## Term Information

| | |
|---|---|
| **Effective Term** | Autumn 2026 |

## General Information

| | |
|---|---|
| **Course Bulletin Listing/Subject Area** | Microbiology |
| **Fiscal Unit/Academic Org** | Microbiology - D0350 |
| **College/Academic Group** | Arts and Sciences |
| **Level/Career** | Graduate |
| **Course Number/Catalog** | 6891 |
| **Course Title** | Progress in Biotechnology |
| **Transcript Abbreviation** | Progress Biotech |
| **Course Description** | Students will gain insight into real-world applied molecular sciences and biotechnology research through seminars presented by industry scientists |
| **Semester Credit Hours/Units** | Fixed: 0.5 |

## Offering Information

| | |
|---|---|
| **Length Of Course** | 14 Week, 12 Week, 8 Week, 7 Week |
| **Flexibly Scheduled Course** | Never |
| **Does any section of this course have a distance education component?** | No |
| **Grading Basis** | Satisfactory/Unsatisfactory |
| **Repeatable** | Yes |
| **Allow Multiple Enrollments in Term** | Yes |
| **Max Credit Hours/Units Allowed** | 2.5 |
| **Max Completions Allowed** | 5 |
| **Course Components** | Seminar |
| **Grade Roster Component** | Seminar |
| **Credit Available by Exam** | No |
| **Admission Condition Course** | No |
| **Off Campus** | Never |
| **Campus of Offering** | Columbus |

## Prerequisites and Exclusions

| | |
|---|---|
| **Prerequisites/Corequisites** | None |
| **Exclusions** | |
| **Electronically Enforced** | No |

## Cross-Listings

**Cross-Listings**

## Subject/CIP Code

| | |
|---|---|
| **Subject/CIP Code** | 26.0502 |
| **Subsidy Level** | Doctoral Course |
| **Intended Rank** | Masters, Doctoral |

## Requirement/Elective Designation

The course is an elective (for this or other units) or is a service course for other units

## Course Details

**Course goals or learning objectives/outcomes**

- Gain insight into real-world applied molecular sciences and biotechnology research being conducted at companies
- Be exposed to career paths and opportunities in the applied molecular sciences and biotechnology

**Content Topic List**

- Biweekly seminars on various topics in biotechnology presented by to-be-determined industry-leading professional scientists

**Sought Concurrence**

No

## Attachments

- M6891_Cover letter.pdf

  *(Cover Letter. Owner: Ruiz,Natividad)*

- M6891_Syllabus_2.pdf

  *(Syllabus. Owner: Ruiz,Natividad)*

- MICRBIO6891_PLG.pdf: Learning goals mapping

  *(Other Supporting Documentation. Owner: Ruiz,Natividad)*

- Biomedical Engineering Concurrence.pdf: Concurrence Biomedical Engineering

  *(Concurrence. Owner: Vankeerbergen,Bernadette Chantal)*

## Comments

## Workflow Information

| Status | User(s) | Date/Time | Step |
|---|---|---|---|
| Submitted | Ruiz,Natividad | 05/19/2025 01:20 PM | Submitted for Approval |
| Approved | Ruiz,Natividad | 05/19/2025 01:21 PM | Unit Approval |
| Approved | Vankeerbergen,Bernadette Chantal | 08/11/2025 10:23 AM | College Approval |
| Pending Approval | Jenkins,Mary Ellen Bigler<br>Hilty,Michael<br>Neff,Jennifer<br>Vankeerbergen,Bernadette Chantal<br>Steele,Rachel Lea | 08/11/2025 10:23 AM | ASCCAO Approval |

THE OHIO STATE UNIVERSITY

**Department of Microbiology**
**College of Arts and Sciences**

105 Biological Sciences Building
484 West 12th Avenue
Columbus, OH 43210

614-292-3426 Phone
614-292-8120 Fax
ruiz.82@osu.edu

May 19, 2025

Dear Colleagues,

The Department of Microbiology would like to propose a new course, **MICRBIO 6891: Progress in Biotechnology**. This seminar-style elective course will provide graduate students with the opportunity to gain insight into real-world applied molecular sciences and biotechnology research by attending bi-weekly presentations given by industry leading professional scientists. We propose offering this course as a 0.5-credit microbiology elective course. Although this seminar might interest students in various graduate programs, we anticipate that this course will be particularly interesting to students in Microbiology and Pharmacy graduate programs. Students will be able to register throughout their graduate career.

