

Degree Programs:

1. Bachelor of Science programs in Biology. The NSU Department of Biological Sciences recognizes the recent explosion of information in the life sciences and the wide variety of current occupations that are dependent on this wealth of information. In response, the Department offers a choice of [six concentrations](#) (Biomedical, Natural Science, Applied Biology, Forensic Science, Bioinformatics, and Clinical Laboratory Science) in conjunction with a common biology core. Each concentration allows students with different interests to obtain the proper training necessary to pursue their specific career objectives. Use the following links for more detail on
 - a. [Biology Major requirements.](#)
 - b. [Biology Minor requirements.](#)
 - c. [Microbiology Minor requirements.](#)
 - d. [Wildlife Management Minor requirements.](#)
 - e. [Biology curriculum.](#)
2. [Associate Degree program in Veterinary Technology.](#) The Veterinary Technology Program is fully accredited by the American Veterinary Medical Association, Division of Scientific Activities, 1931 North Meacham Road, Suite 100, Schaumburg, Illinois 60173-4630.

Pre-professional Programs:

1. [PRE-CARDIOPULMONARY SCIENCE.](#)
2. [Pre-Medicine and Pre-Dentistry.](#)
3. [Pre-Optometry.](#)
4. [Pre-Pharmacy.](#)
5. [Pre-Physician Assistant.](#)
6. [Pre-Veterinary Medicine.](#)
7. [Pre-Occupational Therapy.](#)
8. [Pre-Physical Therapy.](#)

Biological Science Major Requirements: (56 semester hours). Students seeking a major in Biological Science must complete the following:

- **Biology core:** 13 semester hours of Biology 1010-1011, 1020-1021, 2020-2021, and either 4900 or 4910.
- **Concentration-dependent courses:** 32 semester hours of 2000 level or above Biology courses in one of four available concentrations (except for 618R where 39 semester hours are required).
- **Biology electives:** 618 M, N, O and R must take 11 semester hours; 618T must take 9 semester hours of any 2000 level or above Biology course, to give students the opportunity to explore subjects outside of their concentration. 618S students must select 12 semester hours from BIOL 3250-3251, 3280, 4310-4311, 4320, 4350-4351, 4610, 4620, or 4940; CSC 3050; MATH 3090, 3150, or 3160; STAT 4060, or 4270.

Biology Minor Requirements: (21 semester hours) BIOL 1010-1011, 1020-1021, 2060-2061; BIOL 2220 or 2230; and at least six more BIOL hours at the 4000 level.

Microbiology Minor Requirements: (22 semester hours) BIOL 2060-2061; 18 semester hours selected from BIOL 2200-2201, 3090-3091, 4120-4121, 4190-4191, 4210-4211, 4270, 4700, 4900, and 4950.

Wildlife Management Minor Requirements: (22 semester hours) BIOL 2120-2121 or GEOG 2010;

BIOL 2140-2141, 2290, 3220-3221, 4900, 4960; and three semester hours selected from BIOL 2180, 2150-2151; three semester hours selected from BIOL 3040-3041, 3340, 3341, 4040-4041, 4170-4171, or 4180-4181.

Available Concentrations: (32 semester hours each)

Biomedical (618M): Select from 2060-2061, 2080-2081, 2200-2201, 3060, 3170-3171, 3250-3251, 3270-3271, 3280, 3290, 3310-3311, 3320-3321, 4120-4121, 4160-4161, 4190-4191, 4220-4221, 4270, 4300-4301, 4310-4311, 4320, 4350-4351, or 4360-4361.

Natural Science (618N): Select from BIOL 2000, 2030-2031, 2050-2051, 2080-2081, 2100-2101, 2140-2141, 2150-2151, 2180, 3010-3011, 3040-3041, 3060, 3140-3141, 3220-3221, 3340-3341, 4030, 4040-4041, 4170-4171, 4180-4181, 4200-4201, 4400-4401, or 4960.

Applied Biology (618O): Select from BIOL 2000, 2030-2031, 2040, 2060-2061, 2080-2081, 3010-3011, 3030, 3050, 3060, 3090-3091, 4150, 4160-4161, 4200, 4201, 4210-4211, 4220-4221, 3280, 4300-4301, 4310-4311, 4350-4351, or 4360-4361.

