# School of Biomedical Engineering

## Courses

### Biomedical Engineering (BIOM)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisite</th>
<th>Course Description</th>
<th>Term Offered</th>
<th>Grade Mode</th>
<th>Special Course Fee</th>
<th>Registration Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOM 100</td>
<td>Overview of Biomedical Engineering</td>
<td>1</td>
<td>(1-0-0)</td>
<td>Overview of the field of biomedical engineering with an emphasis on the roles of mechanical, electrical, and chemical/biological engineering principles.</td>
<td>Fall</td>
<td>Traditional</td>
<td>No</td>
<td>Must be a: Undergraduate</td>
</tr>
<tr>
<td>BIOM 101</td>
<td>Introduction to Biomedical Engineering</td>
<td>3</td>
<td>(3-0-0)</td>
<td>Basic principles, fundamentals in biomedical engineering including molecular, cellular and physiological principles, major areas such as biomechanics.</td>
<td>Fall</td>
<td>Traditional</td>
<td>No</td>
<td>Restriction: Must be a: Undergraduate. Restrictions: Must not be a: Freshman, Sophomore.</td>
</tr>
<tr>
<td>BIOM 109</td>
<td>Principles of Biomedical Engineering</td>
<td>1</td>
<td>(1-0-0)</td>
<td>Fundamental principles of biomedical engineering and commonalities with mechanical, electrical, and chemical/biological engineering. Emphasis on the application of engineering design in a biomedical context. Introduction to industrial and academic career paths.</td>
<td>Fall, Spring</td>
<td>Traditional</td>
<td>No</td>
<td>Restrictions: Must be a: Undergraduate. Restrictions: Must not be a: Freshman, Sophomore.</td>
</tr>
<tr>
<td>BIOM 200</td>
<td>Fundamentals of Biomedical Engineering</td>
<td>2</td>
<td>(2-0-0)</td>
<td>Application of engineering analysis to physiology and biomedical engineering topics.</td>
<td>Fall</td>
<td>Traditional</td>
<td>No</td>
<td>Restrictions: Must be a: Undergraduate. Restrictions: Must not be a: Freshman, Sophomore.</td>
</tr>
<tr>
<td>BIOM 300</td>
<td>Problem-Based Learning Biomedical Engr Lab</td>
<td>4</td>
<td>(1-4-1)</td>
<td>Group problem-based learning approach to problems spanning all core areas of biomedical engineering.</td>
<td>Spring</td>
<td>Traditional</td>
<td>Yes</td>
<td>Prerequisite: BIOM 101 or BIOM 200 or BIOM 100 and CBE 205 and MECH 262 and (MATH 340 or MATH 345).</td>
</tr>
<tr>
<td>BIOM 306</td>
<td>Bioprocess Engineering</td>
<td>4</td>
<td>(3-2-0)</td>
<td>Material, energy balances; fluid flow, heat exchange, mass transfer; application to operations in food, fermentation, other bioprocess industries.</td>
<td>Spring</td>
<td>Traditional</td>
<td>No</td>
<td>Prerequisite: (CHEM 107 or CHEM 111) and (PH 121 or PH 141).</td>
</tr>
<tr>
<td>BIOM 350A</td>
<td>Study Abroad--Ecuador: Prosthetics</td>
<td>Var[1-2]</td>
<td>(0-0-0)</td>
<td>Design and fabricate prosthetics for under-served populations in Ecuador. Course experience will occur in Quito, Ecuador in partnership with Range of Motion Project (ROMP), a non-profit healthcare organization.</td>
<td>Summer</td>
<td>Traditional</td>
<td>No</td>
<td>Prerequisite: None.</td>
</tr>
<tr>
<td>BIOM 352B</td>
<td>Study Abroad--Portugal: Biomedical Industry and Healthcare</td>
<td>1</td>
<td>(0-0-1)</td>
<td>Topics include: regulatory affairs and quality control, healthcare, research and development in biotechnology and biomedical engineering. Intercultural exchange in Portugal includes visits to biomedical research, industry and healthcare facilities to provide understanding of how products are developed and brought to market in the EU and how this compares to the US.</td>
<td>Spring</td>
<td>Traditional</td>
<td>No</td>
<td>Prerequisite: None.</td>
</tr>
<tr>
<td>BIOM 382B</td>
<td>Study Abroad--Portugal: Biomedical Industry and Healthcare</td>
<td>1</td>
<td>(0-0-1)</td>
<td>Topics include: regulatory affairs and quality control, healthcare, research and development in biotechnology and biomedical engineering. Intercultural exchange in Portugal includes visits to biomedical research, industry and healthcare facilities to provide understanding of how products are developed and brought to market in the EU and how this compares to the US.</td>
<td>Spring</td>
<td>Traditional</td>
<td>No</td>
<td>Prerequisite: None.</td>
</tr>
<tr>
<td>BIOM 403</td>
<td>Intro to Optical Techniques in Biomedical Eng</td>
<td>3</td>
<td>(3-0-0)</td>
<td>Engineering design principles of optical characterization techniques for biomedical systems, including optical spectroscopy and microscopy of biomolecules and tissues.</td>
<td>Spring (odd years)</td>
<td>Traditional</td>
<td>No</td>
<td>Prerequisite: CHEM 111 and PH 142 with a minimum grade of C. Restrictions: Must not be a: Freshman, Sophomore. Registration Information: Junior standing. Sections may be offered: Online. Credit allowed for only one of the following: BIOM 403, BIOM 481A3, ECE 403, or ECE 481A3.</td>
</tr>
</tbody>
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**Also Offered As:**

