

Table of Contents

LaGrange College.....	1
Course Catalog - Biology.....	1
B.A. in Biology and M.A.T. - B.A. in Biology and M.A.T.....	2
B.S. in Biology - B.S. in Biology.....	2
B.A. in Biology - B.A. in Biology.....	3
Minor in Biology - Minor in Biology.....	3
BIOL 1101 - General Biology I.....	4
BIOL 1101 L - General Biology I Laboratory.....	4
BIOL 1102 - General Biology II.....	5
BIOL 1102 L - General Biology II Laboratory.....	5
BIOL 1107 - Principles of Biology I.....	5
BIOL 1107 L - Principles of Biology I Laboratory.....	6
BIOL 1108 - Principles of Biology II.....	6
BIOL 1108L - Principles of Biology II Laboratory.....	6
BIOL 2148 - Human Anatomy and Physiology I.....	7
BIOL 2149 - Human Anatomy and Physiology II.....	7
BIOL 3320 - Medical Microbiology.....	7
BIOL 3321 - Microbiology.....	8
BIOL 3322 - Immunology.....	8
BIOL 3334 - General Ecology.....	9
BIOL 3335 - General Zoology.....	9
BIOL 3336 - General Botany.....	9
BIOL 3340 - Conservation Biology.....	10
BIOL 3351 - Vertebrate Embryology.....	10
BIOL 3353 - Fundamentals of Evolutionary Theory.....	11
BIOL 3360 - Histology.....	11
BIOL 3370 - Toxicology.....	12
BIOL 3373 - Genetics.....	12
BIOL 3374 - Cell Physiology.....	13
BIOL 3376 - Virology.....	13
BIOL 3384 - Neurobiology.....	14
BIOL 4470 - Senior Seminar.....	14
BIOL 4495 - Independent Study.....	14
BIOL 4496 - Internship.....	15

LaGrange College

Course Catalog - Biology

B.A. in Biology and M.A.T. - B.A. in Biology and M.A.T.

Type:Major

Undergraduate students who meet the admission requirements for the M.A.T (passing GACE Program Admissions Assessment or a combined SAT score of more than 1080 (1000 prior to July 01, 2019) and completing the Georgia Code of Ethics for Educators Assessment) and those who have a GPA of 3.0 or higher in their undergraduate studies are eligible to participate in a combined B.A. and M.A.T. program of study after the completion of 90 semester hours. Once accepted, candidates may take entering M.A.T. cohort graduate courses the Summer Semester following their junior year of study. Upon gaining senior status, candidates may take one (1) three-credit graduate course during the Fall, Interim, and Spring semesters only if enrolled with twelve (12) undergraduate credits.

B.S. in Biology - B.S. in Biology

Type:Major

In addition to completing the general education curriculum requirements, students pursuing a major in Biology must complete the following major program requirements:

- Core or Ethos Curriculum (including BIOL 1107, 1107 L, 1108, and 1108 L; A C- or better is required in these courses to declare the biology major and to enroll in upper level biology courses)
- CHEM 1101 and 1102
- Choice of MATH 1114, MATH 1221, or MATH 2221 (in addition to the Core math requirement)
OR
- A total of two(2) MATH courses for **Ethos** curriculum; choose from **Ethos PG1** MATH 1101, MATH 1221, or MATH 2221 and choose from MATH 1114, MATH 1221, or MATH 2221 for the biology major requirements
- Choice of one (1) cellular-level biology course (BIOL 3321, 3322, 3360, 3370, 3372, 3373, 3374, 3376)
- Choice of one (1) organismal-level biology course (BIOL 3334, 3335, 3336, 3340, 3351, 3353, 3384)
- Organic Chemistry I (CHEM 3201) and Organic Chemistry II (CHEM 3202)
- Introductory Physics I (PHYS 1101) and Introductory Physics II (PHYS 1102)
- BIOL 4470—Senior Seminar
- Five (5) additional upper level biology courses (Biochemistry I or II, CHEM 4421 or CHEM 4422, may be chosen as one of these courses. BIOL 2148 or 2149 may be counted as one of these courses.) BIOL 4470 and BIOL 4496 do not satisfy this requirement.

