Cover Sheet: Request 10644

Biomedical Engineering

Info

Process	Major Curriculum|Modify|Ugrad/Pro
Status	Pending
Submitter	Theus, Kristin undergrad@bme.ufl.edu
Created	12/23/2015 12:31:27 PM
Updated	1/21/2016 11:01:25 AM
Description	Curriculum changes to the BS degree in Biomedical Engineering.

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	ENG - Biomedical Engineering 021934001	van Oostrom, Hans		1/4/2016
Added BME16-17.pdf Added BME16-17-proposed.pdf					12/23/2015 12/23/2015
College	Approved	ENG - College of Engineering	Caple, Elizabeth		1/21/2016
No document changes					
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			1/21/2016
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
Academic Assessment Committee Notified					
No document changes					
College Notified					
No document changes					

Major|Modify_Curriculum for request 10644

Info

Request: Biomedical Engineering
Submitter: Theus, Kristin undergrad@bme.ufl.edu
Created: 1/4/2016 8:53:33 AM
Form version: 2

Responses

Major Name: Biomedical Engineering
Major Code: BME
Degree Program Name : Biomedical Engineering
Effective Term : Fall
Effective Year : 2016
Proposed Changes : - Remove BCH 4024 Biochemistry
- Add BME 4632 Biotransport
- Add 1 credit to BME 3052L Computer applications for BME
- Replace EML 3007 Elements of Thermodynamics/Heat Transfer with BME 4??? Biomedical Thermodynamics
- Moving courses in the semester plan

Pedagogical Rationale/Justification: The BME BS program seeks accreditation by ABET. ABET requires a minimum of 48 engineering credits in the curriculum. This has previously been met by carefully reviewing elective and track courses. There is a need to add more engineering credits to the core. This is also consistent with feedback from our Fall 2015 BME Engineering Advisory Board meeting. The following changes are proposed:

- Remove BCH 4024 Biochemistry. Contents relevant to BME are already part of the BME4311 Molecular BME course, which is being moved earlier in the semester plan
- Distribute the 4 credits from BCH 4024 to:
o Add BME 4632 Biotransport to the BME core (3 credits)
o Add 1 credit to BME 3053L Computer applications for BME to convert it into a Lab/Lecture C course.
- Substitute a new BME 4??? Biomedical Thermodynamics course for EML 3007 to better serve BME students
- Additional course sequencing is proposed to move BME specialization track courses and electives in later semesters.
- A change is made to the text at the bottom of the semester plan regarding BME specialization tracks. These are guided technical electives and the specific names are not used. Course selection is made through advising.
- No changes are made to General Education courses, but some are moved in the semester plan.

Impact on Enrollment, Retention, Graduation: No impact on existing students; but students may choose to follow the new curriculum.

Recommended Semester Plan

Semester 1	Credits
BME 1008 Introduction to Biomedical Engineering	1
CHM 2045 General Chemistry 1 (GE-P) or	
CHM 2095 Chemistry for Engineers 1	3
CHM 2045L General Chemistry 1 Laboratory (GE-P)	1
ENC 1101 Expository and Argumentative Writing (State Core GE-C)	3
IUF 1000 What is the Good Life (GE-H)	3
MAC 2311 Calculus 1 (GE-M)	4
Total	15

Semester 2	Credits
BSC 2010 Biology 1 (GE-B)	3
BSC 2010L Biology 1 Laboratory (GE-B)	1
CHM 2046 General Chemistry 2 (GE-P) or	
CHM 2096 Chemistry for Engineers 2	3
CHM 2046L General Chemistry 2 Laboratory (GE-P)	1
MAC 2312 Calculus 2 (State Core GE-M)	4
Social and Behavioral Sciences (State Core GE-S)	3
Total	15

