DEPARTMENT OF BIOLOGY
LEWIS UNIVERSITY

STUDENT HANDBOOK

2025-2026

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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.

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

Dr. Marne Bailey **Office:** **AS-226-L**
Professor **Phone:** **815-836-5395**
Email: **baileyma@lewisu.edu**

Ph.D. Pharmacognosy, Pharmaceutical Biotechnology, University of Illinois at Chicago
B.S., Chemistry-Physics, Lewis University

Dr. William Chura **Office:** **ST205**
Professor **Phone:** **815-836-5977**
Email: **churawi@lewisu.edu**

Ph.D. Physiology & Biophysics, Rosalind Franklin University
B.S., Health Science, Benedictine University

Dr. Mallory Havens **Office:** **AS-231-L**
Professor **Phone:** **815-836-5982**
Email: **havensmy@lewisu.edu**

Ph.D., Cell Biology & Anatomy, Rosalind Franklin University
B.A., Biochemistry, Knox College, Galesburg, IL

Dr. Jerry Kavouras **Office:** **AS-223-L**
Professor and Chair **Phone:** **815-836-5723**
Email: **kavourje@lewisu.edu**

Director, Environmental Science Program
Ph.D. Biological Sciences, Marquette University
B.S. Liberal Arts & Sciences, University of Illinois – Urbana-Champaign

Dr. Elizabeth Kozak **Office:** **AS-229-L**
Associate Professor **Phone:** **815-836-5726**
Email: **kozakel@lewisu.edu**

Director, Dental Hygiene Program
D.D.S. Loyola University School of Dentistry
B.S. Biology, Loyola University Lake Shore Campus

Jeannette Pifer **Office:** **AS-224-L**
Instructor **Phone:** **815-836-5330**
Email: **piferje@lewisu.edu**

Director, Secondary Education
M.S., Biology, DePaul University
B.S., Biology, University of St. Francis

Dr. Sarah Powers **Office:** **AS-232-L**
Professor **Phone:** **815-588-7079**
Email: **powerssa@lewisu.edu**

Ph.D., Immunology, University of Chicago
B.A. Biology, University of Chicago

Dr. James Rago **Office:** **AS-227-L**
Professor **Phone:** **815-836-5394**
Email: **ragoja@lewisu.edu**

Ph.D. Microbiology, University of Minnesota
B.S. Biology, Lewis University

Dr. Holly Snyder **Office:** **AS-230-L**
Associate Professor **Phone:** **815-588-7434**
Email: **snyderho@lewisu.edu**

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

Dr. Erin Zimmer **Office:** **AS-228-L**
Professor **Phone:** **815-836-5659**
Email: **zimmerer@lewisu.edu**

Director, Allied Health
Ph.D. Human Genetics, University of Pittsburgh
B.S. Biology, St. Mary's College

Advising

Academic Advising at Lewis is designed to assist students in making academic choices for majors, minors or course selection, as well as to assist in making other important decisions that will impact the quality and meaningfulness of your college experience. Students with 0-45 earned credit hours are advised by their Success Coach. Students with 46+ earned hours are advised by their Faculty Mentor. **The Biology Department expects students to meet with their faculty mentors every semester.** It is important for students to get to know their faculty mentors once they start at Lewis University. Faculty mentors can provide career guidance and share opportunities that students can take advantage of early in their college tenure.

Students in the Biology Department are assigned to a faculty mentor 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. 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, secondary education programs, or a dual admission program will be automatically assigned to the department's director/advisor of those programs. 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 120 (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 Capstone?	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 Center for Academic Success and Enrichment 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. For **general education courses**, the student must complete a coursework away form prior to enrolling in the class at the other institution. The forms are available from their advisor. The form will be completed electronically and submitted to their advisor for processing and review by the Registrar. For **courses that are required in their major or University elective credit**, the student must submit a coursework away form prior to enrolling in the class at the other institution. The forms are available from their advisor and will be completed electronically before sending to the College of Aviation, Science and Technology Dean's 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 2. In order to take General Biology 2, a student must successfully complete BIOL 11000 - General Biology 1. Therefore, a student must successfully complete **both** General Biology 1 and 2 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 to General Biology 1 & 2, Genetics, and General Microbiology lectures and labs. If the minimum grade of **C-** is not achieved in the first attempt, then the class must be repeated.

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, General Biology 2 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 found on the *Biology Department Student* Blackboard site.

