

**The University of Georgia
Franklin College of Arts and Sciences
Department of Microbiology
BS Microbiology-Fall 2024**

Graduation and Program Requirements

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|--|--|------------------------|------------------------------------|
| ___ US & GA Constitution | ___ Cultural Diversity | ___ Physical Science | ___ Social Sciences (Two Required) |
| ___ US & GA History | ___ FYOS 1001 | ___ History | ___ FA/PHIL/RELI (Two Required) |
| ___ Physical Education | ___ Experiential Learning (MIBO 4970R or MIBO 4600L) | | |
| ___ Literature | ___ Foreign Language (LANG 2001) | ___ Biological Science | |
| ___ Environmental Awareness (MIBO 3510L) | ___ Multicultural Course | | |

Area I: Foundation Courses (6-9 Hours)

Hours: ___

- | | |
|---------------------------|------------------------|
| ___ 3 ENGL 1101 | English Composition I |
| ___ 3 ENGL 1102 | English Composition II |
| ___ 3 MATH 1113 or Higher | Pre-Calculus |

Area II: Sciences (8 Hours)

Hours:

- | | |
|-----------------------|---|
| ___ 4 CHEM 1211-1211L | Freshman Chemistry I (Preferred; Requires MATH 1113) |
| ___ 4 BIOL 1107-1107L | Principles of Biology I (Preferred; Requires CHEM 1211-1211L) |

Area III: Quantitative Reasoning (4 Hours)

Hours:

- | | |
|-----------------|--|
| ___ 4 MATH 2250 | Calculus I for Science and Engineering (Preferred; Requires MATH 1113) |
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Area IV: World Languages and Culture; Humanities and the Arts (12-14 Hours)

Hours: ___

- | | |
|----------------------------------|-------|
| ___ 3 World Language and Culture | _____ |
| ___ 3 World Language and Culture | _____ |
| ___ 3 World Language and Culture | _____ |
| ___ 3 Humanities and the Arts | _____ |

Area V: Social Sciences (9 Hours)

Hours:

- | | |
|----------------------|---|
| ___ 3 POLS 1101 | American Government (Satisfies U.S. & Georgia Constitution requirement) |
| ___ 3 HIST 2111/2112 | American History to/since 1865 (Satisfies U.S. & Georgia History requirement) |
| ___ 3 Social Science | _____ |

Area VI: Courses Related to the Major (20 Hours)

Hours: ___

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|-----------------------|---|
| ___ 4 MATH 2250 | Calculus I |
| ___ 4 BIOL 1108-1108L | Principles of Biology II (Requires BIOL 1107-1107L) |
| ___ 4 CHEM 1211-1211L | Freshman Chemistry II (Requires MATH 1113) |
| ___ 4 CHEM 1212-1212L | Freshman Chemistry II (Requires CHEM 1211-1211L) |
| ___ 4 CHEM 2211-2211L | Modern Organic Chemistry I (Requires CHEM 1212) |

****NOTE:** If any courses in Area VI have been used to satisfy Areas II-V of Core Curriculum, General Electives may be taken here. Microbiology requires individual review of non-equivalent transfer courses before they can be used to satisfy Area VI and Major Requirements

Entrance Requirements: Students must earn a grade of **"C-" (1.7)** or better in **CHEM 1211-1211L, CHEM 1212-1212L, BIOL 1107-BIOL 1107L, BIOL 1108-1108L** and **CHEM 2211-2211L** to complete the Microbiology degree.

Major Requirements: A baccalaureate degree program must require at least 21 semester hours of upper division courses in the major field and at least 39 hours of upper division work overall. Students in the Franklin College must earn a grade of “C” (2.0) or above in major required courses

Required Courses (31-35 hours)

Hours: _____

___ 4	BCMB 3100 or BCMB 4020	Introductory Biochemistry and Molecular Biology (Requires CHEM 2211-2211L and BIOL 1107)
___ 4	MIBO 3500-3500L	Introductory Microbiology and Lab I (Requires CHEM 2211-CHEM 2111L and BIOL 1107-1107L E Summer)
___ 3	MIBO 3510L	Introductory Microbiology Lab (Requires MIBO 3500)
___ 4	MIBO 4090/6090	Prokaryotic Biology (Requires MIBO 3500 or MIBO 3500E)
___ 4	GENE 3200-3200D	Genetics (Requires BIOL 1107)

Major I Choose one option from the following (4 hours):

___ 4	MIBO 4600L/6600L	Experimental Microbiology Laboratory (Requires MIBO 3500 and MIBO 3510, Fall only)
___ 1-6	MIBO 4970R*	Faculty-Mentored Undergraduate Research II (Requires POD and MIBO 4960R)

Major II Choose two courses from the following (6-8 hours):