Forensic Science (618R): Select 16 semester hours from BIOL 2070-2071, 3060-3061, 3500-3501, 3270-3271, 3310-3311, 3320-3321, 4300-4301, and 4160-4161, 4350-4351, and 4360-4361. Select 16 semester hours from CJ 1100, 2300, 2600, 3360, 4000, 4450, 4460 and 4470.

Bioinformatics (618S): This concentration is for students interested in pursuing employment or graduate degrees where they will use or develop computational tools to solve biological problems. You must take BIOL 3060-3061, 3270-3271, 3600-3601, 4300-4301, and 4600; CSC 1060, 2030, 2060, and 060. For more information about the Bioinformatics concentration, see <http://www.nsula.edu/bioinformatics/>.

Clinical Laboratory Sciences (618T): This concentration requires acceptance into an affiliated training program approved by the Council on Allied Health Education and Accreditation. Enrollment in this concentration does not guarantee acceptance into the training program. You must take BIOL 4730, 4740, 4750, 4760, 4770, 4780 and 4790; and then select 9 semester hours from BIOL 2070-2071, 3500-3501, 4160-4161, 4300-4301; CJ 2600, or 4470.

Curriculum for Biology (618)¹

FIRST YEAR	SEM. HRS.
Biology ² 1010-1011, 1020-1021	8
English 1010, 1020	6
Health and personal fitness ³	2
Humanities ³	3
Mathematics ⁴	6
Orientation 1010	1
Social Sciences ³	3
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	29
 SECOND YEAR	 SEM. HRS.
Biology 2020-2021 ²	4

Concentration-dependent Biology ^{2,5}	8
Chemistry 1030-1031, 1040-1041	8
Humanities ³	3
Mathematics ⁴	3
Nutrition 1030	3
Social Sciences ³	<u>3</u>
	32

THIRD YEAR	SEM. HRS.
Biology electives ²	7
Concentration-dependent Biology ^{2,5}	12
Fine Arts 1040	3
Humanities ³	3
General Electives ⁶	<u>7</u>
	32

FOURTH YEAR	SEM. HRS.
Biology 4900 or 4910 ²	1
Biology electives ²	4
Concentration-dependent Biology ^{2,5}	12
General Electives ⁶	<u>15</u>
	32

Total Semester Hours for degree 125

Footnotes:

¹ This curriculum is sufficient to earn a B.S. degree in biology. Refer to Pre-Professional programs for additional requirements.

² All students majoring in Biology must earn a grade of C or better in each required Biology course.

³ Refer to University core requirements.

⁴ Selected from one of the following sequences: MATH 1020, 1060, 2010; 1020, 1090, 2010; or 2100, 2110. 618S concentration requires MATH 2100 and 2110.

⁴ Refer to the different biology concentrations requirements.

⁵ Any academic course 2000 level or above is acceptable. Students pursuing a minor may take up to six semester hours of 1000 level courses if they are pre-requisites of higher level courses.

Curriculum for Pre-Cardiopulmonary Science (618J)¹

FIRST YEAR	SEM. HRS.
Biology 1010-1011, 1020-1021	8
Computer 1020	3
English 1010, 1020	6
Fine Arts 1040	3
Humanities ²	6
Mathematics 1020, 1090	<u>6</u>
	32

SECOND YEAR **SEM. HRS.**

Biology 2060-2061, 3310-3311, 3320-3321	12
Chemistry 1030-1031, 1040-1041	8
Humanities ²	3
Physics 2030-2031	4
Psychology 1010	3
Social Sciences ³	<u>3</u>
	33

Footnotes:

¹ This curriculum meets the current requirements for entrance into the Cardiopulmonary Science program at the Louisiana State University Health Sciences Centers at New Orleans and at Shreveport. Requirements may vary at other universities.

² Recommended humanities include English Literature (ENGL 2050, 2060, or 2070), Technical Writing (ENGL 3230), Advanced Composition (ENGL 3210), or Foreign Language.

³ Recommended Social Science electives include: Sociology (SOC 1010), Economics (ECON 2000, 2010), Geography (GEOG 1010, 1020), Political Science (PSCI 2010, 2020), or Anthropology (ANTH 1510, 2020).