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 Molecular Biochemistry with Clinical Correlates and have no withdrawals in their records. 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. For students **applying to graduate school or allied health programs**, the minimum cumulative and science GPA is 3.0 for letters of recommendation to 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

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

"Fabrication [1] **"** 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 grayer 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 of 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.

Appropriate Use of Artificial Intelligence (Lewis University Policy)

Unless otherwise specified in a course syllabus or assignment, work generated via AI and submitted as the student's own will be considered plagiarism.

Lewis University recognizes artificial intelligence (AI) as one of a number of technologies and tools available to students. In keeping with our mission as an educational institution, Lewis University seeks to educate students on appropriate use of AI for multiple purposes and in various contexts. To this end, course syllabi may provide a statement on Appropriate Use of AI for that particular course. This statement will define "appropriate use" for that course only, and the course-level definition of appropriate use will not apply to any other course or courses. Instructors may also define "appropriate use of AI" on a per-assignment basis, in which case this definition will be in force and will apply only to that particular assignment.

In the absence of any course- or assignment-level statement on the appropriate use of AI, the University policy shall apply.

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.

Regular membership is based on achievement in biology and is, in that sense, honorary, but every major in a biological science can qualify for Associate membership. Acceptance to Regular 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 offers Associate membership. Associate members are those undergraduates whose interests include the life sciences in some significant way but who are not (yet) eligible for Regular membership. Associate members can apply for Regular membership once requirements have been met. Both Regular and Associate members are inducted to the society in a ceremony that occurs each spring on campus.

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.

First year –

FALL:
BIOL 11000 General Biology 1
BIOL 11100 General Biology 1 Lab
CHEM 11000 General Chemistry 1
CHEM 11100 General Chemistry 1 Lab
ENGL 11100 College Writing 1
MATH 20000 Calculus 1 OR
MATH 20400 Calculus for Life Sciences
UNIV-1XXXX Cornerstone Seminar
TOTAL HOURS: 18

SPRING:
BIOL 11500 General Biology 2
BIOL 11600 General Biology 2 Lab
CHEM 11500 General Chemistry 2
CHEM 11600 General Chemistry 2 Lab
ENGL 11200 College Writing 2
UNIV-2XXXX Interdisciplinary Seminar
TOTAL HOURS: 16

Second year –

FALL:
CHEM 23000 Organic Chemistry 1
CHEM 22100 Organic Chemistry 1 Lab
BIOL 22000 Genetics
BIOL 22100 Genetics Lab
HIST 10200 Global History and Culture 2
COMM 11200 Intro to Communication
TOTAL HOURS: 15

SPRING:
CHEM 23500 Organic Chemistry 2
CHEM 22600 Organic Chemistry 2 Lab
BIOL 22400 General Microbiology
BIOL 22600 General Microbiology lab
PSYC 10000 General Psychology
PHIL 11000 Intro to Philosophy
TOTAL HOURS: 15

Third year –

FALL:
BIOL 35500 Biochemistry or ELECTIVE
BIOL 35600 Molecular Biochemistry Lab
PHYS 20000 College Physics 1
PHYS 20100 College Physics 1 Lab
THEO 1XXXX Theology
SOCI 29000 Diversity and Soc. Justice
ELECTIVE – up to 3h
TOTAL HOURS: 15-18

SPRING:
BIOL 35500 Biochemistry or ELECTIVE
BIOL 35600 Molecular Biochemistry Lab
PHYS 20500 College Physics 2
PHYS 20600 College Physics 2 Lab
THEO 2XXXX Theology
ARTS/MUSC/THTR- Apprec. Aesthetic
ELECTIVE – up to 3h
TOTAL HOURS: 15-18

Fourth year –

FALL:	SPRING:
BIOL 32000 Biostatistics or ELECTIVE	BIOL 32000 Biostatistics or ELECTIVE
BIOL 38500 Journal Club*	BIOL 49600 Biology Senior Capstone*
PHIL 33000 Ethics	BIOL 40600 Molecular Cell Biology
ENGL 22XXX Literature	BIOL 39400 Major Field Test
Civic Engagement	ECON 20000 Macroeconomics
TOTAL HOURS: 13 – 18	Globalization
	TOTAL HOURS: 15 – 18

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: Precalculus (MATH 19900) is a prerequisite for General Biology 1 (BIOL 11000). In the event that FOUR YEARS of high school mathematics were NOT taken (including pre-calculus), **Precalculus (MATH 19900)** 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.

