashley Dempsey

Midwestern University

Andrew Grigus

Midwestern University

Feda Abu-Mallouh

Midwestern University

Allison Buldak

Midwestern University

Mohammad Mohammad

Midwestern University

Jenna Cairo

Midwestern University

Kyle Leto

Midwestern University

Pharmacy

Justin Velasco	Midwestern University
Mitch Bokowy	Midwestern University (IL)
Jenna Franzen	Midwestern University (IL)
Todd Meyer	Midwestern University (IL)
Hannah Noxon	Midwestern University (IL)
Dylan Starkus	Midwestern University (IL)
Kim Valdez	Midwestern University (IL)
Keith Young	Midwestern University (IL)
Allie Wortman	Midwestern University (AZ)
James Harnois	Midwestern, Ferris State
Monica Sandrzyk	Roosevelt and Rosalind Franklin
Jake Backhoff	Roosevelt University
Courtney Makowski	Roosevelt University
Fiona Costello	Roosevelt University
Karen Randle	Roosevelt University
Joseph Sanavaitis	Roosevelt University
Evelyn Siaskiewicz	Roosevelt University
Kimberly Zaleski	Roosevelt University
Jesus Munoz	Roosevelt University
Alex Serrano	Roosevelt University
Donna Mariner	Rosalind Franklin
Glen Chanithikul	Rosalind Franklin University
Medha Patel	Shenandoah University
Odessa Ubongen	SIU
Ryan Tutko	Sullivan University – Kentucky
Philip Hodur	UIC, Midwestern, Concordia, U of M
Amanda Lewandowski	University of Arizona
Michael Anonuevo	University of Illinois – Chicago
Gabriela Diaz	University of Illinois – Chicago
Lamar Quinn	University of Illinois – Chicago
Hari Patel	University of Illinois – Chicago
Yoradyl Bendebel	University of Illinois – Chicago
Brittany Stasukewicz	University of Illinois – Chicago
Haley Concepcion	University of Illinois – Chicago
Rian Neuzil	University of Illinois – Chicago
Naseem Alrafati	University of Illinois – Chicago
Mario Barrios	University of Illinois – Chicago
Adrian Kalata	University of Illinois – Chicago
Melinda Kendric	University of Illinois – Chicago

Physical Therapy

Sarah Lyons	Belmont University
Abby Kirschner	Indiana University
Sarunas Skadas	Midwestern University
Katie Stanley	Midwestern University

Physical Therapy

Sarah Whiteside	Midwestern University
Tammie Ostrowski	Midwestern University
Kimberly Adelsbach	Midwestern University
Brian Schumann	Midwestern University
Jaimee Balskus	Midwestern University
Ryan Holehan	Midwestern University
Melanie Limanowski	Midwestern University
Brian Damhoff	Midwestern University
Brian Pedersen	Midwestern University
Elizabeth Schuhler	Midwestern University
Andrew Gestautas	Midwestern University
Maggie Majcher	Midwestern University
Nicole Dominguez	Midwestern University
Brianna Hopp	Midwestern University
Jacob Berndl	Regis University (Colorado)
Jenna Saraga	Southwestern Baptist University
John Avila	St. Ambrose University
Brian Morgan	St. Ambrose University
Mary Moskal	Univ. Ill at Chicago
Janet Morioka	University of Illinois-Chicago
Stephanie Nielsen	University of Wisconsin/Milwaukee
Gavin Weir	Washington University (St. Louis)

Physician Assistant

Emily Richart	Christian Brothers University (TN)
Katelyn Daniels	College of St. Mary (Nebraska)
Christian Silva	Dominican University
Sarah Yarger	Grand Valley State University
Samuel Swartz	Midwestern University
Adaliz Benitez	Midwestern University
Amy Weierman	Midwestern University
Jeremy Lott	Midwestern University
Rita Hegazin	Midwestern University
Courtney Decker	Midwestern University
Erin Newcomb	Midwestern University
Danielle Boyd	Midwestern University
Elena Petrussevska	Midwestern University
Sarah Lubinsky	Midwestern University
Abigail Dodis	Midwestern University (IL)
Matt Creasey	Milligan University (Tennessee)
Lauren Seliga	Mississippi University
Emily Heine	Mississippi University
Jillian Ceranek	New York Institute of Technology
Clay Shelton	Southern Illinois University
William Sideras	Southern Illinois University

Physician Assistant

Christen Alcorde
 Pascale Look
 Carolyn Valois
 Samantha Cullen
 Lorena Perez-Hernandez

St. Louis University
 University of Cumberland
 University of St. Francis
 University of St. Francis
 University of Wisconsin, Madison

Podiatry

Dennis McGrath
 Mike Wynn
 Lauren McCarthy
 Jacob Diaz
 Mike Pulla
 Maureen Spinler
 Nancy Jagodzinski
 Anthony Easley
 Richard Adams
 Laura Ritter
 Cathy Feuerstein
 Allyson Berglund
 Sarah Bettag
 Melanie Flock

