



College of Agricultural and Life Sciences  
Department of Microbiology and Cell Science

Please read the requirements below that you must follow to graduate. If you have questions about admission, course planning, or registration contact your academic advisor at [mcsadvising@ifas.ufl.edu](mailto:mcsadvising@ifas.ufl.edu).

## **Graduation Requirements**

- Students must take at least three credits in the final fall/spring (two credits in summer) semester to graduate.
- Thirty credits are required to complete the degree (37 credits required in introductory online MS track).
- Only courses completed with a grade of C or higher can be counted towards the degree.
- Students must maintain both a 3.0 overall GPA and 3.0 major GPA to graduate.
  - A lower GPA will result in academic probation and possible dismissal from the program
- Fifteen credits must be completed in major courses with a MCB, PCB, or BSC prefix.
- Satisfactorily complete MCB 6900 Final Assessment - Literature Review in the last semester of coursework to fulfill the final exam requirement::

<http://microbiologyonline.ifas.ufl.edu/student-resources/graduation-info/>

## **Required courses**

- Students are required to complete the six courses listed below (16 credits):

| Course #  | Course Title                                                           | Credits | Fall | Spring | Summer  |
|-----------|------------------------------------------------------------------------|---------|------|--------|---------|
| MCB 5270  | Antimicrobial Resistance (Pre-Req: microbiology course)                | 3       | ✓    | ✓      |         |
| MCB 6670C | The Microbiome (Pre-Req: microbiology course)                          | 3       |      | ✓      | Sum C** |
| MCB 6424  | Probiotics (Pre-Req: microbiology course)                              | 3       |      | ✓      |         |
| MCB 5505  | Virology (Pre-Req: microbiology course)                                | 3       | ✓    | ✓      | Sum C** |
| BSC 6895C | AI in Agriculture and Life Sciences (Pre-Req: microbiology course)     | 3       | ✓    |        |         |
| MCB 6900  | Final Assessment - Literature Review (must be taken in final semester) | 1       | ✓    | ✓      | Sum C** |

- Students are required to complete two of the courses listed below (two credits):

| Course # | Course Title                                                                | Credits | Fall | Spring | Summer  |
|----------|-----------------------------------------------------------------------------|---------|------|--------|---------|
| MCB 6937 | Regulatory Aspects of Microbiome Research (Pre-Req: MCB6424 or MCB4422)     | 1       | ✓    |        | Sum C** |
| MCB 7922 | Journal Colloquy: Mechanisms of Host/Microbial Interactions (Pre-Req: none) | 1       | ✓    | ✓      |         |
| MCB 7922 | Journal Colloquy: Virome/Host Interactions (Pre-Req: none)                  | 1       | ✓    | ✓      |         |
| MCB 7922 | Journal Colloquy: Microbiome-based Clinical Trials (Pre-Req: none)          | 1       |      |        | Sum C** |

## Choose a Track

- Students are required to choose one of two available tracks:
  - Microbiome/Host Interactions Track (6 credits)
  - Microbiome Quantitative Track (6 credits)

### Microbiome/Host Interactions Track (6 credits):

- Students are required to complete the course listed below (three credits):

| Course # | Course Title                              | Credits | Fall | Spring | Summer |
|----------|-------------------------------------------|---------|------|--------|--------|
| PCB 5235 | Immunology (Pre-Req: microbiology course) | 3       |      | ✓      |        |

- Students are required to complete one of the courses listed below (three credits):

| Course # | Course Title                                                         | Credits | Fall | Spring | Summer  |
|----------|----------------------------------------------------------------------|---------|------|--------|---------|
| MCB 5205 | Microbiology of Human Pathogens (Pre-Req: microbiology course)       | 3       | ✓    | ✓      |         |
| MCB 6151 | Prokaryotic Diversity (Pre-Req: microbiology course)                 | 3       |      |        | Sum C** |
| MCB 6407 | Prokaryotic Cell (Pre-Req: courses in microbiology and biochemistry) | 3       | ✓    |        |         |

### Microbiome Quantitative Track (6 credits):

- Students are required to complete two of the courses listed below (five or six credits):

| Course # | Course Title                                                                        | Credits | Fall | Spring | Summer |
|----------|-------------------------------------------------------------------------------------|---------|------|--------|--------|
| MCB 6796 | Microbiological Data Analysis (Pre-Req: microbiology course)                        | 3       | ✓    |        |        |
| MCB 6326 | Computational Genomics and Epigenomics (Pre-Req: microbiology course)               | 3       |      | ✓      |        |
| BSC 6459 | Fundamentals in Bioinformatics (Pre-Req: molecular biology and biochemistry course) | 3       | ✓    |        |        |
| MCB 6318 | Comparative Microbial Genomics (module) (Pre-Req: grade of A- in BSC6459)           | 2       |      | ✓      |        |

