

KENT STATE UNIVERSITY CERTIFICATION OF CURRICULUM PROPOSAL

Preparation Date **5-Oct-17** Curriculum Bulletin _____
 Effective Date **Fall 2018** Approved by EPC _____

Department **Biological Sciences**
 College **AS - Arts and Sciences**
 Degree **MS - Master of Science**
 Program Name **Biological Sciences-Physiology** Program Banner Code **PSIO**
 Concentration(s) _____ Concentration(s) Banner Code(s) _____
 Proposal **Revise program**

Description of proposal:

We propose to change the name of the Biological Sciences-Physiology program to Biological Sciences-Integrative Physiology and Neurobiology. This name change better reflects the direction of the field. BSPN

Does proposed revision change program's total credit hours? Yes No
 Current total credit hours: _____ Proposed total credit hours _____

Describe impact on other programs, policies or procedures (e.g., duplication issues; enrollment and staffing considerations; need; audience; prerequisites; teacher education licensure):

This is an existing program, we are requesting to update the name and some of the common coursework. This program already has an existing overlap with the Biomedical Sciences-Physiology and the Biomedical Sciences-Neurosciences programs. Thus, this overlap would continue, but the renaming and curricular changes are more in line with our current faculty and our future research focus within the Department.

Units consulted (other departments, programs or campuses affected by this proposal):
Yes, Biomedical Sciences has been consulted and a letter of support is included.

REQUIRED ENDORSEMENTS

Department Chair / School Director	10 / 15 / 17
_____ Campus Dean (for Regional Campuses proposals)	1 / 1
College Dean (or designee)	10 / 20 / 17
Dean of Graduate Studies (for graduate proposals)	10 / 31 / 17
_____ Senior Vice President for Academic Affairs and Provost (or designee)	1 / 1

Proposal Summary
Name and Curricular Updates to the Biological Sciences-Physiology Program
[MS PSIO]

Description of Action, Including Intended Effect

Since the initial establishment of our MS program in Biological Sciences-Physiology the fields of biology have changed as has the research focus of our Department. In order to have highly qualified graduate applicants, which is directly connected to our ability to sustain high levels of research productivity, as measured by grants and peer-reviewed publications- we propose a degree title update Biological Sciences-Integrative Physiology and Neurobiology, as well as several curricular updates. The proposed title and curricular changes are consistent with our current and future research focus areas and will be more likely to appeal to the high quality students we are seeking.

Proposed Title Changes

- PhD in Biological Sciences- Physiology changed to *Biological Sciences-Integrative Physiology and Neurobiology*.

Proposed Curricular Changes

- We propose the following required course work:

Required Coursework:

1. BSCI 60184 Responsible Conduct in Research and Teaching *Required*
2. BSCI 60491 Seminar in Physiology *new*
3. BSCI 60103 Biological Statistics, or a different graduate-level biochemistry class, as *new* determined by advisor/guidance committee.

Recommended, but not required:

1. BSCI 50142 Bioenergetics, or a different graduate-level biochemistry class, as determined by advisor/guidance committee.
2. BSCI 50195 Seminar in Current Topics- this is a one-hour "seminar-style" specialty courses focused on the primary literature (would change each semester)

Beyond this, additional coursework will be customized depending on an individual student's research interests.

Impact on Other Programs, Course Offerings, Students, Faculty, Staff (e.g., duplication issues)

We already have overlap with a couple of graduate programs in Biomedical Sciences, including: Biomedical Sciences-Physiology and Biomedical Sciences-Physiology. This is not changing in such a way as to significantly alter this overlap, but rather to increase our competitiveness in the market. As of now, the Biological Sciences-Physiology program receives very few applications each year. With this name change and curricular updates this program will be more consistent with developments within the field as well as more aligned with the research we do in the Department. The Biomedical

Sciences Director, Dr. Ernie Freeman, has provided a letter of support.

Thus, we do not anticipate that these changes will negatively impact the Biomedical Sciences program and should not have any impact on course offerings, students, faculty or staff.

Fiscal, Enrollment, Facilities and Staffing Considerations

There are no issues here.