B.A. in Biology

First year –

FALL:
BIOL 11000 General Biology 1
BIOL 11100 General Biology 1 Lab
CHEM 11000 General Chemistry 1
CHEM 11100 General Chemistry 1 Lab
ENGL 11100 College Writing 1
MATH XXXXX Math (Precalculus preferred)
UNIV-1XXXX Cornerstone Seminar
TOTAL HOURS: 18

SPRING:
BIOL 11500 General Biology 2
BIOL 11600 General Biology 2 Lab
CHEM 11500 General Chemistry 2
CHEM 11600 General Chemistry 2 Lab
ENGL 11200 College Writing 2
UNIV-2XXXX Interdisciplinary Seminar
TOTAL HOURS: 16

Second year –

FALL:
CHEM 23000 Organic Chemistry 1
CHEM 22100 Organic Chemistry 1 Lab
BIOL 22000 Genetics
BIOL 22100 Genetics Lab
HIST 10200 Global History and Culture II
COMM 11200 Intro to Communication
TOTAL HOURS: 15

SPRING:
CHEM 23500 Organic Chemistry 2
CHEM 22600 Organic Chemistry 2 Lab
BIOL 22400 General Microbiology
BIOL 22600 General Microbiology lab
PSYC 10000 General Psychology
PHIL 11000 Intro to Philosophy
TOTAL HOURS: 15

Third year –

FALL:
BIOL 35500 Biochemistry or ELECTIVE
BIOL 35600 Molecular Biochemistry Lab
THEO 1XXXX Theology
SOCI 29000 Diversity and Soc. Justice
ELECTIVE – up to 8h
TOTAL HOURS: 15-18

SPRING:
BIOL 35500 Biochemistry or ELECTIVE
BIOL 35600 Molecular Biochemistry Lab
THEO 2XXXX Theology
ARTS/MUSC/THTR- Apprec. Aesthetics
ELECTIVE – up to 8h
TOTAL HOURS: 15-18

Fourth year –

FALL:
BIOL 38500 Journal Club
PHIL 33000 Ethics
ENGL 22XXX Literature
Globalization
ELECTIVE – up to 9h
TOTAL HOURS: 12 – 18

SPRING:
BIOL 49600 Biology Senior Capstone
BIOL 40600 Molecular Cell Biology
BIOL 39400 Major Field Test
ECON 20000 Macroeconomics
Civic Engagement
ELECTIVE – up to 9h
TOTAL HOURS: 12 – 18

Allied Heath

Allied Health: Northwestern Memorial Hospital DMS, Radiation Therapy Paradigm

***College of Aviation, Science and Technology* (total credits in CoAST = 49)**

First Semester	Hours	Second Semester	Hours
BIOL-10100 Anatomy & Physiology 1	4	*BIOL-10300 Anatomy & Physiology 2*	4
BIOL-10200 Anatomy & Physiology 1 Lab	1	*BIOL-10400 Anatomy & Physiology 2 Lab*	1
CHEM-11000 General Chemistry 1	4	*CHEM-11500 General Chemistry 2*	4
CHEM-11100 General Chemistry 1 Lab	1	*CHEM-11600 General Chemistry Lab 2*	1
MATH Precalculus/Calculus/Calc for Life Science	4	*Gen Ed- ENGL 11200 College Writing 2*	3
Gen Ed- UNIV 10100 Cornerstone Seminar	1	*Gen Ed- UNIV-2XXXX Interdisciplinary Seminar*	3
Gen Ed- ENGL 11100 College Writing 1	3		
Total Hours	**18**		**16**

Third Semester	Hours	Fourth Semester	Hours
BIOL-11000 General Biology 1	4	*BIOL-11500 General Biology 2*	4
BIOL-11100 General Biology 1 Lab	1	*BIOL-11600 General Biology 2 Lab*	1
HUPR- 19500 Medical Terminology	3	*Gen Ed- Fine Arts*	3
Gen Ed- 100 Theology	3	*Gen Ed-History*	3
Gen Ed- COM 11200 Human Communications	3	*Gen Ed-Social Science - State and Local Government (Social Science/Civic Engagement)*	3
Gen Ed: SOCI-29000 Diversity & Social Justice	3	*Gen Ed-Philosophy*	3
Total Hours	**17**		**17**