Please note that this course shares the seminar component with MICRBIO 4891, which I also submitted for approval.

I have attached the syllabus and a list of the course learning objectives mapped to the Microbiology PhD Program Learning Goals.

Thank you for your consideration.

Natividad Ruiz

Professor of Microbiology
Vice Chair for Teaching & Undergraduate Affairs

# Microbiology 6891
# Progress in Biotechnology

The Ohio State University | [Term YEAR] | 0.5 Unit | Lecture
[Location] | Wd [11:30-12:25 pm]

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**Description**
The modern biotechnology industry has advances basic discoveries into innovations throughout medicine, agriculture, energy, and consumer products that have improved our lives. These advancements are a continuing source of new solutions to address modern challenges of human health, the environment, and sustainability. In this class, graduate students will gain real-world insight into the applied molecular sciences and biotechnology through seminars given by industry-leading professional scientists.

**Course Director**
Kou-San Ju, PhD
Department of Microbiology, College of Arts & Sciences
Division of Medicinal Chemistry & Pharmacognosy, College of Pharmacy
290 Aronoff Laboratory
Email: ju.109 -at- osu.edu
Office hours: TBA

**Prerequisites:**
All graduate students are welcome to enroll.

**Format**
The course is 100% in-person and will take place in the classroom at scheduled times.

Graduate students will enroll in 0.5 units (S/U) and are required to attend all seminar presentations, the first organizational class, and the final summary class.

**Assignments and Grading**
Attendance at the introductory discussion lecture, all seminars, and summary discussion lecture is required to earn a (S) grade for the class.

**Exams**
There are no exams for this class.

**Attendance and Participation**
Seminars will be given by industry-leading professional scientists in the applied molecular sciences and biotechnology. All students are expected to attend every seminar, arrive on time and participate in active listening. As presentations from industry professionals are proprietary, you are expected to take your own notes. At the end of every seminar, speakers will welcome questions from the students and general audience.

Excused absences
This course is based on experiential learning. Attendance at all seminars is required to achieve the learning objectives of the class.

Excused absences are allowed for severe illness; quarantine; death of family member; OSU athletic commitment; professional interview than cannot be rescheduled; religious observation; military service commitment. Attendance at a scientific conference is also an acceptable absence for graduate students. In all cases, documentation is required. Instructor must be notified in writing before class if you will be absent. For

scheduled absences, 14 days advance notice is required for approval. Oversleeping, forgetfulness, having exams on the same day for another class, working in a research lab or other job, are not excused absences.

Students that miss a seminar due to an excused absence will be required to attend a departmental seminar given by an external speaker within the same term. The make-up cannot be another seminar class that the student is enrolled in. For example, a Microbiology graduate student enrolled in this class may not use Micro 8899 or 7899; MCDB / OSBP students may not use the MLS seminar series; etc. The student will write a two-page summary of the seminar (double-spaced) as a make-up assignment. Graduate students may miss a maximum of 1 seminar due to an approved excused absence. Additional absences will result in a grade of (U). Proper citations are expected to prevent plagiarism (academic misconduct) -- examples will be provided in the rubric. Students are encouraged to speak with the instructor if there are questions regarding the use of citations. Reports will be scanned through Turnitin Feedback Studio to detect academic plagiarism. The use of generative AI is also prohibited.

**Classroom Etiquette**

Electronic devices should be silenced during seminars. Computers and tablets can be used during lectures as long as they do not distract other students. Cellular phones should be stored away at all times. Recording lectures (audio and/or video) is prohibited without the express consent of the instructor or seminar speaker.

**Course Communications and Email Policy**

Students are responsible for all announcements made in class, posted on the course website (Carmen), or communicated by email. Questions about class material should not be submitted by e-mail and they will not be answered. Instead, please ask questions before or after seminar, or schedule an appointment for an individual meeting.

