Summer 2016 - Course Offerings

MAYMESTER (MAY): May 10-May 27, 2016

1st Summer Session (00A/0PA): May 16-June 24, 2016

2nd Summer Session (00C/0PC): June 27-August 5, 2016

Entire Summer Session (00B/0PB): May 16-August 5, 2016

Please Note: The information contained in the Course Atlas is subject to change. For final schedule information, please refer to OPUS or contact the Biology Department.

Introductory Courses
Effective Fall 2014, the Biology 141 and 142 Labs are now separate, 1 credit-hour courses.

Biology 141, 141L, 142, and 142L are required for all upper level biology courses. These courses meet the requirements for the biology major, premed, and the life sciences laboratory GER requirements. Biology 120 meets the GER requirement for a life science laboratory course, but not the requirements for the biology major, and is recommended for students who are not science majors or premed.

AP Credit
Biology AP scores of 4 or 5 will earn Biology 141 LECTURE credit ONLY for students entering Emory in Fall 2014 and later. Students with AP credit for Biology 141 will be required to take our Biology 141 Lab before taking Biology 142 and the Biology 142 Lab. Students who have taken Biology 141/142 prior to Fall 2014 will remain under the Fall 2008 or Fall 2013 requirements.

Biology Major
The major also requires one course in each of three areas of biology (Column A - Cell and Molecular, Column B - Organismal, and Column C - Ecology and Evolution) and 12 credit hours (minimum) of elective courses (4 or more courses). These courses must include one upper-level laboratory course.

NOTE: Students entering Emory Fall 2014 or later AND those declaring a major in Biology after Summer 2014 will be required to take QTM 100 (Intro. to Stat. Inference), in addition to two semesters of Calculus, for the BS degree.

Additional Requirements
The BA and BS degrees in Biology have additional required courses from other departments (or AP equivalents). The BA and BS require Chemistry 141 (or Chemistry 221/228L) and Chemistry 142. The BS also requires Chemistry 221, Chemistry 221L, Math 115, Math 116, and Physics 141 or 151 with Lab.

Freshmen who have AP credit for Chem 141 and take Chem 221/228L will be exempt from taking Chem 142 for the Biology major.

BIOLOGY 120 (00C): Concepts in Biology w/Lab (4 Credit Hours) (SNTL)
Abreu, M, Tu, W, Th, F, 10:00-11:20, MAX: 48, 1462 Clifton Road, Room 308

NOTE: STUDENTS MUST ALSO REGISTER FOR A BIOLOGY 120 LABORATORY. Dr. Megan Cole is the Lab Director/Instructor.
LABs:
LC1, TuTh, 12:00-3:00, MAX: 24, 1462 Clifton Road 119
or
LC2, TuTh, 3:30-6:30, MAX: 24, 1462 Clifton Road 119

Content: The lecture and laboratory portions of this course will be organized around modules that relate biology to current issues such as evolution, global warming, cloning, stem cell research, and more. This course is designed to have you think critically about biological subjects and to help you seek out reliable sources.

Texts:
· Lecture: To be determined.
· Lab: Laboratory bound notebook with carbonless copies.

Particulars: This course is NOT applicable to a science major, including biology majors and the premedical program (but does meet the GER requirements for a life science laboratory). Science majors should NOT take this course.

---

BIOLOGY 141 (00A): Foundations of Modern Biology I LECTURE [Cell Biology and Classical Genetics] (SNT) (3 Credit Hours)
Campbell, M, Tu, W, Th, Fri, 10:00-11:20, MAX: 48, 1462 Clifton Road 230

This is the first semester of a two-semester introductory biology course and is required for the biology major.

NOTE: STUDENTS MUST ALSO REGISTER FOR A BIOLOGY 141 LABORATORY, which is now a separate 1 credit hour course. (SEE BIOL 141L for days and times.)

Content: Biology 141, 141L, 142, and 142L will provide a topic-driven overview of molecular and cellular biology and genetics. The second semester will cover evolution, genomics, molecular, developmental, and cancer genetics. The topics covered in class will address major issues in human biology and medicine. The integrated lecture and lab will emphasize the basic principles and critical thinking involved in modern biological discovery. In lab, students will design and perform experiments using several important model systems.


Particulars: Biology 141, 141L, 142, and 142L are required of all Biology majors, and Biology 141/141L, along with Chemistry 141, should be taken in the fall of the Freshman year by prospective Biology majors. If scheduling precludes taking both, it is recommended that you take Chemistry 141 before Biology 141/141L. Biology 141/141L and 142/142L are prerequisites for all Biology courses above the 100 level. AP Biology scores of 4 or 5 count for the Biology 141 LECTURE ONLY (effective Fall 2014). Students taking Biology 141 and 142 Fall 2014 and later will be required to take the Biology 141 and 142 LABs. These courses include classical and molecular genetics and meet the biology premedical requirements.

