



DEPARTMENT OF  
HIGHER EDUCATION &  
WORKFORCE DEVELOPMENT

## New Program Report

**Date Submitted:**

10/18/2023

**Institution**

Fontbonne University

**Site Information**

**Implementation Date:**

8/15/2023 12:00:00 AM

**Added Site(s):**

**Selected Site(s):**

Fontbonne University, 6800 Wydown Boulevard, St. Louis, MO, 63105-3098

**CIP Information**

**CIP Code:**

260101

**CIP Description:**

A general program of biology at the introductory, basic level or a program in biology or the biological sciences that is undifferentiated as to title or content. Includes instruction in general biology and programs covering a variety of biological specializations.

**CIP Program Title:**

Biology/Biological Sciences, General

**Institution Program Title:**

Biology

**Degree Level/Type**

**Degree Level:**

Master Degree

**Degree Type:**

Master of Science

**Options Added:**

**Collaborative Program:**

N

**Mode of Delivery**

**Current Mode of Delivery**

Classroom

**Student Preparation**



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Special Admissions Procedure or Student Qualifications required:

Students applying for admission to a master's program through the Accelerated Option submit an Accelerated Master's Program Application, which must be approved by the graduate program director, department chair, and college dean. Application can be made as early as the first semester of the junior year, but typically in the third semester prior to completion of the undergraduate degree and with at least one full semester remaining at the time of application. Students must have completed at least 12 credit hours in the undergraduate major by the time they are admitted into an Accelerated Path.

Undergraduate students admitted to a master's program through an Accelerated Path must maintain

- a cumulative GPA of 2.5 and
- a cumulative GPA of 2.8 or higher in all of their BIO/ONE courses.

Specific Population Characteristics to be served:

n/a

### Faculty Characteristics

Special Requirements for Assignment of Teaching for this Degree/Certificate:

Fontbonne is accredited by the Higher Learning Commission (HLC) and complies with HLC minimum faculty qualifications. In particular, faculty generally must have a degree in the discipline that is one level higher than offered. In doctoral programs, faculty must have a terminal degree and demonstrate research and accomplishments commensurate with a doctoral program. In some cases, we will also hire faculty that do not meet these criteria but do meet the "tested experience" criteria that we developed to comply with the HLC criteria.

Estimate Percentage of Credit Hours that will be assigned to full time faculty:

We estimate at least 75% of courses will be taught by full-time faculty.

Expectations for professional activities, special student contact, teaching/learning innovation:

All Fontbonne faculty are expected to be up-to-date on their discipline. Full-time faculty, as part of the annual review process, are expected to document professional activities and innovation in the classroom that improves student learning. Fontbonne maintains a low student to faculty ratio, and all faculty have extensive student contact

### Student Enrollment Projections Year One-Five

<b>Year 1</b>	<b>Full Time: 5</b>	<b>Part Time: 0</b>	
<b>Year 2</b>	<b>Full Time: 5</b>	<b>Part Time: 0</b>	
<b>Year 3</b>	<b>Full Time: 5</b>	<b>Part Time: 0</b>	<b>Number of Graduates:</b> 3
<b>Year 4</b>	<b>Full Time: 5</b>	<b>Part Time: 0</b>	
<b>Year 5</b>	<b>Full Time: 5</b>	<b>Part Time: 0</b>	<b>Number of Graduates:</b> 5

Percentage Statement:

n/a

Program Accreditation



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## New Program Report

Institutional Plans for Accreditation:  
not applicable

Program Structure

**Total Credits:**

36

**Residency Requirements:**

n/a

**General Education Total Credits:**

0

**Major Requirements Total Credits:**

36

**Course(s) Added**

COURSE NUMBER	CREDITS	COURSE TITLE
BIO 535	3	Advanced Conservation Medicine
BIO 540	1	Microbial Genetics
BIO 545	1	Parasitology
BIO 595	6	Graduate Research
BIO 525	3	Advanced Disease Ecology
BIO 590	3	Thesis Writing
BIO 565	3	Advanced Immunology
BIO 555	3	Advanced Environmental Chemistry
BIO 515	1	Techniques in Parasitology and Bacteriology
BIO 530	3	Advanced Population Genetics
BIO 550	3	Scientific Communication and Writing
BIO 520	3	Ethics and Research Methods
BIO 560	3	Advanced Evolutional Biology

**Free Elective Credits:**

0

**Internship or other Capstone Experience:**

Successful written and public defense of thesis.

**Assurances**

I certify that the program will not unnecessarily duplicate an existing program of another Missouri institution in accordance with 6 CSR 10-4.010, subsection (9)(C) Submission of Academic Information, Data and New Programs.

I certify that the program will build upon existing programs and faculty expertise.



## **New Program Report**

I certify that the institution has conducted research on the feasibility of the proposal and it is likely the program will be successful. Institutions' decision to implement a program shall be based upon demand and/or need for the program in terms of meeting present and future needs of the locale, state, and nation based upon societal needs, and/or student needs.

