REQUIREMENTS FOR THE BACHELOR OF SCIENCE IN MICROBIOLOGY

COLLEGE OF ARTS AND SCIENCES

THE UNIVERSITY OF OKLAHOMA

For Students Entering the Oklahoma State System for Higher Education:

Summer 2009 through Spring 2010

Minimum Credit Hours and Grade Point Averages Required			
Total Hours —	**120**	Upper-Division Within Total	**48**
Major Hours —	**35**	Upper-Division Within Major	**35**

Grade Point Averages:

Overall & Major: Combined OU/Transfer - **2.00** OU - **2.00**

48 Upper-Division Hours REQUIRED

Microbiology (Professional)

B691
Bachelor of Science in Microbiology

OU encourages students to complete at least 30 hours of applicable coursework each year to have the opportunity to graduate in four years.

GENERAL EDUCATION AND COLLEGE REQUIREMENTS
Courses graded P/NP will not apply.

Courses for fulfillment of General Education and College of Arts & Sciences requirements must be from the approved General Education course list published in the Class Schedule or at **http://www.ou.edu/enrollment/home/**

University-Wide General Education (minimum 40 hours) and College of Arts and Sciences Requirements

Core Area I: Symbolic and Oral Communication (9-22 hours, 3-6 courses)

a. **English Composition** (6 hours, 2 courses)
   1. English 1113, Principles of English Composition
   2. English 1213, Principles of English Composition, **or** EXPO 1213, Expository Writing

b. **Foreign Language** (0-13 hours in the same language)
   The College of Arts and Sciences requirement ***cannot be met by high school coursework***.
   1. Beginning Course (0-5 hours) _____
   2. Beginning Course, continued (0-5 hours) _____
   ♦ 3. Intermediate Course (2000 level, 0-3 hours). _____
   One course at the intermediate level or demonstrated competency at that level.

c. **Mathematics** (3 hours, 1 course). _____

Core Area II: Natural Science (7 hours, 2 courses) including one laboratory component.

♦ 1. **Biological Science** _____
Chosen from the following approved General Education designators: BIOL, BOT, HES, MBIO, or ZOO.

♦ 2. **Physical Science** _____
Chosen from the following approved General Education designators: AGSC, ASTR, CHEM, GEOG, GEOL, GPHY, METR, or PHYS.

Core Area III: Social Science (6 hours, 2 courses)

1. Political Science 1113, American Federal Government
2. _____

Core Area IV: Humanities (18 hours, 6 courses)

a: **Understanding Artistic Forms** (3 hours, 1 course) _____

b. **Western Civilization and Culture** (6 hours, 2 courses)
   1. History 1483, U.S., 1492-1865, **or** History 1493, U.S., 1865-Present,
   2. _____ (excluding HIST 1483 and 1493)

c. **Non-Western Culture** (3 hours, 1 course):_____

d. **Additional Core IV Humanities courses** (6 upper-division hours, 2 courses at the 3000- 4000-level). Must be outside the major and selected from Understanding Artistic Forms, Western Civilization and Culture, or Non-Western Culture.

♦ 1. _____

♦ 2. _____

Core Area V: Senior Capstone Experience (3 hours, 1 course): _____

♦ College of Arts and Sciences Requirements: College requirements are not automatically fulfilled by a previous degree.

Computer Literacy Requirement — Students must demonstrate computer proficiency which includes the competent use of a variety of software and networking applications. This requirement may be satisfied by:
1. A high school computer science course that meets curricular requirement; **or**
2. Completion of a college-level course that requires competent use of computing; **or**
3. Completion of a university computer proficiency assessment test.

Some courses required for the major may also fulfill University General Education and/or College of Arts & Sciences Requirements

A grade of C or better must be earned in each Microbiology course presented for major credit and in the required supporting courses.

MAJOR REQUIREMENTS

MBIO 2815 will not be accepted for major credit.

A total of 35 hours in microbiology is required, which must include the following.