Evidence of Need and Sustainability if Establishing

N/A

Provisions for Phase-Out if Inactivating

N/A

Timetable and Actions Required: *a chronology of actions required to approve the proposal with an anticipated implementation date for each action*

Departmental Approval	Spring 2017
A&S CCC Approval	Fall 2017
EPC Approval	Fall 2017
Effective Date	Fall 2018



May 25, 2017

Dr. Heather Caldwell
Associate Professor and Graduate Coordinator
Department of Biological Sciences
Kent State University
253C Cunningham Hall
Kent, OH 44242-0001

Dear Dr. Caldwell:

Thank you for allowing me the opportunity to review the changes to the BSCI MS- Physiology program that have been approved by the graduate faculty in the Department of Biological Sciences. As these changes are being made to an existing program to better reflect the faculty research areas of the Department of Biological Sciences, I do not see that the proposed name change or the proposed curricular changes will negatively impact the courses or curriculum in the Biomedical Sciences program. As before, our two programs will continue to work together to help attain the highest quality graduate students for the faculty in Biological Sciences.

Good luck with your proposed changes.

Sincerely,

A handwritten signature in black ink, appearing to read "Ernie Freeman", with a long horizontal flourish extending to the right.

Dr. Ernie Freeman
Director
School of Biomedical Sciences
Associate Professor
Department of Biological Sciences
efreema2@kent.edu

BIOLOGICAL SCIENCES - *Integrative Physiology and Neurobiology* ~~PHYSIOLOGY~~ - M.S.

College of Arts and Sciences

Department of Biological Sciences

256 Cunningham Hall

Kent Campus

330-672-3613

kentbiology@kent.edu

www.kent.edu/biology

Description

The Master of Science degree in Biological Sciences - *Integrative Physiology and Neurobiology* is the study of a broad range of topics, including endocrinology, neuroscience, immunology, reproductive biology and other regulatory systems. Students have access to resources for physiological research, including a vivarium, tissue culture facility, confocal microscope/visualization facility, laser capture microscope, genomics and proteomics facilities.

FULLY OFFERED AT:

Kent Campus

Admission Requirements

Official transcript(s)

Minimum 3.0 GPA

GRE scores (general test)

Goal statement

Three letters of recommendation

A list of up to five potential faculty advisors

English Language Proficiency Requirements for International Students: All international students must provide proof of English language proficiency (unless they meet specific exceptions) by earning a minimum 587 TOEFL score (94 on the Internet-based version), minimum 82 MELAB score, minimum 7.0 IELTS score or minimum 65 PTE Academic score. For more information on international admission, visit the [Office of Global Education's admission website](#). **Effective spring 2018.**

Before admission can be completed, a prospective student must be accepted by a faculty member in the program who will act as adviser. Prospective students must have completed undergraduate coursework roughly equivalent to a Biology minor.

For more information about graduate admissions, please visit the [Graduate Studies](#) website.

Program Learning Outcomes

Graduates of this program will be able to:

- 1 Understand advanced biological concepts beyond the scope of the typical undergraduate degree and to increase the depth of their knowledge through coursework and hands-on experiences.
- 2 Apply scientific principles and appreciate work outside of their particular field.
- 3 Effectively communicate about science with colleagues as well as those outside of the student's area of expertise.
- 4 Develop the necessary laboratory skills that will allow testing of hypotheses.

Program Requirements

Courses selected in consultation with academic faculty advisor⁵ ✓
 Departmental Seminar Presented by the Student⁶

¹ Students are required to enroll in BSCI 60184 their first semester (or the following fall semester for those starting their studies in the spring semester).
² Students must enroll in BSCI 60491 each semester (repeatable for credit).
³ Course substitutions for a different graduate-level statistics class can be made if deemed appropriate by the advisor/guidance committee.
⁴ same as what is now "2" in the catalog
⁵ It is recommended that students enroll in BSCI 50195 for coursework on selected current topics and BSCI 50142 for Bioenergetics. Additional coursework should provide the necessary skills and/or knowledge base that will aid in the completion of the student's research project and will be beneficial for their professional development. At least 14 hours of formal graded coursework is required.
⁶ Students are required to present at least one departmental seminar about their work.

