

## Request for Graduate Addition, Deletion, or Change of Area of Emphasis-Page 1

1. Prepare one paper copy with all signatures and supporting material and forward to the Graduate Council Chair.
2. E-mail one PDF copy without signatures to the Graduate Council Chair. If attachments included, please merge into a single file.
3. **The Graduate Council cannot process this application until it has received both the PDF copy and the signed hard copy.**

College: MedicineDept/Division: Biomedical ResearchContact Person: Todd L. Green, Ph.D.Phone: 696-3531

### Action Requested

Check action requested:  Addition  Deletion  ChangeDegree Program Biomedical Research M.S.Area of Emphasis Medical Sciences ResearchEffective Term/Year Fall 20  Spring 20  Summer 20 

### Notifications

Attach a copy of written notification regarding this curriculum request to the following:

1. Statement of Non-Duplication: If this area of emphasis will be similar in title or content to an existing area of emphasis, please send a memo to the affected department/division and include a copy with this packet as well as the response received from the affected department.
2. If your department/division requires additional faculty, equipment, or specialized materials, attach an estimate of cost and time required to secure these items.

Signatures: if disapproved at any level, do not sign. Return to previous signer with recommendation attached.

|                                   |            |
|-----------------------------------|------------|
| Dept. Chair/Division Head _____   | Date _____ |
| Registrar _____                   | Date _____ |
| College Curriculum Chair _____    | Date _____ |
| College Dean _____                | Date _____ |
| Graduate Council Chair _____      | Date _____ |
| Provost/VP Academic Affairs _____ | Date _____ |
| President _____                   | Date _____ |

## Request for Graduate Addition, Deletion, or Change of Area of Emphasis-Page 2

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1. Please provide a rationale for addition, deletion, change:

Research is becoming an important factor in admission to medical school and particularly in applying for residencies after receiving the MD degree. Having research experience through the Medical Sciences Research area of emphasis will be beneficial to students when they apply to medical school, especially if they want the MD/PhD combined degree, and to residencies.

2. Please describe any changes in curriculum:

Course number, title, credit hours. Note whether each course is required or optional. Enter NONE if no change.

Curriculum attached.

3. **Additional Resource Requirements:** If your program requires additional faculty, equipment or specialized materials to ADD or CHANGE this Area of Emphasis attach an estimate of the time and money required to secure these items. May attach separate page if needed

NOTE: approval of this form does not imply approval for additional resources. Enter NOT APPLICABLE if not applicable.

No additional faculty and resources are required.

4. **NON-DUPLICATION:**

If a question of possible duplication occurs, attach a copy of the correspondence sent to the appropriate department(s) describing the request and any response received from them.

Enter NONE if not applicable.

This is similar to the current Medical Sciences area of emphasis in the Biomedical Research Program. But students take different classes and spend more time doing research in this new area of emphasis.

***For catalog changes as a result of the above action, please fill in the following pages.***

## Request for Graduate Addition, Deletion, or Change of Area of Emphasis-Page 3

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### 5. **Current Catalog Description**

Insert the *Current* Catalog Description and page number from the latest catalog for entries you would like to change.  
(May attach separate page if needed)

Attached.

### 6. **Edits to the Current Description**

Attach a PDF copy of the current catalog description prepared in MS Word with strikethroughs to mark proposed deletions and use the highlight function to indicate proposed new text.

### 7. **New Catalog Description**

Insert a 'clean' copy of your proposed description, i.e., no strikethroughs or highlighting included. This should be what you are proposing for the new description. (May attach separate page if needed)

Attached.

## Request for Graduate Addition, Deletion, or Change of Area of Emphasis-Page 4

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Please insert in the text box below your Area of Emphasis change information for the Graduate Council agenda. Please enter the information exactly in this way (including headings):

Department:

Area of Emphasis Title:

Credit Hours:

Type of Change Requested: *(addition, deletion, change)*

Term to Take Effect: *(Fall, Spring, Summer/Year)*

Rationale:

Department: Biomedical Research

Area of Emphasis Title: Medical Sciences Research

Credit Hours: 36

Type of Change Requested: addition

Term to Take Effect: Fall 2019

Rationale: Research is becoming an important factor in admission to medical school and particularly in applying for residencies after receiving the MD degree. Having research experience through the Medical Sciences Research area of emphasis will be beneficial to students when they apply to medical school, especially if they want the MD/PhD combined degree, and to residencies.

