

# **B.S./M.S. or B.S./M.Eng Program**

## **Department of Biomedical Engineering**

### **Objectives**

The goal of the BME B.S./M.S. or B.S./M.Eng Program is to allow academically qualified students to receive the B.S and M.S. /M.Eng degrees in a shortened time frame (up to 6 years for the MS/ME). This highly intensive academic program gives students more research experience and better prepares them for research and development careers or further graduate study. Completing the B.S./M.S. or B.S./M.Eng Program is possible if you enroll in the J.J. Slade Scholars Program and take graduate-level courses in the senior year **in addition to** completing all of the undergraduate degree requirements. (Courses cannot double-count for both UG requirements and graduate credit)

### **Eligibility**

In order to be considered for the B.S./M.S. or B.S./M.Eng Program, students must:

- 1) Have a GPA of 3.5 or higher and maintain at least a 3.2 GPA throughout Senior Year;
- 2) Apply after the end of Spring exams and before June 15 of the Junior Year;
- 3) Have completed all of the School of Engineering Undergraduate requirements for General, Humanities and Social Science Electives by the start of Senior Year;
- 4) Have three letters of recommendation and a personal statement. At least one of your letters must be from you research and/or intended J.J. Slade Scholar faculty advisor.

\*There is no GRE requirement although the GRE's will be required to apply for a PhD program or any type of future funding or fellowship.

### **Curriculum**

The B.S./M.S. or B.S./M.Eng Program requires the student to take up to 24 Undergraduate credits during the Senior Year and 33 Graduate level credits during Senior and Graduate Years (5<sup>th</sup> Year). The timeline for the Program is as follows:

**Spring of Junior Year:** Candidates should identify an advisor for their Slade Scholar Research and apply for the James J. Slade Scholars Program. Apply to the BME B.S./M.S. or B.S./M.Eng Program by June 1st.

**Summer following Junior Year** (optional): Begin research and/or Slade Project.

**Senior year:** Take Slade Scholar Research courses. The 587/588 credits will count only as elective course credits towards the M.S. or M.Eng degree. This Slade research may become the thesis topic for the M.S. degree but cannot count for the B.S. degree.

**Fifth year:** Remainder of Masters Courses. (Research/Elective/Core Graduate).

You can take fewer courses, but this would lengthen the duration of the M.S. degree.

**Summer and Fall following fifth year:** If necessary, students will write the M.S. thesis and defend it or present the M.Eng project.

Please Note:

- 1) Students can change advisors at the end of the B.S. Senior year, as the Slade Scholar topic does not necessarily have to be the M.S. thesis or M.Eng topic.
- 2) You need to graduate with a B.S. at the end of the spring semester of your 4<sup>th</sup> year
- 3) Continuation in the BS/MS or BS/M.Eng program is contingent on receiving **no more than one C grade** in the graduate courses in the 4<sup>th</sup> year.

# BME B.S./M.S. or B.S./M.Eng Sample Curriculum

## Summer: rising 4<sup>th</sup> year undergraduate/1<sup>st</sup> year graduate

Slade Scholar Thesis Research Begins

### Fall: 4<sup>th</sup> year undergraduate/1<sup>st</sup> year graduate

14:125:401	Senior Design I	3
14:125:xxx	Departmental Elective	3
14:125:xxx	Departmental Elective	3
14:125:xxx	Technical Elective	3
16:125:587	Slade Scholar Thesis Research I	3
16:125:xxx	Graduate Core Course or <input type="text"/>	3 (1 of 2 courses)
16:125:xxx	Graduate Elective Course <input type="text"/>	

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12 UG credits, 6 graduate credits

### Spring: 4<sup>th</sup> year undergraduate/1<sup>st</sup> year graduate

14:125:402	Senior Design II	3
14:125:xxx	Departmental Elective	3
14:125:xxx	Departmental Elective	3
14:125:xxx	Technical Elective	3
14:125:588	Slade Scholar Thesis Research II	3
16:125:xxx	Graduate Core Course or <input type="text"/>	3 (1 of 2 courses)
16:125:xxx	Graduate Elective Course <input type="text"/>	

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12 UG credits, 6 graduate credits

### Fall: 2<sup>nd</sup> year graduate

16:125:xxx	Graduate Course Course or <input type="text"/>	3 (1 of 2 courses)
16:125:xxx	Graduate Elective Course <input type="text"/>	
16:125:501	BME Math Modeling Course	3
16:125:701	Research (MS Only)	3
16:125:699	Non-Thesis Study (M.Eng Only)	3
16:125:601	Engineering Ethics and Seminar	1

### Spring: 2<sup>nd</sup> year graduate

16:125:xxx	Graduate Course Course or <input type="text"/>	3 (1 to 3 courses as needed)
16:125:xxx	Graduate Elective Course or <input type="text"/>	
16:125:586	BME Cell Biology Course	3
16:125:628	Clinical Practicum	1
16:125:702	Research (MS Only)	3
16:125:699	Non-Thesis Study (M.Eng Only)(as needed)	3
16:125:602	Engineering Writing and Seminar	1

## Summary:

### Sample Undergraduate Curriculum for Year 5: 24 credits

Senior design I & II  
 4 departmental electives  
 2 technical electives

### Master's Curriculum: 33 credits minimum

3 Core Courses (out of 5)	9 credits
1 Analytical Math Course	3 credits
1 Cell Biology Course	3 credits
3 One-Credit Developmental Courses	3 credits
2 Slade Scholar 587/588 Courses as Electives	6 credits
1 Elective Course (2 electives if doing M.Eng)	3 or 6 credits
If Doing MS: 6 Research Credits/ M.Eng: 3 Non-Thesis Study Credits	3 or 6 credits

**33 Total Graduate Credits**

# Application for BME BS/MS or BS/M.Eng Program

## RUTGERS UNIVERSITY DEPARTMENT OF BIOMEDICAL ENGINEERING

### Instructions:

- 1) Fill out this application and attach your personal statement and transcript.
- 2) Have three letters of reference sent to Lawrence Stromberg in BME-111. (YOU SHOULD NOT SEE YOUR OWN LETTERS) Email: [les42@rci.rutgers.edu](mailto:les42@rci.rutgers.edu)
- 3) Send/Email the completed application package to Lawrence Stromberg in BME-111 before June 15 but after spring exams end.

***\*Please Type or Print Legibly\****

Name: \_\_\_\_\_ RUID: \_\_\_\_\_

Home mailing address: \_\_\_\_\_  
\_\_\_\_\_

Campus mailing address: \_\_\_\_\_

RU and Non-RU Email Addresses: \_\_\_\_\_

Overall GPA: \_\_\_\_\_ Major GPA (If known): \_\_\_\_\_

Year started at Rutgers: \_\_\_\_\_ Credits completed so far: \_\_\_\_\_

Expected graduation date (BS degree): \_\_\_\_\_

Faculty advisor who will supervise the Slade Scholar Research (Slade advisor must submit a reference letter):  
\_\_\_\_\_

Title of project: \_\_\_\_\_

1) Name of first reference (Slade Advisor): \_\_\_\_\_

2) Name of second reference: \_\_\_\_\_

3) Name of third reference: \_\_\_\_\_

***"I have read and understand the requirements for the BME BS/MS or BS/M.Eng degrees":***

**Student Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**For BME Use Only:** Admit Conditional Admit Deny Date: \_\_\_\_\_

Comments/Reasons: \_\_\_\_\_  
\_\_\_\_\_

Undergraduate Program Director Approval: \_\_\_\_\_

Graduate Program Director Approval: \_\_\_\_\_