MICROBIOLOGY

3812	Fund. of Microbiology Laboratory	2
3813	Fund. of Microbiology	3
4823	Pathogenic Microbiology and Immunology	3
4843	Intro. to Molecular Biology	3
4853	Physiology of Microorganisms	3

One capstone course or two semesters of Senior Thesis:
4893 Capstone in Microbiology
or
4950 Senior Thesis - Capstone

_____ 3-6
_____

Laboratory Courses:

4813	Ecology & Pathogenic Microbiology Laboratory	3
4873	Microbial Physiology & Molecular Biology Laboratory	3

MBIO electives to complete 35 hours required in the major:

_____ 9-12
_____
_____
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MAJOR SUPPORT REQUIREMENTS

CHEMISTRY

1315	General Chemistry	5
1415	General Chemistry (continued)	5
3053	Organic Chemistry	3
3152	Organic Chemistry Lab	2
3153	Organic Chemistry	3
3214	Quantitative Analysis	4
or		
3451	Basic Physical Chem. Lab, **and**	
3453	Basic Physical Chemistry	
3653	Introduction to Biochemistry	3
3753	Intro. to Biochemical Methods	3

PHYSICS

1311	General Physics Lab I	1
1321	General Physics Lab II	1
2414	General Physics for Life Sciences	4
2424	General Physics for Life Sciences	4

MATH

1743	Calculus I for Business, Life and Social Sciences	3

A course in statistics from:
ECON 2843 Elements of Statistics
PSY 2113 Research Methods I: Stats.
PSC/SOC 3123 Social Statistics

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BOTANY
1114 General Botany
or
BIOLOGY
1134 Introductory Biology: Evolution, Ecology, & Diversity

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A second course in Biochemistry is strongly recommended.

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Free Electives

Electives to bring total applicable hours to 120 including 48 upper-division hours.

INFORMATION CONCERNING GENERAL RULES, REGULATIONS AND MINIMUM REQUIREMENTS

TOTAL HOURS: A minimum of 120 semester hours acceptable toward graduation must be completed.

UPPER-DIVISION HOURS: A minimum of 48 upper-division semester hours acceptable toward graduation must be completed. OU courses numbered 3000 or above are upper-division. Transfer work is counted as lower-division or upper-division credit depending on the level at which it was offered at the institution where it was earned. Two-year college work is accepted only as lower-division credit.

ARTS AND SCIENCES HOURS: At least 80 semester hours of liberal arts and sciences courses are required for a BA degree. At least 55 semester hours of liberal arts and sciences courses are required for a BS degree.

MAJOR WORK: A minimum of 30 semester hours must be earned in the major, including a minimum of 15 credit hours at the upper-division level.

PASS/NO PASS ENROLLMENT: A maximum of 16 semester hours of free elective credit may be attempted under this option.

INDIVIDUAL STUDIES (e.g., courses titled "Independent Study"): A maximum of 12 total semester hours may be counted toward graduation, excluding Honors Reading and Honors Research.

P.E. COURSES: No physical education activity courses will be counted toward the 120 semester hours of acceptable credit for graduation.

SENIOR INSTITUTION HOURS: A minimum of 60 semester hours applied toward graduation must be earned at senior (4-year) institutions.

RESIDENCY:

- At least 15 of the final 30 hours applied toward the degree or at least 50 percent of the hours required by the institution in the major field must be satisfactorily completed at the awarding institution.
- At least 15 semester hours of upper-division major work must be completed in residence at OU.
- OU correspondence courses are ***not*** considered resident credit.
- Credits earned via examination are neither resident nor nonresident credit.

GRADE POINT AVERAGES: Students must earn a minimum overall 2.00 for each of the following: Combined Retention GPA (all college grades), OU Retention GPA, GPA for all major courses, and GPA for all major courses taken at OU. Some schools and departments of the College have higher minimum grade point averages required for their students.

SPECIAL DEGREES: Students may qualify for an Honors degree (cum Laude, Magna cum Laude, or Summa cum Laude) by completing specific requirements of the Honors College. A degree will be earned with Distinction if the student completes at least 60 semester hours at OU with at least a 3.60 combined retention GPA and OU retention GPA. A degree will be earned with Special Distinction if the student completes at least 60 semester hours at OU with at least a 3.90 combined retention GPA and OU retention GPA.

APPLICATION FOR GRADUATION: Students must apply for graduation during the term in which they complete their degree requirements in order to graduate in that term. Application forms are available from the College of Arts and Sciences Academic Services office, Ellison Hall, Room 124. The deadline for completion of all coursework to graduate in a particular term is the last day of classes in that term.