## Medical Sciences Research Area of Emphasis

| <u>Course Title</u>   | <u>Course Number</u>       | <u>Credit Hours</u> | <u>Required/Optional</u> |
|---|----------------------------|---------------------|--------------------------|
| <b>Year 1 – Fall Semester</b>   |                            |                     |                          |
| Introduction to Nucleic Acids and Proteins                                  | BMR 601                    | 3                   | Required                 |
| Introduction to Cell Structure and Metabolism                               | BMR 602                    | 3                   | Required                 |
| Seminar   | BMR 680                    | 1                   | Required                 |
| Introduction to Research  | BMR 785                    | 3                   | Required                 |
| <b>Year 1 – Spring Semester</b>   |                            |                     |                          |
| Regulation of Cell Function   | BMR 603                    | 2                   | Required                 |
| Cellular Basis of Disease   | BMR 604                    | 1                   | Required                 |
| Seminar   | BMR 680                    | 1                   | Required                 |
| Mammalian Physiology  | PHS 628                    | 6                   | Optional                 |
| OR  |                            |                     |                          |
| Online Survey Tools, Relational and Data Warehousing, and Data Manipulation | CTS 614                    | 3                   | Optional                 |
| <b>Year 1 – Summer I Semester</b>   |                            |                     |                          |
| Research  | BMR 882                    | 4                   | Required                 |
| <b>Year 2 – Fall Semester</b>   |                            |                     |                          |
| Seminar   | BMR 680                    | 1                   | Required                 |
| Research  | BMR 882                    | 5                   | Required                 |
| Medical Microbiology I  | MCB 631                    | 3                   | Optional                 |
| <b>Year 2 – Spring Semester</b>   |                            |                     |                          |
| Seminar   | BMR 680                    | 1                   | Required                 |
| Biostatistics   | BMR 617<br>(or equivalent) | 3                   | Required                 |
| Research  | BMR 882                    | 3                   | Required                 |
| Online Survey Tools, Relational and Data Warehousing, and Data Manipulation | CTS 614                    | 3                   | Optional                 |
| OR  |                            |                     |                          |
| Mammalian Physiology  | PHS 628                    | 6                   | Optional                 |
| Medical Microbiology II   | MCB 631                    | 2                   | Optional                 |

Required courses

BMR 601

BMR 602

BMR 603

BMR 604

BMR 680

BMR 785

BMR 882 (12 hours minimum)

Biostatistics course

Elective courses

CTS 614

PHS 628

MCB 631

MCB 632

A student has to complete a minimum of 36 hours to get the degree.

## **CURRENT CATALOG DESCRIPTION**

### **Page 216**

#### **BIOMEDICAL RESEARCH, M.S. (Thesis), M.S. (Non-Thesis), Ph.D., M.D./Ph.D.**

##### **Areas of Emphasis**

**Cardiovascular Disease  
Cell Biology  
Medical Sciences (M.S. only)  
Neurobiology and Addiction  
Obesity and Related Diseases  
Toxicology and Environmental Health**

### **Page 218**

#### **BIOMEDICAL RESEARCH, M.S. (Non-Thesis Medical Sciences Area of Emphasis)**

A minimum of 36 credit hours is required for the non-thesis degree. In addition, the student must pass a written comprehensive examination covering BMR 601-604, MCB 631, MCB 632, and PHS 628. All students are required to successfully complete the following core curriculum:

BMR 601 Introduction to Nucleic Acids and Proteins  
BMR 602 Introduction to Cell Structure and Metabolism  
BMR 603 Regulation of Cell Function  
BMR 604 Cellular Basis of Disease  
BMR 617 Statistical Techniques for the Biomedical Sciences  
(or MTH 518, BSC 517, PSY 517, EDF 517 or equivalent)  
BMR 680 Seminar (minimum of 4 hrs.)  
BMR 785 Introduction to Research  
MCB 631 Medical Microbiology I  
MCB 632 Medical Microbiology II  
PHS 628 Neurophysiology

Elective classes include PHS 629 (Mammalian Physiology), PMC 621 (Medical Pharmacology I) and PMC 622 (Medical Pharmacology II).

In addition, after 12 hours of coursework has been completed, the student must submit to an M.S. Plan of Study form to the Dean of the Graduate College.

To remain in good academic standing and to graduate, the student must have a minimum graduate GPA of 3.0.

## **EDITS TO CURRENT CATALOG DESCRIPTION**

### **BIOMEDICAL RESEARCH, M.S. (Thesis), M.S. (Non-Thesis), Ph.D., M.D./Ph.D.**

#### **Areas of Emphasis**

**Cardiovascular Disease**  
**Cell Biology**  
**Medical Sciences (M.S. only)**  
**Medical Sciences Research (M.S. only)**  
**Neurobiology and Addiction**  
**Obesity and Related Diseases**  
**Toxicology and Environmental Health**

### **BIOMEDICAL RESEARCH, M.S. (Non-Thesis Medical Sciences Area of Emphasis)**

A minimum of 36 credit hours is required for the non-thesis degree. In addition, the student must pass a written comprehensive examination covering BMR 601-604, MCB 631, MCB 632, and PHS 628. All students are required to successfully complete the following core curriculum:

|                |   |
|----------------|---|
| BMR 601        | Introduction to Nucleic Acids and Proteins  |
| BMR 602        | Introduction to Cell Structure and Metabolism   |
| BMR 603        | Regulation of Cell Function   |
| BMR 604        | Cellular Basis of Disease   |
| BMR 617        | Statistical Techniques for the Biomedical Sciences<br>(or MTH 518, BSC 517, PSY 517, EDF 517 or equivalent) |
| <b>BMR 680</b> | <b>Seminar (minimum of 4 hours)</b>   |
| BMR 785        | Introduction to Research  |
| MCB 631        | Medical Microbiology I  |
| MCB 632        | Medical Microbiology II   |
| PHS 628        | Neurophysiology   |

Elective classes include PHS 629 (Mammalian Physiology), PMC 621 (Medical Pharmacology I) and PMC 622 (Medical Pharmacology II).

