The BCES Department Biomedical Engineering Program is requesting Undergraduate Curriculum Committee approval to apply the following changes to the Biomedical Engineering B.S. Program curriculum (the proposed changes are presented also on a table, on the next page):

Replace BIO 1020 Biological Discovery 2 and BIO 1040 Introduction to Biodiversity and Physiology (Fall Sophomore Year) with BIO 3201 Anatomy and Physiology 1 (Fall Sophomore Year). Also replace MAR 3210 Mammalian Physiology (Fall Junior Year) with BIO 3202 Anatomy and Physiology 2 (Spring Sophomore Year). The rationale for these changes is that the course material presented in BIO 3201/3202 is more relevant to Biomedical Engineering majors.

Replace ECE 3222 Signals and Systems (Spring Junior Year) with a new course, BME 3222 Biological Signals and Applications (Spring Junior Year). BME 3222 covers material equivalent to that in ECE 3222 with additional emphasis and applications in Biomedical Engineering.

Move to the Junior Year Spring the courses BME 4252 Biomedical Measurement and Instrumentation (Fall Senior Year) and BME 4253 Biomedical Imaging and Instrumentation Laboratory (Spring Senior Year). It will be advantageous to Biomedical Engineering students to learn the material of these courses before they start work on their Senior Design Projects.

Move ECE 4231 Control Systems from Spring Senior Year to Fall Senior Year. This is actually a fall-semester course that is currently listed together with the two spring-semester alternative Control Systems courses (AEE 4014 and MEE 4014). It is also the most recommended and most popular of the three options, therefore it should appear in the semester it is actually offered.

Move COM 2223 Scientific and Technical Communications (Spring Sophomore Year) to Fall Junior Year. Also move a Technical Elective from Spring Junior Year to Spring Senior Year. These changes are needed to re-balance the total number of credits in those semesters.

Changes are also proposed to the prerequisite and/or co-requisite requirements of seven BME courses (as shown on the attached forms). Some of them resulted directly from the proposed curriculum changes and others were decided in a recent review by the Biomedical Engineering Faculty of the requirements of all undergraduate BME courses.
New courses are available beginning with the fall term in which they appear in the University Catalog.

<table>
<thead>
<tr>
<th>SUBJECT</th>
<th>COURSE NO.*</th>
<th>CREDIT HOURS</th>
<th>ACADEMIC YEAR TO BE ADDED TO THE FILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>(e.g., CSE)</td>
<td>(e.g., 1301)</td>
<td>3</td>
<td>Fall 2019 (e.g. Fall 2018)</td>
</tr>
</tbody>
</table>

*Justify level if 1000-level+ and no co- or prerequisites

<table>
<thead>
<tr>
<th>CLASS HOURS</th>
<th>LECTURE HOURS</th>
<th>LAB HOURS</th>
<th>CONTACT HOURS (CEU ONLY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>45/semester</td>
<td>45/semester</td>
<td>0/semester</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DEPARTMENT</th>
<th>SCHEDULE TYPE Lecture (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomedical and Chemical Engineering and Sciences</td>
<td>(e.g., Lecture, Lab or Special Topics/Project)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COMPUTER TITLE</th>
<th>Bio Signals and Applic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restricted to 25 characters, including spaces</td>
<td></td>
</tr>
</tbody>
</table>

This course will be entered into the system as: Bi-Level ☐ Cross-Listed ☐ Dual-Numbered ☐ Full-Load ☐ None of these/Standard Listing ☐

<table>
<thead>
<tr>
<th>CATALOG DESCRIPTION OF COURSE Restricted to 350 characters, including spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brings together fundamental mathematical techniques indispensable to the study of signals and systems in bioengineering. Covers properties and applications of Fourier series, and Fourier and Laplace transforms to linear continuous systems with applications to biomedical engineering. Includes MATLAB(r) and introduces state-space systems descriptions.</td>
</tr>
</tbody>
</table>