Barry
 Cleveland College
 Des Moines University
 Des Moines University
 Rosalind Franklin University
 Scholl
 Scholl
 Scholl
 Scholl
 Scholl
 Scholl
 Scholl
 Scholl at Rosalind Franklin University
 Temple University School Podiatric Medicine

Public Health

Rebecca Conneen

Benedictine University

Research Assistants

Erin Beddows
 Tanja Barac
 Thomas Campbell
 Peter Tanaka

University of Freiburg
 Northwest Community Hospital
 St. Louis University
 Wayne State School of Medicine

Veterinary Medicine

Marcus Taylor
 Lisa Gartland
 Carolynne Kruckman
 Cailey O'Donnell
 Destiny Evans
 Jane Lazzara
 Alexandra Finnegan
 Michael Miller
 Steve Boroviak
 Elizabeth Curry
 Pamela Means
 Erica Shulha
 Melissa Stefanski

Kansas State University
 Michigan State University
 Michigan State University
 Midwestern University
 Purdue University
 Ross University
 Ross University
 University of Illinois
 University of Illinois
 University of Illinois
 University of Illinois
 University of Illinois
 University of Michigan

Allied Health

Diagnostic Medical Sonography

Amber Kirby	Northwestern Memorial Hospital
Erika Rocha	Northwestern Memorial Hospital
Kirsten Gerry	Northwestern Memorial Hospital
Sarah Kuczek	Northwestern Memorial Hospital
Bridget Murphy	Northwestern Memorial Hospital

Nuclear Medicine Technology

Pradip Patel	College of DuPage
Nicholas Bradley	College of DuPage
Brian Deida	College of DuPage
Veronica Salas	College of DuPage
Rodney Hille	College of DuPage
Lauren O'Keefe	College of DuPage
Monica Malecki	College of DuPage
Jessica Rawlins	Hines Hospital
Danielle Montgomery	Midwestern
Danielle Sproch	Northwestern Memorial Hospital
Stephanie Haddad	Northwestern Memorial Hospital
Jeff Mann	Northwestern Memorial Hospital
Elizabeth Hogan	Northwestern Memorial Hospital
Barbara Lazar	Northwestern Memorial Hospital
Brian Vlaisavich	Northwestern Memorial Hospital
Mary Giancarlo	Northwestern Memorial Hospital
Edwin Vargas	Northwestern Memorial Hospital
Elizabeth Schei	Northwestern Memorial Hospital, COD
Katherine Manalang	Northwestern Memorial Hospital, COD

Radiation Therapy

Kristen Hink	Northwestern Memorial Hospital
Jessica Rauch	Northwestern Memorial Hospital
Meghan Marshall	Northwestern Memorial Hospital
Cori Kaminski	Northwestern Memorial Hospital
Ashlan Humphrey	Northwestern Memorial Hospital
Martyna Kulawiuk	Northwestern Memorial Hospital
Kelly Sheer	Northwestern Memorial Hospital

Radiography

Kaetlyn Hernandez	Northwestern Memorial Hospital
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Vascular Ultrasound

Selena Foster	Rush Presbyterian
Judy Nguyen	Rush University

Vascular Ultrasound
Fatime Shuaipaj

Rush University

Graduate

Doctoral Programs

Tyler McCue
C.J. Koeller
Bob Gaugush
Amanda Persons
Mike Dzusvardis
Courtney Dial
Remington Rodela-Fogt
Daniel Anco
Thomas Lynch
Mike Bradaric
Mark Zilch
Sarah Nelson
Lawrence Misialek
Sandra Szegedi
Colleen Kuemmel
Kari Wong
John Balloy
Justin Ramotowski
Sandy Morzarotti
James Rago
Elisa Bott
Todd Mitchell
Jack Pyne
Michael Bannon

Baylor College of Medicine
Benedictine University
Kent State University
Loyola Univ. Medical Center
Loyola University
Loyola University Stritch School of Medicine
National University
Ohio State University
Purdue, Loyola and Rosalind Franklin
Rush Univ. Medical Center
Rush Univ. Medical Center
Southern Illinois University
Southern Illinois University
Southern Illinois University
State University New York
University of Chicago
University of Illinois - Chicago
University of Illinois – Chicago
University of Indiana
University of Minnesota
University of Wisc.- Madison
Wayne State University
Western Illinois University
Yale

Masters Programs

Dominique Drouin
Araceli Gutierrez
Scott Cammack
Omar Meza
Ruth Velazquez
Kaitlin Dudding
Corey Anco
Ciersten Deardorf
Leigh Barea
Caitlin Shanahan
Tammy Rabenda
Carla Morandi
Jim Fazekas

Benedictine University
Case Western University
Colorado University
DePaul University
DePaul University
Drake University
Duke University
Indiana State University
Jacksonville State University
Lewis University
Lewis University
Lewis University
Lewis University