In addition, after 12 hours of coursework has been completed, the student must submit to an M.S. Plan of Study form to the Dean of the Graduate College.

To remain in good academic standing and to graduate, the student must have a minimum graduate GPA of 3.0.

### **BIOMEDICAL RESEARCH, M.S. (Non-Thesis Medical Sciences Research Area of Emphasis)**

A minimum of 36 credit hours is required for the non-thesis degree. In addition, the student must either pass a written comprehensive examination covering BMR 601-604 and BMR 882, or have a research manuscript accepted or submitted for publication in a peer-reviewed journal with the student as first author.



All students are required to successfully complete the following core curriculum:

|         |   |
|---------|---|
| BMR 601 | Introduction to Nucleic Acids and Proteins  |
| BMR 602 | Introduction to Cell Structure and Metabolism   |
| BMR 603 | Regulation of Cell Function   |
| BMR 604 | Cellular Basis of Disease   |
| BMR 617 | Statistical Techniques for the Biomedical Sciences<br>(or MTH 518, BSC 517, PSY 517, EDF 517 or equivalent) |
| BMR 680 | Seminar (minimum of 4 hours)  |
| BMR 785 | Introduction to Research  |
| BMR 882 | Research (minimum of 12 hours)  |

Recommended elective classes are CTS 614 (Online Survey Tools, Relational and Data Warehousing, and Data Manipulation), PHS 629 (Mammalian Physiology), MCB 631 (Medical Microbiology I), and MCB 632 (Medical Microbiology II).

In addition, after 12 hours of coursework has been completed, the student must submit an M.S. Plan of Study form to the Dean of the Graduate College.

To remain in good academic standing and to graduate, the student must have a minimum graduate GPA of 3.0.

## **NEW CATALOG DESCRIPTION**

### **BIOMEDICAL RESEARCH, M.S. (Thesis), M.S. (Non-Thesis), Ph.D., M.D./Ph.D.**

#### **Areas of Emphasis**

**Cardiovascular Disease**  
**Cell Biology**  
**Medical Sciences (M.S. only)**  
**Medical Sciences Research (M.S. only)**  
**Neurobiology and Addiction**  
**Obesity and Related Diseases**  
**Toxicology and Environmental Health**

### **BIOMEDICAL RESEARCH, M.S. (Non-Thesis Medical Sciences Area of Emphasis)**

A minimum of 36 credit hours is required for the non-thesis degree. In addition, the student must pass a written comprehensive examination covering BMR 601-604, MCB 631, MCB 632, and PHS 628. All students are required to successfully complete the following core curriculum:

BMR 601 Introduction to Nucleic Acids and Proteins  
BMR 602 Introduction to Cell Structure and Metabolism  
BMR 603 Regulation of Cell Function  
BMR 604 Cellular Basis of Disease  
BMR 617 Statistical Techniques for the Biomedical Sciences  
(or MTH 518, BSC 517, PSY 517, EDF 517 or equivalent)  
BMR 680 Seminar (minimum of 4 hours)  
BMR 785 Introduction to Research  
MCB 631 Medical Microbiology I  
MCB 632 Medical Microbiology II  
PHS 628 Neurophysiology

Elective classes include PHS 629 (Mammalian Physiology), PMC 621 (Medical Pharmacology I) and PMC 622 (Medical Pharmacology II).

In addition, after 12 hours of coursework has been completed, the student must submit to an M.S. Plan of Study form to the Dean of the Graduate College.

To remain in good academic standing and to graduate, the student must have a minimum graduate GPA of 3.0.

### **BIOMEDICAL RESEARCH, M.S. (Non-Thesis Medical Sciences Research Area of Emphasis)**

A minimum of 36 credit hours is required for the non-thesis degree. In addition, the student must pass a written comprehensive examination covering BMR 601-604 and BMR 882, or have a research manuscript accepted or submitted for publication in a peer-reviewed journal with the student as first author.

All students are required to successfully complete the following core curriculum:

- BMR 601 Introduction to Nucleic Acids and Proteins
- BMR 602 Introduction to Cell Structure and Metabolism
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- BMR 617 Statistical Techniques for the Biomedical Sciences  
(or MTH 518, BSC 517, PSY 517, EDF 517 or equivalent)
- BMR 680 Seminar (minimum of 4 hours)
- BMR 785 Introduction to Research
- BMR 882 Research (minimum of 12 hours)

Recommended elective classes are CTS 614 (Online Survey Tools, Relational and Data Warehousing, and Data Manipulation), PHS 629 (Mammalian Physiology), MCB 631 (Medical Microbiology I), and MCB 632 (Medical Microbiology II).

In addition, after 12 hours of coursework has been completed, the student must submit an M.S. Plan of Study form to the Dean of the Graduate College.

To remain in good academic standing and to graduate, the student must have a minimum graduate GPA of 3.0.