This description has been approved by the catalog office: [Signature] 11-28-2018

**In addition, please attach a course syllabus and/or more detailed description.**

<table>
<thead>
<tr>
<th>RESTRICTIONS</th>
<th>GRADES TO BE ISSUED</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECE 4991</td>
<td>A, B, C, D, F</td>
</tr>
<tr>
<td>MTH 2201</td>
<td>A, B, C, D, F, CEU/Audit</td>
</tr>
<tr>
<td>Course Prefix/Number</td>
<td></td>
</tr>
<tr>
<td>Prerequisite ONLY ☐</td>
<td>Corequisite ONLY ☐</td>
</tr>
<tr>
<td>Prerequisite ONLY ☐</td>
<td>Corequisite ONLY ☐</td>
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<tr>
<td>Prerequisite ONLY ☐</td>
<td>Corequisite ONLY ☐</td>
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<tr>
<td>Prerequisite ONLY ☐</td>
<td>Corequisite ONLY ☐</td>
</tr>
<tr>
<td>Course Prefix/Number</td>
<td></td>
</tr>
</tbody>
</table>

Please indicate old course information and the date/term the course may be removed from the system:

| Yes ☐ | No ☐ | Will this course be used to measure program-level student learning outcomes? If yes, review and signature required** |
| Yes ☐ | No ☐ | Will this course be used to satisfy the scholarly inquiry requirement? If yes, attach "Q" materials for review. |
| Yes ☐ | No ☐ | Will this course impact any existing programs? If yes, attach "Changing Graduation Requirements" form for each program impacted. |
| Yes ☐ | No ☐ | Will this course be used to satisfy the Cross Cultural (CC) requirement? If yes, attach confirmation memo from QEP2 Committee. |

APPROVALS: On completion of description and course number verification, affix appropriate signatures as indicated, and submit to the Office of Graduate Programs or Undergraduate Curriculum Committee Chair for placement on agenda.

<table>
<thead>
<tr>
<th>Originator</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department Head/Program Chair Date</td>
<td>Chair, Undergraduate Curriculum Committee Date</td>
</tr>
</tbody>
</table>

**Chair, Academic Programs Assessment Committee Date

<table>
<thead>
<tr>
<th>CATALOG &amp; CURRICULUM MANAGER Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida Institute of Technology • Office of the Registrar</td>
</tr>
</tbody>
</table>

130 West University Boulevard, Melbourne, FL 32901-6975 • 321-674-8114 • Fax 321-674-7827

RGR-371-818
BME 3222 BIO SIGNALS AND APPLICATIONS  
Spring 2019

2019-20 Catalog Data: 3 Credits. Brings together fundamental mathematical techniques that are indispensable to the study of signals and systems in bioengineering. Covers properties and applications of Fourier series, and Fourier and Laplace Transforms to linear continuous systems with applications to biomedical engineering. Includes MATLAB applications and introduces state-space systems descriptions.

Credits & Contact Hours: 3 Credits, 30 lectures (75 mins)

Required or Elective or Selected Elective: Required

Prerequisite and Co-Requisite Courses: Prerequisite: ECE 4991 Electric and Electronic Circuits, MTH 2201 Differential Equations/Linear Algebra

Textbook (T) and References (R):

Instructor
Dr. Carlos F. Martino Office: OLS 220 Phone: 321-674-8497 Email: cmartino@fit.edu

Course Outcomes: Upon completion of this course the student will be able to:
1. Understand the fundamental concepts that define the field of biosignals and systems
2. Demonstrate an understanding of frequency domain analysis via Fourier Transforms
3. Understand applications and implications of Fourier Transforms
4. Demonstrate understanding of application of time - frequency transformations and interpretation of the results
5. Understand implementation of signal acquisition/processing in MATLAB
6. Demonstrate an understanding of linear system analysis via Laplace Transforms

Topics Covered:
1. General overview of Bioengineering Signals and Systems
2. Basic Signal Processing Concepts
3. Fourier Series and Fourier Transforms
4. Transfer Function
5. Laplace Transforms
6. Convolution and Simulations
7. Applications of Linear Systems

Grading Policy
Homework (10%), Exam 1 (20%), Exam 2 (20%), Exam 3 (20%), Final Exam (30%)

Grading System
A = 90-100   B = 80-89   C = 70-79   D= 60-69   F= 0-59
**Relationship of Course Outcomes to Student Outcomes:** See Outcome Assessment Matrix.