Masters Programs

Jeff Czaja	Lewis University
Lauren Sick	Lewis University
Tess Hilton	Lewis University
Myra Perez	Lewis University
Kaitlyn Curtis	Lewis University
Daniel Lentz	Lewis University
Courtney Dial	Loyola University
Michelle Fernandez	Loyola University
Elisabeth Hardin	Miami of Ohio
Agnes Molek	Miami of Ohio
Lisa Ramos	Michigan State
Kristen Czech	North Carolina State
Kaitlin Hitt	Northwestern Memorial Hospital
Daniel Anco	Ohio State University
Stephanie Haddad	Rosalind Franklin University
Paige Canino	Rosalind Franklin University
Justin Salazar	Rosalind Franklin University
Sarah Maali	Rush University
David Gonzalez	Rush University
Victorija Makrovaite	Rush University
Candelaria Sanchez	Rush University
Jessica Bethke	Rush University
Ted Karamanski	Rush University
Emily Vihnanek	Rush University
Adam Fisher	San Diego State
Jim Riley	Southern Illinois University
Steve Barger	Southern Illinois University
Sarah Papiez Lambert	Southern Illinois University
Amy Dombrowski	University of Illinois
Brittany Gifford	University of Chicago
Debra Spezio	University of Illinois Chicago
Jaimie Hughes	University of Illinois Chicago
Joe Bajt	Western Illinois University
Kim Stamitti	University of Illinois Chicago
Lauresha Hawkins	University of So. California
Maddie Dudczyk	University of Illinois Chicago
Mark Melka	University of Illinois
Meaghan McKee	University of Illinois-UC
Melissa Dudek	University of Illinois Chicago
Niamh Costello	University of Kentucky
Walter Pascale	University of Indiana
Joe Pryzdia	University of Hawaii

Department Paradigms

Biology

B.S. in Biology

Servicing those students interested in pre-health science areas such as allopathic/osteopathic medicine, dentistry, podiatry, optometry, chiropractic, PT/OT, veterinary medicine, and Physician Assistant programs. This would also include all persons interested in pursuing a career in scientific research.

FRESHMAN YEAR

FALL	SPRING
General Biology I (BIOL 11000), Lab (BIOL 11100)	General Biology II (BIOL 11500), Lab (BIOL 11600)
General Chem I (CHEM 11000), Lab (CHEM 11100)	General Chem II (CHEM 11500), Lab (CHEM 11600)
Calculus I (MATH 20900) or Calculus/Life Science (MATH 20400)	

SOPHOMORE YEAR

FALL	SPRING
Genetics (BIOL 22000), Lab (BIOL 22100)	General Microbiology (BIOL 22400), Lab (BIOL 22600)
Organic Chem I (CHEM 22000), Lab (CHEM 22100)	Organic Chem II (CHEM 22500), Lab (CHEM 22600)

JUNIOR YEAR

FALL	SPRING
Molecular Biochem (BIOL 35500), Lab (BIOL 35600)	Biology Elective (BIOL xxxxx)
Physics I (PHYS 20000), Lab (PHYS 20100)	Physics II (PHYS 20500), Lab (PHYS 20600)
	Biology Journal Club (BIOL 38500)*

SENIOR YEAR

FALL	SPRING
Biostatistics (BIOL 32000)	Molecular Cell Biology (BIOL 40600)
Senior Thesis (BIOL 49600) – fall, spring or summer*	Biology Elective (BIOL xxxxx)

Examples of Biology Electives:

General Ecology (BIOL 31500), and General Ecology Lab (BIOL 31600), Environmental Microbiology (BIOL 32200) and Environmental Microbiology Lab (BIOL 32300), Advanced Clinical Physiology (BIOL 33500), Case Studies in Human Physiology (BIOL 33600), Nutritional Biochemistry with Clinical Correlates (BIOL 35700) and lab (BIOL 35800), Biomimicry & Whole Systems Thinking (BIOL 36300), Issues in Environmental Science (BIOL 37500), Conservation Biology (BIOL 41600) and Conservation Biology Lab (BIOL 41700), Medical Microbiology (BIOL 42500), Immunology (BIOL 42600), Scientific Ethics (BIOL 43500), Human Anatomy (BIOL 42200), and Functional Human Anatomy Lab (BIOL 42300), Special Topics (BIOL 49700).

Notes: In the event that FOUR YEARS of high school mathematics were NOT taken (including pre-calculus), **Precalculus (MATH 12000)** must be taken concurrently with **General Chemistry I (CHEM 11000)**. Students who place into College Algebra will not be enrolled into General Chemistry I until the math course is successfully completed. Similarly, if testing indicates the need to enroll in **The Sentence and Paragraph (ENGL 10200)**, or **The Essay (ENGL 10300)**, this class must be taken during the first semester.

*Fulfills the Advanced Writing requirement for graduation for all Biology programs.