Fifth Semester	Hours	Sixth Semester	Hours
PHYS-20000 College Physics 1	4	*BIOL-22400 General Microbiology*	4
PHYS-20100 College Physics 1 Lab	1	*BIOL-22600 General Microbiology Lab*	1
BIOL-22000 Genetics	4	*Gen Ed- PHIL 21500 Ethics*	3
BIOL-22100 Genetics Lab	1	*Gen Ed-Macroeconomics*	3
Gen Ed- Literature	3	*Option: Biostatistics*	4
Gen Ed- 20000-level Theology/Globalization	3	*Option: College Physics 2 lecture and lab*	5
Total Hours	**16**		

- **Earn BS from Lewis University**
- **Gen Eds can be taken in any order, but recommended to take one course that fulfills Social Science/Civic Engagement and another to fulfull 200-Theology/Globalization**
- **Optional courses- College Physics II and Biostats if considering also applying to NMT**

Allied Health: Northwestern Memorial Hospital Nuclear Medicine Technology Paradigm

***College of Aviation, Science and Technology* (total credits in CoAST = 57)**

First Semester	Hours	Second Semester	Hours
BIOL-10100 Anatomy & Physiology 1	4	*BIOL-10300 Anatomy & Physiology 2*	4
BIOL-10200 Anatomy & Physiology 2 Lab	1	*BIOL-10400 Anatomy & Physiology 2 Lab*	1
CHEM-11000 General Chemistry 1	4	*CHEM-11500 General Chemistry 2*	4
CHEM-11100 General Chemistry 1 Lab	1	*CHEM-11600 General Chemistry Lab 2*	1
MATH Precalculus/Calculus/Calc for Life Science	4	*Gen Ed- ENGL 11200 College Writing 2*	3
Gen Ed- UNIV 10100 Cornerstone Seminar	1	*Gen Ed- UNIV-2XXXX Interdisciplinary Seminar*	3
Gen Ed- ENGL 11100 College Writing 1	3		
Total Hours	**18**		**16**

Third Semester	Hours	Fourth Semester	Hours
BIOL-11000 General Biology 1	4	*BIOL-11500 General Biology 2*	4
BIOL-11100 General Biology 1 Lab	1	*BIOL-11600 General Biology 2 Lab*	1
Gen Ed-Macroeconomics	3	*Gen Ed- Fine Arts*	3
Gen Ed- 100 Theology	3	*Gen Ed-History*	3
Gen Ed- COM 11200 Human Communications	3	*Gen Ed-Social Science - State and Local Government (Social Science/Civic Engagement)*	3
Gen Ed: SOCI-29000 Diversity & Social Justice	3	*Gen Ed-Philosophy*	3
Total Hours	**17**		**17**

Fifth Semester	Hours	Sixth Semester	Hours
PHYS-20000 College Physics 1	4	*PHYS- College Physics 2*	4
PHYS-20100 College Physics 1 Lab	1	*PHYS- College Physics 2 Lab*	1
BIOL-22000 Genetics	4	*BIOL-22400 General Microbiology*	4
BIOL-22100 Genetics Lab	1	*BIOL-22600 General Microbiology Lab*	1
Gen Ed- Literature	3	*BIOL 32000- Biostatistics*	3
Gen Ed- 20000-level Theology/Globalization	3	*Gen Ed- PHIL 21500 Ethics*	3
Total Hours	**16**		**16**

- **Earn BS from Lewis University**
- **Gen Eds can be taken in any order, but recommended to take one course that fulfills Social Science/Civic Engagement and another to fulfill 200-Theology/Globalization**
- **Optional Course: Medical Terminology if considering applying to Sonography or Radiation Therapy**

Allied Health: Rush University Vascular Ultrasound (2+2)

College of Aviation, Science and Technology

First Semester	Hours	Second Semester	Hours
BIOL-10100 Anatomy & Physiology 1	4	*BIOL-10300 Anatomy & Physiology 2*	4
BIOL-10200 Anatomy & Physiology 1 Lab	1	*BIOL-10400 Anatomy & Physiology 2 Lab*	1
BIOL-11000 General Biology 1	4	*BIOL-11500 General Biology 2*	4
BIOL-11000 General Biology 1 lab	1	*BIOL-11500 General Biology 2 lab*	1
MATH College Algebra/ Precalculus/Calculus/Calc for Life Science	4	*Gen Ed- ENGL 11200 College Writing 2*	3
Gen Ed- UNIV 10100 Cornerstone Seminar	1	*Gen Ed- COM 11200 Introduction to Human Communications*	3
Gen Ed- ENGL 11100 College Writing 1	3		
Total Hours	**18**		**16**

