## APPENDIX II: INSTRUCTIONS AND FORMS FOR Ph.D. PROGRAM OF STUDY

Page 1

After the Program of Study forms are all completed, obtain the approval (via signatures) of your academic advisor, your research advisor, and all other Guidance Committee members. Check the appropriate box in the top left-hand side of the page to indicate if this is a preliminary, new, or a revised Program of Study. ***Note: Your final Program of Study must include the signatures of your Guidance Committee. If revisions were required, the Guidance Committee must sign a new form indicating that they have seen and agree to the new Program of Study.***

Page 2

List chronologically only courses taken or to be taken at Case for graduate credit beyond the B.S. degree. Do not include Masters Thesis (EBME 651) or Masters Project (EBME 601). Note that the various 0 credit hour courses that must be completed by all students are listed at the bottom of this list. For courses that have been completed, include the grade that you received.

Page 3 (Only form needed for Preliminary POS)

1) List all courses taken at all schools, including Case, to fulfill the Ph.D. course requirements and check the appropriate categories. Do not include any M.S. or Ph.D. research credits. Do not include EBME 400T/500T/600T on this page.

2) To request the incorporation of graduate-level courses from other institutions to satisfy requirements of the Ph.D. Program of Study, a petition to the GEC should be submitted along with the POS. This petition should include a cover page that clearly summarizes what is being requested and what supporting documents are included. If a revised petition is being submitted, clearly describe what issues were raised by the GEC in the original petition and how the revised petition addressed these issues. The petition should also include all of the documentation described in the GEC Handbook under “Courses Taken at Other Institutions to Fulfill Requirements of the Ph.D. Program of Study”. The courses to be used from other institutions must be consistent with one or more of the course categories (Engineering Concentration, Biomedical Science, or Mathematical Science).

Pages 4

Students must include short descriptions of how the proposed Program of Study satisfies the ***spirit*** of the Engineering Concentration requirement, the Biomedical Sciences requirement, and the Mathematical Sciences requirement. Many courses contain engineering, biomedical sciences, and mathematical content in varying amounts, making it difficult in some cases for the GEC to assess your training in each of these categories across your entire Program of Study. These descriptions are your opportunity to explain your choices to the GEC, reducing the number of revisions required to achieve a final approved POS while maintaining maximum flexibility.

1. Provide a written explanation (1/2 page recommended) of how the proposed POS satisfies the ***spirit*** of the Engineering Concentration requirement to provide depth and expertise appropriate for the student’s research area. In some cases, this explanation may include a description of how two mixed-material courses were combined to count as one Engineering Concentration course. In all cases, the explanation must be logical for the BME graduate program requirements and for your research area in particular.
2. Provide a written explanation (1/2 page recommended) of how the proposed POS satisfies the ***spirit*** of the Biomedical Science requirement to provide appropriate experience in basic science disciplines relevant to BME. Furthermore, some students may fulfill the Biomedical Sciences requirement in non-standard ways, e.g., the medical school curriculum. Again, it is possible to compile a single course credit from portions of several different courses, but this must be logical for the BME graduate program requirements and for your research area in particular.
3. Provide a written explanation (1/2 page recommended) of how the proposed POS satisfies the ***spirit*** of the Mathematical Science requirement to provide additional breadth in mathematics relevant to BME. Just because a course uses mathematical concepts and tools extensively does not mean that it will satisfy the Mathematical Sciences requirement. The course must contain new and/or advanced mathematical tools beyond those included in an undergraduate BME curriculum. Again, it is possible to compile a single course credit from portions of several different courses, but this must be logical for the BME graduate program requirements and for your research area in particular.

**Approval Process:**

1. Submit the POS only to Blackboard (migrating to Canvas in Spring 2017) for review.
2. If the GEC does not approve your Program of Study, you will receive appropriate instructions for how to revise it. ***When submitting a revised program of study, always include a cover page that lists the changes requested by the GEC and includes a point-by-point explanation of exactly what was changed in the POS to implement these changes.***
3. Upon approval by the GEC, your program of study will be submitted to the BME Associate Chair for Graduate Programs for approval.
4. After departmental approval, forward your program of study to Graduate Studies for approval through SIS.