<u>BSCI 60184</u>	RESPONSIBLE CONDUCT IN RESEARCH AND TEACHING-BIOLOGICAL SCIENCES ¹	0-2
<u>BSCI 60199</u>	THESIS I ²	6
<u>BSCI 60491</u>	SEMINAR IN PHYSIOLOGY ³	1
	Courses selected in consultation with academic faculty advisor ⁴	14-25
	Departmental Seminar Presented by Student ⁵	
Minimum Total Credit Hours:		32

- 1 Students who will serve as teaching assistants are required to take **BSCI 60184** their first semester (or the following fall semester for those starting their studies in spring semester).
- 2 After completing 6 credit hours of **BSCI 60199**, students must register continually for **BSCI 60299** until the degree is earned. Students begin research by successfully preparing, presenting and defending a formal prospectus for their research project to their committee. For the thesis and final defense, it is expected that students will present the results of their study in a defense open to students and faculty. The thesis must be presented and defended before the Guidance Committee with not more than one negative vote in order to be recommended to the Department of Biological Sciences and the College of Arts and Sciences for degree conferral.
- 3 Students must enroll in **BSCI 60491** each semester (repeatable for credit).
- 4 Students must take at least one course in each of the following areas: physiology, cell biology/molecular biology (such as eukaryotic cell biology) and biochemistry (such as bioenergetics). Students are required to enroll in at least one graduate level statistics course. Students must complete the required OSHA Training Session prior to working with radioactive materials. Students should enroll in additional courses that provide necessary skills for completion of research projects and that will be beneficial for their professional development. Students with coursework deficits in curricula of prior degrees, should enroll in appropriate graduate-level courses (permission must be obtained from the department to enroll in undergraduate-level courses).
- 5 Students are required to present at least one departmental seminar about their research.



**Department of
Higher Education**

John R. Kasich, Governor
John Carey, Chancellor

**CHANGE REQUEST:
NAME AND CURRICULUM MODIFICATION**

Date of submission: October 5, 2017

Name of institution: Kent State University

Previously approved title: Biological Sciences- Physiology-MS

Proposed new title: Biological Sciences- Integrative Physiology and Neurobiology- MS

Proposed implementation date of the request: Fall 2018

Date that the request received final approval from the appropriate institutional committee:
[DATE] (Kent State University Board of Trustees)

Primary institutional contact for the request

Name: Melody J. Tankersley, PhD
Title: Senior Associate Provost and Dean of Graduate Studies
Phone: 330-672-8613
E-mail: mtankers@kent.edu

Educator Preparation Programs:

Leads to licensure: No [change to Yes if true]
Leads to endorsement: No

Explain the rationale for name and curricular changes.

Since the initial establishment of our MS program in Biological Sciences-Physiology the fields of biology have changed as has the research focus of our Department. In order to have highly qualified graduate applicants, which is directly connected to our ability to sustain high levels of research productivity, as measured by grants and peer-reviewed publications- we propose a degree title update for Biological Sciences-Physiology as well as several curricular updates. The proposed title and curricular changes are consistent with our current and future research focus areas and will be more likely to appeal to the high quality students we are seeking.

Describe how the name and curricular changes will affect students in the current program.

The name change is still inclusive of the students we currently have in the program and thus will have no impact on current students in the program. Current students will be able to complete their program requirements as the courses will continue to be offered.

Describe any faculty, administrative or support service changes occurring along with the name and curriculum changes.

No support changes are required

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Provide evidence that the appropriate accreditation agencies been informed of the proposed change (if applicable).

n/a

Describe how the effectiveness of the new curriculum will be monitored over time.

The effectiveness of our new curriculum will be evaluated by the quality of our applicant pool as well as the successful completion of our degree program. The first can be evaluated by average GPAs and GRE scores. The second can be evaluated by the time to degree completion.

Submit a comparison of the currently authorized curriculum and the proposed curriculum.

Previously Authorized Curriculum	Credit Hours	Proposed Curriculum	Credit Hours
Biochemistry requirement	3-4		
Responsible Conduct in Research and Teaching, BSCI 60184	0-2	Responsible Conduct in Research and Teaching, BSCI 60184	2
Seminar each semester	1	Seminar each semester, BSCI 60491	4-6
Statistics	3-4	Biological Statistics, BSCI 60103	3
Additional electives as appropriate	14-25	Additional electives as appropriate*	15-17
Thesis I, BSCI 60199	6	Thesis I, BSCI 60199	6

*14 hours of formal graded coursework is required and BSCI 50195 (Current Topics) and BSCI 50142 (Bioenergetics) are recommended.

Kent State University verifies that the information in this request is truthful and accurate.

Respectfully,

Todd A. Diacon, PhD
Senior Vice President for Academic Affairs and Provost

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