Curriculum for Pre-Medicine or Pre-Dentistry (618F)¹

FIRST YEAR	SEM. HRS.
Biology 1010-1011, 1020-1021	8
Chemistry 1030-1031, 1040-1041	8
English 1010, 1020 ²	6
Mathematics 1020, 1090	<u>6</u>
	28

SECOND YEAR	SEM. HRS.
Biology ³	8
Chemistry 3010-3011, 3020-3021 ⁴	10
General Electives ⁵	6
Physics 2030-2031, 2040-2041	<u>8</u>
	32

THIRD YEAR	SEM. HRS.
Biology Electives ⁶	16-22
General Electives ⁵	<u>8-14</u>
	30

Footnotes:

¹ This curriculum meets the current requirements for entrance into the Louisiana State University School of Medicine at New Orleans and at Shreveport, and the LSU School of Dentistry at New Orleans (a minimum of 90 semester hours). Requirements may vary at other universities.

² The LSU School of Dentistry at New Orleans requires 9 semester hours of English. The English requirement can also be met by literature courses (ENGL 2050, 2060, or 2070), Technical Writing (ENGL 3230), or Advanced Composition (ENGL 3210).

³ Two lecture or lecture/lab combinations are required. These can be selected from any courses offered by the Biology Department.

⁴ A course in Biochemistry (BIOL 4350-4351, 4360-4361) is strongly recommended, and may be substituted for one semester of organic chemistry (CHEM 3020-3021) at the LSU School of Medicine at Shreveport.

⁵ A minimum of 90 semester hours is required for admission into the LSU Schools of Medicine and Dentistry. General and Biology Electives can be used to fulfill this requirement in addition to the required courses. Selection from the following

Arts and Humanities courses is recommended: Economics, English, Foreign Languages, History, Philosophy, Psychology, Sociology and Public Speaking.

⁶ Although not required, it is highly recommended to take several of the following courses: Biochemistry (BIOL 4350-4351, 4360-4361), Cell Biology (BIOL 3250-3251), Genetics (BIOL 3270-3271), Biostatistics (BIOL 3060), Histology (BIOL 3170-3171), Immunology (BIOL 4190-4191), Molecular Biology (BIOL 4300-4301, 4310-4311), Microbiology (BIOL 2060-2061), Pathogenic Microbiology (BIOL 4120-4121), Virology (BIOL 4270), Human Physiology and Anatomy (BIOL 3290-3291), Comparative Anatomy (BIOL 2081-2081), Comparative Vertebrate Physiology (BIOL 4220-4221), or Cancer Biology (BIOL 4320).

Curriculum for Pre-Optometry (618H)¹

FIRST YEAR	SEM. HRS.
Biology 1010-1011, 1020-1021	8
Chemistry 1030-1031, 1040-1041	8
English 1010, 1020	6
General Electives ²	3
Mathematics 1020, 1090	<u>6</u>
	31

SECOND YEAR	SEM. HRS.
Biology 2060-2061, 3060	7
Chemistry 3010-3011	5
General Electives ²	3
Mathematics 2010	3
Physics 2030-2031, 2040-2041	8
Psychology 1010	<u>3</u>
	29

THIRD YEAR	SEM. HRS.
Biology 3310-3311, 3320-3321, 4350-4351 ³	12
General Electives ³	<u>18</u>
	30

Footnotes:

¹ This curriculum meets the current admission requirements of 90 semester hours published by the Association of Schools and Colleges of Optometry. Since requirements vary slightly between schools, students are encouraged to contact the program(s) of their interest for specific requirements. In particular, students interested in the University of Houston College of Optometry should note the requirement of a bachelor's degree prior to admission into their Doctor of Optometry program.

² Recommended Electives include History and other Humanities, Speech, and Social Sciences.

³ These courses are strongly recommended: Biochemistry (BIOL 4350-4351) may substitute for one semester of organic chemistry (CHEM 3020-3021).