**Learning Outcomes**

Graduate students that successfully complete this course will:

- Gain insight into real-world applied molecular sciences and biotechnology research being conducted at companies
- Be exposed to career paths and opportunities in the applied molecular sciences and biotechnology

## LECTURE SCHEDULE

This is a tentative schedule and is subject to change.

| Date | Day | Week | Class |
|---|---|---|---|
| 1/14 | Wd | 1 | Introduction and Organization |
| 1/21 | Wd | 2 | |
| 1/28 | Wd | 3 | Seminar 1 TBA |
| 2/4 | Wd | 4 | |
| 2/11 | Wd | 5 | Seminar 2 TBA |
| 2/18 | Wd | 6 | |
| 2/25 | Wd | 7 | Seminar 3 TBA |
| 3/4 | Wd | 8 | |
| 3/11 | Wd | 9 | Seminar 4 TBA |
| 3/18 | Wd | 10 | Spring Break – No Class |
| 3/25 | Wd | 11 | |
| 4/1 | Wd | 12 | Seminar 5 TBA |
| 4/8 | Wd | 13 | |
| 4/15 | Wd | 14 | Seminar 6 TBA |
| 4/22 | Wd | 15 | Summary Discussion |

## ADDITIONAL INFORMATION

**Instructor feedback and response time**

I am providing the following list to give you an idea of my intended availability throughout the course. (Remember that you can call **614-688-HELP** at any time if you have a technical problem.)

- **Email:** I will generally respond to emails within 48 hours on days when class is in session at the University. Emails are reserved for general questions regarding logistical aspects of the class. Questions on course content and grading should be asked in-person before, during, or after class, or during office hours. All emails should have an accurate and descriptive subject line ("Question about M6891 schedule"), begin with a salutation ("e.g., "Prof. Ju"), and conform to standard English with proper punctuation and capitalization.

**Discussion and Communication Guidelines**

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

- **Writing style**: While there is no need to participate in class discussions as if you were writing a research paper, you should remember to write using good grammar, spelling, and punctuation. A more conversational tone is fine for non-academic topics.
- **Tone and civility**: We will maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm does not always come across online.
- **Citations**: When we have academic discussions, please cite your sources to back up what you say. For the textbook or other course materials, list at least the title and page numbers. For online sources, include a link.

**Plagiarism and Academic Misconduct**

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the University's Code of Student Conduct (http://studentaffairs.osu.edu/csc/), and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the University's Code of Student Conduct and *this* syllabus may constitute "Academic Misconduct."

It is the responsibility of the Committee on Academic Misconduct (COAM) to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed, illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Plagiarism is presenting another person's words, ideas, or sequence of arguments as your own without attribution. We will discuss what constitutes plagiarism and how to cite sources properly in this course. If at any point, however, you have a question about this, please ask. If you are tempted to plagiarize or find yourself using material from the Internet or any other source and trying to pass it off as your own, stop working on the assignment and contact the instructors. It is better to submit work late than to violate the Code of Student Conduct. It is the instructors' responsibility to report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487), and the professor and discussion section leaders take this responsibility seriously. For additional information, see the Code of Student Conduct (http://studentaffairs.osu.edu/csc/).

The Ohio State University's Code of Student Conduct (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the University, or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. *Ignorance of the University's Code of Student Conduct is never considered an "excuse" for academic misconduct, so I recommend that you review the Code of Student Conduct and, specifically, the sections dealing with academic misconduct.* For more information see: http://studentlife.osu.edu/csc/.

If we suspect that a student has committed academic misconduct in this course, we are obligated by University Rules to report suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the University's Code of Student Conduct (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the University.

**Generative Artificial Intelligence (GenAI)**

Revisions to the Code of Student Conduct went into effect on Jan, 1, 2024, after a review by the Council on Student Affairs. Among the revisions is an updated definition of academic misconduct that clarifies that the unauthorized use of generative artificial intelligence (AI) systems or similar technologies to complete academic activities is prohibited conduct. Commonly used GenAI tools include including ChatGPT, Sudowrite and others. **For this course, the use of GenAI tools on submitted and graded material is prohibited.** With this, we understand that GenAI tools have a future in education and the workplace. Because of this I want to suggest places where GenAI may be of use in the course, and the known limitations of using GenAI. GenAI can be useful to students to help summarize and clarify long and difficult texts or topics, especially topics that have been well studied and written about extensively. Please be aware or the many known limitations of GenAI: it can generate incomplete, inaccurate, or false information, GenAI is prone to hallucination where it connects things that have not real connection, citations generated by GenAI might be inaccurate or completely made-up, GenAI will plagiarize text without proper attribution as required by the Code of Student Conduct, answers are prone to biases. When using GenAI, it is important to recognize these known limitations and intervene with your own reading and interpretation.