Third Semester	Hours	Fourth Semester	Hours
PHYS-20000 College Physics 1	4	*Gen Ed- PHIL 21500 Ethics*	3
PHYS-20100 College Physics 1 Lab	1	*Gen Ed-Philosophy*	3
HUPR- 19500 Medical Terminology	3	*Gen Ed- Fine Arts*	3
Gen Ed- PHIL 21500 Ethics	3	*Gen Ed-History*	3
Gen Ed- COM 11200 Introduction to Human Communications	3	*Optional courses: College Physics II with lab, General Chemistry 1 with lab, Genetics with lab, General Microbiology with lab*	
Gen Ed: SOCI-29000 Diversity & Social Justice	3		
Total Hours	**17**		**15-18**

- **Earn BS from Rush University**
- **60 credit hours required to apply to Rush**
- **Gen Eds requirements: College Writing 1, College Writing 2, Communications, Ethics**
- **Optional courses (recommended if space): Genetics lecture/lab, General Microbiology Lecture/lab, College Physics 2 and Biostats**

Allied Health: Northwestern Memorial Hospital Histotechnology

College of Aviation, Science and Technology **(total credits in CoAST = 52)**

First Semester	***Hours***	***Second Semester***	***Hours***
BIOL-11000 General Biology 1	*4*	*BIOL-11500 General Biology 2*	*4*
BIOL-11100 General Biology Lab 1	*1*	*BIOL-11600 General Biology 2 Lab*	*1*
CHEM-11000 General Chemistry 1	*4*	*CHEM-11500 General Chemistry 2*	*4*
CHEM-11100 General Chemistry 1 Lab	*1*	*CHEM-11600 General Chemistry Lab 2*	*1*
MATH Precalculus/Calculus/Calc for Life Science	*4*	*Gen Ed- ENGL 11200 College Writing 2*	*3*
Gen Ed- UNIV 10100 Cornerstone Seminar	*1*	*Gen Ed- UNIV-2XXXX Interdisciplinary Seminar*	*3*
Gen Ed- ENGL 11100 College Writing 1	*3*		
Total Hours	***18***		***16***

Third Semester	***Hours***	***Fourth Semester***	***Hours***
BIOL-22000 Genetics	*4*	*BIOL-22400 General Microbiology*	*4*
BIOL-22100 Genetics Lab	*1*	*BIOL-22600 General Microbiology Lab*	*1*
CHEM 23000 Organic Chemistry 1	*3*	*Gen Ed- Fine Arts*	*3*
CHEM 22100 Organic Chemistry 1 Lab	*1*	*Gen Ed-History*	*3*
Gen Ed- COM 11200 Human Communications	*3*	*Gen Ed-Social Science - State and Local Government (Social Science/Civic Engagement)*	*3*
Gen Ed: SOCI-29000 Diversity & Social Justice	*3*	*Gen Ed- 100 Theology*	*3*
Total Hours	***15***		***17***

Fifth Semester	***Hours***	***Sixth Semester***	***Hours***
BIOL 32000 Biostatistics	*3*	*BIOL 42600 Immunology*	*3*
Gen Ed-Macroeconomics	*3*	*Gen Ed-Philosophy*	*3*
BIOL 10100 A&PI OR BIOL 42200 Human Anatomy	*4/3*	*BIOL 10300 A&PII OR BIOL 33500 Advanced Clinical Physiology*	*4/3*
BIOL 10200 A&P I Lab Anatomy lab or BIOL 42300 Functional Human Anatomy Lab	*1*	*BIOL 10400 A&P I Lab Anatomy lab OR BIOL 33600 Case Studies on Human Physiology*	*1*
Gen Ed- Literature	*3*	*Gen Ed- PHIL 21500 Ethics*	*3*
Gen Ed- 20000-level Theology/Globalization	*3*	*Elective*	*3*
Total Hours	***16/17***		***16/17***

- **Earn BS from Lewis University**
- **Gen Eds can be taken in any order, but recommended to take one course that fulfills Social Science/Civic Engagement and another to fulfill 200-Theology/Globalization**
- **Optional Course: Molecular Cell Biology, Medical Terminology-if considering applying to Sonography or Radiation Therapy**

