

**THE UNIVERSITY OF AKRON
REQUIREMENTS FOR A B.S. IN BIOLOGY**

I. University General Education Requirements - MUST DO SPEECH, ENGLISH AND MATH (through 3450:145 College Algebra) WITHIN THE FIRST 48 CREDITS AT UA.

A. SPEECH - 3 credits.

7600:105 Intro. to Public Speaking, 3 credits

OR 7600:106 Eff. Oral Communication, 3 credits

OR 2540:263 Prof. Communications and Presentation, 3 credits

B. ENGLISH COMPOSITION - 7 credits of two sequential courses.

3300:111 English Composition I, 4 credits **AND** 3300:112 English Composition II, 3 credits

OR 3300:113 African American Language & Culture I, 4 cr. **AND** 3300:114 AA Lang. & Cult. II, 3 cr.

OR 2020:121 English, 4 credits **AND** 2020:222 Technical Report Writing, 3 credits

C. PHYSICAL EDUCATION/WELLNESS- 1 credit.

5540:120-150 Physical Education	0.5-1 cr.	7400:133 Nutrition Fundamentals	3 cr.
5540:190 Physical Education	0.5-2 cr.	7510:126 Marching Band	1 cr.
5550:150 Concepts of Health & Fitness	3 cr.	7900:119/120 Intro. Modern Dance I/II	2 cr.
5550:194 Sports Officiating	2 cr.	7900:124/125 Intro. Ballet I/II	2 cr.
5550:211 First Aid & CPR	2 cr.	7900:130/230 Intro. Jazz Dance I/II	2 cr.
5570:101 Personal Health	2 cr.	7900:144 Tap Dance I	2 cr.

D. SOCIAL SCIENCES - 6 credits. Select 2 courses for 6 credits from 2 different sets (Sets 1 - 7)

Set 1.	3250:100 Intro. to Economics	3 cr.	Set 5.	3850:100 Intro. to Sociology	4 cr.
	3250:200 Prin. Microeconomics	3 cr.		3230:150 Cultural Anthropology	4 cr.
	3250:244 Intro. to Econ. Analysis	3 cr.		5100:150 Democracy in Educ.	3 cr.
	2040:247 Survey of Basic Econ.	3 cr.			
Set 2.	3350:100 Intro. to Geography	3 cr.	Set 6.	3400:250 US History to 1877	4 cr.
				3400:251 US History since 1877	4 cr.
				(Both classes have lecture & discussion.)	
Set 3.	3700:100 Govt. & Politics in US	4 cr.	Set 7.	2040:241 Tech. of Human Values	2 cr.
	3700:150 World Politics & Gov.	3 cr.		2040:243 Contemp. Global Issues	3 cr.
	2040:242 American Urban Society	3 cr.		3240:100 Intro. to Archaeology	3 cr.
Set 4.	3750:100 Intro. to Psychology	3 cr.		3600:125 Theory and Evidence	3 cr.
	(Recommended for professional school)				
	2040:240 Human Relations	3 cr.			

E. AREA STUDIES & CULTURAL DIVERSITY - Select 4 credits from two classes. Must have Junior status, 64 credits. Recommended to chose ONLY ONE course within the # or only one within the * choices.

3400:385 World Civilization: China	2 cr.	* 2040:254 The Black Exp. 1619 to 1877	2 cr.
# 3400:386 World Civilization: Japan	2 cr.	* 2040:257 The Black Exp. 1877 to 1954	2 cr.
# 3560:304 Japanese Culture thru Film	2 cr.	* 2040:258 The Black Exp. 1954 to Pres.	2 cr.
3400:387 World Civilization: SE Asia	2 cr.	2040:256 Diversity in Am. Society	2 cr.
3400:388 World Civilization: India	2 cr.	3002:201 Intro. Pan African Studies	3 cr.
3400:389 World Civ.: Middle East	2 cr.	3350:375 Geo. of Cultural Diversity	2 cr.
3400:390 World Civilization: Africa	2 cr.	1840:300 Intro. to Women's Studies	3 cr.
3400:391 World Civ.: Latin America	2 cr.	3230:251 Human Diversity	3 cr.
7600:325 Intercultural Communication	3 cr.		