## ACCESSIBILITY ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

The University strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

**Your Mental Health**

**As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation.** These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting ccs.osu.edu or calling 614- 292-5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on-call counselor when CCS is closed at 614-292-5766 and 24-hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-800-273- TALK or at suicidepreventionlifeline.org.

**Statement on Title IX**

All students and employees at Ohio State have the right to work and learn in an environment free from harassment and discrimination based on sex or gender, and the university can arrange interim measures, provide support resources, and explain investigation options, including referral to confidential resources. **Title IX** makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories (e.g., race). If you or someone you know has been sexually harassed or assaulted, you may find the appropriate resources at https://civilrights.osu.edu/title-ix or by contacting the Ohio State Title IX Coordinator at titleix@osu.edu.

**Weather or Other Short-Term Closing**

Should in-person classes be cancelled, I will notify you as to which alternative methods of teaching will be offered to ensure continuity of instruction for this class. Communication will be email, CarmenCanvas, or other mode of communication.

**Religious Accommodations**

Ohio State has had a longstanding practice of making reasonable academic accommodations for students' religious beliefs and practices in accordance with applicable law. In 2023, Ohio State updated its practice to align with new state legislation. Under this new provision, students must be in early communication with their instructors regarding any known accommodation requests for religious beliefs and practices, providing notice of specific dates for which they request alternative accommodations within 14 days after the first instructional day of the course. Instructors in turn shall not question the sincerity of a student's religious or spiritual belief system in reviewing such requests and shall keep requests for accommodations confidential.

With sufficient notice, instructors will provide students with reasonable alternative accommodations with regard to examinations and other academic requirements with respect to students' sincerely held religious beliefs and practices by allowing up to three absences each semester for the student to attend or participate in religious activities. Examples of religious accommodations can include, but are not limited to, rescheduling an exam, altering the time of a student's presentation, allowing make-up assignments to substitute for missed class work, or flexibility in due dates or research responsibilities. If concerns arise about a requested accommodation, instructors are to consult their tenure initiating unit head for assistance.

A student's request for time off shall be provided if the student's sincerely held religious belief or practice severely affects the student's ability to take an exam or meet an academic requirement and the student has notified their instructor, in writing during the first 14 days after the course begins, of the date of each absence. Although students are required to provide notice within the first 14 days after a course begins, instructors are strongly encouraged to work with the student to provide a reasonable accommodation if a request is made outside the notice period. A student may not be penalized for an absence approved under this policy.

If students have questions or disputes related to academic accommodations, they should contact their course instructor, and then their department or college office. For questions or to report discrimination or harassment based on religion, individuals should contact the Office of Institutional Equity. For questions or to report discrimination or harassment based on religion, individuals should contact the Civil Rights Compliance Office. (Policy: Religious Holidays, Holy Days and Observances).

**Copyright Protection**

The materials used in connection with this course are subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

# Mapping Microbiology 6891 to Ph.D. Degree Program Learning Goals

## Microbiology Ph.D. Degree Program Learning Goals (PLGs)

PhD graduates of Microbiology should be able to:

1. Demonstrate a broad base of knowledge in several areas, including microbial physiology, genetics, biochemistry, and pathogenesis.
2. Demonstrate in-depth knowledge in an area of interest.
3. Make an original and substantial contribution to the field, as indicated by at least one first-author publication.
4. Effectively communicate science through oral and written presentations to both scientific and general audiences.

## Microbiology 6891 Learning Outcomes Mapped to Ph.D. Degree Program Learning Goals

1. Gain insight into real-world applied molecular sciences and biotechnology research being conducted at companies **(PLG 1 & 2: Intermediate)**
2. Be exposed to career paths and opportunities in the applied molecular sciences and biotechnology **(PLG 2: Intermediate)**

**From:** Childers, Rachel
**To:** Ruiz, Natividad
**Subject:** FW: Concurrence request
**Date:** Friday, June 13, 2025 12:28:18 PM
**Attachments:** image001.png
image002.png
image003.png

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We are all good from BME for concurrence! Let me know if there is anything else you need from us.