This represents 57 semester hours of coursework in addition to the Core requirements.

B.A. in Biology - B.A. in Biology

Type:Major

In addition to completing the general education curriculum requirements, students pursuing a major in Biology must complete the following major program requirements.

The program offers a Bachelor of Arts in Biology with the following criteria:

- Core or Ethos Curriculum (including BIOL 1107, 1107 L, 1108, and 1108 L; A C- or better is required in these courses to declare the biology major and to enroll in upper level biology courses).
- CHEM 1101 and 1102
- Choice of MATH 1114, MATH 1221, or MATH 2221 (in addition to the Core math requirement)
OR
- A total of two (2) MATH courses for **Ethos** curriculum; choose from **Ethos PG1** MATH 1101, MATH 1221, or MATH 2221 and choose from MATH 1114, MATH 1221, or MATH 2221 for the biology major requirements
- Choice of one (1) cellular-level biology course (BIOL 3321, 3322, 3360, 3370, 3372, 3373, 3374, 3376)
- Choice of one (1) organismal-level biology course (BIOL 3334, 3335, 3336, 3340, 3351, 3353, 3384)
- BIOL 4470—Senior Seminar
- Six (6) additional upper level biology courses (Biochemistry I or II, CHEM 4421 or CHEM 4422, may be chosen as one of these courses. BIOL 2148 or 2149 may be counted as one of these courses.) BIOL 4470 and BIOL 4496 do not satisfy this requirement.

This represents 45 semester hours of coursework in addition to the Core requirements.

Minor in Biology - Minor in Biology

Type:Minor

Students pursuing a minor in Biology must complete the following program requirements:

- BIOL 1107, 1107 L, 1108, and 1108 L or BIOL 2148 and 2149; A C- or better is required in these courses to declare the biology major and to enroll in upper level biology courses. These courses fulfill the Laboratory Science requirement of the Core Curriculum or PG2, Laboratory Science and the Natural World of the Ethos Curriculum.
- Choice of one (1) cellular-level biology course (BIOL 3321, 3322, 3360, 3370, 3372, 3373, 3374, 3376)
- Choice of one (1) organismal-level biology course (BIOL 3334, 3335, 3336, 3340, 3351, 3353, 3384)

- Two (2) additional upper-level biology courses (one of these courses may be CHEM 4421 or CHEM 4422). If BIOL 1107, 1107L, 1108, and 1108L are used as the Laboratory Science requirement in the Core Curriculum, either BIOL 2148 or 2149 may satisfy one of the required courses in this section. BIOL 4470 and BIOL 4496 do not satisfy this requirement.
- All courses must be completed with a C- or better

This represents 16 semester hours of coursework in addition to the general education requirements.

BIOL 1101 - General Biology I

This is the beginning biology course for non-majors. General Biology deals with the phenomenon of life as is manifested in all types of living organisms. The origin of life, chemistry of life, cellular and tissue organization, metabolism, cell division, genetics, and gene action are among topics covered. This course fulfills 3 hours of the laboratory science portion of both the Core and Ethos (PG2) general education requirements. BIOL 1101L is a co-requisite for students in the CORE curriculum (enrolled before Fall 2018). BIOL 1101L is not required for students in the Ethos curriculum (students enrolling in Fall 2018 and beyond).

Grade Basis: AL

Credit hours: 3.0

Lecture hours: 3.0

Restrictions:

- Offered in Fall terms
-

BIOL 1101 L - General Biology I Laboratory

This laboratory course is designed to complement and to provide experiential learning for General Biology I. Note: This course is required for students in the CORE curriculum (enrolled before Fall 2018); BIOL 1101L is not required for students in the Ethos curriculum (students enrolling in Fall 2018 and beyond). Co-requisite: BIOL 1101.