Semester 3	Credits
CHM 3217 Organic Chemistry 1 *	4
COP 2271 Computer Programming for Engineers	2
COP 2271L Computer Programming for Engineers Laboratory	1
MAC 2313 Analytic Geometry and Calculus 3 (GE-M)	4
PHY 2048 Physics With Calculus 1 (State Core GE-P)	3
PHY 2048L Physics With Calculus 1 Laboratory (GE-P)	1
Total	15

Semester 4	Credits
BME 3060 BME Fundamentals	3
PHY 2049 Physics With Calculus 2 (GE-P)	3
PHY 2049L Physics With Calculus 2 Laboratory (GE-P)	1
MAP 2302 Differential Equations (GE-M)	3
PCB 3713C Cellular and Systems Physiology	4
EGM 2511 Engineering Mechanics: Statics or	
EMA 3010 Materials	3
~~STA 3032 Engineering Statistics~~	~~3~~
Total	17

Semester 5: Summer	Credits
EEL 3111C Circuits 1	4
ENC 3246 Professional Writing for Engineers (State Core GE-C)	3
EGM 2511 Engineering Mechanics: Statics or	
EMA 3010 Materials	3

~~Humanities (State Core GE-H) (D) ****~~	~~3~~
Total	10

Semester 6	Credits
~~BME 3053L Computer Applications for BME~~	~~1~~
BME 3053C Computer Applications for BME	2
BME 4409 Quantitative Physiology	3
BME 4503 Biomedical Instrumentation	3
BME 4503L Biomedical Instrumentation Laboratory	1
BME 4311 Molecular Biomedical Engineering	3
STA 3032 Engineering Statistics	3
~~BME Specialization Track ***~~	~~3~~
~~Social and Behavioral Science (GE-S, N; E6) ****~~	~~3~~
Total	15~~14~~

Semester 7	Credits
~~BCH 4024 Introduction to Biochemistry and Molecular Biology~~	~~4~~
BME 3323L Cellular Engineering Laboratory	3
BME 4??? Biomedical Thermodynamics	3
BME 4632 Biotransport	3
~~EGM 2511 Engineering Mechanics: Statics~~	~~3~~
~~EML 3007 Elements of Thermodynamics / Heat Transfer **~~	~~3~~
BME Specialization Track ***	3
BME Specialization Track ***	3
Total	15~~16~~

Semester 8	Credits
BME 4531 Biomedical Imaging	3
BME 4882 Senior Design, Professionalism and Ethics 1	3
Humanities (State Core GE-H) (D)****	3
~~EMA 3010 Materials~~	~~3~~
~~BME Elective ****~~	~~3~~
BME Specialization Track ***	3
BME Specialization Track ***	3
Total	15

Semester 9	Credits
~~BME 4311 Molecular Biomedical Engineering~~	~~3~~
BME 4883 Senior Design, Professionalism and Ethics 2	3
BME Elective ****	3
BME Elective ****	3
BME Specialization Track ***	3
Social and Behavioral Science (GE-S, N; E6)****	3
~~BME Specialization Track ***~~	~~3~~
Total	15

* CHM 2210 and 2211 can be substituted for CHM 3217.
~~** EMA 4314 Energy and Kinetics can be substituted for EML 3007.~~
*** BME Tracks: 15 credits of 3000/4000-level courses selected from approved lists ~~in biomechanics, biomaterials, medical physics and imaging, and neural engineering.~~(see advisor or department website)
**** These courses should cover 12,000 words.

Students are also expected to complete the general education international (GE-N) and diversity (GE-D) requirements. This is often done concurrently with another general education requirement (typically, GE-C, H or S).

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BME 4??? Biomedical Thermodynamics	3
BME 4632 Biotransport	3
BME Specialization Track ***	3
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BME 4882 Senior Design, Professionalism and Ethics 1	3
Humanities (State Core GE-H) (D)****	3
BME Specialization Track ***	3
BME Specialization Track ***	3
Total	15

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BME Elective ****	3
BME Elective ****	3
BME Specialization Track ***	3
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