F. HUMANITIES - 3 courses (10 credits total).

1. **Required:** 3400:210 Humanities in Western Traditions I, 4 credits. (Prerequisite is English 112)
You must register for both the lecture and a required discussion section.
2. **6 additional credits:** Select 2 courses from 2 different sets (Sets 1-4).
3400:210 Human. in Western Trad I is usually the prerequisite for all other humanities classes.

Set 1 - Fine Arts - Prerequisite 3400:210

7100:210 Visual Arts Awareness	3 cr.
7500:201 Exp. Music: Bach - Rock	3 cr.
7800:301 Intro. to Theatre & Film	3 cr.
7900:200 Viewing Dance	3 cr.

Set 2 - Philosophy/Classics – Pre-req. 3400:210

3200:220 Intro. to Ancient World	3 cr.
3200:230 Sports & Society/ Greece	3 cr.
3200:289 Myth. of Ancient Greece	3 cr.
3600:101 Intro. to Philosophy	3 cr.
3600:120 Introduction to Ethics	3 cr.
3600:170 Introduction to Logic	3 cr.

Set 3 - Literature - Prerequisite 3400:210

3300:250 Classic & Contemp. Lit.	3 cr.
3300:251 Topics in World Literature	3 cr.
3300:252 Shakespeare and His World	3 cr.
3300:281 Fiction Appreciation	3 cr.
3200:361 Literature of Greece	3 cr.
3580:350 Lit. of Span.-Amer in Trans	3 cr.

Set 4 - Humanities - Prerequisite 3400:210

3400:211 Humanities in West. Trad. II	3 cr.
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II. Buchtel College of Arts & Sciences Requirement

A. Foreign Language (14 credits of the same foreign language)

- First and/or second year may be taken credit/non-credit. (Must earn a C- to receive a grade of Cr.)
- 14 credits of Spanish, French, German, Italian, Latin, Japanese, Chinese and Arabic. The 14 credits includes 101, 102 Beginning I and II (4 cr. ea.) and 201, 202 Intermediate I and II (3 cr. ea.)
- Sign Language includes 5 courses: 7700:101, 102, 201, 202, and 222 Deaf Culture.
- Must complete the second year of any foreign language or Sign Language (Intermediate I and II).
- A Placement test is available for by-passing classes if you had more than two years of one language in high school. Take the placement test in the Counseling & Testing Center, 304 Simmons Hall, 330-972-7084.
- To get credit for by-passed class(es), must get a C or better in the higher level course. See Dr. Kory (ASEC 277) for by-pass credit form once the higher level course is successfully completed.

III. Biology Department Requirements

A. Mathematics - MUST EARN C- OR HIGHER IN A CLASS TO TAKE NEXT LEVEL MATH CLASS.

1. **REQUIRED:** 3450:149 Precalculus, 4 credits (prerequisite is based on ACT/SAT score or Placement Test or 3450:145 College Algebra, 4 credits)
2. **Recommended:**
 - 3460:125 Descriptive Computer Science, 2 credits
 - 3470:261/262 Introduction to Statistics I & II, 2 credits each (each class is half a semester)
3. **OPTIONAL** but required for most professional schools and graduate schools:
 - 3450:221 Analytical Geometry and Calculus I, 4 credits

B. Chemistry

F = Fall, S = Spring, SS = Summer Session listed after classes to indicate when classes are taught.