**Prepared By:** Carlos F Martino, Ph.D., Associate Professor of Biomedical Engineering

### Outcome Assessment Matrix for BME 3222

<table>
<thead>
<tr>
<th>Course Outcomes</th>
<th>ABET Student Outcomes 1-7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>◊</td>
</tr>
<tr>
<td>2</td>
<td>◊</td>
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<td>3</td>
<td>◊</td>
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<td>4</td>
<td>◊</td>
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<tr>
<td>5</td>
<td>◊</td>
</tr>
<tr>
<td>6</td>
<td>◊</td>
</tr>
</tbody>
</table>

**Key**

<table>
<thead>
<tr>
<th><strong>Student Outcome Descriptions</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
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<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>7</td>
</tr>
</tbody>
</table>

◊ = The Course Outcome *lightly* addresses the Student Outcome  
◆ = The Course Outcome *strongly* addresses the Student Outcome (used in Student Outcome Assessment)

**Date:** 11/15/2018
REQUEST TO CHANGE THE
REQUIREMENTS FOR A COURSE

Any change, addition or removal of any restriction, or change in credit hours or availability for a course requires this form,
accompanied by any supporting documentation, be completed and approved as indicated below.

COLLEGE Engineering and Science

DEPARTMENT Biomedical and Chemical Engineering and Science

REQUEST IS FOR CHANGE IN COURSE

Prefix 3 0 8 1 Course Title Biomechanics

Number

TO BE INCLUDED IN 20 19 / 20 20 CATALOG

Course changes are effective beginning with the fall term in which they appear in the University Catalog.

IS REQUEST FOR A CHANGE IN THE NAME LISTED ABOVE? □ Yes □ No If yes, requested name

IS REQUEST FOR A CHANGE IN CREDITS FOR COURSE LISTED ABOVE? □ Yes □ No If yes, current credits requested credits

IS REQUEST TO CHANGE RESTRICTIONS FOR COURSE LISTED ABOVE? □ Yes □ No If yes, please check all that apply:

Add □ Remove □ Prerequisite □ Corequisite □ BIO 1020 □ and □ or

Remove □ Prerequisite □ Corequisite □ MAR 1020 □ and □ or

Other Restrictions* □ Yes □ No If yes, please use box below:

*Other restrictions may include changing the grade mode (P/F, S/U, A-F, ELD), deactivating a course already in the system, majors or class levels restricted from registration, or other restrictions.

Please enter the complete prerequisite/restriction list as it should appear if this change is approved:

Add Prerequisite BIO 3201

Updated list of requirements:
Prerequisite: BIO 3201 and (SCME 2081 or MAE 2081)

☐ Yes □ No Is this request for the course to be used to measure program-level student learning outcomes?

☐ Yes □ No Is this request for the course to satisfy the scholarly inquiry requirement? If yes, attach "Q" materials for review.

☐ Yes □ No Will this change impact any existing programs? If yes, attach "Changing Graduation Requirements" form for each program that is impacted.

APPROVALS: Once appropriate department approvals are completed, submit to the Office of Graduate Programs,
or Undergraduate Curriculum Committee Chair for placement on agenda.

1) Original

Date

2) Department Head/Program Chair

Date

3) Dean or Associate Dean

Date

Chair, Undergraduate Curriculum Committee

Date

Chair, Graduate Council

Date

OR

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REQUEST TO CHANGE THE REQUIREMENTS FOR A COURSE

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COLLEGE: Engineering and Science

DEPARTMENT: Biomedical and Chemical Engineering and Science

REQUEST IS FOR CHANGE IN COURSE: Computational Methods for Bio Systems

Prefix: 3 2 4 0

Number: 19 20

Course Title: CATALOG

Course changes are effective beginning with the fall term in which they appear in the University Catalog.