B.S. in Dental Hygiene

Fall-*First Year*	**Hours**	**Spring-*First Year***	**Hours**
BIOL 10101 Human Anatomy & Physiology 1 BIOL 10201 Human Anatomy & Physiology 1 Lab	5	BIOL 10101 Human Anatomy & Physiology 2 BIOL 10201 Human Anatomy & Physiology 2 Lab	5
CHEM 11000 General Chemistry 1 CHEM 11000 General Chemistry 1 Lab	5	CHEM 11000 General Chemistry 2 CHEM 11000 General Chemistry 2 Lab	5
ENGL 11100 College Writing 1	3	ENGL 11200 College Writing 2	3
MAT 11900 College Algebra	3	COMM 11200 Introduction to Human Communication	3
UNIV 1XXXX Cornerstone Seminar	1	PSYC 10000 General Psychology	3
Total Hours	**17**		**19**

Summer: Appreciating the Aesthetics, Intro to Philosophy

Fall – *Second Year*	**Hours**	**Spring – *Second Year***	**Hours**
BIOL 22500 Microbiology BIOL 22700 Microbiology Lab	5	BIOL 11100 General Biology 1 BIOL 11100 General Biology 1 Lab	5
SOCI 29000 Diversity & Social Justice	3	PHIL 21500 Ethics	3
ECON 20000 Macroeconomics	3	ENGL 22XXX Literature	3
UNIV 2XXXX Interdisciplinary Seminar	3	HIST-10200 Global History 2	3
SOCI-25500 or SOCI-27000	3	Globalization Requirement	3
Total Hours	**17**		**17**

Summer: 10000-level Theology

Fall- *Third Year* (COD or Parkland)	**Hours**	**Spring – *Third Year*** (COD or Parkland)	**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* (COD or Parkland)	**Hours**	**Spring – *Fourth Year*** (COD or Parkland)	**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

First year – FALL: BIOL 11000 General Biology 1 BIOL 11100 General Biology 1 Lab CHEM 11000 General Chemistry 1 CHEM 11100 General Chemistry 1 Lab ENGL 11100 College Writing 1 MATH 20000 Calculus 1 OR MATH 20400 Calculus for Life Sciences UNIV-2XXXX Cornerstone Seminar TOTAL HOURS: 18	 SPRING: BIOL 11500 General Biology 2 BIOL 11600 General Biology 2 Lab CHEM 11500 General Chemistry 2 CHEM 11600 General Chemistry 2 Lab ENGL 11200 College Writing 2 UNIV-2XXXX Interdisciplinary Seminar TOTAL HOURS: 16
Second year – FALL: BIOL 22000 Genetics BIOL 22100 Genetics Lab BIOL 22200 Earth Science CHEM 23000 Organic Chemistry 1 COMM 11200 Intro to Communication TOTAL HOURS: 15	 SPRING: BIOL 22300 Principles of Environmental Science BIOL 22400 General Microbiology BIOL 22600 General Microbiology Lab PHIL 11000 Intro to Philosophy HIST 10200 Global History and Culture 2 TOTAL HOURS: 15
Third year – FALL: BIOL 29800 Field Biology BIOL 31500 General Ecology and Evolution BIOL 31600 Ecology Lab BIOL 37500 Issues in Environmental Science SOCI 29000 Diversity and Soc. Justice POLS 21000 State and Local Government TOTAL HOURS: 15	 SPRING: UPPER DIVISION ELECTIVE (3-4) BIOL 32000 Biostatistics THEO 1XXXX Theology ARTS/MUSC/THTR- Apprec. Aesthetic ENGL 22XXX Literature TOTAL HOURS: 15
Fourth year – FALL: UPPER DIVISION ELECTIVE (3-4) BIOL 38500 Journal Club THEO 2XXXX Theology PHIL 21500 Ethics Civic Engagement General Elective TOTAL HOURS: 16-17	 SPRING: UPPER DIVISION ELECTIVE (3-4) BIOL 49600 Biology Senior Capstone ECON 20000 Macroeconomics Globalization General Elective TOTAL HOURS: 14-15