1. 3150:151 Principles of Chemistry I, 3 credits F, S, SS
(Prerequisite for Chem. I is to be in or tested into 3450:149 Precalculus)
- 3150:152 Principles of Chemistry Lab, 1 credit F, S, SS
- 3150:153 Principles of Chemistry II, 3 credits F, S, SS
- 3150:154 Qualitative Analysis, 2 credits S, SS (Laboratory Course)
2. 3150:263 Organic Chemistry I, 3 credits F, SS (Prerequisite is 3150:151 and 153)
- 3150:265 Organic Chemistry I lab, 2 credits F, SS (Prerequisite is 3150:154)
- 3150:264 Organic Chemistry II, 3 credits S, SS
- 3150:266 Organic Chemistry II lab, 2 credits S, SS

3. For a minor in Chemistry, 6 additional 300/400 credits are required, students generally take:
3150:401 Biochemistry I, 3 credits F, SS (Prerequisite is 3150:264)
3150:402 Biochemistry II, 3 credits S, SS

C. Physics

Physics is not required for a Biology degree but is recommended. Physics **must** be taken by students anticipating professional school and should be taken by students anticipating graduate school.

- 3650:261/262 Physics for Life Sciences I and II, 4 cr. ea. F-S, SS (prerequisite is 149 Precalculus)
3650:267/268 Computations I and II, 1 credit each (Optional) F-S, SS

D. Biology

F = Fall, S= Spring, SS = Summer Session listed after classes to indicate when classes are taught.

When classes are to be taught is NOT guaranteed and is subject to change without notice.

Requires a minimum of **40** credits of biology including:

1. **Core curriculum (22 credits):**

- 3100: 111/112 Principles of Biology I & II, 4 credits for each course with a lab F-S, SS
(111/112 are the prerequisites for all higher level biology courses.)
3100: 211 General Genetics, 3 credits - F, SS
3100: 212 Genetics Laboratory, 1 credit - F, SS (does not have to be taken with the lecture)
3100: 217 General Ecology (no lab), 3 credits - F, S, maybe SS
3100: 311 Cell & Molecular Biology (no lab), 4 credits - F, S, maybe SS (Genetics is a prerequisite)
3100: 316 Evolutionary Biology (no lab), 3 credits – F, S, maybe SS (Genetics is NO LONGER a prerequisite)

2. **18 credits beyond the core** (to reach 40) of upper level (300/400) **Biology (3100)** courses.

- Can take **ANY** 18 credits of 300/400 level Biology (**3100**) courses except Workshops.
- May include up to 4 credits of Biological Problems (independent research).
- All students must have 18 total credits of 300/400 Biology (**3100**) credit beyond the core, regardless of the number of credits required for an Area of Specialization.

IV. Credits needed for graduation

A. University Rules - minimum **128 credits** (includes transfer credits)

- Must have an overall **cumulative average** GPA of **2.0** or better (Univ. of Akron grades only).
- **NOTE - Most students will need to take elective credits beyond the minimum credits needed for the Gen. Ed and Biology requirements to reach 128 credits.**
- Grades of D- or higher apply toward graduation, if have a cumulative GPA of ≥ 2.0 .

B. Buchtel College of Arts & Sciences - **47 credits** at the 300/400 level.

- By following the above biology rules, you complete **44 of the 47 credits** at the 300/400 level (19 credits of chemistry (Principles and Organic), 3 cr. of Evolutionary Bio., 4 cr. of Cell Bio. and 18 credits of 300/400 biology beyond the core.)
- The following courses are counted toward the 3 remaining 300/400 level requirement for Biology majors:
Mathematics--Calculus (221 or 215 and above)
Physics for Life Sciences (or Elementary Classical Physics)
- Can also use **any** 300/400 level courses in **any** department except General Ed. courses or workshops for the remaining 3 credits to reach 47 credits of 300/400 level credits.

C. Biology Department - At least 40 credits of Biology (22 core credits & 18 300/400 biology credits)

- Must have a **cumulative average** GPA of **2.0** or better in biology courses (includes UA biology courses **ALONE and** ALL biology courses including transfer credit).
- Biology grades of D- or higher apply toward graduation, if you have a **cumulative** biology GPA of at least a 2.0.