IS REQUEST FOR A CHANGE IN THE NAME LISTED ABOVE? Yes ☐ No ☐

If yes, requested name ________________________________

IS REQUEST FOR A CHANGE IN CREDITS FOR COURSE LISTED ABOVE? Yes ☐ No ☐

If yes, current credits __________________________ requested credits ____________

IS REQUEST TO CHANGE RESTRICTIONS FOR COURSE LISTED ABOVE? Yes ☐ No ☐

If yes, please check all that apply:

☐ Add ☐ Remove ☐ Prerequisite ☐ Corequisite

Prefix: BIO

Number: 3201

and ☐ or

☐ Add ☐ Remove ☐ Prerequisite ☐ Corequisite

Prefix: BIO

Number: 1010

and ☐ or

☐ Add ☐ Remove ☐ Other Restrictions*

Yes ☐ No ☐

If yes, please use box below:

*Other restrictions may include changing the grade mode (F/F, S/U, A-CEU), deactivating a course already in the system, majors or class levels restricted from registration, or other restrictions.

Please enter the complete prerequisite/restriction list as it should appear if this change is approved:

Updated list of requirements:
Prerequisite: MTH 2201 and BIO 3201
Co-requisite: BIO 3201

☐ Yes ☐ No Is this request for the course to be used to measure program-level student learning outcomes?

☐ Yes ☐ No Is this request for the course to satisfy the scholarly inquiry requirement? If yes, attach "Q" materials for review.

☐ Yes ☐ No Will this change impact any existing programs? If yes, attach “Changing Graduation Requirements” form for each program that is impacted.

APPROVALS: Once appropriate department approvals are completed, submit to the Office of Graduate Programs, or Undergraduate Curriculum Committee Chair for placement on agenda.

1) [Signature]
[Date]: 12/5/18

Chair, Graduate Council Date

2) [Signature]

[Date]: 12/5/18

OR

Department Head/Program Chair

Date

3) [Signature]

[Date]: 12/7/18

Chair, Undergraduate Curriculum Committee Date

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RGR-254-1015
REQUEST TO CHANGE THE REQUIREMENTS FOR A COURSE

Any change, addition or removal of any restriction, or change in credit hours or availability for a course requires this form, accompanied by any supporting documentation, be completed and approved as indicated below.

COLLEGE: Engineering and Science
DEPARTMENT: Biomedical and Chemical Engineering and Science

REQUEST IS FOR CHANGE IN COURSE: Biomaterials

TO BE INCLUDED IN 20__/20__ CATALOG
Course changes are effective beginning with the fall term in which they appear in the University Catalog.

IS REQUEST FOR A CHANGE IN THE NAME LISTED ABOVE? □ Yes □ No [If yes, please provide name]

IS REQUEST FOR A CHANGE IN CREDITS FOR COURSE LISTED ABOVE? □ Yes □ No [If yes, current credits requested credits]

IS REQUEST TO CHANGE RESTRICTIONS FOR COURSE LISTED ABOVE? □ Add □ Remove □ Prerequisite □ Corequisite □ BIO 1020 □ and □ or

□ Add □ Remove □ Prerequisite □ Corequisite □ and □ or

□ Add □ Remove □ Other Restrictions* □ Yes □ No [If yes, please include box below]

*Other restrictions may include changing the grade mode (P/F, S/N, A-E [ECE]), deactivating a course already in the system, majors or class levels restricted from registration, or other restrictions. Please enter the complete prerequisite/restriction list as it should appear if this change is approved.

Updated list of requirements:
Prerequisite: BIO 1010 and CHM 2001 and PHY 1001 and (MTH 1002 or MTH 1020)

☐ Yes □ No [Is this request for the course to be used to measure program-level student learning outcomes?]

☐ Yes □ No [Is this request for the course to satisfy the scholarly inquiry requirement? If yes, attach “Q” materials for review.]

☐ Yes □ No [Will this change impact any existing programs? If yes, attach “Changing Graduation Requirements” form for each program that is impacted.]

APPROVALS: Once appropriate department approvals are completed, submit to the Office of Graduate Programs, or Undergraduate Curriculum Committee Chair for placement on agenda.

1) [Signature] Date 12/5/18
   Originator
   Chair, Graduate Council

2) [Signature] Date 12/5/18
   Department Head/Program Chair
   OR

3) [Signature] Date 12/17/18
   Dean or Associate Dean
   Chair, Undergraduate Curriculum Committee

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RGR-254-1015
REQUEST TO CHANGE THE REQUIREMENTS FOR A COURSE

Any change, addition or removal of any restriction, or change in credit hours or availability for a course requires this form, accompanied by any supporting documentation, be completed and approved as indicated below.