B.A. in Biology

FRESHMAN YEAR

FALL

General Biology I (BIOL 11000), Lab (BIOL 11100)
General Chem I (CHEM 11000), Lab (CHEM 11100)

SPRING

General Biology II (BIOL 11500), Lab (BIOL 11600)
General Chem II (CHEM 11500), Lab (CHEM 11600)

SOPHOMORE YEAR

FALL

Genetics (BIOL 22000), Lab (BIOL 22100)
Organic Chem I (CHEM 22000), Lab (CHEM 22100)

SPRING

General Microbiology (BIOL 22400), Lab (BIOL 22600)
Organic Chem II (CHEM 22500), Lab (CHEM 22600)

JUNIOR YEAR

FALL

Biology Elective (BIOL xxxxx)

SPRING

Molecular Cell Biology (BIOL 40600)

SENIOR YEAR

FALL

Biology Journal Club (BIOL 38500)

SPRING

Senior Thesis (BIOL 49600)

Allied Health

B.S. in Diagnostic Medical Sonography / Northwestern Memorial Hospital

This paradigm requires that students take 2 general education requirements during summer sessions.

First Year

First Semester	Hours	Second Semester	Hours
General Biology I & Lab	5	General Biology II & Lab	5
General Chemistry I & Lab	5	Gen Chemistry II & Lab	5
Calculus I	4	Gen Ed	3
Gen Ed	3	Gen Ed	3
Cornerstone Seminar	1		
Total	18	Total	16

Second Year

First Semester	Hours	Second Semester	Hours
Genetics & Lab	5	General Microbiology & Lab	5
Organic Chem I & Lab	5	Organic Chem II & Lab	5
Gen Ed	3	Gen Ed	3
Gen Ed	3	Gen Ed	3
Total	16	Total	16

Third Year

First Semester	Hours	Second Semester	Hours
College Physics I & Lab	5	Adv. Human A & P	3
Human Anatomy	3	Case Studies	1
Functional Anatomy	1	Gen Ed	3
Gen Ed	3	Gen Ed	3
Gen Ed	3	Gen Ed	3
Gen Ed	3	Medical Terminology	3
Total	18		16

Summer Session (At Northwestern Memorial Hospital)

Course	Hours
Fundamentals of Sonography	3

Fourth Year (At Northwestern Memorial Hospital)

First Semester	Hours	Second Semester	Hours
Mngmt & Mthds Pt. Care	1	Medical Terminology	1
Cellular Pathophysiology	2	Princ. Ultrasound Physics I	3
Abdoml. Sonography & Lab	4	OB-GYN Pathology	4
Sectnl. Imaging Anatomy	2	Abdominal Pathology	3
OB-GYN Sono & Embryol	3	Clinical Education II	3
Clinical Education I	2		
Total	14	Total	14

Fifth Year

First Semester	Hours
Princ. Ultrasound Physics II	2
Ultrasound Image Critique	1
Clinical Education III	3
Intro Ped & Vasc. Imaging	1
Specialty Sonography	2
Clinical Education IV	4
Registry Review	2
Total	15

B.S. in Nuclear Medicine Technology / Northwestern Memorial Hospital

*This paradigm requires that students take 3 general education requirements during a summer session.

First Year

First Semester	Hours	Second Semester	Hours
General Biology I & Lab	5	General Biology II & Lab	5
General Chemistry I & Lab	5	Gen Chemistry II & Lab	5
Calculus I	4	Gen Ed	3
Gen Ed	3	Gen Ed	3
Cornerstone Seminar	1		
Total	18	Total	16

Second Year

First Semester	Hours	Second Semester	Hours
Genetics & Lab	5	Microbiology & Lab	5
Organic Chem I & Lab	5	Organic Chem II & Lab	5
Gen Ed	3	Gen Ed	3
Gen Ed	3	Gen Ed	3
Total	16	Total	16

Third Year

First Semester	Hours	Second Semester	Hours
College Physics I & Lab	5	Adv. Human A & P	3
Human Anatomy	3	Case Studies	1
Functional Anatomy	1	College Physics II & Lab	5
Gen Ed	3	Gen Ed	3
Gen Ed	3	Gen Ed	3
Gen Ed	3	Biostatistics	3
	18		18

Fourth Year (At Northwestern Memorial Hospital)

First Semester	Hours	Second Semester	Hours
Mgmt/Mthds Patient Care I	3	Mgmt/Mthds Patient Care II	1
Radtn Safety /Protection	3	Radtn Detection/Instrumentation	3
Clin Nclr Imaging Proc I	3	Clin Nclr Imaging Proc II	3
RadiationPhysics/Instrumentation	3	Diagn. Nclr Imaging Practicum II	4
Clinical Correlations/Pathology	2	CT/Cross Sectional Anatomy	2
Diagn. Nclr Imaging Practicum I	4	RadioChem/RadioPharm	3
		Medical Terminology	1
		Radiation Biology	1
Total	18		18

B.S. in Radiation Therapy / Northwestern Memorial Hospital

*This paradigm requires that students take 1 general education requirements during a summer session.