- Lower level biology courses that do not apply toward the biology degree can NOT be included in the biology GPA.
- Courses can fulfill the 47 credits at the 300/400 level and the required credits of biology.

V. Minor in Chemistry (Optional)

To get a minor in Chemistry, 6 additional credits of 300/400 Chemistry (3150) beyond organic chemistry are required. Most students take 3150:401,402 Biochemistry I and II (3 cr. each).

You apply for a minor at the same time you apply for graduation.

VI. Applying for Graduation

The dates by which you must apply for graduation (major, double major, second degree, minor) are:

Sept. 15 for May grad., Feb. 15 for Aug. grad., and May 15 for Dec. grad.

Get graduation forms in Simmons Hall and return the forms to the same room. You can get the forms online at www.uakron.edu/registrar. The BS degree, a second BS degree, a second major, and minors are free.

There is a \$100.00 late fee to apply for graduation after the above dates.

VII. AREAS OF SPECIALIZATION WITHIN BIOLOGY (Optional)

To obtain a B.S. degree with an Area of Specialization within Biology, the student must take the required courses listed below and designated A, B, C, etc., for that specific area. While most of the areas of specialization require less than 18 credits, you must complete 18 Biology (3100) credits at the 300/400 level beyond the core.

If you want an Area of Specialization, your official major must reflect that Area. To do this, tell Dr. Kory (ASEC 277) or go to 448 CAS, the Dean's Office, and change your major from Biology to Biology, Area of Specialization _____. Once you have done this, you will be held to the required courses listed for that Area. This is the same procedure if you wish to remove an Area of Specialization from your record.

ANIMAL PHYSIOLOGY (13-15 of the required 18 300/400 Biology credits)

Required:

- | | |
|---|---|
| <ul style="list-style-type: none"> A. 3100:363 Animal Physiology (with lab), 4 credits - F B. 3100:473 Comparative Animal Physiology (no lab), 3 credits - S (Animal Physiology is a prerequisite) C. At least <u>two</u> of the following: <ul style="list-style-type: none"> 3100:465 Advanced Cardiovascular Physiology (no lab), 3 credits - S 3100:468 Physiology of Reproduction (no lab), 3 credits (No longer taught) 3100:469 Respiratory Physiology (no lab), 3 credits (No longer taught) 3100:471 Physiological Genetics (with lab), 4 credits (unknown if or when class will be offered) 3100:472 Biological Mechanisms of Stress (no lab), 3 credits - F 3100:485 Cell Physiology (with lab), 4 credits - S | <p>FACULTY</p> <ul style="list-style-type: none"> Dr. Ely Dr. Londraville Dr. Salisbury Dr. Bagatto Dr. Ramirez |
|---|---|

Electives (courses related to physiology):

- 3100:365 Histology (with lab), 4 credits - Only SS
- 3100:466 Vertebrate Embryology (with lab), 4 credits - Alternate S '09
- 3100:467 Comparative Vertebrate Morphology (with lab), 4 credits - F
- 3100:474 Comparative Animal Physiology laboratory, 1 credit (currently not offered)
- 3150:401/2** Biochemistry I and II, (no labs) 3 credits each F-S, SS (Does not count toward 18 300/400 biology credit. Does count toward a Chemistry minor.)