COLLEGE: Engineering and Science
DEPARTMENT: Biomedical and Chemical Engineering and Science

REQUEST IS FOR CHANGE IN COURSE: BME 4191

Design Methodologies and Practice

Course Title

TO BE INCLUDED IN 2019/2020 CATALOG

Course changes are effective beginning with the fall term in which they appear in the University Catalog.

IS REQUEST FOR A CHANGE IN THE NAME LISTED ABOVE? □ Yes □ No If yes, requested name ____________________________

IS REQUEST FOR A CHANGE IN CREDITS FOR COURSE LISTED ABOVE? □ Yes □ No If yes, current credits ______ requested credits ______

IS REQUEST TO CHANGE RESTRICTIONS FOR COURSE LISTED ABOVE? □ Yes □ No if yes, please check all that apply:

□ Add □ Remove □ Prerequisite □ Corequisite

□ Add □ Remove □ Prerequisite □ Corequisite

□ Add □ Remove □ Other Restrictions* □ Yes □ No If yes, please use box below:

*Other restrictions may include changing the grade mode (P/F, S/U, A-E, EUI), deactivating a course already in the system, majors or class levels restricted from registration, or other restrictions.

Please enter the complete prerequisite restriction list as it should appear if this change is approved:

Add Prerequisite AND Co-requisite BME 3260
Remove Prerequisite BME 3030
Add COM 2223 as Co-requisite (in addition to Prerequisite)

Updated list of requirements:
Prerequisites: BIO 3201 and BME 3081 and BME 3260 and COM 2223 -- Co-requisites: BME 3260 and COM 2223

□ Yes □ No Is this request for the course to be used to measure program-level student learning outcomes?

□ Yes □ No Is this request for the course to satisfy the scholarly inquiry requirement? If yes, attach "Q" materials for review.

□ Yes □ No Will this change impact any existing programs? If yes, attach "Changing Graduation Requirements" form for each program that is impacted.

APPROVALS: Once appropriate department approvals are completed, submit to the Office of Graduate Programs, or Undergraduate Curriculum Committee Chair for placement on agenda.

1) Original Date

Chair, Graduate Council Date

2) Date

Department Head/Program Chair Date

OR

3) Date

Dean of Associate Dean Date

Chair, Undergraduate Curriculum Committee Date

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RGR-254-1015
REQUEST TO CHANGE THE REQUIREMENTS FOR A COURSE

Any change, addition or removal of any restriction, or change in credit hours or availability for a course requires this form, accompanied by any supporting documentation, be completed and approved as indicated below.

COLLEGE: Engineering and Science
DEPARTMENT: Biomedical and Chemical Engineering and Science

REQUEST IS FOR CHANGE IN COURSE: BME 4241 Transport in Biological Systems

TO BE INCLUDED IN 2019/2020 CATALOG
Course changes are effective beginning with the fall term in which they appear in the University Catalog.

IS REQUEST FOR A CHANGE IN THE NAME LISTED ABOVE? □ Yes □ No If yes, requested name ____________________________

IS REQUEST FOR A CHANGE IN CREDITS FOR COURSE LISTED ABOVE? □ Yes □ No If yes, current credits ______ requested credits ________

IS REQUEST TO CHANGE RESTRICTIONS FOR COURSE LISTED ABOVE? □ Yes □ No If yes, please check all that apply:

☐ Add □ Remove □ Prerequisite □ Corequisite BIO 1020 Prefix Number
☐ Add □ Remove □ Prerequisite □ Corequisite BIO 1010 Prefix Number

☐ Add □ Remove □ Other Restrictions* □ Yes □ No If yes, please use box below:

*Other restrictions may include changing the grade mode (PF, S/U, A-F, CEU), deactivating a course already in the system, majors or class levels restricted from registration, or other restrictions. Please enter the complete prerequisite/restriction list as it should appear if this change is approved.

Updated list of requirements:
Prerequisite: BME 3030

☐ Yes □ No Is this request for the course to be used to measure program-level student learning outcomes?

☐ Yes □ No Is this request for the course to satisfy the scholarly inquiry requirement? If yes, attach "Q" materials for review.