- If MCB6318 is selected in the section above, take one of the courses listed below (one credit):

| Course # | Course Title                                                                   | Credits | Fall | Spring | Summer  |
|----------|--------------------------------------------------------------------------------|---------|------|--------|---------|
| MCB 6937 | Regulatory Aspects of Microbiome-Based Therapies (Pre-Req: MCB6424 or MCB4422) | 1       | ✓    |        | Sum C** |
| MCB 7922 | Journal Colloquy: Mechanisms of Host/Microbial Interactions (Pre-Req: none)    | 1       | ✓    | ✓      |         |
| MCB 7922 | Journal Colloquy: Virome/Host Interactions (Pre-Req: none)                     | 1       | ✓    | ✓      |         |
| MCB 7922 | Journal Colloquy: Microbiome Therapeutics/Clinical Trials (Pre-Req: none)      | 1       |      |        | Sum C** |

## Elective Courses

- Students are required to complete six elective credits
  - Note – module courses are offered during shortened periods throughout the semester

| Course # | Course Title                                                                                                                                | Credits | Fall | Spring | Summer   |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------|---------|------|--------|----------|
| BSC 6459 | Fundamentals in Bioinformatics (Pre-Req: molecular biology and biochemistry course)                                                         | 3       | ✓    |        |          |
| MCB 6796 | Microbiological Data Analysis (Pre-Req: microbiology course)                                                                                | 3       | ✓    |        |          |
| MCB 6407 | Prokaryotic Cell (Pre-Req: courses in microbiology and biochemistry)                                                                        | 3       | ✓    |        |          |
| MCB 6937 | Synthetic Biology (Pre-Req: microbiology course)                                                                                            | 3       | ✓    |        |          |
| MCB 6656 | Environmental Microbiology (Pre-Req: microbiology course)                                                                                   | 3       | ✓    |        |          |
| MCB 6937 | Fundamentals in Molecular Genetics (Highly recommended for those with limited molecular biology background)                                 | 3       | ✓    |        |          |
| MCB 6417 | Microbial Metabolism and Energetics (module) (Pre-Req: biochemistry course)                                                                 | 1       | ✓    |        |          |
| MCB 6095 | Microbiology Careers (Pre-Req: none)                                                                                                        | 1       | ✓    | ✓      | Sum B*** |
| MCB 6096 | Innovation Project Management (Pre-Req: none)                                                                                               | 1       | ✓    | ✓      | Sum B*** |
| MCB 6937 | Advanced Molecular Genetics (Pre-Req: molecular genetics course)                                                                            | 3       |      | ✓      |          |
| MCB 5252 | Microbiology, Immunology & Basis for Immuno-Therapeutics (Highly recommended for those with limited microbiology and immunology background) | 4       |      | ✓      | Sum A*   |
| MCB 6772 | Advanced Topics in Cell Biology (module) (Pre-Req: microbiology course)                                                                     | 1       |      | ✓      |          |
| MCB 6355 | Microbial/Host Defense (module) (Pre-Req: immunology course)                                                                                | 1       |      | ✓      |          |
| MCB 6318 | Comparative Microbial Genomics (module) (Pre-Req: grade of A- in BSC6459)                                                                   | 2       |      | ✓      |          |
| PCB 6667 | Human Genomics (Pre-Req: microbiology course)                                                                                               | 3       |      | ✓      |          |
| MCB 6326 | Computational Genomics and Epigenomics (Pre-Req: microbiology course)                                                                       | 3       |      | ✓      |          |
| PCB 5235 | Immunology (Pre-Req: microbiology course)                                                                                                   | 3       |      | ✓      |          |
| MCB 5705 | Astrobiology (Pre-Req: microbiology course)                                                                                                 | 3       |      | ✓      |          |
| MCB 6937 | Python Programming (Pre-Req: microbiology course)                                                                                           | 3       |      | ✓      |          |
| MCB 6458 | Post Translational Modifications in Microbiology (Pre-Req: microbiology course)                                                             | 2       |      |        | Sum C**  |
| MCB 6151 | Prokaryotic Diversity (Pre-Req: microbiology course)                                                                                        | 3       |      |        | Sum C**  |
| MCB 6937 | Microbial Multicellularity (Pre-Req: passing grade in MCB5205)                                                                              | 2       |      |        | Sum C**  |

## Introductory Course Track

- These two courses are required in addition to the standard 30 credits for students who are lacking a foundation in microbiology and/or biochemistry. It will be noted in your admission email if you are required to take either of these courses.

| Course # | Course Title                                       | Credits | Fall | Spring | Summer  |
|----------|----------------------------------------------------|---------|------|--------|---------|
| MCB 6937 | Biology of Microorganisms                          | 3       | ✓    | ✓      | Sum A*  |
| BCH 5404 | Fundamentals of Biochemistry and Molecular Biology | 4       | ✓    | ✓      | Sum C** |

\* Sum A refers to the first six-week summer session, mid-May through late June

\*\* Sum C refers to the 12-week summer session, mid-May through early August

\*\*\*Sum B refers to the second six-week summer session, early July through early August