Grade Basis: AL

Credit hours: 1.0

Lab hours: 1.0

Restrictions:

- Offered in Fall terms
-

BIOL 1102 - General Biology II

This course is a continuation of General Biology I. General Biology deals with the phenomenon of life as is manifested in all types of living organisms. Evolution, diversity of life, ecology and the functioning of the organ systems are among topics covered. This course fulfills 3 hours of the laboratory science portion of both the Core and Ethos (PG2) general education requirements.

Grade Basis: AL

Credit hours: 3.0

Lecture hours: 3.0

Prerequisites:

- [BIOL 1101](#) - General Biology I

Restrictions:

- Offered in Spring terms
 - Co-requisite: BIOL 1102 L
-

BIOL 1102 L - General Biology II Laboratory

This laboratory course is designed to complement and provide experiential learning for General Biology II and is a continuation of General Biology I Laboratory. This course fulfills 3 hours of the laboratory science portion of both the Core and Ethos (PG2) general education requirements. Prerequisite: BIOL 1101. Co-requisite: BIOL 1102

Grade Basis: AL

Credit hours: 1.0

Lab hours: 1.0

Restrictions:

- Offered in Spring terms
-

BIOL 1107 - Principles of Biology I

An introductory biology course for science majors that includes scientific method and its application, biological chemistry, cell structure and function, energy transfer, cell cycle, and mitosis. This course fulfills 3 hours of the laboratory science portion of both the Core and Ethos (PG2) general education requirements. This course fulfills 3 hours of the laboratory science portion of both the Core and Ethos (PG2) general education requirements. Prerequisite: MATH 1101 placement or higher. Co-requisite: BIOL 1107L

Grade Basis: AL

Credit hours: 3.0

Lecture hours: 3.0

Restrictions:

- Offered in Fall terms
-

BIOL 1107 L - Principles of Biology I Laboratory

Laboratory experience for science majors to accompany topics from BIOL 1107. This course focuses on the scientific method, data acquisition, manipulation and analysis, and presentation of results. This course fulfills 3 hours of the laboratory science portion of both the Core and Ethos (PG2) general education requirements. Prerequisite: MATH 1101 placement or higher. Co-requisite: BIOL 1107.

Grade Basis: AL

Credit hours: 1.0

Lab hours: 1.0

Restrictions:

- Offered in Fall terms
-

BIOL 1108 - Principles of Biology II

A continuation of introductory biology for science majors. Topics include evolution, biodiversity, physiology, and ecology. This course fulfills 3 hours of the laboratory science portion of both the Core and Ethos (PG2) general education requirements. Co-requisite: BIOL 1108L.

Grade Basis: AL

Credit hours: 3.0

Lecture hours: 3.0

Prerequisites:

- [BIOL 1107](#) - Principles of Biology I

Restrictions:

- Offered in Spring terms
-

BIOL 1108L - Principles of Biology II Laboratory

Laboratory experience for science majors to accompany topics from BIOL 1108. This course focuses on the scientific method, data acquisition, manipulation and analysis, and presentation of results. This course fulfills 3 hours of the laboratory science portion of both the Core and Ethos (PG2) general education requirements. Co-requisite: BIOL 1108.

Grade Basis: AL

Credit hours: 1.0

Lab hours: 1.0

Prerequisites:

- [BIOL 1107](#) - Principles of Biology I

Restrictions:

- Offered in Spring terms
-

BIOL 2148 - Human Anatomy and Physiology I

A study of the structure and function of the human body. Designed for pre-nursing majors.

Grade Basis: AL

Credit hours: 4.0

Lecture hours: 4.0

Restrictions:

- Offered in Fall terms
-

BIOL 2149 - Human Anatomy and Physiology II

A continuation of Human Anatomy and Physiology I.