Biology 120 is recommended for non-science majors who are not premed. Some exams may be administered in the evening.

Corequisite: Biol 141L.
**BIOLOGY 141L (00A / 01A): Foundations of Modern Biology | LAB [Cell Biology and Classical Genetics LAB] (SNL) (1 Credit Hour)**  
Cole, Megan, (00A), Tu & Th, 12:00-3:00, MAX: 24, 1462 Clifton Road, Room TBD  
Or  
Cole, Megan, (01A), Tu & Th, 3:30-6:30, MAX: 24, 1462 Clifton Road, Room TBD  

**Content:** This is the laboratory component of Biology 141 and is **required for the Biology major.**  

**Text:** Laboratory bound notebook with carbonless copies (**LAB-REQUIRED**)  

**Particulars:** AP Biology scores of 4 or 5 count for the Biology 141 LECTURE ONLY (effective Fall 2014). Students taking Biology 141 and 142 in Fall 2014 and later will be required to take the Biology 141 and 142 LABs. Some exams may be administered in the evening.  

**Pre or Corequisite:** Biol 141. 

---  

**BIOLOGY 142 (00C): Foundations of Modern Biology II: Molecular Genetics (LECTURE) (SNT) (3 Credit Hours)**  
Campbell, M, Tu, W, Th, Fri, 10:00-11:20, MAX: 48, 1462 Clifton Road 230  

This is the second semester of a two-semester introductory biology course and is required for the biology major.  

**NOTE:** STUDENTS MUST ALSO REGISTER FOR A BIOLOGY 142 LABORATORY, which is now a separate 1 credit hour course. (SEE BIOL 142L for days and times.)  

This course, in addition to the laboratory component, is required for the biology major.  

**Content:** Biology 141, 141L, 142, and 142L will provide a topic-driven overview of molecular and cellular biology and genetics. The second semester will cover evolution, genomics, molecular, developmental, and cancer genetics. The topics covered in class will address major issues in human biology and medicine. The integrated lecture and lab will emphasize the basic principles and critical thinking involved in modern biological discovery. In lab, students will design and perform experiments using several important model systems.  

**Text:** Freeman, Scott. *Biological Science, 5th Edition (Customized Emory University Edition-2014)* (Includes a Modified Mastering Biology Access Kit.) (Pearson/Prentice-Hall) (**LECTURE-REQUIRED**)  

**Particulars:** Biology 141, 141L, 142, and 142L are required of all Biology majors, and Biology 141 and 141L, along with Chemistry 141, should be taken in the fall of the Freshman year by prospective Biology majors. If scheduling precludes taking both, it is recommended that you take Chemistry 141 before Biology 141/141L. Biology 141/141L and Biology 142/142L are prerequisites for all Biology courses above the 100 level. AP Biology scores of 4 or 5 count for the Biology 141 LECTURE ONLY (effective Fall 2014). Students taking Biology 141 and 142 Fall 2014 and later will be required to take the Biology 141 and 142 LABs. These courses include classical and molecular genetics and meet the biology premedical requirements.  

**Biology 120 is recommended for non-science majors who are not premed.** Some exams may be administered in the evening.  

**Prerequisites:** Biol 141 and Biol 141L. **Corequisite:** Biol 142L.
**BIOLOGY 142L (00C / 01C): Foundations of Modern Biology II: Molecular Genetics LAB (SNTL) (1 Credit Hour)**

*Cole, Megan, (00C)*, *Tu & Th, 12:00-3:00*, *MAX: 24*, *1462 Clifton Road, Room TBD*

*Cole, Megan, (01C)*, *Tu & Th, 3:30-6:30*, *MAX: 24*, *1462 Clifton Road, Room TBD*

**Content:** This is the laboratory component of Biology 142 and is required for all students taking Biology 142 Fall 2014 or later.

**Text:** Laboratory bound notebook with carbonless copies *(LAB-REQUIRED)*

**Particulars:** AP Biology scores of 4 or 5 count for the Biology 141 LECTURE ONLY (effective Fall 2014). Students taking Biology 141 in Fall 2014 and later will also be required to take Biology 141L, Biology 142, and Biology 142L. Some exams may be administered in the evening.

**Prerequisites:** Biol 141 and Biol 141L. **Corequisite:** Biol 142.

---

**BIOLOGY 224 (MAY and L01): Experimental Developmental Biology with Lab (3 Credit Hours)**

*Shepherd, M*, *Tu, W, Th, F, 10:00-12:00 (LECTURE), MAX: 20, 1462 Clifton Road TBD*

*and M, Tu, W, Th, F, 2:00-4:30 (LAB), MAX: 20, 1462 Clifton Road 101*

**Content:** TBD.

**Texts:** TBD.

**Particulars:** TBD.

**Prerequisites:** Biol 142/142L. This course may be taken as elective credit and fulfills the upper-level laboratory requirement for the Biology major.

