Thesis Option Petition Policy for the Combined Bachelor's and Master's Degrees (BS/MS) program

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Purpose and Application

This document establishes the policy for participation in the Thesis Option of the BS/MS program in the School of Biomedical Engineering, Science and Health Systems at Drexel University, hereafter referred to as **The School**, effective September 24, 2007, and last updated April 19, 2023. It presents the guidelines for petitioning The School to participate in the Thesis Option of the BS/MS program and serves as a supplement to The School's BS/MS program policy. Additionally, it should be noted that BS/MS Thesis Option participants must comply with the established policies for The School's master's degree program.

BS/MS Thesis Option Petition Requirements

The School's accreditation by ABET, Inc. requires the engineering degree program to include a capstone engineering design experience. To fulfill this requirement, students that are accepted to the BS/MS program are automatically assigned to the option that requires completion of the BMES 491, 492 and 493 - Senior Design course sequence which ***does not*** require the completion of a master's thesis. The BS/MS student who desires to pursue a master's thesis in lieu of the Senior Design courses must petition The School for approval to participate in the Thesis Option of the BS/MS program. The petition's purpose is to ensure that the BS/MS student has favorable conditions for pursuing a master's thesis and that the thesis incorporates an engineering design component which complies with accreditation standards. The petition requirements are as follows:

A. The petitioner must be a student with good standing in the BS/MS program in the School of Biomedical Engineering, Science and Health Systems at Drexel University (The School).

B. The petitioner must submit to the Undergraduate Academic Affairs Committee (UAAC) a petition to participate in the Thesis Option of the BS/MS program.
   a. The UAAC will accept petitions for review from April 1st to June 1st of the petitioner's Junior (fourth) year.
   b. The petition must include:
      i. a completed petition transmittal sheet, which establishes consent to participate in the BS/MS Thesis Option with a supervising thesis advisor,
      ii. a summary description of an engineering design that is associated with the master's thesis.

C. Final approval of the petition to participate in the BS/MS Thesis Option will be given by the UAAC.
   a. ***If the petition is approved***, the student will be registered in the BS/MS Thesis Option and must complete the thesis requirements per The School's master's degree program policies which includes a written thesis document and an oral examination of the thesis by a

faculty committee. The student also must complete the BMES 490 - Senior Thesis course sequence to ensure compliance with the accreditation-requisite capstone engineering design experience.

b. ***If the petition is not approved***, the student will be considered as continuing in the BS/MS program with good standing and the student must complete the BMES 491, 492 and 493 - Senior Design course sequence.
c. ***If the petition is submitted*** to the UAAC outside the designated review period (April 1st to June 1st of the petitioner's Junior (fourth) year), a review of the petition is not guaranteed.

BS/MS Thesis Option Petition Process

The process for petitioning The School to participate in the BS/MS Thesis Option includes the following three segments: 1) a summary description of the engineering design associated with the thesis, 2) a petition transmittal sheet, and 3) a review of the petition by The School's UAAC. Each segment must be satisfactorily completed for the petition approval.

1. **Summary Engineering Design Description** – The engineering design description should summarize the engineering design associated with the thesis in a report of two pages (maximum). The engineering design component may entail all or part of the master's thesis.

2. **Petition Transmittal Sheet** – The petition transmittal sheet is used to affirm the BS/MS student is affiliated with a supervising thesis advisor and to provide a record of the petition status. The transmittal sheet requires application signatures from the petitioning student and the supervising thesis advisor.

3. **UAAC Review of the Petition** – The School's UAAC will accept petitions for review from April 1st to June 1st of the petitioner's Junior (fourth) year. The UAAC is the final arbiter of the petition's approval and will record the review decision on the petition transmittal sheet.

BS/MS Thesis Option Petition Instructions

The following are guidelines for completing each of the petition segments listed above.

Summary Engineering Design Description

The petitioner should begin the petition process by meeting with a supervising thesis advisor to determine the engineering design that will be associated with the thesis. The petitioner must provide a summary description of the engineering design associated with the thesis that meets accreditation standards in a two-page (maximum) report. The following engineering design process breakdown has questions to assist your preparation of the design summary report. Not every question may apply to your specific situation, so, use them as a guide for the type of information that is relevant to the review committee.

1) Problem Scope and Objective
    a) What is the specific clinical, medical, scientific or engineering problem you are addressing?
    b) What is the unmet need the design intends to solve?
    c) Who is the intended user of the design?

d) Are you designing a device, process, or system to facilitate scientific discovery, such as use in a research study?
e) What is your specific deliverable objective for the design?

2) Design Inputs
   a) What are the problem-specific constraints associated with the unmet need you identified?
   b) What are the principal requirements that your design solution must achieve for the unmet need (a maximum of three requirements is sufficient)?
   c) Describe how you justified the determination of each requirement you listed:
      i) authoritative sources - peer-reviewed publications,
      ii) theoretical modeling - simulation, and/or
      iii) empirical examination - experimentation.

3) Verification Testing
   a) Provide a brief description of how you will verify that your design is successful.
   b) Provide a brief description of how you will test at least one requirement you identified.

4) Design Resources
   a) Provide a brief description of the facilities, equipment, materials and resources provided by the supervising thesis advisor that you will need for your design and testing.
   b) Provide a brief description of any special conditions necessary to complete your design effort (i.e., IRB or IACUC approval, Non-Disclosure Agreement (NDA), special training, etc.)

5) Design Schedule
   a) Provide a proposed timeline for your design project milestones.

6) **Formatting**. The following specifications are the recommended formatting for the design summary report:
   a) Page limit: 2 pages (8.5" x 11")
   b) Font style: Arial, Helvetica, Times New Roman (or similar font)
   c) Text size: 11-point (minimum)
   d) Line spacing: 1.5 (maximum)
   e) Page margins: 0.5-inch (minimum) -left, -right, -top and -bottom margins
   f) References format: APA

7) **Petition Submission**. Submit the petition (transmittal sheet and design summary report) to the following email address from April 1st to June 1st of the Junior (fourth) year: biomedadvising@drexel.edu

Note: BSMS students may begin working on the thesis-associated design prior to enrolling in BMES 490.

BS/MS Thesis Option Petition Transmittal Sheet

This form represents the transmittal information for a petition to participate in the Thesis Option of the BS/MS program in the School of Biomedical Engineering, Science and Health Systems at Drexel University. This form must accompany the *Summary Description of the Engineering Design* associated with the master's thesis. The petitioner must obtain the participation consent of

a supervising thesis advisor by signature below and submit the petition to the School of Biomedical Engineering for review at the email: biomedadvising@drexel.edu from April 1st to June 1st of the Junior (fourth) year.

Petition Submission Date:

Student Name:

Student ID#:

Student Email:

Student Signature:

Supervising Thesis Advisor Consent

I have read and agree with the policy for the BS/MS Thesis Option. I also agree with the *Summary Description of the Engineering Design* associated with the proposed thesis, and therefore consent to supervise the master's thesis of the named student.

Thesis Advisor Name:

Position/Title/Affiliation:

Email:

Phone#:

Advisor Signature:

Date:

UAAC Review of the Petition

Petition Status
The following checklist represents the status of the named student's petition to participate in the Thesis Option of the BS/MS program (to be completed by the UAAC).

(Petitioner Name):

a. Date petition received by the UAAC:

b. Date petition review completed by the UAAC:

c. Status of the petition:

_____**APPROVED**

_____**NOT APPROVED**

d. Reviewer COMMENTS: