



DEPARTMENT OF  
HIGHER EDUCATION &  
WORKFORCE DEVELOPMENT

**New Program Report**

**Date Submitted:**

05/26/2022

**Institution**

Southeast Missouri State University

**Site Information**

**Implementation Date:**

8/22/2022 12:00:00 AM

**Added Site(s):**

**Selected Site(s):**

Southeast Missouri State University, One University Plaza, Cape Girardeau, MO, 63701

**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**

**Special Admissions Procedure or Student Qualifications required:**

Undergraduate GPA of at least 2.75 overall and for the last 30 semester hours of science and math (4.0 scale)



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Specific Population Characteristics to be served:

N/A

**Faculty Characteristics**

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

Ph.D., Graduate Faculty status

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

100% of credit hours will be assigned to full-time faculty with graduate faculty status, equivalent to 3 full time faculty.

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

No specific expectations beyond that of all faculty per existing guidelines and policies.

**Student Enrollment Projections Year One-Five**

Year 1	Full Time: 30	Part Time: 2	
Year 2	Full Time: 35	Part Time: 2	
Year 3	Full Time: 40	Part Time: 5	Number of Graduates: 15
Year 4	Full Time: 45	Part Time: 5	
Year 5	Full Time: 50	Part Time: 5	Number of Graduates: 22

Percentage Statement:

n/a

**Program Accreditation**

Institutional Plans for Accreditation:

N/A

**Program Structure**

Total Credits:

30

Residency Requirements:

n/a

General Education Total Credits:

0

Major Requirements Total Credits:

30

**Course(s) Added**

COURSE NUMBER	CREDITS	COURSE TITLE
000	0	See Attached

Free Elective Credits:

6



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### Internship or other Capstone Experience:

Students, with guidance from a faculty advisor, will be able to select whether they complete a thesis or a non-thesis path for the program. Those completing a thesis will also complete an oral exam. Those completing a non-thesis will have additional research course requirements or and internship and comprehensive exams.

### Assurances

I certify that the program is clearly within the institution's CBHE-approved mission. The proposed new program must be consistent with the institutional mission, as well as the principal planning priorities of the public institution, as set forth in the public institution's approved plan or plan update.

I certify that the program will be offered within the proposing institution's main campus or CBHE-approved off-site location.

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.

I certify that the program can be launched with minimal expense and falls within the institution's current operating budget.

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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Koch

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**MS in Biology  
Proposed Curriculum Changes**

*strikethrough = deletions, green highlight = ~~new courses~~, yellow highlights = courses that are being revised, gray = existing courses added.*

Current Program		Proposed Program	
Required	Cr Hrs	Required	Cr Hrs
<del>BI689 Graduate Seminar I</del>	4	BI688 Experimental Design in Biology	3
<del>BI690 Graduate Seminar II</del>	4		
Complementary Area	6		
Biology Electives (BI, BO, BT, or ZO 500-600 level courses)	13-16	Biology Electives (BI, BO, BT, or ZO 500-600 level courses)	18
Electives (any 500-600 level course)	2-8	Electives (any 500-600 level course)	6-9
<b>Thesis Option</b>		<b>Thesis Option</b>	
Thesis Hours (BI694, 696, 697)	3-6	Thesis Hours (BI694, 696, 697)	3-6
GR699 (Oral Exam)	0	GR699 (Oral Exam)	0
<b>Non-Thesis Option</b>		<b>Non-Thesis Option</b>	
GR698 (Comprehensive Examination)	0	Research (BI589, 590, 591) or Internship Hours (BI581, 582, 583)	3-6
		GR698 (Comprehensive Examination)	0
<b>Total Hours</b>	32		30



BOARD OF GOVERNORS

MOTION CONSIDERATION FORM

May 13, 2022

Open Session

I. Motion to be Considered:

Authorize and approve the new MS in Biology.

II. Background:

Justification: The current Masters of Natural Sciences (MNS) in Biology was part of a collaborative MNS that also included Mathematics, Chemistry, and Biology. An MNS degree is not a well-known degree type and the collaborative curriculum hampered the growth of the Biology program. The Mathematics and Chemistry portions of the degree have recently been deleted. The current MNS in Biology program has been successful but the proposed transition would make it more competitive and appealing and beneficial to students. Our students have been very successful in locating jobs or being admitted to other programs (doctorate or professional programs). With the elimination of the other two programs, the Biology Department is proposing to develop a stand-alone degree that has the potential to grow and is a recognized degree type by industry, higher education and students.

The new program is designed to provide increased flexibility for students to tailor their master's degree to their needs. Students will work with faculty advisors to develop a plan of study that will allow them to be successful in the biology subdiscipline they wish to pursue. This flexibility and the reduction of the required hours for the degree from 32 to 30 will allow the department to support a 4+1 program. The flexibility will also strengthen pre-med students' application materials by providing them with greater opportunities to pursue specific areas of study and research.

Recommended By:

Student Government \_\_\_\_\_ Chairperson \_\_\_\_\_
Faculty Senate \_\_\_\_\_ Dean \_\_\_\_\_
Administrative Council \_\_\_\_\_ Academic Council \_\_\_\_\_
VP, Enroll. Man. & Stu. Suc. \_\_\_\_\_ Provost \_\_\_\_\_
VP, Finance & Admin. \_\_\_\_\_
VP, University Advancement \_\_\_\_\_ President \_\_\_\_\_

Board Action on: \_\_\_\_\_ Postpone: \_\_\_\_\_
Motion By: \_\_\_\_\_ Amend: \_\_\_\_\_
Second By: \_\_\_\_\_ Disapprove: \_\_\_\_\_
Vote: Yeas: \_\_\_\_\_ Nays: \_\_\_\_\_ Approve: \_\_\_\_\_
Abstentions: \_\_\_\_\_ Secretary: \_\_\_\_\_

**Need:** The career outlook for biologists and particularly biologists with a graduate degree is positive. The National Bureau of Labor Statistics show *Occupational Code 19-1029 biological scientists, all other Employment by Industry, Occupation, and Percent Distribution, 2020 and projected 2030 National Employment Matrix OCC 19-1029 (bls.gov)* as having mild growth overall during the next decade, but some occupational areas within the discipline will experience employment change of over 20%. Some of those areas include Support Activities for Agriculture and Forestry 39.9%; Medical and Diagnostic Laboratories 22.9%; Management, Scientific, and Technical Consulting Services 22.4%. These high growth occupations are what the MS in Biology specifically targets.

**Program Summary:** The total credit hours required for the MS in Biology will be reduced from 32, required in the former MNS, to 30 hours. The program is also emphasizing a non-thesis pathway to completion. The non-thesis pathway along with the reduction in hours is intended to streamline the program and aid in program completion. The program will be offered in a face-to-face format due to the hands-on lab requirements for most courses.

The program is designed to provide flexibility for the students to focus on and specialize in specific disciplines within Biology related to their career or continuing educational goals. It is very common for Biology MS degrees to have this type of flexibility designed into the program. Four out of the five Missouri MS in Biology programs have a similar structure to the one being proposed. For efficiency and to be able to offer the breadth of courses, many of the courses are taught as undergraduate/graduate level courses. Graduate students have specific graduate level course outcomes that must be achieved and overall higher expectations of being able to synthesize and evaluate information. Students will not be able to take the same course at the undergraduate level and at the master's level.

Current MNS in Biology	Enrollment Fall 2017	Enrollment Fall 2018	Enrollment Fall 2019	Enrollment Fall 2020	Enrollment Fall 2021
	36	26	16	16	17
	Degrees Awarded 2016-2017	Degrees Awarded 2017-2018	Degrees Awarded 2018-2019	Degrees Awarded 2019-2020	Degrees Awarded 2020-2021
	8	17	8	8	7