Thanks,
Rachel

**Rachel Childers, Ph.D.**

Professional Practice Associate Professor & Director of Undergraduate Education

Department of Biomedical Engineering

Fontana Labs 4100B, 140 W 19th Ave., Columbus, Ohio 43210

Childers.73@osu.edu | 614.247.6681

(She/Her) | Student Hours Link

THE OHIO STATE UNIVERSITY

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**From:** Senitko, Melanie <senitko.1@osu.edu>
**Sent:** Friday, June 13, 2025 9:54 AM
**To:** Devina Purmessur Walter <Devina.Purmessur@osumc.edu>; Childers, Rachel <childers.73@osu.edu>
**Cc:** Matyas, Cory <matyas.3@osu.edu>
**Subject:** RE: Concurrence request

Looks good to me as well.
Thanks!
Mel

THE OHIO STATE UNIVERSITY

**Melanie A. Senitko, MA**
Graduate Program Coordinator

**The Ohio State University**
College of Engineering
Department of Biomedical Engineering
2124K Fontana Labs
140 W 19th Ave, Columbus, OH 43210
614.292.7152 Office
senitko.1@osu.edu / bme.osu.edu

Pronouns: she/her

*Shared Values in Action: At Ohio State, we demonstrate our Shared Values through our actions.*

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**From:** Purmessur, Devina <Devina.Purmessur@osumc.edu>
**Sent:** Friday, June 13, 2025 9:30 AM
**To:** Childers, Rachel <childers.73@osu.edu>
**Cc:** Senitko, Melanie <senitko.1@osu.edu>; Matyas, Cory <matyas.3@osu.edu>
**Subject:** RE: Concurrence request

Hi Rachel,

Thanks so much for sharing. I don't see any issues from my end – Mel do you have any addition thoughts or comments?

Thanks again,

Devina

**Devina Purmessur (Walter), PhD**
***Associate Professor and Director of Graduate studies***
*College of Engineering Innovation Scholar*
Department of Biomedical Engineering
Department of Orthopaedics
**The Ohio State University**
Mars G. Fontana, Room 3016
140 W. 19th Ave, Columbus, OH 43210
(office 3016) | (lab 3155)
**Email:** purmessurwalter.1@osu.edu and devina.purmessur@osumc.edu
https://stl.engineering.osu.edu/
**Note:** You may be receiving this email outside of normal working hours. While it suits me to email now, I do not expect a response or action from you outside of your own working hours.

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**From:** Childers, Rachel <childers.73@osu.edu>
**Sent:** Wednesday, June 11, 2025 1:24 PM
**To:** Purmessur, Devina <Devina.Purmessur@osumc.edu>
**Cc:** Senitko, Melanie (OSU) <senitko.1@osu.edu>; Matyas, Cory (OSU) <matyas.3@osu.edu>
**Subject:** FW: Concurrence request

Hi Devina,

Looping you in for the grad studies side. I don't see any concurrence issues for the Microbio/Biotechnology course from the undergrad side. I assume the same for grad side, but wanted to check with you first.

Best,
Rachel

**Rachel Childers, Ph.D.**

Professional Practice Associate Professor & Director of Undergraduate Education

Department of Biomedical Engineering

Fontana Labs 4100B, 140 W 19th Ave., Columbus, Ohio 43210

Childers.73@osu.edu | 614.247.6681

(She/Her) | Student Hours Link

THE OHIO STATE UNIVERSITY

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**From:** Ruiz, Natividad <ruiz.82@osu.edu>
**Sent:** Monday, June 9, 2025 8:00 AM
**To:** Childers, Rachel <childers.73@osu.edu>
**Subject:** Concurrence request

Dear Dr. Childers,

The Department of Microbiology has developed three new courses focused on biotechnology. We are seeking concurrence from your department, and I hope you can assist us.

As you can see from the attached syllabi, MICRBIO 4800 is a lecture course, while MICRBIO 4891/6891 are seminar courses. Please note that 4891/6891 will share the seminar series presented by external speakers. The graduate version will only require students to attend seminars, while the undergraduate course will demand more work and additional meetings. This is why we had to split the offering into two courses.

I have attached the concurrence request forms for each course. I kindly request a response by June 27. No response will be interpreted as concurrence.

Please let me know if you have any questions. Thank you for your time.

Natacha

THE OHIO STATE UNIVERSITY

**Natividad Ruiz, PhD**
Professor
Vice Chair for Teaching and Undergraduate Affairs
Department of Microbiology
264 Aronoff Lab Bldg
318 W 12th Ave., Columbus OH 43210
614-292-3426 Office | 614-292-4129 Lab | 614-292-8120 Fax