Curriculum for Pre-Pharmacy (618I)¹

FIRST YEAR	SEM. HRS.
Biology 1010-1011, 1020-1021	8
Chemistry 1030-1031, 1040-1041	8
English 1010, 1020	6

Heath Education 1010	2
Mathematics 1020, 1090	<u>6</u>
	30

SECOND YEAR	SEM. HRS.
Biology 2060-2061, 3310-3311, 3320-3321	12
Chemistry 3010-3011, 3020-3021	10
Communication 1010, 4020	6
Psychology 1010	<u>3</u>
	31

THIRD YEAR	SEM. HRS.
Biology 3250-3251, 3270-3271	8
Economics 2000	3
Mathematics 2100, 2110	10
Physics 2030-2031, 2040-2041	<u>8</u>
	29

FOURTH YEAR	SEM. HRS.
Biology 3290-3291, 4350-4351	8
English 3230	3
Management 3220	3
Mathematics 2050	<u>3</u>
	17

Footnotes:

¹ This curriculum meets the current admission requirements of the University of Louisiana at Monroe School of Pharmacy. Requirements may vary at other universities.

Curriculum for Pre-Physician Assistant (618P)¹

FIRST YEAR	SEM. HRS.
Biology ²	8
Computer 1020	3
English 1010, 1020	6
Fine Arts 1040	3
Humanities ³	3
Mathematics 1020, 1090	<u>6</u>
	29

SECOND YEAR	SEM. HRS.
Biology 2060-2061	4
Chemistry 1030-1031, 1040-1041	8
Humanities ³	6
Physics 2030-2031	4
Psychology ⁴	6
Social Sciences ⁵	<u>3</u>

Footnotes:

¹ This curriculum meets the current admission requirements of the Louisiana State University Health Sciences Center at Shreveport (a minimum of 60 semester hours). Applicants must also have obtained a minimum of 80 hours of direct patient contact medical experience, by the application deadline. Requirements may vary at other universities.

² Select from BIOL 1010-1011, 2220-2221, or 2230-2231.

³ At least 3 semester hours must be at the 2000 level of above. Recommended Humanities include History, Philosophy, Religion, Literature, Speech, and Foreign Languages.

⁴ Take PSYC 1010; and select one of the following: PSYC 2050, 2450, or 3060.

⁵ Recommended Social Sciences include Anthropology, Economics, Geography, Political Science, Psychology, or Sociology.

Curriculum for Pre-Veterinary Medicine (618C)¹

FIRST YEAR	SEM. HRS.
Biology 1010-1011, 1020-1021	8
Chemistry 1030, 1040, 1031, 1041	8
Communication 1010	3
Electives ¹	3
English 1010, 1020	6
Mathematics 1020, 1060	6
Orientation 1010	<u>1</u>
	35

SECOND YEAR	SEM. HRS.
Chemistry 1080, 3010-3011	8
Electives ¹	13
Biology 2060-2061	4
Physics 2030-2031, 2040-2041	8
Veterinary Technology 1020	<u>2</u>
	35

Footnotes:

¹ This curriculum comprises those courses required by the School of Veterinary Medicine at Louisiana State University. Students interested in applying to veterinary school may choose courses from elective requirements that will apply towards a terminal undergraduate degree (i.e., bachelor's degree in biology, chemistry, physics, or mathematics; associate degree in veterinary technology).

NOTE: All correspondence involving veterinary medical education and requests for applications for admission to the school should be addressed to the Dean, School of Veterinary Medicine, Louisiana State University, Baton Rouge, Louisiana 70803 or contact the Pre-Veterinary advisor at NSU. Formal application and all required credentials must be submitted by October 1 prior to the year admission is sought.

Curriculum for Associate Degree in Veterinary Technology (725)¹

FIRST YEAR	SEM. HRS.
Biology 1010-1011, 1020-1021, 2040	11
English 1010, 1020	6
Fine Arts 1040	3
Mathematics 1020	3
Orientation 1010	1

Psychology 1010	3	
Veterinary Technology ² 1010-1011, 1020, 1030-1031, 2060		<u>9</u>
	36	

SECOND YEAR	SEM. HRS.	
Humanities ³	3	
Biology 2060-2061	4	
Social/Behavioral Science ³ (2000 level or above)		3
Veterinary Technology 2090-2091, 2100-2101, 2190-2191, 2200-2201, 2600, 2700-2701, 3010		<u>24</u>
	34	

THIRD YEAR	SEM. HRS.
Veterinary Technology 2900 ⁴	<u>12</u>
	12
Total Semester Hours for Degree	82

Footnotes:

¹ Students majoring in Veterinary Technology must have completed Veterinary Technology 2190-2191, 2200-2201 within one calendar year prior to registering for Veterinary Technology 2900 (Internship).