---

**BIOLOGY 261 SAF (Queensland, Australia): The Biology of Insects (4 Credit Hours) (SNTL) (June 18-July 23, 2016)**

*de Roode, SEE The Emory Biology in Australia Program on the Center For International Programs Abroad (CIPA) website at http://cipa.emory.edu.*

**This course is the same as Biology 280: Insect Biology,** normally offered during the MayMester on the main Emory campus.

**Content:** Insects form one of the most diverse abundant animal groups on earth, with some estimates indicating that there are no fewer than 800,000 species of beelee alone. Entomology is the branch of biology that studies insects and related arthropods such as spiders, ticks, millipedes, and woodlice. This course will provide an introduction to the study of entomology by addressing questions such as: what makes an insect, how do insects develop, and how does an understanding of entomology help combat human disease and ensure food security? Topics will further include insect behavior, insect ecology, and insect evolution. The course is a combination of lectures, labs, and field work, and a major goal is to develop the ability to distinguish between the major orders (e.g., butterflies vs. beetles) and subgroups (e.g., bees vs. wasps) of insects.

**Texts:**

**Particulars:** This course will fulfill elective and upper-level lab credit for the Biology major and will satisfy the SNTL GER.

**Prerequisites:** Biology 142/142L or Biology 240.

---

**BIOLOGY 301 (OLA): Biochemistry I (SNT) -- ONLINE COURSE**
*Escobar, M, W, F, 9:00-10:00; ON-LINE; MAX: 20*

**Content:** This ON-LINE course gives an integrated approach to the synthesis, structure, and function of macromolecular biomolecules, including proteins, carbohydrates, lipids, and nucleic acid. The evolution of structural and catalytic diversity at a molecular level will provide a theme that underpins specific examples that will include: the energetics of catalysis, protein structure and folding, enzyme kinetics and mechanisms, DNA & RNA structure and synthesis, photosynthesis & oxidative phosphorylation. These concepts will also be applied to understanding cellular organization at the molecular level. A particular focus will be the interconnections between and regulation of metabolic pathways both within the cell and throughout the organism.


This course will fulfill elective credit for the biology major and should provide students with a firm foundation in biochemistry.

**Students may also take CHEM 301 for the Biology major.**

**Prerequisites:** Biology 142/142L and Chem 221/221L.

---

**BIOLOGY 336 (OLA): Human Physiology -- ONLINE COURSE**
*Cafferty, M & W, 5:30-7:00 p.m., ON-LINE, MAX: 20*

**Content:** This ON-LINE course is a study of human physiology emphasizing homeostatic mechanisms of integrated body functions. Topics include cellular communication, endocrinology, neurophysiology, muscle physiology, circulation, respiration, and renal physiology.

**Texts:**
- A Response Card NXT “Clicker”.

**Particulars:** There will be weekly assignments, online "LearnSmart" assignments in McGraw-Hill Connect, 2 midterm exams, and a cumulative final exam.

**Prerequisites:** Biology 142/142L.

---

**BIOLOGY 349 SAF (Queensland, Australia): Ecology of Invasions (4 Credit Hours) (June 18-July 23, 2016)**
*Beck, Summer 2016*

SEE The Emory Biology in Australia Program on the Center For International Programs Abroad (CIPA) website at
http://cipa.emory.edu.

Back to Course Atlas: Summer 2016 | Biology Department Homepage

**ENVS 446 SAF (Namibia and Botswana, South Africa): Environmental Field Studies in Southern Africa (6 Credit Hours) (June 18-July 15, 2016)**
*Larry Wilson, Summer 2016*

This course originates in the Environmental Science Department and may be taken as elective credit for the Biology major.

SEE the Center For International Programs Abroad (CIPA) website at http://cipa.emory.edu for additional information.

Back to Course Atlas: Summer 2016 | Biology Department Homepage

**BIOLOGY 497R (OPA/OPB/OPC): Supervised Reading**
*Individual Faculty (See OPUS for section and class numbers)*

This course does NOT count for the Biology major and does NOT fulfill the writing requirement for the GERs.

For this course, selected readings are done in conjunction with a Biology Department faculty member. Interested students should communicate with appropriate faculty and obtain their permission prior to preregistration. Once permission is received from the faculty member, contact Tonya Davis at tonya.davis@emory.edu or 404-727-6292 to obtain a permission number.

This course may be taken for variable credit (1 to 4 hours per semester).

**Prerequisites:** Biology 142/142L.

Back to Course Atlas: Summer 2016 | Biology Department Homepage