Grade Basis: AL

Credit hours: 4.0

Lecture hours: 4.0

Prerequisites:

- [BIOL 2148](#) - Human Anatomy and Physiology I

Restrictions:

- Offered in Spring terms
-

BIOL 3320 - Medical Microbiology

A study of human disease caused by pathogenic microbes and helminthes. Designed for pre-health professions majors. Laboratory activities focus on bacteria as model organisms.

Grade Basis: AL

Credit hours: 4.0

Lecture hours: 4.0

Prerequisites:

- [BIOL 2148](#) - Human Anatomy and Physiology I
- [BIOL 2149](#) - Human Anatomy and Physiology II

Restrictions:

- Offered in Spring terms
-

BIOL 3321 - Microbiology

A study of the morphology, physiology, classification, ecology, and economics of microbial forms, especially bacteria and fungi.

Grade Basis: AL

Credit hours: 4.0

Lecture hours: 4.0

Prerequisites:

- [BIOL 1107](#) - Principles of Biology I
 - [BIOL 1107 L](#) - Principles of Biology I Laboratory
 - [BIOL 1108](#) - Principles of Biology II
 - [BIOL 1108L](#) - Principles of Biology II Laboratory
-

BIOL 3322 - Immunology

A study of the fundamentals of immunology. Topics will include tissues and control of the immune system, including dynamics of B cell and T cell activation and function, inflammation and autoimmune disorders. Laboratory experiences include antigen-antibody interactions in gels, on membranes and in tissues, as well as complement-mediated cell lysis.

Grade Basis: AL

Credit hours: 4.0

Lecture hours: 4.0

Prerequisites:

- [BIOL 1107](#) - Principles of Biology I
- [BIOL 1107 L](#) - Principles of Biology I Laboratory
- [BIOL 1108](#) - Principles of Biology II
- [BIOL 1108L](#) - Principles of Biology II Laboratory

Restrictions:

- Offered in Spring terms (Even years).
-

BIOL 3334 - General Ecology

An introduction to the basic principles and concepts of ecology with emphasis on environmental sampling, analysis and characterization.

Grade Basis: AL

Credit hours: 4.0

Lecture hours: 4.0

Prerequisites:

- [BIOL 1107](#) - Principles of Biology I
- [BIOL 1107 L](#) - Principles of Biology I Laboratory
- [BIOL 1108](#) - Principles of Biology II
- [BIOL 1108L](#) - Principles of Biology II Laboratory

Restrictions:

- Offered in Spring terms (Even years).
-

BIOL 3335 - General Zoology

A phylogenetic approach to the Animal kingdom following cladistic principles. Emphasis will be placed upon representative animal groups and the position of Animalia within the domains of life. Studies of local faunae will be highlighted.

Grade Basis: AL

Credit hours: 4.0

Lecture hours: 4.0

Prerequisites:

- [BIOL 1107](#) - Principles of Biology I
- [BIOL 1107 L](#) - Principles of Biology I Laboratory
- [BIOL 1108](#) - Principles of Biology II
- [BIOL 1108L](#) - Principles of Biology II Laboratory

Restrictions:

- Offered in Spring terms (Odd years).
-

BIOL 3336 - General Botany

A phylogenetic and ecological survey of the kingdom Plantae. The focus will be on the general anatomy and physiology of plants as well as the natural history and ecology of plants. Lab work will be field based and strongly oriented toward the local flora.

Grade Basis: AL

Credit hours: 4.0

Lecture hours: 4.0

Prerequisites:

- [BIOL 1107](#) - Principles of Biology I
- [BIOL 1107 L](#) - Principles of Biology I Laboratory
- [BIOL 1108](#) - Principles of Biology II
- [BIOL 1108L](#) - Principles of Biology II Laboratory

Restrictions:

- Offered in Fall terms (Odd years).
-

BIOL 3340 - Conservation Biology

An introduction to the principles and practices involved in the management of endangered species, communities and ecosystems. We will investigate how species natural history, ecology and population dynamics interact with human activities to impact the loss of species diversity.