B.S. in Environmental Science – Sustainability Track

First year – FALL: BIOL 11000 General Biology 1 BIOL 11100 General Biology 1 Lab CHEM 11000 General Chemistry 1 CHEM 11100 General Chemistry 1 Lab ENGL 11100 College Writing 1 MATH 20000 Calculus 1 OR MATH 20400 Calculus for Life Sciences UNIV-2XXXX Cornerstone Seminar TOTAL HOURS: 18	 SPRING: BIOL 11500 General Biology 2 BIOL 11600 General Biology 2 Lab CHEM 11500 General Chemistry 2 CHEM 11600 General Chemistry 2 Lab ENGL 11200 College Writing 2 UNIV-2XXXX Interdisciplinary Seminar TOTAL HOURS: 16
Second year – FALL: BIOL 22200 Earth Science CHEM 23000 Organic Chemistry 1 COMM 11200 Intro to Communication PHIL 11000 Intro to Philosophy HIST 10200 Global History and Culture 2 TOTAL HOURS: 16	 SPRING: BIOL 22300 Principles of Environmental Science BIOL 32000 Biostatistics POLS 21000 State and Local Government THEO 1XXXX Theology ARTS/MUSC/THTR- Apprec. Aesthetic TOTAL HOURS: 16
Third year – FALL: BIOL 31500 General Ecology and Evolution BIOL 31600 Ecology Lab BIOL 37500 Issues in Environmental Science CONCENTRATION ELECTIVE (3-4) SOCI 29000 Diversity and Soc. Justice TOTAL HOURS: 13-14	 SPRING: CONCENTRATION ELECTIVE (3-4) ENGL 22XXX Literature THEO 2XXXX Theology PHIL 21500 Ethics General Elective TOTAL HOURS: 15-16
Fourth year – FALL: CONCENTRATION ELECTIVE (3-4) BIOL 38500 Journal Club Civic Engagement ECON 20000 Macroeconomics General Elective General Elective TOTAL HOURS: 16-17	 SPRING: CONCENTRATION ELECTIVE (3-4) BIOL 49600 Biology Senior Capstone Globalization General Elective General Elective TOTAL HOURS: 14-15

B.A. in Environmental Science

First year – FALL: BIOL 11000 General Biology 1 BIOL 11100 General Biology 1 Lab CHEM 11000 General Chemistry 1 CHEM 11100 General Chemistry 1 Lab ENGL 11100 College Writing 1 MATH 20000 Calculus 1 OR MATH 20400 Calculus for Life Sciences UNIV-2XXXX Cornerstone Seminar TOTAL HOURS: 18	 SPRING: BIOL 11500 General Biology 2 BIOL 11600 General Biology 2 Lab CHEM 11500 General Chemistry 2 CHEM 11600 General Chemistry 2 Lab ENGL 11200 College Writing 2 UNIV-2XXXX Interdisciplinary Seminar TOTAL HOURS: 16
Second year – FALL: BIOL 22000 Genetics BIOL 22100 Genetics Lab BIOL 22200 Earth Science COMM 11200 Intro to Communication PHIL 11000 Intro to Philosophy TOTAL HOURS: 15	 SPRING: BIOL 22300 Principles of Environmental Science BIOL 22400 General Microbiology BIOL 22600 General Microbiology Lab HIST 10200 Global History and Culture 2 THEO 1XXXX Theology TOTAL HOURS: 15
Third year – FALL: BIOL 29800 Field Biology BIOL 31500 General Ecology and Evolution BIOL 31600 Ecology Lab BIOL 37500 Issues in Environmental Science SOCI 29000 Diversity and Soc. Justice POLS 21000 State and Local Government TOTAL HOURS: 15	 SPRING: ARTS/MUSC/THTR- Apprec. Aesthetic ENGL 22XXX Literature THEO 2XXXX Theology General Elective General Elective TOTAL HOURS: 15
Fourth year – FALL: BIOL 38500 Journal Club PHIL 21500 Ethics Civic Engagement General Elective General Elective General Elective TOTAL HOURS: 16	 SPRING: BIOL 49600 Biology Senior Capstone ECON 20000 Macroeconomics Globalization General Elective General Elective TOTAL HOURS: 14

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).

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 Capstone		

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 Capstone (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.

Biology Major for the High School Teaching License (9-12)

The advanced writing requirement is satisfied by successful completion of writing components in BIOL 11100 and BIOL 11600 – General Biology Labs 1 and 2, BIOL 22600 General Microbiology Lab and BIOL 49600 – Biology Senior Capstone. 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 Department 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 Departments of Biology and 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 Capstone

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