- BIOM 306: Bioprocess Engineering
- BIOM 350A: Study Abroad--Ecuador: Prosthetics
- BIOM 352B: Study Abroad--Portugal: Biomedical Industry and Healthcare
- BIOM 403: Intro to Optical Techniques in Biomedical Eng

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**Special Course Fee:**

- Yes.
- No.

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**Register Information:**

- Credit allowed for only one of the following: BIOM 100, BIOM 101, BIOM 109, or BIOM 180A1.
- Credit not allowed for both BIOM 101 and BIOM 200.
- Credit not allowed for both BIOM 306 and BTEC 306.
- Credit not allowed for both BIOM 350A and BIOM 382A.
- Credit not allowed for both BIOM 350A and BIOM 382A.
- Credit not allowed for both BIOM 350A and BIOM 382A.
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- Credit not allowed for both BIOM 350A and BIOM 382A.
- Credit not allowed for both BIOM 350A and BIOM 382A.
BIOM 421 Transport Phenomena in Biomedical Engineering Credits: 3 (3-0-0)
Course Description: Engineering models of active and passive mechanisms of momentum. Heat and mass transport in mammalian cells, tissues, and organ systems.
Prerequisite: (BMS 300) and (CIVE 360 or MECH 344).
Registration Information: Sections may be offered: Instructor Option. Credit not allowed for both BIOM 400 and BIOM 421.
Term Offered: None.
Grade Mode: Traditional.
Special Course Fee: No.

BIOM 422 Quantitative Systems and Synthetic Biology Credits: 3 (3-0-0)
Course Description: In-depth analysis of the quantitative systems approach to biology and biological engineering at the molecular and cellular scales.
Prerequisite: BIOM 421 or CIVE 360.
Registration Information: Sections may be offered: In instructor option. Credit not allowed for both BIOM 400 and BIOM 422.
Term Offered: None.
Grade Mode: Traditional.
Special Course Fee: No.

BIOM 431 Biomedical Signal and Image Processing Credits: 3 (3-0-0)
Also Offered As: ECE 431.
Course Description: Principles, features and mathematical processing of biomedical signals and images including interference and noise filtering and feature enhancement.
Prerequisite: (ECE 303 with a minimum grade of C or STAT 303 with a minimum grade of C and ECE 311 with a minimum grade of C and PH 142 with a minimum grade of C).
Registration Information: Sections may be offered: Online. Credit not allowed for both BIOM 400 and ECE 431.
Term Offered: None.
Grade Mode: Traditional.
Special Course Fee: No.

BIOM 441 Biomechanics and Biomaterials Credits: 3 (3-0-0)
Course Description: Principles of biomechanics, biofluids, and biomaterials.
Prerequisite: (BMS 300, may be taken concurrently and CIVE 360 and MECH 324, may be taken concurrently) and (MECH 331, may be taken concurrently or MECH 331B, may be taken concurrently and MECH 331A, may be taken concurrently) and (MECH 342).
Registration Information: Sections may be offered: Online. Credit not allowed for both BIOM 400 and BIOM 441.
Term Offered: None.
Grade Mode: Traditional.
Special Course Fee: No.