☐ Yes □ No Will this change impact any existing programs? If yes, attach "Changing Graduation Requirements" form for each program that is impacted.

APPROVALS: Once appropriate department approvals are completed, submit to the Office of Graduate Programs, or Undergraduate Curriculum Committee Chair for placement on agenda.

1) Original ___________________________ Date 12/15/18
Chair, Graduate Council ___________________________ Date ___________________________ OR

2) Department Head/Program Chair ___________________________ Date 12/15/18

3) Dean or Associate Dean ___________________________ Date 12/17/18
Chair, Undergraduate Curriculum Committee ___________________________ Date ___________________________

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RGR 254-1015
REQUEST TO CHANGE THE REQUIREMENTS FOR A COURSE

Any change, addition or removal of any restriction, or change in credit hours or availability for a course requires this form, accompanied by any supporting documentation, be completed and approved as indicated below.

COLLEGE: Engineering and Science

DEPARTMENT: Biomedical and Chemical Engineering and Science

REQUEST IS FOR CHANGE IN COURSE

B M E

4 2 5 2

Biomed Measurement and Instrumentation

Course Title

To be included in 20 19 2020 catalog

Course changes are effective beginning with the fall term in which they appear in the University Catalog.

Is request for a change in the name listed above? Yes ☐ No ☐ If yes, requested name: ____________________________

Is request for a change in credits for course listed above? Yes ☐ No ☐ If yes, current credits requested credits: ____________

Is request to change restrictions for course listed above? Yes ☐ No ☐ If yes, please check all that apply:

☐ Add ☐ Remove ☐ Prerequisite ☐ Corequisite

BIO 3210 ☐ and ☐ or

☐ Add ☐ Remove ☐ Prerequisite ☐ Corequisite

MAR 3210 ☐ and ☐ or

☐ Add ☐ Remove ☐ Other Restrictions* ☐ Yes ☐ No ☐ If yes, please use box below:

*Other restrictions may include changing the grade mode (P/F, S/U, A-F, CEO), deactivating a course already in the system, majors or class levels restricted from registration, or other restrictions.

Please enter the complete prerequisite/restriction list as it should appear if this change is approved:

Remove Prerequisite ECE 3222
Add Prerequisite BIO 3201
Add Prerequisite ECE 4991

Updated list of requirements:
Prerequisite: BIO 3201 and ECE 4991

1) ☐ Is this request for the course to be used to measure program-level student learning outcomes?

☐ Yes ☐ No

2) ☐ Is this request for the course to satisfy the scholarly inquiry requirement? If yes, attach "Q" materials for review.

☐ Yes ☐ No

3) ☐ Will this change impact any existing programs? If yes, attach "Changing Graduation Requirements" form for each program that is impacted.

☐ Yes ☐ No

4) Chair, Graduate Council

Date

Date

Chair, Undergraduate Curriculum Committee

Date

Date

CATALOG & CURRICULUM MANAGER'S USE ONLY

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REQUEST TO CHANGE THE REQUIREMENTS FOR A COURSE

Any change, addition or removal of any restriction, or change in credit hours or availability for a course requires this form, accompanied by any supporting documentation, be completed and approved as indicated below.

COLLEGE: Engineering and Science

DEPARTMENT: Biomedical and Chemical Engineering and Science

REQUEST IS FOR CHANGE IN COURSE

BME 4253

Biomed Imaging and Instrumentation Lab

Prefix: 4

Number: 253

Course Title: Biomed Imaging and Instrumentation Lab

TO BE INCLUDED IN 2019-2020 CATALOG

Course changes are effective beginning with the fall term in which they appear in the University Catalog.

IS REQUEST FOR A CHANGE IN THE NAME LISTED ABOVE? □ Yes □ No

If yes, requested name ____________________________

IS REQUEST FOR A CHANGE IN CREDITS FOR COURSE LISTED ABOVE? □ Yes □ No

If yes, current credits ________ requested credits ________

IS REQUEST TO CHANGE RESTRICTIONS FOR COURSE LISTED ABOVE? □ Yes □ No

If yes, please check all that apply:

- Add □ Remove □ Prerequisite □ Corequisite BME 4252

  Prefix: ________ Number: 4252

  and □ or

  Prefix: ________ Number: ________

  and □ or

  Prefix: ________ Number: ________

- Add □ Remove □ Other Restrictions* □ Yes □ No

  If yes, please use box below:

  *Other restrictions may include changing the grade mode (F/P/F, S/U, A-F, E/ED), deactivating a course already in the system, majors or class levels restricted from registration, or other restrictions.