**CASE WESTERN RESERVE UNIVERSITY**

Fall 2016 or later

**Department of Biomedical Engineering, School of Engineering**

☐ New POS

☐ Revised POS

**Ph.D. PROGRAM OF STUDY: GUIDANCE COMMITTEE**

Name: Date:

 Last First Middle

##### CASE FACULTY/ ADJUNCT

|  |  |  |  |
| --- | --- | --- | --- |
| NAME | **PRIMARY DEPT** | **Case BME Position** | **SIGNATURE** |
| **Academic Advisor1:** |  |  |  |
|  |  |  |  |
|  |  |  |  |
| **Research Advisor2:** |  |  |  |
|  |  |  |  |
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| **External Member3:** |  |  |  |
|  |  |  |  |
|  |  |  |  |
| **Other Members:** |  |  |  |
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|  |  |  |  |
| **Thesis Committee Chair1,4** |  |  |  |
|  |  |  |  |

1. Must be primary BME faculty.
2. Must have primary or adjunct BME appointment
3. Cannot be directly involved in the project or have ongoing collaborations with the student or advisors
4. Cannot be Research Advisor

**Non-Case Faculty (may participate but may not vote)**

|  |  |  |  |
| --- | --- | --- | --- |
| **NAME** | **INSTITUTION** | **TITLE** | **SIGNATURE** |
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**Approved by:**

 Associate Chair of Dean

 Graduate Programs

 Date Date

**CASE WESTERN RESERVE UNIVERSITY**

Fall 2016 or later

**Department of Biomedical Engineering, School of Engineering**

☐ New POS

☐ Revised POS

**Ph.D. PROGRAM OF STUDY: LIST OF COURSES**

Name: Date:

 Last First Middle

List only courses taken at Case, including at least 18 credit hours of EBME 701:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Semester** | **Year** | **Course (number and title)** | **Credit** | **Grade** |
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|  |  | IBMS 500 Integrated Biological Studies: On Being a Professional Scientist: The Responsible Conduct of Research (REQUIRED FOR MSTP, Optional Breadth Course for Non-MSTP) | 0 |  |
|  |  | UNIV 400 Professional Dev. Of Grad. TA | 0 |  |
|  |  | EBME 400T Graduate Teaching/Mentoring I | 0 |  |
|  |  | EBME 500T Graduate Teaching/Mentoring II | 0 |  |
|  |  | EBME 600T Graduate Teaching/Mentoring III | 0 |  |

 **Ph.D. Program of Study: Supplementary Information**

Revised November 2016

☐ New POS

☐ Revised POS

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| Name: |  |  | Date: |  |
|  | Last | First | Middle |  |  |  |  |
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| Department: |  |  | Academic Advisor: |  |
|  |
| B.S. in |  |  | From |  |  | Date Awarded: |  |
| M.S. in |  |  | From |  |  | Date Awarded: |  |
|  |
| Ph.D. Qualifying Exam Date (actual or expected): |  |
| Ph.D. Proposal Exam Date (actual or expected): |  |
| Residence Period of Ph.D. Thesis Research: |  |
| Specialty area in BME: |  |

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| --- | --- | --- | --- | --- |
| **COURSES** Category | Course | Hrs. | Course Title | Total Credits |
| Core Courses(12 Hrs.) | CBIO 453 | 4 |  | 12 |
| EBME 401D | 3 |  |
| EBME 433 | 4 |  |
| EBME 602 | 1 |  |
| Categorical Requirements(15 Hrs. min)Engineering(6 Hrs. min)Biomedical Science(3 Hrs. min)Math Science(3 Hrs. min) |  |  |  | Engineering |
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|  |  |  | Biology |
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|  |  |  |
|  |  |  |
|  |  |  | Math |
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| Breadth Requirements(9 Hrs. max) | EBME 570 | 1 | Graduate Professional Development for Biomedical Engineers |  |
| EBME 611/612 |  | BME Department Seminar (minimum 1 credit) |
| EBME |  | BME Topic Seminar (minimum 1 credit) |
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**Justification of POS Categorical Requirements**

Fall 2016 or later

☐ New POS

☐ Revised POS

Name: Date:

 Last First Middle

Provide a written explanation of how the proposed Program of Study satisfies the ***spirit*** of the three main categories (Engineering Concentration, Biomedical Science, Mathematical Science) of courses in your Program of Study.

##### Engineering Concentration

##### Biomedical Science

##### Mathematical Science