First Year

First Semester	Hours	Second Semester	Hours
General Biology I & Lab	5	General Biology II & Lab	5
General Chemistry I & Lab	5	Gen Chemistry II & Lab	5
Calculus I	4	Gen Ed	3
Gen Ed	3	Gen Ed	3
Cornerstone Seminar	1		
Total	18	Total	16

Second Year

First Semester	Hours	Second Semester	Hours
Genetics & Lab	5	General Microbiology & Lab	5
Organic Chem I & Lab	5	Biostatistics	3
Gen Ed	3	Gen Ed	3
Gen Ed	3	Gen Ed	3
		Gen Ed	3
Total	16	Total	17

Third Year

First Semester	Hours	Second Semester	Hours
College Physics I & Lab	5	Adv. Human A & P	3
Human Anatomy	3	Case Studies	1
Functional Anatomy	1	College Physics II & Lab	5
Gen Ed	3	Gen Ed	3
Gen Ed	3	Gen Ed	3
Gen Ed	3	Gen Ed	3
Total	18		18

Fourth Year (At Northwestern Memorial Hospital)

First Semester	Hours	Second Semester	Hours
Clinical Practicum I	3	Clinical Practicum II	3
Path/Sectional Anatomy	2	Intro Computed Tomography	2
Radiation Safety/Protection	2	Quality Management	2
Principles/Practices of RT I	3	Radiation Therapy PhysicsII	2
Med. Imaging/Processing	2	Principles/Practices of RT II	3
Mgmt/Meth. Patient Care I	2	Operational Issues in Healthcare	2
Radiation Physics	2	Technical Radiation Oncology	2
Medical Terminology	0	Radiation Biology	2
Technical Radiation Oncology I	2		
Total	18		18

B.S. in Radiography / Northwestern Memorial Hospital

*This paradigm requires that students take 3-4 general education requirements during a summer session.

First Year

First Semester	Hours	Second Semester	Hours
General Biology I & Lab	5	General Biology II & Lab	5
General Chemistry I & Lab	5	Gen Chemistry II & Lab	5
Calculus I or Calc Life Sci	4	Gen Ed	3
Gen Ed	3	Gen Ed	3
Cornerstone Seminar	1		
Total	18	Total	16

Second Year

First Semester	Hours	Second Semester	Hours
Genetics & Lab	5	Gen. Microbiology & Lab	5
Organic Chem I & Lab	5	Organic Chem II & Lab	5
Gen Ed	3	Biostatistics	3
Gen Ed	3	Gen Ed	3
Total	16	Total	16

Third Year

First Semester	Hours	Second Semester	Hours
College Physics I	4	Adv. Clinical Physiology	3
College Physics I Lab	1	Case Studies	1
Human Anatomy	3	College Physics II	4
Functional Anatomy	1	College Physics II Lab	1
Gen Ed	3	Gen Ed	3
Gen Ed	3	Gen Ed	3
Gen Ed	3	Medical Terminology	3
Total	18		16-19

Fourth Year (At Northwestern Memorial Hospital)

First Semester	Hours	Second Semester	Hours
Intro Radiography & Medical Imaging	3	Imaging Principles I	3
Management & Methods of Patient Care I	4	Physics of Radiography	3
Radiographic Procedures I and Lab	4	Medical Law & Ethics	1
Radiography Clinical I	2	Radiographic Procedures II and Lab	4
Fluoroscopic Procedures I	1	Fluoroscopic Procedures II	1
		Radiography Clinical II	4
Total	14	Total	16

Fifth Year (At Northwestern Memorial Hospital)

First Semester	Hours	Second Semester	Hours
Operational Issues Healthcare Environment	1	CT and Cross-Sectional Anatomy	2
Imaging Principles II	3	ARRT Review	3
Radiography Clinical III	4	Radiographic Pathology	1
Radiographic Procedures III and Lab	3	Radiographic Clinical V	3
Radiation Biology	2	Radiographic Procedures IV and Lab	4
Imaging Modalities & Equipment	2		
Radiographic Clinical IV	3		
Total	18	Total	13

B.S. in Vascular Ultrasound Technology / Rush University Medical Center

First Year

Fall Semester	Hours	Spring Semester	Hours
General Biology I / Lab	5	General Biology II & Lab	5
General Chemistry I/Lab	5	General Chemistry II/Lab	5
College Writing I	3	College Writing II	3
Calculus I	4	Human Communications	3
ICE	1	General Psychology	3
Total Hours	18	Total Hours	19*

Second Year

Fall Semester	Hours	Spring Semester	Hours
Anatomy	3	Adv. Anatomy & Physiology	3
Physics I/Lab	5	Case Studies	1
Cultural Diversity	3	Biostatistics	3
Macroeconomics	3	Physics II/Lab	5
Mission/Humanities**	3	Ethics	3
		Global History 2	3
Total Hours	17	Total Hours	18

* Since 19 hours exceeds the hours allowed under block tuition, the student may either take course(s) (up to 3) at Lewis University in the summer session between the first and second year OR may pay for the extra hours during this semester.

** Mission/Humanities options are limited to Faith and the Arts OR The Bible as Literature. The student should be aware of when these courses become available to ensure that they are taken prior to matriculation to Rush University.

B.S. in Biology with Certificate in Nuclear Medicine Technology / College of DuPage

This paradigm requires that students take 1 general education requirement during a summer session.