### Contact Information

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Phone: 314-889-4679

# Fontbonne University 2023-2024 Undergraduate and Graduate Catalog

## Biology, M.S.

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Prior to admission into the program, students must complete the following:

- 60 earned hours
- [BIO 132 - General Biology 1: Diversity of Life](#) and [BIO 134 - General Biology 2: Cell Structure and Function](#)
- [BIO 204 - Modeling and Experimental Design](#)

The following courses must be completed before starting the program:

- [BIO 397 - Advanced Topics in Biology](#)
- [BIO 201 - R-Basics/BIO 202 - Data Analysis in R](#)

## Accelerated Masters Program Details and Admission Requirements

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### Admission Requirements

Students applying for admission to a master's program through the Accelerated Option submit an Accelerated Master's Program Application, which must be approved by the graduate program director, department chair, and college dean. Application can be made as early as the first semester of the junior year, but typically in the third semester prior to completion of the undergraduate degree and with at least one full semester remaining at the time of application. Students must have completed at least 12 credit hours in the undergraduate major by the time they are admitted into an Accelerated Path. Undergraduate students admitted to a master's program through an Accelerated Path must maintain

- a cumulative GPA of 2.5 and
- a cumulative GPA of 2.8 or higher in all of their BIO/ONE courses

### Degree and Tuition Policies

Once admitted to a master's program through the Accelerated Path, students may take up to a maximum of 12 credit hours of graduate coursework (as outlined) and have those hours count toward both the bachelor's and master's degrees. Students will be charged at the undergraduate rate and retain eligibility for undergraduate scholarships. For each semester in which they take courses for both undergraduate and graduate credit, students must complete a "mixed credit" registration form that is approved by the graduate program director, department chair and college dean. Students taking courses for graduate credit must adhere to all relevant graduate policies.

Students admitted to an Accelerated Path Master's Program must meet all graduate program admission requirements at the time they complete the baccalaureate degree and must meet all degree completion requirements of the graduate program.

**Students applying to an Accelerated Path Master's Program must:**

- Be a currently enrolled Fontbonne University student
- Have completed at least 60 credit hours (including the BIO 132/134 sequence and BIO 204, with a grade of B- or higher in each of these courses.)
- Have at least one full semester an undergraduate remaining
- Possess a minimum Fontbonne cumulative GPA of 2.5

**Additionally, before beginning the Accelerated Master's Program in Biology, students must:**

- Formally be accepted into the Program
- Complete BIO 397 (on Peoples Exploited in Science) and the BIO 201/202 sequence
- Select and receive Faculty Approval to join a research lab

## Student and Program Expectations

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**Teaching Assistantships** - Students will be expected to participate as Teaching Assistants for lab portions of specific undergraduate courses (eg BIO108, BIO 245, CHM 106) throughout their fifth year. Students will need to have passed the course they TA as an undergraduate and will work closely with the Course Coordinator to learn best practices in science pedagogy, including but not limited to: inquiry-based learning, experimental design within labs, and resource allocation as well as more general best practices in pedagogy: inclusive teaching practices, universal design, and equitable grading practices. Additionally, these TA positions will serve as a community of practice wherein TAs mentor undergraduates students, especially working to support students of color, in our research pipeline and success in science. Students will receive compensation, with funds used to offset tuition payments (default) or received as funds (with application).

**Principal Investigator** - Students may complete their research in any qualified laboratory at Fontbonne or at a partner institution, including the Saint Louis Zoo, the Missouri Department of Conservation, the Missouri Botanical Garden. PIs must approve of the applicant's joining their research group and agree to mentor the student in advance of acceptance into the program.

**Research Support** - Scientific research is exceedingly expensive. While it will be expected that both the student and the supporting faculty member routinely apply for external funding for the support of the student, each student may apply to receive up to \$1500, remitted to the department, for the express support of Master student's research expenses. This amount will be reviewed every 5 years to ensure program success in response to rising publication costs. These expenses can include supplies and consumables, small equipment, publication costs, and expenses incurred as a result of the presentation at conferences, including registration fees and travel expenses. All expenditures must be approved by the PI, with unusual expenses requiring approval by the Department Chair.

**Thesis and Formatting** - In response to the ever-growing recognition of the importance of publication, it is increasingly accepted that dissertations and theses in the sciences are formatted in accordance with the journal guidelines, if under review or in press, even if the resulting thesis chapters are not uniformly formatted across the document.

## Learning Outcomes

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- **Objective 1:** Upon completion of the MS in Biology degree, graduates will be able to demonstrate organized and clear experimental design and data analysis skills.
- **Objective 2:** Upon completion of the MS in Biology degree, graduates will be scholars of scientific literature, as

demonstrated by their having successfully written a literature review and presented their evidence-driven research findings.

- **Objective 3:** Upon completion of the MS in Biology degree, graduates will be able to have furthered their field in biology by contributing to the scientific discourse via independent biological research.

## Required Courses

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- [BIO 515 - Techniques in Parasitology and Bacteriology](#) **Credit(s): 1**
  - [BIO 520 - Ethics and Research Methods](#) **Credit(s): 3**
  - [BIO 525 - Advanced Disease Ecology](#) **Credit(s): 3**
  - [BIO 530 - Advanced Population Genetics](#) **Credit(s): 3**
  - [BIO 535 - Advanced Conservation Medicine](#) **Credit(s): 3**
  - [BIO 540 - Microbial Genetics](#) **Credit(s): 1**
  - [BIO 545 - Parasitology](#) **Credit(s): 1**
  - [BIO 550 - Scientific Communication and Writing](#) **Credit(s): 3**
  - [BIO 555 - Advanced Environmental Chemistry](#) **Credit(s): 3**
  - [BIO 560 - Advanced Evolutionary Biology](#) **Credit(s): 3**
  - [BIO 565 - Advanced Immunology](#) **Credit(s): 3**
  - [BIO 590 - Thesis Writing](#) **Credit(s): 3**
  - [BIO 595 - Graduate Research](#) **Credit(s): variable (1-6)**
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  - Career Development
- Athletics
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  - Seasonal Events
  - Community Relations
  - Planned Giving

- Campaign
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