

BME M.S./M.Eng Program Curriculum

FALL Year 1

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|------------|-------------------------------------|
| 16:125:xxx | BME Core Course (3cr) |
| 16:125:xxx | BME Core Course (3cr)* |
| 16:125:xxx | Bioengineering Elective (3cr) |
| 16:125:501 | Mathematical Modeling for BME (3cr) |
| 16:125:601 | Engineering Ethics/Seminar(1cr) |

Advisor Selection Forms (December through June)

SPRING Year 1

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|------------|---|
| 16:125:xxx | BME Core Course (3cr) |
| 16:125:xxx | BME Core Course (3cr)* |
| 16:125:xxx | Bioengineering Elective (3cr) |
| 16:125:586 | Structure and Dynamics in Adult and Stem Cell Biology (3cr) |
| 16:125:602 | Engineering Writing/Seminar (1cr) |

FALL & SPRING Year 2/Year 3

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| 16:125:xxx | Bioengineering Elective (3cr) |
| 16:125:xxx | Bioengineering Elective (3cr) (As Needed) |
| 16:125:628 | Clinical Practicum (1cr) |
| 16:125:701/702 | Research (3cr/3cr) |
| 16:125:699 | Non-Thesis Study (3cr) (M.Eng Only) |
| 16:125:605 | BME Seminar (zero credit, no tuition charge) |

BME Core Courses

Must take 3 out of 5:

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|----|------------|---|
| 1) | 16:125:561 | BioImaging Methods (3cr) |
| 2) | 16:125:571 | Biosignal Processing and Biomedical Imaging (3cr) |
| 3) | 16:125:572 | Biocontrol, Modeling and Computation (3cr) |
| 4) | 16:125:573 | Kinetics, Thermodynamics and Transport in Biomedicine (3cr) |
| 5) | 16:125:574 | Biomechanics and Biomaterials (3cr) |

Physiology

Students **must** have taken an UG level Physiology course previously or the following course must be taken.

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|-----------|--|--|
| 1) | 16:125:581 | Mammalian Physiology (online course-3cr) |
| <u>OR</u> | Other Rutgers or RWJMS Physiology Courses – Contact the Graduate Program for information | |

Advanced Engineering Mathematics[^]

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| 1) | 16:125:501 | Mathematical Modeling for BME (3cr) |
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[^]Students may be asked to complete an alternate graduate-level math course based on need or availability. Students wishing to take an alternate math class should petition the graduate program director.

Advanced Cell Biology

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| 1) | 16:125:586 | Structure and Dynamics in Adult and Stem Cell Biology (3cr) |
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Professional Developmental Courses **Must take 1, 2 and 5...3&4 are optional**

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|----|------------|---------------------------------------|
| 1) | 16:125:601 | Engineering Ethics and Seminar (1cr) |
| 2) | 16:125:602 | Engineering Writing and Seminar (1cr) |
| 3) | 16:125:607 | Preparing Future Faculty I (1cr) |
| 4) | 16:125:608 | Preparing Future Faculty II (1cr) |
| 5) | 16:125:628 | Clinical Practicum (1cr) |

BME Seminar (Required each semester after taking 601/602)

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|----|------------|-------------------|
| 1) | 16:125:605 | BME Seminar (0cr) |
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Summary of Minimum M.S./M.Eng Requirements

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|---|---|
| 3 out of 5 BME Core Courses | 9 credits |
| Advanced Engineering Math Course | 3 credits |
| Advanced Cell Biology Course | 3 credits |
| 3 Bioengineering Electives (4 if M.Eng) | 9 credits (12 credits if M.Eng) |
| 3 out of 5 Professional Developmental Courses | 3 credits |
| Research (M.S. ONLY) | 6 credits |
| Non-Thesis Study (M.Eng ONLY) | 3 credits (MUST take an additional 3 credit elective) |
| BME Seminars each fall/spring semester after Y1 | 0 credits (REQUIRED COURSE 605) |
| Total | 33 credits |

* If schedule allows, take up to two core classes per semester. Minimum of three core classes required.