5-Year Combined Bachelor’s/Master's Program

Department of Biomedical Engineering

Objectives

The goal of the BME B.S./M.S. or B.S./M.Eng 5-Year 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 5+ years total for the BS/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 the candidate also enrolls 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, candidates must:
1. Have a GPA of 3.0 or higher and maintain at least a 3.2 GPA throughout Senior Year;
2. Apply after the end of Spring exams but before July 1 going into the Senior Year;
3. Also apply to the J.J. Slade Scholar Program by July 1: https://soe.rutgers.edu/slade
4. Have completed most, if not all, the School of Engineering Undergraduate requirements for General, Humanities and Social Science Electives by the start of Senior Year;
5. Have three letters of recommendation and a personal statement. At least one of the letters must be from the candidate’s 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 fellowships.

* Remember, candidates must apply to BOTH BME's 5-Year Program and SoE’s J.J. Slade Program.

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 (5th Year). The timeline for the Program is as follows:

After Spring Finals of the Junior Year: Candidates should identify an advisor for their Slade Scholar Research and apply for the James J. Slade Scholars Program (2 separate programs). Apply to BOTH programs by July 1.

Summer following the Junior Year: Begin/identify the Slade Project and faculty advisor.

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 students are not tied to continue the Slade project for the master's.

Fifth Year (1st graduate year): Remainder of master’s courses and work on the master’s thesis or project. Candidates can take fewer courses, but this would lengthen the duration of the master’s degree.

Summer and Fall following the Fifth Year: If necessary, students will complete 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 4th year to continue (officially) in the master’s program, as a full-fledged graduate student, starting in the 5th 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 4th year.
# Sample BME 5-Year Bachelor’s/Master’s Curriculum

**Summer:** Rising 4th year undergraduate/1st year “graduate” (technically an undergraduate still)
Slade Scholar Thesis Research Begins

**Fall:** 4th year undergraduate/1st year “graduate” (technically an undergraduate still)
- 14:125:401/421 Senior Design I  3
- xx:125:xxx Departmental Elective  3
- xx:125:xxx Departmental Elective  3
- xxx:xxx:xxx Technical Elective  3
- 16:125:587 Slade Scholar Thesis Research I  3
- 16:125:xxx Graduate Core Course or Graduate Elective Course  3 (1 of 2 courses)

**Spring:** 4th year undergraduate/1st year “graduate”
- 14:125:402/422 Senior Design II  3
- xx:125:xxx Departmental Elective  3
- xx:125:xxx Departmental Elective  3
- xxx:xxx:xxx Technical Elective  3
- 14:125:588 Slade Scholar Thesis Research II  3
- 16:125:xxx Graduate Core Course or Graduate Elective Course  3 (1 of 2 courses)

**Fall:** 2nd year graduate (Official Graduate Student in Graduate School)
- 16:125:xxx Graduate Core Course or Graduate Elective Course  3 (1 of 2 courses)
- 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:** 2nd year graduate
- 16:125:xxx Graduate Core Course or Graduate Elective Course or BME Cell Biology Course  3 (1 to 3 courses as needed)
- 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

**Summer:** 2nd year graduate
Finish up Thesis or M.Eng project

## 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 BME Math Methods Course  3 credits
- 1 BME Adult and Stem 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 pursuing M.Eng)  3 or 6 credits
- If pursuing MS: 6 Research Credits/ M.Eng: 3 Non-Thesis Study Credits  3 or 6 credits

**Total Graduate Credits:** 33 credits
Application for 5-Year Bachelor’s/Master’s 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@soe.rutgers.edu
3) Send/Email the completed application package to Lawrence Stromberg in BME-111 after the spring semester final exams end but before July 1.

*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 Slade project (if known already):

_________________________________________________________________________________________

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 5-Year 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: _________________________________________________