First Year

First Semester	Hours	Second Semester	Hours
General Biology I & Lab	5	General Biology II & Lab	5
General Chemistry I & Lab	5	Gen Chemistry II & Lab	5
Math Analysis or Calculus I	4	Calculus I or Gen Ed	3
Gen Ed	3	Gen Ed	4 or 3
Intro to College Experience	1		
Total	18	Total	16 - 17

Second Year

First Semester	Hours	Second Semester	Hours
Genetics & Lab	5	General Microbiology & Lab	5
Organic Chem I & Lab	5	Organic Chem II & Lab	5
Gen Ed	3	Gen Ed	3
Gen Ed	3	Gen Ed	3
		Gen Ed	3
Total	16	Total	19

Third Year

First Semester	Hours	Second Semester	Hours
Biochemistry I & Lab	4	Adv. Clinical Physiology	3
Journal Club	1	Case Studies in Human Physiology	1
Physics I & Lab	5	Immunology	3
Gen Ed	3	Senior Thesis	2
Gen Ed	3	Gen Ed	3
		Gen Ed	3
		Gen Ed	3
Total	16		18

Fourth Year (15 month program at College of DuPage)

First Semester	Hours	Second Semester	Hours
Basics of Nuclear Medicine	3	Nuclear Medicine Radiopharmacy	4
Physics & Instrumentation	5	Nuclear Medicine Procedures III	3
Radiation Biology/Safety	2	Clinical Nuclear Medicine II	3
Clinical Nuclear Medicine I	3	Clinical Nuclear Medicine III	3
Nuclear Medicine Procedures	5	PET: Positron Emission Tomography	3
		Nuclear Medicine Review Seminar	1
Total	18		17

B.S. in Dental Hygiene / College of DuPage

Fall-First Year	Hours	Spring-First Year	Hours
A & P I Lecture/Lab	5	A & P II-Lecture/Lab	5
Gen. Chem. I Lecture/Lab	5	Gen. Chem. II-Lecture/Lab	5
College Writing I	3	College Writing II	3
College Algebra	3	Intro/Human Communications	3
Cornerstone Seminar	1	General Psychology	3
Total Hours	17		19

Summer: Appreciating the Aesthetics, Intro to Philosophy

Fall – Second Year	Hours	Spring – Second Year	Hours
Microbiology Lecture/Lab	5	Gen Bio I-Lecture/Lab	5
Cultural Diversity	3	Ethics	3
Basic Macroeconomics	3	Literature	3
Interdisciplinary Seminar	3	Global History II	3
SOCI-25500 or SOCI-27000	3	Globalization Requirement	3
Total Hours	17		17

Summer: 10000-level Theology

Fall- Third Year	Hours	Spring – Third Year	Hours
Principles in Dental Hygiene I	3	Principles in Dental Hygiene II	2
Preclinical Dental Hygiene	1	Clinical Dental Hygiene I	1
Dental Anatomy/Morphology	3	Gen/Oral Pathology	2
Head/Neck Anatomy	3	Dental Radiology I	2
Biochem/Nutrition	3	Medical Emergencies	1
		Dental Materials/Expanded Functions	3
		Clinical Dental Hygiene II	2
		Review of Dental Literature	1
		Periodontics I	2
Total	13		16

Fall – Fourth Year	Hours	Spring – Fourth Year	Hours
Dental Hygiene Theory I	2	Dental Hygiene Theory II	3
Clinical Dental Hygiene III	2	Clinical Dental Hygiene IV	3
Pharmacology	2	Ethics/Jurisprudence	3
Radiology II	2	Community Dental Health II	3
Community Dental Health I	2		
Periodontics II	3		
Total Hours	13		12

Environmental Science

B.S. in Environmental Science – Ecology Track

FRESHMAN YEAR

FALL

General Biology I (BIOL 11000), Lab (BIOL 11100)
General Chem I (CHEM 11000), Lab (CHEM 11100)
Calculus I (MATH 20900) or Calculus/Life Science
(MATH 20400)

SPRING

General Biology II (BIOL 11500), Lab (BIOL 11600)
General Chem II (CHEM 11500), Lab (CHEM 11600)

SOPHOMORE YEAR

FALL

Genetics (BIOL 22000), Lab (BIOL 22100)
Earth Science (BIOL 22200)
Fundamentals of Organic Chemistry (CHEM 12000)

SPRING

General Microbiology (BIOL 22400), Lab (BIOL 22600)
Principles of Environmental Science (BIOL 23300)

JUNIOR YEAR

FALL

Issues of Environmental Science (BIOL 37500)
General Ecology (BIOL 31500), Lab (BIOL 31600)

SPRING

Ecology Journal Club (BIOL 38300)
Ecology Elective (BIOL xxxxx)

SENIOR YEAR

FALL

Biostatistics (BIOL 32000)
Field Biology (BIOL 29800)
Ecology Elective (BIOL xxxxx)
Biology Journal Club (BIOL 38500)

SPRING

Senior Thesis (BIOL 49600)
Ecology Elective

Ecology Electives Include:

Introduction to Geographic Information Systems (BIOL 31200), Environmental Microbiology (BIOL 32200) and Lab (BIOL 32300), Invertebrate Zoology (BIOL 40500), Conservation Biology (BIOL 41600) and lab (BIOL 41700), Limnology (BIOL 41800) and lab (BIOL 41900), Botany (BIOL 42000) and lab (BIOL 42100).