ECOLOGY/EVOLUTION (12-15 of the required 18 300/400 Biology credits)

Required:

- | | | | | | | | | | |
|---|---|-----------|----------------|------------------|-----------|--------------|---------|----------------|-------------|
| <ul style="list-style-type: none"> A. At least <u>two</u> of the following: <ul style="list-style-type: none"> 3100:406 Principles of Systematics (no lab), 3 credits - S '09 3100:422 Conservation Biology (no lab), 3 credits - Alternate F '08 3100:423 Population Biology (no lab), 3 credits - Alternate F '08 3100:428 Biology of Behavior (has separate lab), 3 credits - S (was 2 credits) 3100:430 Community/Ecosystem Ecology (with lab), 4 credits - Alternate F '08 (may change to S semester) | <p>FACULTY</p> <table border="0"> <tr> <td>Dr. Weeks</td> <td>Dr. Blackledge</td> </tr> <tr> <td>Dr. Niewiarowski</td> <td>Dr. Moore</td> </tr> <tr> <td>Dr. Mitchell</td> <td>Dr. Pan</td> </tr> <tr> <td>Dr. Lavrentyev</td> <td>Dr. Shawkey</td> </tr> </table> | Dr. Weeks | Dr. Blackledge | Dr. Niewiarowski | Dr. Moore | Dr. Mitchell | Dr. Pan | Dr. Lavrentyev | Dr. Shawkey |
| Dr. Weeks | Dr. Blackledge | | | | | | | | |
| Dr. Niewiarowski | Dr. Moore | | | | | | | | |
| Dr. Mitchell | Dr. Pan | | | | | | | | |
| Dr. Lavrentyev | Dr. Shawkey | | | | | | | | |

- B. At least two of the following
- 3100:342 Flora and Taxonomy (with lab), 3 credits - Alternate F '08
 - 3100:343 Diversity of Plants (separate lab), 3 credits - Alternate S '08
 - 3100:345 Biology of Vascular Plants, 4 credits (unknown if or when class will be offered)
 - 3100:418 Field Ecology (with lab), 4 credits – Alternate F '09
 - 3100:421 Tropical Field Bio (with lab), 4 credits (off campus) (unknown if or when class will be offered)
 - 3100:427 Limnology (with lab), 4 credits (unknown if or when class will be offered)
 - 3100:440 Mycology (with lab), 4 credits - Alternate F '09
 - 3100:443 Phycology (with lab), 4 credits - Alternate F '08
 - 3100:444 Field Marine Phycology (with lab), 3 credits (off campus) - Alternate S '09
 - 3100:451 General Entomology (with lab), 4 credits - Alternate F '10 (year may change)
 - 3100:453 Invertebrate Zoology (with lab), 4 credits - Alternate F '09
 - 3100:455 Ichthyology (with lab), 4 credits (unknown if or when class will be offered)
 - 3100:456 Ornithology (with lab), 4 credits, Alternate S '09
 - 3100:457 Herpetology (with lab), 4 credits (unknown if or when class will be offered)
 - 3100:458 Vertebrate Zoology (with lab), 4 credits - F
 - 3100:467 Comparative Vertebrate Morphology (with lab), 4 credits - F
 - 3100:473 Comparative Animal Physiology (no lab), 3 credits - S (Animal Physiology is a prerequisite)

MICROBIOLOGY (12 of the required 18 300/400 Biology credits)

Required:

- A. 3100:331 Microbiology (with lab), 4 credits - F
- B. 3100:433 Pathogenic Bacteriology (with lab), 4 credits - S
- C. 3100:437 Immunology (with lab), 4 credits - F

FACULTY

Dr. Holda
 Dr. Kory
 Dr. Lavrentyev

Electives (courses related to microbiology):

- 3100:440 Mycology (with lab), 4 credits - Alternate F '09
- 3100:443 Phycology (with lab), 4 credits - Alternate F '08
- 3100:454 Parasitology (with lab), 4 credits - S '08 (may alternate the years taught after S '08)
- 3100:480 Molecular Biology (no lab), 3 credits - Alternate '10
- 3100:481 Advanced Genetics (no lab), 3 credits - S
- 3150:401/2** Biochemistry I & II (no labs), 3 credits each F-S, SS (Does not count toward 18 300/400 biology credit. Does count toward a Chemistry minor.)