BIOM 470 Biomedical Engineering Credits: 3 (3-0-0)
Also Offered As: MECH 470.
Course Description: Engineering application in human/animal physiology, diagnosis of disease, treatment, rehabilitation, human genome manipulation.
Prerequisite: (PH 141) and (MATH 155 or MATH 160).
Registration Information: Credit not allowed for both BIOM 470 and MECH 470.
Term Offered: None.
Grade Mode: Traditional.
Special Course Fee: No.

BIOM 476A Biomedical Clinical Practicum I Credits: 2 (0-0-2)
Course Description: Biomedical lab work or exposure to the hospital/clinical environment.
Prerequisite: (BMS 300) and (BIOM 470 or MECH 470).
Terms Offered: In instructor option. Sections may be offered: Online. Credit not allowed for both BIOM 504 and CBE 504.
Grade Mode: S/U Sat/Unsat Only.
Special Course Fee: No.

BIOM 476B Biomedical Clinical Practicum II Credits: 4 (0-0-4)
Course Description: Biomedical lab work or exposure to the hospital/clinical environment.
Prerequisite: (BMS 300) and (BIOM 470 or MECH 470).
Terms Offered: In instructor option. Sections may be offered: Online. Credit not allowed for both BIOM 504 and CBE 504.
Grade Mode: S/U Sat/Unsat Only.
Special Course Fee: No.

BIOM 486A Biomedical Design Practicum: Capstone Design I Credits: 4 (0-0-10)
Course Description:
Prerequisite: (BIOM 486A) and (CBE 451 or ECE 312 or MECH 325 and MECH 326 or PH 353).
Restrictions: Must not be a: Freshman, Sophomore, Junior. Must be a: Undergraduate.
Registration Information: Senior standing. Enrollment in biomedical engineering major.
Term Offered: Fall.
Grade Mode: Traditional.
Special Course Fee: No.

BIOM 486B Biomedical Design Practicum: Capstone Design II Credits: 4 (0-0-10)
Course Description:
Prerequisite: (BIOM 486A) and (CBE 451 or ECE 312 or MECH 325 and MECH 326 or PH 353).
Restrictions: Must not be a: Freshman, Sophomore, Junior. Must be a: Undergraduate.
Registration Information: Senior standing. Enrollment in biomedical engineering major.
Term Offered: Spring.
Grade Mode: Traditional.
Special Course Fee: No.

BIOM 495 Independent Study Credits: Var[1-6] (0-0-0)
Course Description:
Prerequisite: None.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