² Veterinary Technology courses are offered only once each calendar year.

³ Refer to University core requirements.

⁴ All other courses required for a degree in Veterinary Technology must have been successfully completed prior to registration in Veterinary Technology 2900.

NOTES:

- All students majoring in Veterinary Technology will require a grade of C or better in each course entitled Veterinary Technology.
- Students entering the Veterinary Technology curriculum are strongly receive rabies prophylaxis immunization prior to enrolling in Veterinary Technology courses, as many laboratories involve working directly with live animals. Students electing not to receive immunization must sign a “Statement of Release”.
- A student enrolled in Veterinary Technology courses must meet with the Director of the Veterinary Technology at first knowledge of pregnancy to discuss specific risks, and complete a “Statement of Release” if she wishes to remain enrolled.

Occupational Therapy

Admission into the Master of Occupational Therapy program at the School of Allied Health Professions, the Louisiana State University Health Sciences Center at Shreveport and at New Orleans requires the following:

1. Completion of a baccalaureate degree from an accredited college or university.
2. Completion of the Graduate Record Examination (GRE) with minimum scores in math and verbal of 400 each and 4.0 on the analytical writing section. The GRE must be taken within five years prior to enrollment.

3. Completion of prerequisite courses (with a minimum grade of “C”) prior to enrollment in the program.

Prerequisite Courses	SEM. HRS.
Biology 3310-3311, 3320-3321, 3060	11
Chemistry 1030	3
Physics 2030-2031	4
Psychology 2050, 4450	6
Sociology 1010	3

Strongly Recommended Courses	SEM. HRS.
Biology 1060	2
Communication 1010	3
Computer 1020	3
English 3230	3

4. Applicants must acquire a minimum of 20 hours of verified contact with one registered occupational therapist, (OTR). Additional observation hours in other areas of clinical practice are advisable.
5. Applicants must have a minimum overall cumulative grade point average (GPA) of 2.5 (based on a 4.0 scale) for their undergraduate degree, and a GPA of 2.8 for prerequisite courses.
6. Computer literacy is required of all students in the program. Specifically, students are expected to be proficient in word processing, spreadsheet management, internet navigation, and e-mail procedures.
7. CPR Certification must be valid while enrolled in the program, but is not required for application to the program.

Physical Therapy

Admission into the Doctor of Physical Therapy program at the School of Allied Health Professions, the Louisiana State University Health Sciences Center at Shreveport and at New Orleans requires the following:

1. Completion of a baccalaureate degree from an accredited college or university.
2. Completion of the Graduate Record Examination (GRE) with minimum scores of 800 in the verbal and quantitative portions. The GRE must be taken within five years prior to enrollment.
3. Completion of the following prerequisite courses (with a minimum grade of “C”) prior to enrollment in the program.

Prerequisite Courses	SEM. HRS.
Advanced Biology ¹	3
Biology 1010-1011, 1020-1021, 3310-3311 3320-3321, 3060 ²	14
Chemistry 1030, 1040, 1031, 1041	8
Communication 1010	3
Computer 1020	3
English 1010, 1020, 3210 or 3230	9
Mathematics 1020, 1090 or 2050 ²	6

Physics 2030-2031, 2040-2041	8
Psychology 2050, 4450	6

Footnotes:

¹ Recommended Advanced Biology courses include Microbiology (BIOL 2060-2061), Histology (BIOL 3170-3171), and Cell Biology (BIOL 3250-3251).

² Statistics requirement can be met by taking either BIOL 3060 or MATH 2050. Credits in MATH 2050 may be used to meet the Mathematics requirements.

4. Applicants must acquire a minimum of 60 clock hours of practical experience in physical therapy under the direct supervisions of a licensed physical therapist. Additional hours and experience are recommended.
5. Applicants must have a minimum cumulative grade point average (GPA) of 3.0 (based on a 4.0 scale) in all undergraduate science courses.