ZOOLOGY (13-15 of the required 18 300/400 Biology credits)

Required:

- A. At least one of the following:
 - 3100:453 Invertebrate Zoology (with lab), 4 credits - Alternate F '09
 - 3100:458 Vertebrate Zoology (with lab), 4 credits - F
- B. The following one class:
 - 3100:473 Comparative Animal Physiology (no lab), 3 credits - S (3100:363 Animal Physiology is a prerequisite)
- C. At least one of the following:
 - 3100:466 Vertebrate Embryology (with lab), 4 credits - Alternate S '09
 - 3100:467 Comparative Vertebrate Morphology (with lab), 4 credits - F
- D. At least one of the following:
 - 3100:365 Histology (with lab), 4 credits - Only SS
 - 3100:421 Tropical Field Bio. (with lab), 4 credits (off campus) (unknown if or when class will be offered)
 - 3100:428 Biology of Behavior (has separate lab) 3 credits - S (was 2 credits)
 - 3100:451 General Entomology (with lab), 4 credits - Alternate F '10 (year may change)
 - 3100:454 Parasitology (with lab), 4 credits - S '08 (may alternate the years taught after S '08)
 - 3100:455 Ichthyology (with lab), 4 credits (unknown if or when class will be offered)
 - 3100:456 Ornithology (with lab), 4 credits - Alternate S '09
 - 3100:457 Herpetology (with lab), 4 credits (unknown if or when class will be offered)
 - 3100:482 Neurobiology (no lab), 3 credits - F

FACULTY

Dr. Liu
 Dr. Londraville
 Dr. Niewiarowski
 Dr. Weeks

BOTANY (10-13 of the required 18 300/400 Biology credits)

Required:

A. At least one of the following:

- 3100:343 Diversity of Plants, 3 credits - Alternate S '08 **and**
 3100:344 Diversity of Plants Lab, 2 credits - Alternate S '08
- 3100:345 Biology of Vascular Plants, 4 credits (unknown if or when class will be offered)

B. At least two of the following:

- 3100:342 Flora and Taxonomy (with lab), 3 credits - Alternate F '08
- 3100:427 Limnology (with lab), 4 credits (unknown if or when class will be offered)
- 3100:440 Mycology (with lab), 4 credits - Alternate F '09
- 3100:443 Phycology (with lab), 4 credits - Alternate F '08
- 3100:444 Field Marine Phycology (with lab), 3 credits (off campus) – Alternate S '09

FACULTY

Dr. Ott
 Dr. Mitchell
 Dr. Duff
 Dr. Pan

Preparation for Specific Careers

These curricula provide the necessary training for these specific careers, but are not awarded an Area of Specialization.

Pre-Professional (7-8 of the required 18 300/400 Biology credits)

Pre-medical, pre-dental, and pre-vet and pre-pharmacy students. **** This is provided only as a guide ****. You should contact the schools you are interested in attending (via the web) for specific requirements.

See Dr. Kory (277 ASEC) for a NEOUCOP pre-pharmacy requirement flyer.

Courses that should be taken:

- A. 3100:363 Animal Physiology (with lab), 4 credits - F
- B. At least one of the following:
- 3100 400 level Physiology Course, 3-4 credits
- 3100:466 Vertebrate Embryology (with lab), 4 credits - Alternate S '09
- 3100:467 Comparative Vertebrate Morphology (with lab), 4 credits - F (Anatomy course)
- 3100:473 Comparative Animal Physiology (no lab), 3 credits - S - Strongly recommended for Pre-vet. (Animal Physiology is a prerequisite)
- C. 3650:261/2 Physics for Life Sciences I & II (with labs), 4 credits each F-S, SS
- D. One of the following:
- 3450:221 Analytical Geometry and Calculus I, 4 credits F, S, SS (preferred course)
- 3450:215 Concepts of Calculus I, 4 credits
- E. 3470:261/2 Introductory Statistics I & II, 2 credits each (each class is half a semester)

FACULTY

Dr. Ely
 Dr. Kory
 Dr. Salisbury

Courses that may be taken and are part of most medical school curricula:

- 3100:331 Microbiology (with lab), 4 credits - F
- 3100:365 Histology (with lab), 4 credits, Only SS
- 3150:401/2** Biochemistry I and II (no labs), 3 credits each F-S, SS (Does not count toward 18 300/400 biology credit. Does count toward a Chemistry minor.)