BIOM 504 Fundamentals of Biochemical Engineering Credits: 3 (3-0-0)
Also Offered As: CBE 504.
Course Description: Application of chemical engineering principles to enzyme kinetics, fermentation and cell culture, product purification, and bioprocess design.
Prerequisite: CBE 205.
Registration Information: Senior standing. Sections may be offered: Online. Credit not allowed for both BIOM 504 and CBE 504.
Term Offered: Fall.
Grade Mode: Traditional.
Special Course Fee: No.
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<th>Course Code</th>
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<tr>
<td>BIOM 517</td>
<td>Advanced Optical Imaging</td>
<td>3</td>
<td>MATH 255, MATH 340</td>
<td>Online. Credit allowed for only one of the following: BIOM 517, BIOM 581A7, ECE 517 or ECE 581B7.</td>
<td>Fall (odd years).</td>
<td>Traditional.</td>
<td>No.</td>
</tr>
<tr>
<td>BIOM 518</td>
<td>Biophotonics</td>
<td>3</td>
<td>ECE 526, ECE 581A7</td>
<td>Online. Credit allowed for only one of the following: BIOM 518, BIOM 581A9, ECE 518 or ECE 581A9.</td>
<td>Fall (even years).</td>
<td>Traditional.</td>
<td>No.</td>
</tr>
<tr>
<td>BIOM 522</td>
<td>Bioseparation Processes</td>
<td>3</td>
<td>BIOM 101, BIOM 102, CHEM 111</td>
<td>Online. Credit allowed for only one of the following: BIOM 522, CBE 522, or CBE 581A2.</td>
<td>Fall.</td>
<td>Traditional.</td>
<td>No.</td>
</tr>
<tr>
<td>BIOM 525</td>
<td>Cell and Tissue Engineering</td>
<td>3</td>
<td>BIOM 101, BIOM 102, CHEM 111</td>
<td>Sections may be offered: BIOM 525, CBE 525, MECH 525. Sections may be offered: Online.</td>
<td>Fall (odd years).</td>
<td>Traditional.</td>
<td>No.</td>
</tr>
<tr>
<td>BIOM 526</td>
<td>Biological Physics</td>
<td>3</td>
<td>BIOM 101, BIOM 102, CHEM 111</td>
<td>Sections may be offered: BIOM 526 and ECE 526. Sections may be offered: Online.</td>
<td>Fall (odd years).</td>
<td>Traditional.</td>
<td>No.</td>
</tr>
<tr>
<td>BIOM 527A</td>
<td>Biosensing: Cells as Circuits</td>
<td>1</td>
<td>BIOM 101, BIOM 102, CHEM 111</td>
<td>Credit allowed for only one of the following: BIOM 527A, BIOM 581B1, ECE 527A, or ECE 581B1.</td>
<td>Fall (even years).</td>
<td>Traditional.</td>
<td>No.</td>
</tr>
<tr>
<td>BIOM 527B</td>
<td>Biosensing: Signal and Noise in Biosensors</td>
<td>1</td>
<td>BIOM 101, BIOM 102, CHEM 111</td>
<td>Credit allowed for only one of the following: BIOM 527B, BIOM 581B2, ECE 527B, or ECE 581B2.</td>
<td>Spring (even years).</td>
<td>Traditional.</td>
<td>No.</td>
</tr>
<tr>
<td>BIOM 527C</td>
<td>Biosensing: Sensor Circuit Fundamentals</td>
<td>1</td>
<td>BIOM 101, BIOM 102, CHEM 111</td>
<td>Credit allowed for only one of the following: BIOM 527C, BIOM 581B3, ECE 527C, or ECE 581B3.</td>
<td>Spring (even years).</td>
<td>Traditional.</td>
<td>No.</td>
</tr>
<tr>
<td>ECE 501</td>
<td>Engineering Fundamentals</td>
<td>1</td>
<td>ECE 526</td>
<td>Online. Credit allowed for only one of the following: ECE 501, ECE 526, or ECE 581A1.</td>
<td>Fall.</td>
<td>Traditional.</td>
<td>No.</td>
</tr>
<tr>
<td>ECE 551</td>
<td>Electrical Engineering</td>
<td>4</td>
<td>ECE 526</td>
<td>Online. Credit allowed for only one of the following: ECE 551, ECE 526, or ECE 581A1.</td>
<td>Fall.</td>
<td>Traditional.</td>
<td>No.</td>
</tr>
<tr>
<td>ECE 581</td>
<td>Electrical Measurements</td>
<td>3</td>
<td>ECE 526</td>
<td>Online. Credit allowed for only one of the following: ECE 581, ECE 526, or ECE 581A1.</td>
<td>Fall.</td>
<td>Traditional.</td>
<td>No.</td>
</tr>
</tbody>
</table>

**Course Description**: Engineering design principles of advanced optical imaging techniques and image formation theory.

**Prerequisite**: ECE 342 with a minimum grade of C or MATH 340 with a minimum grade of C or MATH 345 with a minimum grade of C.

**Restriction**: Must not be a: Freshman, Sophomore.

**Registration Information**: Sections may be offered: Online. Credit allowed for only one of the following: BIOM 517, BIOM 581A7, ECE 517 or ECE 581B7.

**Term Offered**: Fall (odd years).

**Grade Mode**: Traditional.

**Special Course Fee**: No.
BIOM 527E  Biosensing: Affinity Sensors  Credit: 1 (1-0-0)  
Also Offered As: ECE 527E.  
Course Description: Fundamentals of affinity sensor application and design, including optical and electrical approaches and technologies.  
Prerequisite: (BIOM 101 or LIFE 102) and (CHEM 111) and (MATH 340, may be taken concurrently or MATH 345, may be taken concurrently) and (PH 142).  
Registration Information: Junior standing. This is a partial semester course. Credit allowed for only one of the following: BIOM 527E, BIOM 581B4, ECE 527E, or ECE 581B4.  
Term Offered: Spring (even years).  
Grade Mode: Traditional.  
Special Course Fee: No.  

BIOM 527F  Biosensing: Biophotonic Sensors Using Refractive Index  Credit: 1 (1-0-0)  
Also Offered As: ECE 527F.  
Course Description: Operating principles of optical biosensors based on changes in refractive index, such as thin films, ring-resonators, Mach-Zehnder interferometers, and other evanescent wave sensors. Basic supporting optical concepts, including thin-film interference, optical waveguides and evanescent waves.  
Prerequisite: (BIOM 527F or ECE 527F) and (MATH 340, may be taken concurrently or MATH 345, may be taken concurrently) and (PH 142).  
Registration Information: Junior standing. This is a partial semester course. Credit allowed for only one of the following: BIOM 527F, BIOM 581B6, ECE 527F, or ECE 581B6.  
Term Offered: Spring (even years).  
Grade Mode: Traditional.  
Special Course Fee: No.  

