**Physiology (MS)**

**Master of Science in Physiology**

Unit: School of Medicine (http://louisville.edu/medicine) (GM)
Department Website: Physiology (http://louisville.edu/medicine/departments/physiology)
Program Website (http://louisville.edu/medicine/departments/physiology/degrees/ms-pb)
Academic Plan Code(s): PHZBMS

**Program Information**

**General Procedures and Requirements for the Degree of Master of Science in Physiology**

**Program Overview and Objectives**

The Department of Physiology is located in the Health Sciences Center of the University of Louisville which provides our graduate students with an active and intellectually stimulating environment. Our Graduate Program offers a Master of Science degree to provide several career options:

1. To develop competence in directed research for advanced technical positions in industry, government, and university medical research laboratories;
2. To prepare students with a good general knowledge of human physiology to enable them to communicate physiological concepts to future students; and
3. To explore the possibility of a future career as an independent scientist in medically-related research.
4. To enhance student credentials for admission to and performance in professional health care programs.

**Minimal Requirements for the Master’s Degree**

The typical Master of Science (MS) Graduate Program includes a directed research emphasis and consists of 30 credit hours typically over a twelve-month period (three (3) semesters) to include the following: 18 credit hours of basic medical sciences coursework and at least 12 credit hours of electives.

**Advisor Selection**

The Director of Graduate Studies will meet with the new student to discuss the academic and research interests. The Director of Graduate Studies will serve as a Temporary Advisor until a Permanent Advisor is selected.

During the first semester of their graduate study, beginning graduate students will visit research laboratories in which they have an interest. First-year students must select a principal advisor. The selection process involves approval by the student, the Principal Advisor, the Director of Graduate Studies, and the Department Chair.

**Admission Requirements**

The University of Louisville graduate catalog gives a general description of admission procedures. Application information can be found on the Graduate School website (http://www.louisville.edu/graduate/apply).

The following application items must be submitted to the Graduate School, Graduate Admissions at the University of Louisville:

1. One official transcript of the applicant’s previous work for each college or university that has been previously attended
2. Two letters of recommendation from people who are well acquainted with the applicant’s previous academic work.
3. The Graduate Record Examination (GRE) is required and the scores are considered part of the academic profile. Satisfactory MCAT, DAT, OAT or similar test scores may also be accepted in lieu of the GRE.
4. TOEFL Examination scores for foreign students from non-English speaking countries.
5. A non-refundable application fee to the University of Louisville.

Applicants must state in a letter to the Department but submitted to the Graduate School (referred to as the Personal Statement in the application materials), why they desire a MS degree in this Department of Physiology. Successful applicants generally demonstrate the following:

- A cumulative undergraduate grade point average that is usually 2.80 or higher on a scale of 4.00 (A=4, B=3, etc.)
- In the case of a foreign applicant from a non-English speaking country, the applicant must achieve a TOEFL Examination score >85 on the internet exam.

**Procedures for Determining Admissions**

Two committees will control student admission into the department graduate programs, the Graduate Program Executive Committee (GPEC) and the Graduate Admission Committee (GAC). The GPEC will recommend students to be interviewed based upon a dossier of information obtained from the Graduate School, Graduate Admissions. The GAC will conduct student interviews and vote on admission as representatives of the entire faculty of the Department.

**Structure of Admission Committees**

The GPEC will consist of the Director of Graduate Admissions, the Director of Graduate Studies, and one other departmental faculty member, all of whom are appointed by the department chair for staggered five-year terms.

The GAC will be composed of three tenured or tenure-track department faculty members and members of GPEC, for a total membership of six. The full-time faculty of the department will elect the three faculty representatives to GAC for staggered three-year terms.

**Functions of the Admission Committees**

The GPEC evaluates all requests for admission into the Program. The Director of Admissions will create a dossier of information on applicants that complete the application process. This dossier will be derived from PeopleSoft and OnBase databases. A completed applicant dossier (i.e., all application material) will be submitted to GPEC for evaluation. The GPEC will determine if an applicant should be voted on by the entire admissions committee, interviewed prior to determination of a vote, or not eligible for the program.

Student admission will require a simple majority recommendation from GAC. The recommendation of GAC is forwarded to the Director of Graduate Admissions. Completion of the admission process is accomplished by submission of a referral form to the Graduate School and delivery of the GPEC Report and complete dossier on admitted students to the departmental office. The referral form will initiate an acceptance or denial letter to the student. The GPEC Report and the complete dossier becomes the Department File on the admitted student and are transferred to the Director of Graduate Studies.
When an applicant is accepted into the department graduate program, the department chair will send a letter of acceptance. The prospective student must provide a letter indicating their acceptance of admission to the department graduate program.

Program Requirements
At least 30 credit hours beyond the baccalaureate degree are required for the degree of Master of Science. A maximum of six (6) credit hours may be credited from post-baccalaureate work in other professional or graduate degree programs.

Minimum Course Requirements
The typical MS program must include the following courses taken on a grade basis:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHZB 605</td>
<td>Systemic Physiology I</td>
<td>5</td>
</tr>
<tr>
<td>PHZB 606</td>
<td>Systemic Physiology II</td>
<td>5</td>
</tr>
<tr>
<td>BIOC 645</td>
<td>Advanced Biochemistry I</td>
<td>4</td>
</tr>
<tr>
<td>BIOC 647</td>
<td>Advanced Biochemistry II</td>
<td>4</td>
</tr>
<tr>
<td>Electives (see list below)</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Minimum Total Hours</td>
<td></td>
<td>30</td>
</tr>
</tbody>
</table>

Academic Performance
A student must have at least a 3.0 accumulated GPA to be graduated with a degree of Master of Science in Physiology. In general, a student with a GPA less than 3.0 at the end of the second semester will require a two-thirds majority vote of the Departmental faculty to continue in the Program.

A student may not be graduated with more than six (6) credit hours of C grades in their required courses.

Electives
All electives must be graduate levels courses.

Electives may include but are not limited to:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHZB 607</td>
<td>Principles of Presentations: Self, Science, Interviews</td>
<td>3</td>
</tr>
<tr>
<td>PHZB 625</td>
<td>Experimental Physiology Methods</td>
<td>1</td>
</tr>
<tr>
<td>PHZB 617</td>
<td>Seminar in Physiology and Biophysics</td>
<td>1</td>
</tr>
<tr>
<td>PHZB 619</td>
<td>Research</td>
<td>1-20</td>
</tr>
<tr>
<td>MBIO 601</td>
<td>Molecular Microbiology</td>
<td>2</td>
</tr>
<tr>
<td>MBIO 602</td>
<td>Immunology</td>
<td>3</td>
</tr>
<tr>
<td>PHZB 630</td>
<td>Biomedical Applications of Physiology in the Eye</td>
<td>3</td>
</tr>
<tr>
<td>PHZB 608</td>
<td>Physiological Concepts Related to the Metabolic Syndrome</td>
<td>3</td>
</tr>
<tr>
<td>PHZB 617</td>
<td>Seminar in Physiology and Biophysics</td>
<td>1</td>
</tr>
<tr>
<td>PHZB 619</td>
<td>Research</td>
<td>1-20</td>
</tr>
<tr>
<td>BIOC 667</td>
<td>Cell Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIOC 675</td>
<td>Cancer Biology</td>
<td>4</td>
</tr>
</tbody>
</table>

Other Potential Graduate Elective Course Areas:

- Communications
- Sociology
- Psychology
- Biostatistics
- Public Health
- Pharmacology
- Oral Biology