___ 4	CBIO/MIBO/IDIS 4100/6100-4100D	Immunology (Requires BCMB 3100 and GENE 3200)
___ 4	EHSC/FDST/MIBO 4310/6310-4310L	Environmental Microbiology (Requires MIBO 3500, Spring only)
___ 4	FDST/MIBO 4120/6120-4120L/6120L	Food Fermentations (Requires MIBO 3500, Fall only)
___ 3	GENE 3210L	Experimental Genetics (Requires GENE 3200, Fall only)
___ 3	GENE 4520/6520	Genetics of Industrial Micro-Organisms (Requires GENE 3200, Spring Odd Year only)
___ 4	GENE 4240L**	Experimental Microbiome Genetics Laboratory (Requires GENE 3200, Spring only)
___ 4	MARS(MIBO) 4620/6620	Microbial Ecology (Requires MIBO 3500 or POD, Fall Odd Year only)
___ 3	MIBO(POPH) 4220/6220 or 4220S	Pathogenic Bacteriology (Requires MIBO 3500, Spring only)
___ 3	MIBO 4300/6300	Genome Editing in Mammals, Plants, Insects, and Microbes (Requires MIBO 3500, Fall only)
___ 4	MIBO 4450/6450-4450L/6450L	Microbial Genetics and Genomics (Spring)
___ 4	MIBO 4600L/6600L**	Experimental Microbiology Laboratory (Requires MIBO 3500 and MIBO 3510)
___ 3	MIBO 4700/6700	Medical Mycology (Requires BIOL 1108, Spring only)
___ 3	POPH(MIBO)(IDIS) 4650/6650	Introduction to Virology (Requires BCMB 3100, GENE 3200, and MIBO 3500, Fall only)

Major III Choose one course from the following (3-4 hours):

___ 3	BCMB 3600	Genomics and Bioinformatics (Requires BCMB 3100, Spring only)
___ 4	BCMB 4030L/6030L	Bioprocess Technology (Requires BIOL 1107 and CHEM 1212)
___ 4	CRSS(MIBO) 4610/6610-4610L/6610L	Soil Microbiology
___ 4	CBIO 3400	Cell Biology (Requires BCMB 3100 and GENE 3200)
___ 3	CBIO 4500/6500	Medical Parasitology (Requires BIOL 1108, Fall Even Year only)
___ 4	CBIO(PBIO) 4600/6600	Biology of Protists (Requires BIOL 1108, Spring only)
___ 4	ECOL(BIOL)4150/6150-4150L/6150L	Population Biology of Infectious Diseases (BIOL1108 and MATH 2250/STAT 2000, Spring only)
___ 4	EHSC/FDST/MIBO 4310/6310-4310L	Environmental Microbiology (Requires MIBO 3500, Spring only)
___ 3	GENE 4240L**	Experimental Microbiome Genetics Laboratory (Requires GENE 3200, Spring only)
___ 4	MARS(MIBO) 4620/6620	Microbial Ecology (Requires MIBO 3500 or POD, Fall Odd Year only)
___ 4	MIBO 4600L/6600L**	Experimental Microbiology Laboratory (Requires MIBO 3500 and MIBO 3510, Fall only)
___ 4	MIBO 4450/6450-4450L/6450L	Microbial Genetics and Genomics (Spring)
___ 4	PATH 4200/6200-4200L/6200L	Mycology (Fall)

*Four hours of research courses (MIBO 4960R, MIBO 4970R, MIBO 4980R, and MIBO 4990R) may be used toward the required courses unless the student uses a MIBO research class for the laboratory skills requirement. Students are encouraged to use additional research hours as electives.

**GENE 4240L and MIBO 4600L/6600L may be used for a single requirement listing but cannot be used to fulfill an additional requirement simultaneously.

Major Electives (11-12 hours) Note: Microbiology requires individual review of non-equivalent transfer courses to satisfy Major Electives.

Physics I & II (8 hours)

Hours: _____

____ 4 PHYS 1111-1111L or PHYS 1211-1211L Physics I (Requires MATH 1113 (PHYS 1111) or MATH 2250 (PHYS 1211))

____ 4 PHYS 1112-1112L or PHYS 1212-1212L Physics II (Requires MATH 2260 (PHYS 1212))

Computer Sciences, Mathematics, Statistics: Choose one course from the following (3-4 hours)

____ 2 BINF(BCMB) 4005/6005 Essential Computing Skills for Biologists (Requires POD, **Fall only**)

____ 3 BINF(PBIO) 4550/6550 Concepts in Bioinformatics and Omics (**Fall only**)

____ 4 BIOS 2010 Elementary Biostatistics

____ 3 CSCI 1210 Computer Modeling and Science

____ 4 CSCI 1301-1301L Introduction to Computing and Programming (Requires MATH 1113)

____ 3 GENE 4220L Laboratory in Genetic Modeling (Requires GENE 3200, **Fall only**)

____ 4 MATH 2260 Calculus II (Requires MATH 2250)

____ 3 MATH(BINF) 4780/6780 Mathematical Biology(Requires MATH 2270, MATH 2700 and POD, **Spring Odd Year only**)

____ 4 STAT 2000 Introduction to Statistics

____ 4 STAT 2100H Introduction to Statistics and Computing (Honors)

____ 3 STAT 3110 Introduction to Statistics for Life Sciences (**Fall only**)

____ 4 STAT 3120 Introduction to Probability for Life Sciences (Requires MATH 2250, **Spring only**)

General Electives (13-18 Hours) / Upper Division Elective (0-10 Hours)

Hours:

____ **Minimum Semester Hours: 120 (This total does not include the 1-hour PEDB course)**

Total :

____ /120