Refer to the OU General Catalog for more complete information.

Suggested Semester Plan of Study — Microbiology (Professional) - B691

This plan shows one possible grouping of courses that would allow students to graduate in four years. Please refer to the front of the degree checksheet for official requirements. Students must consult with College of Arts and Sciences and/or Department of Botany and Microbiology academic advisers to verify that courses selected each semester fulfill the recommended plan and satisfy university, College of Arts and Sciences, and Microbiology major requirements.

Year	FIRST SEMESTER	Hours	SECOND SEMESTER	Hours
FRESHMAN	CHEM 1315, General Chemistry	5	CHEM 1415, General Chemistry continued	5
	ENGL 1113, Principles of English Composition (Core I)	3	ENGL 1213, Principles of English Composition (Core I), **or**	3
	MATH 1743, Calculus I for Business, Life and Social Sciences (Core I)	3	EXPO 1213, Expository Writing (Core I)	
	Beginning Foreign Language (Core I)	5	P SC 1113, American Federal Government (Core III)	3
			Beginning Foreign Language continued (Core I)	5
	TOTAL CREDIT HOURS	**16**	**TOTAL CREDIT HOURS**	**16**
SOPHOMORE	CHEM 3053, Organic Chemistry	3	BIOL 1134, Intro. Biology: Evolution, Ecology and Diversity, **or**	4
	PHYS 1311, General Physics Lab I	1	BOT 1114, General Botany	
	PHYS 2414, General Physics for Life Sciences Oriented Majors	4	CHEM 3153, Organic Chemistry	3
	Intermediate Foreign Language	3	CHEM 3152, Organic Chemistry Lab	2
	Social Science (Core III)	3	PHYS 1321, General Physics Lab II	1
			PHYS 2424, General Physics for Life Sciences Oriented Majors	4
			Understanding Artistic Forms (Core IV)	3
	TOTAL CREDIT HOURS	**14**	**TOTAL CREDIT HOURS**	**17**
JUNIOR	CHEM 3653, Introduction to Biochemistry	3	CHEM 3753, Introduction to Biochemical Methods	3
	MBIO 3813, Fundamentals of Microbiology	3	MBIO 4813, Ecology & Pathogenic Microbiology Laboratory	3
	MBIO 3812, Fundamentals of Microbiology Laboratory	2	MBIO 4843, Introduction to Molecular Biology	3
	MBIO Major Elective	3	MBIO Major Elective	3
	ECON 2843, Elements of Statistics, **or**	3	Western Civilization & Culture (Core IV)	3
	PSY 2113, Research Methods I: Stats., **or**			
	PSC/SOC 3123, Social Statistics			
	Non-Western Culture (Core IV)	3		
	TOTAL CREDIT HOURS	**17**	**TOTAL CREDIT HOURS**	**15**
SENIOR	HIST 1483, United States 1492-1865, **or**	3	CHEM 3214, Quantitative Analysis	4
	1493, United States 1865-Present (Core IV)		MBIO 4853, Physiology of Microorganisms	3
	MBIO 4823, Pathogenic Microbiology and Immunology	3	MBIO 4893, Capstone in Microbiology (Capstone), or	3
	MBIO 4873, Microbial Physiology & Molecular Biology Laboratory	3	4950, Senior Thesis-Capstone	
	MBIO Major Elective	3	MBIO Major Elective	3
	Humanities, upper-division, outside major (Gen. Ed.)	3	Humanities, upper-division, outside major (Gen. Ed.)	3
	TOTAL CREDIT HOURS	**15**	**TOTAL CREDIT HOURS**	**16**

*If deficient in computer literacy, contact your college academic counselor in the Hobson Academic Services Center, ELLH 124, 325-4411, for approved courses.

Bachelor's degrees require a minimum of 48 hours of upper-division (3000-4000) coursework.
This plan of study should not be used in lieu of academic advisement.

Students who transfer from other institutions (particularly community colleges) must verify credit hour and course requirements with their college academic counselor, ELLH 124, 325-4411, **http://ou.edu/cas**. Please make an appointment for a degree check with your college academic counselor once you have earned 90 hours. Appointments may be scheduled at **https://iadvise.ou.edu/**.