NOTE: A biochemistry course is required for admission to OSU Veterinary School.

High School Biology: For more information see Dr. Kory

Required Courses, Biology Department
All Students except pre-professional students

First Year

<u>Fall Semester</u>	<u>Cr.</u>	<u>Spring Semester</u>	<u>Cr.</u>
3100:111 Principles of Biology I Plus a Prin. of Bio I lab	4	3100:112 Principles of Biology II Plus a Prin. of Bio II Lab	4
3150:151 Principles of Chem. I + Recitation (must be at the level of precalculus)	3	3150:153 Principles of Chemistry II+Recitation	3
3150:152 Principles of Chem. I Lab	1	3150:154 Qualitative Analysis (lab)	2
3300:111 English Composition I	4	3300:112 English Composition II	3
3450: Math (precalculus to take Chem.)	4	3450: Math (must do thru precalculus)	4
Start foreign language if above 101 & omit Eng or Math		If finished w/Math start Foreign Language	

Second Year

<u>Fall Semester</u>	<u>Cr.</u>	<u>Spring Semester</u>	<u>Cr.</u>
3150:263 Organic Chem. I lecture	3	3150:264 Organic Chemistry II lecture	3
3150:265 Organic Chem. I lab + Discussion	2	3150:266 Organic Chemistry II lab + Discussion	2
3100:211 General Genetics	3	3100:311 Cell & Molecular Biology	4
3100:212 General Genetics Lab (can take later)	1	3100:217 217 General Ecology (no lab), also in F	3
3100:316 Evolutionary Biology, also taught in S	3	General Ed. Classes OR Foreign Language	3-4
Foreign Language or Gen. Ed. Classes	3-4		

Third Year

Evolutionary Biology, if not done earlier
 Cell & Molecular Biology, if not done earlier
 Biology Electives (total 18 credits 3100:300/400)
 PE
 General Ed. Courses (Area Studies)
 Finish Foreign Language
 Sign Contract (see Advisor)

Fourth Year

Biology Elective (total 18 credits 3100:300/400)
 401,402 Biochemistry if want a minor in Chemistry
 Finish Foreign Language (if not done earlier)
 PE, if not done
 Finish General Ed. Courses
 Sign Contract (if not done in 3rd year)
 Apply for Graduation

General Information:

You should take General Genetics in the sophomore year; it is a prerequisite for many upper level biology courses (except for General Ecology and Evolutionary Bio). Genetics is a prerequisite for Cell/Molecular Biology. If you elect to have an area of specialization, try to choose the area by the end of your second year. Although a specialization is OPTIONAL, if you decide to specialize, you must complete the required courses in that area as listed in the Areas of Specialization. Tell Dr. Kory (ASEC 277) or go to the Arts & Science Building 448 (Office of Dean of College of Arts and Sciences) and change your major from Biology to Biology, Area of Specialization _____.

Talk to a faculty member in the department who is in your field of interest for advice about graduate programs and career opportunities (see names listed next to the areas of specialization).

Take Physics and Calculus if you plan to go to graduate school.

Do a Biological Problems (independent research) if plan to go to graduate school. Four credits can apply toward the 18 300/400 level biology credits.

To get a minor in Chemistry, 6 additional credits of 300/400 Chemistry beyond organic chemistry are required. Other Minors - see the general Bulletin for requirements.