Grade Basis: AL

Credit hours: 4.0

Lecture hours: 4.0

Prerequisites:

- [BIOL 1108](#) - Principles of Biology II
- [BIOL 1108L](#) - Principles of Biology II Laboratory

Restrictions:

- Offered in Fall terms (Even years).
-

BIOL 3351 - Vertebrate Embryology

A study of the embryological development of representative vertebrates, with laboratory emphasis upon the frog and chick.

Grade Basis: AL

Credit hours: 4.0

Lecture hours: 4.0

Prerequisites:

- [BIOL 1107](#) - Principles of Biology I
- [BIOL 1107 L](#) - Principles of Biology I Laboratory
- [BIOL 1108](#) - Principles of Biology II
- [BIOL 1108L](#) - Principles of Biology II Laboratory
- [BIOL 2148](#) - Human Anatomy and Physiology I

- [BIOL 2149](#) - Human Anatomy and Physiology II

Restrictions:

- Offered in Fall terms (Even years).
-

BIOL 3353 - Fundamentals of Evolutionary Theory

A balanced survey of the present-day concepts of evolution with emphasis on human evolution/paleoanthropology.

Grade Basis: AL

Credit hours: 4.0

Lecture hours: 4.0

Prerequisites:

- [BIOL 1107](#) - Principles of Biology I
- [BIOL 1107 L](#) - Principles of Biology I Laboratory
- [BIOL 1108](#) - Principles of Biology II
- [BIOL 1108L](#) - Principles of Biology II Laboratory
- [BIOL 2148](#) - Human Anatomy and Physiology I
- [BIOL 2149](#) - Human Anatomy and Physiology II

Restrictions:

- Offered in Fall terms (Even years).
-

BIOL 3360 - Histology

A study of the microscopic features of mammalian cells, tissues, and organs. Lectures correlate cell structure with tissue function. Laboratory experiences include the microscopic identification of tissues and organs at the cellular level.

Grade Basis: AL

Credit hours: 4.0

Lecture hours: 4.0

Prerequisites:

- [BIOL 1107](#) - Principles of Biology I
- [BIOL 1107 L](#) - Principles of Biology I Laboratory
- [BIOL 1108](#) - Principles of Biology II
- [BIOL 1108L](#) - Principles of Biology II Laboratory
- [BIOL 2148](#) - Human Anatomy and Physiology I
- [BIOL 2149](#) - Human Anatomy and Physiology II

Restrictions:

- Offered in Fall terms (Odd years).
-

BIOL 3370 - Toxicology

An introduction to the basic principles of toxicology. Topics include the cellular sites of action of toxicants, their physiological absorption, distribution and excretion and their effects on tissues and in an ecosystem. The lab applies these principles by students' implementation and analysis of data of an original research project.

Grade Basis: AL

Credit hours: 4.0

Lecture hours: 4.0

Prerequisites:

- [BIOL 1107](#) - Principles of Biology I
- [BIOL 1107 L](#) - Principles of Biology I Laboratory
- [BIOL 1108](#) - Principles of Biology II
- [BIOL 1108L](#) - Principles of Biology II Laboratory

Restrictions:

- Offered in Fall terms (Even years).
-

BIOL 3373 - Genetics

This course includes topics in both classical and molecular genetics. Topics of study may include but are not limited to Mendelian and non-Mendelian transmission of genes, sex-linked traits, chromosomal genetics and genomes, DNA structure, replication, mutation and repair, gene expression and its regulation, recombinant DNA technology, cancer, and population genetics. The laboratory will evaluate wild-type and mutant model organisms using classical and/or molecular genetic approaches as well as pursue research questions in genetics using model organisms and other systems.