BIOM 531  Materials Engineering  Credits: 3 (3-0-0)  
Also Offered As: MECH 531.  
Course Description: Selection of structural engineering materials by properties, processing, and economics; materials for biomedical and biotechnology applications.  
Prerequisite: (MECH 331 or MECH 331A and MECH 331B) and (MECH 431).  
Registration Information: Credit not allowed for both BIOM 531 and MECH 531. Sections may be offered: Online.  
Term Offered: Spring.  
Grade Mode: Traditional.  
Special Course Fee: No.  

BIOM 532  Materials Issues in Mechanical Design  Credits: 3 (3-0-0)  
Also Offered As: MECH 532.  
Course Description: Failure mechanisms from materials viewpoint with emphasis on use in design. Fracture, creep, fatigue, and corrosion.  
Prerequisite: MECH 331 or MECH 331A and MECH 331B.  
Registration Information: Credit not allowed for both BIOM 532 and MECH 532. Sections may be offered: Online.  
Term Offered: Fall.  
Grade Mode: Traditional.  
Special Course Fee: No.  

BIOM 533  Biomolecular Tools for Engineers  Credits: 3 (2-3-0)  
Also Offered As: CIVE 533.  
Course Description: Theoretical and practical aspects of biomolecular laboratory tools--PCR, cloning, sequencing, single-molecule optical techniques and live-cell imaging.  
Prerequisite: BMS 300 or MIP 300.  
Registration Information: Must register for lecture and laboratory. Credit not allowed for both BIOM 533, CIVE 533 and ECE 533.  
Term Offered: Fall.  
Grade Mode: Traditional.  
Special Course Fee: Yes.  

BIOM 537  Biomedical Signal Processing  Credits: 3 (3-0-0)  
Also Offered As: ECE 537.  
Course Description: Modeling and classification of biosignals (e.g. EEG, ECG, EMG), covering adaptive filtering, wavelets, support vector machines, neural networks, and handling problems with overfitting of noisy data.  
Prerequisite: ECE 303 or ECE 311 or MATH 340 or STAT 303.  
Registration Information: Sections may be offered: Online. Credit not allowed for both BIOM 537 and ECE 537.  
Term Offered: Spring (even years).  
Grade Mode: Traditional.  
Special Course Fee: No.  

BIOM 570  Bioengineering  Credits: 3 (3-0-0)  
Also Offered As: MECH 570.  
Course Description: Physiological and medical systems analysis using engineering methods including mechanics, fluid dynamics, control electronics, and signal processing.  
Prerequisite: MECH 307 and MECH 324.  
Registration Information: Credit not allowed for both BIOM 570 and MECH 570. Sections may be offered: Online.  
Term Offered: Spring.  
Grade Mode: Traditional.  
Special Course Fee: No.  

BIOM 573  Structure and Function of Biomaterials  Credits: 3 (3-0-0)  
Also Offered As: MECH 573.  
Course Description: Structure-function relationships of natural biomaterials; application to analysis of biomimetic materials and biomaterials used in medical devices.  
Prerequisite: MECH 331 or MECH 331A and MECH 331B.  
Registration Information: Sections may be offered: Online. Credit not allowed for both BIOM 573 and MECH 573.  
Term Offered: Spring.  
Grade Mode: Traditional.  
Special Course Fee: No.  

BIOM 574  Bio-Inspired Surfaces  Credits: 3 (3-0-0)  
Also Offered As: MECH 574.  
Course Description: Analysis of surface functionalities of various biological species; identification of design principles.  
Prerequisite: MECH 342 and CHEM 111.  
Registration Information: Sections may be offered: Online. Credit not allowed for both BIOM 574 and MECH 574.  
Term Offered: Spring.  
Grade Mode: Traditional.  
Special Course Fee: No.
BIOM 576  Quantitative Systems Physiology  Credits: 4 (4-0-0)
Also Offered As: MECH 576.
Course Description: Quantitative, model-oriented approach to cellular and systems physiology with design examples from biomedical engineering.
Prerequisite: BMS 300 and CHEM 113 and MATH 340 and PH 142.
Registration Information: Credit not allowed for both BIOM 576 and MECH 576. Sections may be offered: Online.
Term Offered: Spring.
Grade Mode: Traditional.
Special Course Fee: No.