Please enter the complete prerequisite/restriction list as it should appear if this change is approved:

Updated list of requirements:
Prerequisite: BME 4252
Co-requisite: BME 4252

☐ Yes □ No Is this request for the course to be used to measure program-level student learning outcomes?

☐ Yes □ No Is this request for the course to satisfy the scholarly inquiry requirement? If yes, attach "Q" materials for review.

☐ Yes □ No Will this change impact any existing programs? If yes, attach "Changing Graduation Requirements" form for each program that is impacted.

APPROVALS: Once appropriate department approvals are completed, submit to the Office of Graduate Programs, or Undergraduate Curriculum Committee Chair for placement on agenda.

1) ____________________________ Date: 12/10/18

Chair, Graduate Council

2) ____________________________ Date: 12/15/18

Chair, Undergraduate Curriculum Committee

3) ____________________________ Date: 12/17/18

Dean or Associate Dean

CATALOG & CURRICULUM MANAGER’S USE ONLY

SCACSE: ______________ SCADET: ______________ SCAPREQ: ______________

SCACBSE: ______________ SCARBES: ______________ ACALOG: ______________

Operator initials: ______________ Date: ______________

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RGR-254-1015
The addition or removal of any graduation requirement in a major or minor requires that this form, accompanied by supporting documentation, be completed and approved as indicated below. Incomplete or incorrect forms will not be processed.

COLLEGE: Engineering and Science

DEPARTMENT: Biomedical and Chemical Engineering and Sciences

DEGREE LEVEL: Bachelor of Science

PROGRAM TITLE: Biomedical Engineering

TO BE INITIATED WITH CATALOG YEAR 20 1 9 / 2 0 2 0

CHANGE REQUESTED FOR: □ major program □ minor program

Program changes are effective beginning with the fall term in which they appear in the University Catalog.

☐ Yes  ☐ No Will this change impact the program’s assessment process? If yes, attach a description of how the assessment will be impacted and the new process.

DESCRIPTION OF REQUESTED CHANGES: Attach a more detailed description and any supporting documentation.

Replace BIO 1020 Biological Discovery 2 and BIO 1040 Introduction to Biodiversity and Physiology (Fall Sophomore Year) with BIO 3201 Anatomy and Physiology 1 (Fall Sophomore Year).

Replace MAR 3210 Mammalian Physiology (Fall Junior Year) with BIO 3202 Anatomy and Physiology 2 (Spring Sophomore Year).

Replace ECE 3222 Signals and Systems (Spring Junior Year) with a new course, BME 3222 Biological Signals and Applications (Spring Junior Year).

Move to the Junior Year Spring the courses BME 4252 Biomedical Measurement and Instrumentation (from Fall Senior Year) and BME 4253 Biomedical Imaging and Instrumentation Laboratory (from Spring Senior Year).

Move ECE 4231 Control Systems from Spring Senior Year to Fall Senior Year.

Move COM 2223 Scientific and Technical Communications from Spring Sophomore Year to Fall Junior Year.

Move a Technical Elective from Spring Junior Year to Spring Senior Year.

Change the course requirements of seven BME courses required in the major (as shown on the attached forms).

Approvals: On completion of appropriate department approvals, submit form to Chair, Graduate Council, or Chair, Undergraduate Curriculum Committee, for approval below and forward to the Catalog & Curriculum Manager.

Original Date

Chair, Graduate Council Date

Department Head / Major Program Chair Date

OR

Chair, Undergraduate Curriculum Committee Date

Department Head / Minor Program Chair Date

Registrar’s Use Only

CAPP / Degree Evaluation

☐ Yes  ☐ No Update completed Date Initials

Catalog Management System

☐ Yes  ☐ No Update completed Date Initials

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RGR-221-315
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<th>Current 2018-19</th>
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* May be substituted by AEE 4014 Control Systems or MEE 4014 Control Systems