**Required Courses, Biology Department
Pre-professional Students**

First Year

<u>Fall Semester</u>	<u>Cr.</u>	<u>Spring Semester</u>	<u>Cr.</u>
3100:111	4	3100:112	4
Principles of Biology I Plus a Prin. of Bio I lab		Principles of Biology II Plus a Prin. of Bio II Lab	
3150:151	3	3150:153	3
Principles of Chem. I + Recitation (must be at the level of precalculus)		Principles of Chemistry II+Recitation	
3150:152	1	3150:154	2
Principles of Chem. I Lab		Qualitative Analysis (lab)	
3300:111	4	3300:112	3
English Composition I		English Composition II	
3450:	4	3450:	4
Math (precalculus to take Chem.)		Math (must do thru precalculus)	
Start foreign language if above 101 & omit Eng or Math		If finished w/Math start Foreign Language	

Second Year

<u>Fall Semester</u>	<u>Cr.</u>	<u>Spring Semester</u>	<u>Cr.</u>
3150:263	3	3150:264	3
Organic Chem. I lecture		Organic Chemistry II lecture	
3150:265	2	3150:266	2
Organic Chem. I lab +Discussion		Organic Chemistry II lab + Discussion	
3100:211	3	3100:311	4
General Genetics		Cell & Molecular Biology	
3100:212	1	3100:217	3
General Genetics Lab (can take later)		217 General Ecology (no lab), also in F	
3100:316	3	General Ed. Classes OR Foreign Language	3-4
Evolutionary Biology, also taught in S			
Foreign Language or Gen. Ed. Classes	3-4		

Third Year

363 Animal Physiology
261/262 Physics for Life Sciences
Take MCAT in Spring (this is more advantageous)
Biology Electives (total 18 Credits 3100:300/400)
General Ed. Course (Area Studies)
Finish Foreign Language
Sign Contract (See Advisor)

Fourth Year

400 Level Physiology/Anatomy course
Take MCAT again, if did poorly
401, 402 Biochemistry I and II (strongly recommended)
Biology Electives (total 18 credits 3100:300/400)
Finish General Ed. Courses
Do PE (if forgot)
Sign Contract (if not done in 3rd year)

General Information for applying to medical school:

You should take General Genetics in the sophomore year; it is a prerequisite for many upper level biology courses (except General Ecology and Evolutionary Biology). Genetics is a prerequisite for Cell and Molecular Biology.

MCAT - 4 sections: Verbal reasoning, Physical Sciences (Physics & Inorganic Chem.), Biological Sciences (Bio. & Organic Chemistry), each section is graded on a 1-15 scale with 15 being the best, need to score in the 8-9 range in each to **start** to be competitive. Fourth section is a Writing Sample - is graded on a J to T scale, with T being the best. Probably need an O to start to be competitive. MCAT is offered via Computer Based Testing and is offered 22 times/year. MCAT registration is online at www.aamc.org/mcat. It takes about one month to receive the results of the MCAT.

Need at least a 3.3 - 3.4 Overall and Science (Bio, Chem., Math, Physics) GPAs to **start** to be competitive. This includes ALL classes taken at all universities including any repeat for change of grade courses.

There are five state-supported medical schools in Ohio: OSU, Univ. of Cinn., Wright State (Dayton), Univ. of Toledo, and NEOUCOM. The Osteopathic Med. School is at OU (Athens).

Apply in the summer before your senior year (and have taken MCATs in Spring of Junior year). It is much more advantageous to take the Spring MCAT (than Summer MCAT) so you can apply early! Virtually all medical schools have a rolling admission process which begins in the summer.

Get involved in some clubs or organizations (Biology, Future Physicians, Tri-Beta, Greek)

Medical field experience (volunteer at a hospital and/or nursing home) and shadow physicians. These are critically important.

You may want to do independent research = Biological Problem (4 credits count toward 300/400 requirements)

To get a minor in Chemistry, 6 additional credits of 300/400 Chemistry beyond organic chemistry are required