BIOM 578  Musculoskeletal Biosolid Mechanics  Credits: 3 (3-0-0)
Also Offered As: MECH 578.
Course Description: Application of engineering concepts to quantify the mechanical behavior of load-bearing biological tissues and orthopaedic implant performance.
Prerequisite: CIVE 360.
Restriction: Must be a: Graduate.
Registration Information: Graduate standing. Sections may be offered: Online. Credit not allowed for both BIOM 578 and MECH 578.
Term Offered: Fall.
Grade Mode: Traditional.
Special Course Fee: No.

BIOM 579  Cardiovascular Biomechanics  Credits: 3 (3-0-0)
Also Offered As: MECH 579.
Course Description: Bio-mechanical principles and approaches applied in cardiovascular research.
Prerequisite: MATH 340 and PH 142.
Restriction: Must be a: Graduate.
Registration Information: Graduate students only. Sections may be offered: Online. Credit allowed for only one of the following: BIOM 579, BIOM 581A8, MECH 579, or MECH 581A8.
Term Offered: Fall (odd years).
Grade Mode: Traditional.
Special Course Fee: No.

BIOM 586A  Biomedical Clinical Practicum  Credits: 2 (1-2-0)
Course Description: Graduate-level activity that includes biomedical research or design of a new medical device, as well as essential elements of professional development.
Prerequisite: (BMS 300 or BMS 500) and (BIOM 570 or MECH 570).
Registration Information: Must register for lecture and laboratory.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Traditional.
Special Course Fee: No.

BIOM 586B  Biomedical Clinical Practicum  Credits: 4 (1-6-0)
Course Description: Graduate-level activity, such as biomedical research or design of a new medical device, for exposure to the hospital/clinical environment.
Prerequisite: (BMS 300 or BMS 500) and (BIOM 570 or MECH 570).
Registration Information: Must register for lecture and laboratory.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Traditional.
Special Course Fee: No.

BIOM 592  Seminar  Credits: Var[1-3] (0-0-0)
Course Description: Student and research faculty presentations, guest and invited extramural speakers.
Prerequisite: None.
Registration Information: Sections may be offered: Online.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

BIOM 671  Orthopedic Tissue Biomechanics  Credits: 3 (3-0-0)
Also Offered As: MECH 671.
Course Description: Linear elastic, finite deformation, and viscoelastic theories applied to the mechanical behavior of orthopedic tissues (bone, tendon, cartilage).
Prerequisite: CIVE 560.
Restriction: Must be a: Graduate, Professional.
Registration Information: Credit not allowed for both BIOM 671 and MECH 671.
Term Offered: Fall (odd years).
Grade Mode: Traditional.
Special Course Fee: No.

BIOM 684  Supervised College Teaching  Credits: Var[1-18] (0-0-0)
Course Description:
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Registration Information: Maximum of 6 credits allowed in course; may not be used to satisfy degree requirements requiring bioengineering courses.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

BIOM 695  Independent Study  Credits: Var[1-18] (0-0-0)
Course Description:
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

BIOM 699  Thesis  Credits: Var[1-18] (0-0-0)
Course Description:
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

BIOM 750  Grant Proposal Writing and Reviewing  Credit: 1 (1-0-0)
Course Description: Preparation and review of applications for fellowships and grants.
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Registration Information: Written consent of instructor.
Term Offered: Fall.
Grade Mode: Traditional.
Special Course Fee: No.

BIOM 784  Supervised College Teaching  Credits: Var[1-6] (0-0-0)
Course Description:
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

BIOM 786  Practicum-Laboratory Rotations  Credits: Var[1-18] (0-0-0)
Course Description:
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.
BIOM 795  Independent Study  Credits: Var[1-6] (0-0-0)
Course Description:
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall. Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

BIOM 798  Research-Laboratory Rotations  Credits: Var[1-6] (0-0-0)
Course Description: Doctoral laboratory rotation.
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.

BIOM 799  Dissertation  Credits: Var[1-18] (0-0-0)
Course Description:
Prerequisite: None.
Restriction: Must be a: Graduate, Professional.
Terms Offered: Fall, Spring, Summer.
Grade Mode: Instructor Option.
Special Course Fee: No.