Grade Basis: AL

Credit hours: 4.0

Lecture hours: 4.0

Prerequisites:

- [BIOL 1107](#) - Principles of Biology I
- [BIOL 1107 L](#) - Principles of Biology I Laboratory
- [BIOL 1108](#) - Principles of Biology II
- [BIOL 1108L](#) - Principles of Biology II Laboratory

Restrictions:

- Offered in Fall terms.

BIOL 3374 - Cell Physiology

An advanced study of the structure and functions of the eukaryotic cell. Topics include the structure and function of macromolecules, the plasma membrane, intracellular trafficking and cell signaling. The lab uses techniques to microscopically identify organelles and cells, examine the role of enzymes and identify specific proteins involved in cell death.

Grade Basis: AL

Credit hours: 4.0

Lecture hours: 4.0

Prerequisites:

- [BIOL 1107](#) - Principles of Biology I
- [BIOL 1107 L](#) - Principles of Biology I Laboratory
- [BIOL 1108](#) - Principles of Biology II
- [BIOL 1108L](#) - Principles of Biology II Laboratory

Restrictions:

- Offered in Spring terms (Odd years).
-

BIOL 3376 - Virology

This introduction to virology will focus on animal viruses that are important for basic science and human and animal diseases. The topics in this course may include viral taxonomy, structure, entry/exit, replication, quantitation, genetics, pathogenesis, and virus-host interaction. The laboratory will study nonpathogenic model viral systems.

Grade Basis: AL

Credit hours: 4.0

Lecture hours: 4.0

Prerequisites:

- [BIOL 1107](#) - Principles of Biology I
- [BIOL 1107 L](#) - Principles of Biology I Laboratory
- [BIOL 1108](#) - Principles of Biology II
- [BIOL 1108L](#) - Principles of Biology II Laboratory

Restrictions:

- Offered in Spring terms (taught in rotation with 3372, generally even years)
-

BIOL 3384 - Neurobiology

An integrated study of the human nervous system correlating neuroanatomy and neurophysiology with fundamentals of clinical neurology.

Grade Basis: AL

Credit hours: 4.0

Lecture hours: 4.0

Prerequisites:

- [BIOL 1107](#) - Principles of Biology I
- [BIOL 1107 L](#) - Principles of Biology I Laboratory
- [BIOL 1108](#) - Principles of Biology II
- [BIOL 1108L](#) - Principles of Biology II Laboratory

Restrictions:

- Offered in Spring terms
-

BIOL 4470 - Senior Seminar

Senior seminar is a thematic capstone course that is a broad, integrative experience in biology. The course promotes independent thinking, develops analytical skills, and provides practice in group discussion and in written and oral presentation. This course is required of all biology majors. Seniors enroll in BIOL 4470 in their last spring semester of enrollment.

Grade Basis: AL

Credit hours: 1.0

Lecture hours: 1.0

Restrictions:

- Prerequisite: Senior Standing, Biology Major
 - Offered in Spring terms
-

BIOL 4495 - Independent Study

Although not required as part of the biology major, this course provides an opportunity for students, on an individual basis, to pursue in-depth research of a particular biology topic, question, or problem. Up to 4 hours of BIOL 4495 may be counted toward the major.

Grade Basis: AL

Credit hours: 3.0

Lecture hours: 3.0

Restrictions:

- Course Hours: (1-4)
 - On demand
 - Consent of the instructor, the department chair, and the Vice President for Academic Affairs (VPAA)
-

BIOL 4496 - Internship

An opportunity for students to gain added experience and insight in approved off-campus settings. The internship cannot be counted as one of the courses required for the major or minor in biology.

Grade Basis: AL

Credit hours: 3.0

Lecture hours: 3.0

Restrictions:

- Course Hours: (1-3)
 - On demand
 - Consent of the supervising instructor, department chair, and the Career Development Center.
-

Last updated: 03/16/2020

LaGrange College

601 Broad Street

LaGrange, GA 30240

706-880-8000