Notes:

The advanced writing requirement of the General Education Curriculum is satisfied by successful completion of the following courses: Biology Journal Club (BIOL 38500) and Biology Senior Thesis (BIOL 49600).

B.S. in Environmental Science – Sustainability

FRESHMAN YEAR

FALL

General Biology I (BIOL 11000), Lab (BIOL 11100)
General Chem I (CHEM 11000), Lab (CHEM 11100)
Calculus I (MATH 20900) or Calculus/Life Science
(MATH 20400)

SPRING

General Biology II (BIOL 11500), Lab (BIOL 11600)
General Chem II (CHEM 11500), Lab (CHEM 11600)

SOPHOMORE YEAR

FALL

Earth Science (BIOL 22200)
Fundamentals of Organic Chemistry (CHEM 12000)

SPRING

Principles of Environmental Science (BIOL 23300)

JUNIOR YEAR

FALL

Issues of Environmental Science (BIOL 37500)
Principles of Sustainability (BIOL 24300)
General Ecology (BIOL 31500) and Lab (BIOL 31600)

SPRING

Renewable Energy Technology (BIOL 37300)
Ecology Journal Club (BIOL 38300)

SENIOR YEAR

FALL

Biomimicry and Whole Systems Thinking (BIOL 36300)
Biostatistics (BIOL 32000)
Conservation Biology (BIOL 41600) and Lab (BIOL
41700)
Biology Journal Club (BIOL 385000)

SPRING

Green Building (BIOL 39300)
Senior Thesis (BIOL 49600)

Notes:

The advanced writing requirement of the General Education Curriculum is satisfied by successful completion of the following courses: Biology Journal Club (BIOL 38500) and Biology Senior Thesis (BIOL 49600).

B.A. in Environmental Science

FRESHMAN YEAR

FALL

General Biology I (BIOL 11000), Lab (BIOL 11100)
General Chem I (CHEM 11000), Lab (CHEM 11100)
Calculus I (MATH 20900) or Calculus/Life Science
(MATH 20400)

SPRING

General Biology II (BIOL 11500), Lab (BIOL 11600)
General Chem II (CHEM 11500), Lab (CHEM 11600)

SOPHOMORE YEAR

FALL

Genetics (BIOL 22000), Lab (BIOL 22100)
Earth Science (BIOL 22200)

SPRING

General Microbiology (BIOL 22400), Lab (BIOL 22600)
Principles of Environmental Science (BIOL 23300)

JUNIOR YEAR

FALL

Issues of Environmental Science (BIOL 37500)
Ecology (BIOL 31500), Lab (BIOL 31600)

SPRING

Ecology Journal Club (BIOL 38300)

SENIOR YEAR

FALL

Field Biology (BIOL 29800)
Biology Journal Club (BIOL 385000)

SPRING

Biology Senior Thesis in Ecology & Environmental
Science (BIOL 49600)

Environmental Science – Minor

Required Courses:

BIOL 23300 Principles of Environmental Science (4)

BIOL 37500 Issues in Environmental Science (3)

Electives: *Choose at least 12 hours from this list, at 3 credit hours (must be upper-division)*

BIOL 22200 Earth Science (4), BIOL 24300 Principles of Sustainability (4), BIOL 29800 Field Biology (2), BIOL 31200 Intro/Geographic Information Systems (3), BIOL 31500 General Ecology (3), BIOL 31600 Gen. Ecology Lab (1), BIOL 32200 Environmental Microbiology (2), BIOL 32300 Environmental Microbiology Lab (1), BIOL 36300 Biomimicry and Whole Systems Thinking (3), BIOL 37300 Renewable Energy Technologies (4), BIOL 39300 Green Building & LEED Rating Systems (3), BIOL 41600 Conservation Biology (3), BIOL 41700 Conservation Biology Lab (1), BIOL 41800 Limnology (3), and BIOL 41900 Limnology Lab (1).

Notes:

The advanced writing requirement of the General Education Curriculum is satisfied by successful completion of the following courses: Biology Journal Club (BIOL 38500) and Biology Senior Thesis (BIOL 49600).

Biomedical Science

B.A. in Biomedical Science

This degree is intended for students who already hold a bachelor's degree but lack some of the prerequisite coursework required of Professional Schools and their respective entrance exams. Students should work with their academic advisor to determine which courses are necessary for the specific health profession/career interest. The usual course prerequisites apply as stipulated in the catalog. A grade of "C-" or better must be earned in a prerequisite course in order to advance to the next course in the sequence. If a student has not achieved a "C-" after 2 attempts, the student may not repeat the course at Lewis University.

Required Courses (16):

BIOL 11000	General Biology 1	BIOL 11100	General Biology 1 Lab
BIOL 11500	General Biology 2	BIOL 11600	General Biology 2 Lab
BIOL 38500	Biology Journal Club	BIOL 43500	Ethics: Scientific Principles and Practices
BIOL 49600	Biology Senior Thesis		

Electives (35): Elective credits can come from any major level courses in the sciences (Biology, Chemistry, Physics) in addition to coursework in Calculus (Calculus 1, 2, and/or 3). As prerequisite coursework can vary for each health profession, no specific set of courses will be required. Students must complete at Lewis at least 2 courses (6 – 8 credits) in upper-division coursework from among the following: BIOL-22400 General Microbiology (4); BIOL-22600 General Microbiology Lab (1); BIOL 32000 Biostatistics (3); BIOL-33500 Advanced Clinical Physiology (3); BIOL-33600 Case Studies in Human Physiology (1); BIOL-35500 Molecular Biochemistry with Clinical Correlates (3); BIOL-35600 Molecular Biochemistry Lab (1); BIOL-35700 Nutritional Biochemistry with Clinical Correlates (3); BIOL-40600 Molecular Cell Biology (4); BIOL-42200 Human Anatomy (3); BIOL-42300 Functional Human Anatomy Lab (1); CHEM-11000 General Chemistry 1 (4); CHEM-11100 General Chemistry 1 Lab (1); CHEM-11500 General Chemistry 2 (4); CHEM-11600 General Chemistry 2 Lab (1); CHEM-22000 Organic Chemistry 1 (4); CHEM-22100 Organic Chemistry 1 Lab (1); MATH-20000 Calculus 1 (4); MATH-21100 Calculus for the Life Sciences (4); PHYS-20000 College Physics 1 (4); PHYS-20100 College Physics 1 Lab (1); PHYS-20500 College Physics 2 (4); PHYS-20600 College Physics 2 Lab (1).

Mission Requirements (9):

Choose three courses from the following with at least one Theology: SOCI-29000 Diversity and Social Justice (3); 10000-level Theology course (3); 20000-level course (3); PHIL 33000 Ethics or THEO 31000 Christian Ethics (3).

Notes:

The advanced writing requirement of the General Education Curriculum is satisfied by successful completion of the following courses: Biology Journal Club (BIOL 38500) and Biology Senior Thesis (BIOL 49600).

Biomedical Science / Post-Secondary Certificate

Total Credit Hours: 32-49

A certificate can be earned in lieu of the Bachelor of Arts when the student completes 32 semester hours of advisor-approved coursework from major-level offerings in the departments of Biology, Chemistry, and Physics. All laboratories associated with lecture courses will be required. General education courses (or the equivalent) will not be substituted/allowed for courses in the major. Students may take Calculus 1/Calculus for the Life Sciences (or a higher level Calculus course) and use it to meet program requirements.

Secondary Licensure in Science with Biology Designation

The advanced writing requirement is satisfied by successful completion of writing components in BIOL 11100 and BIOL 11600 – General Biology Labs I and II, BIOL 22600 General Microbiology Lab and BIOL 49600 – Biology Senior Thesis. Please see Secondary Education Bachelor of Arts for Required Education courses.

Students in Biology B.S. are required to take all of the required courses and Biostatistics (BIOL 32000) as well as an additional 6-8 hours of upper division electives.

In conjunction with the College of Education, the Department of Biology features a fully approved teacher education program which prepares candidates to teach in grades 9-12 in public and private schools in the State of Illinois. The program is approved by the State Educator Preparation and Licensure Board in conjunction with the Illinois State Board of Education and leads to the Professional Educator License with a high school endorsement to teach science with a designation in Biology. Teacher education candidates major in both Biology and Secondary Education and should consult with advisors in both the Department of Biology and the College of Education. The content requirements for secondary licensure are listed under Biology. Candidates can have a maximum of two “C’s” in their content area classes.

Required Courses in Biology (B.A.)

BIOL-11000	General Biology 1
BIOL-11100	General Biology 1 Lab
BIOL-11500	General Biology 2
BIOL-11600	General Biology 2 Lab
BIOL-22000	Genetics
BIOL-22100	Genetics Lab
BIOL-22400	General Microbiology
BIOL-22600	General Microbiology Lab
BIOL-23300	Principles of Environmental Science
BIOL-31500	General Ecology and Evolution
BIOL-31600	General Ecology Lab
BIOL-35500	Molecular Biochemistry with Clinical Correlates OR
BIOL-35700	Nutritional Biochemistry with Clinical Correlates
BIOL-35600	Molecular Biochemistry Lab
BIOL-40600	Molecular Cell Biology
BIOL-49600	Biology Senior Thesis

Other Requirements:

BIOL-38500	Biology Journal Club
CHEM-11000	General Chemistry 1
CHEM-11100	General Chemistry 1 Lab
CHEM-11500	General Chemistry 2
CHEM-11600	General Chemistry 2 Lab
CHEM-22000	Organic Chemistry 1
CHEM-22100	Organic Chemistry 1 Lab
CHEM-22500	Organic Chemistry 2
CHEM-22600	Organic Chemistry 2 Lab
MATH-20000	Calculus 1
	OR
MATH-21100	Calculus for the Life Sciences
PHYS-10500	Introduction to Astronomy
PHYS-20000	College Physics 1
PHYS-20100	College Physics 1 Lab