### Bachelor of Science
### Biomedical Engineering - Curriculum A: Traditional
### 2018-2019

#### Name ________________________ UID# U____________________________

#### First Year
- **BME 1110**: Fundamentals of BIE Engineering
- **BME 1210**: General Chemistry I
- **BME 1210L**: General Chemistry I Lab
- **EGR 1010**: Math for Egr Applications (E-2)
- **ENG 1100**: English
- **CHM 1220**: General Chemistry II
- **CHM 1220L**: General Chemistry II Lab
- **MTH 2300**: Calculus I (E-2 Additional)
- **PHY 2400**: General Physics I (E-6)
- **PHY 2400L**: General Physics I Lab

#### Second Year
- **BME 3211**: Human Biomechanics I
- **ANT 3100**: Human Structure & Function I
- **MTH 2310**: Calculus II (E-2 Additional)
- **BME 3212**: Human Biomechanics II
- **MTH 2320**: Global Traditions/History (E-3)
- **BME 3212**: Human Biomechanics II
- **ANTE 3120**: Human Structure & Function II
- **PHY 2410**: General Physics II (E-6)
- **PHY 2410L**: General Physics II Lab
- **MTH 2350**: Differential Equations w/ Matrix Algebra

#### Third Year
- **BME 3511**: Bioelectronics I
- **BME 3540**: Biomedical Computation
- **BME 4703**: Medical Imaging
- **ISE 2211**: Statistics for Engineers
- **BME 3512**: Bioelectronics II
- **BME 3530**: Biomedical Signals & Systems
- **BME 4421**: Biotransport
- **EGR 3350**: Tech Comm for Engineers & Computer Scientists (E-1)
- **BME 4550**: Bioinstrumentation
- **BME 4440**: Biomaterials
- **BME 4910**: Senior Design I
- **BME 4920**: Senior Design II

#### Pre/Co-requisites
- **BME 3211**: MTH 2300 and PHY 2400, BME 3211Rc
- **ANT 3100**: (CHM 1020 or CHM 1210 Grd C or Better), ANT 3100Lc
- **MTH 2310**: MTH 2300
- **BME 3212**: MTH 2310
- **ANTE 3120**: ANT 3100 Grade C or Better, ANT 3100Lc
- **PHY 2410**: PHY 2400, MTH 2300, (MTH 2310), PHY 2410Lc
- **PHY 2410L**: PHY 2400Lc
- **MTH 2350**: MTH 2310
- **BME 3511**: MTH 2312Lc
- **BME 3530**: BME 3540, BME 3511
- **BME 4421**: ANT 3120 and MTH 2350
- **EGR 3350**: ENG 1100
- **BME 4550**: ANT 3120, BME 3512, BME 3530, BME 4550Lc
- **BME 4440**: BME 3212 and BME 3540, BME 4440Lc
- **BME 4910**: BME 3212, BME 3512, AN 3100, EGR 3350
- **BME 4920**: BME 4910

#### Credit Hours Per Semester in the Model Program
- 13 14 0
- 15 16 0
- 17 16 0

**TOTAL SEMESTER CREDIT HOURS**: 120.0

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Meets or exceeds ABET minimum requirements of 37.5% engineering credit hours (45 semester credit hours).
General Information:

1. **Curriculum A** prepares the graduate for the engineering industry employment. Graduates are also prepared for graduate training in biomedical engineering or in a traditional engineering area.

2. **Curriculum B** also satisfies the admission requirements for medical, osteopathic, dental, or veterinary schools. Graduates are also well prepared to pursue graduate training in engineering or the life sciences.

3. **Program Planning** - the student, in cooperation with his/her advisor, should use a Program Guide and the corresponding catalog to plan his/her program. Any problem which arises in connection with a particular Program Guide should be referred to the student’s advisor.

4. Except for BME 3211 & 3212, students must have met the CECS entrance requirements in order to register for BIE courses numbered 3000 or higher.

Additional Requirements:

* Students are required to have two Multicultural Competence courses from any of the Wright State Core MC designated courses, Study Abroad courses, or Service Learning courses.

* Students are also required to have two Integrated Writing (IW) courses from the Wright State Core.

NOTES:

1. Use this guide, advisor consultations, and the Undergraduate Catalog to carefully plan a program of study. Most courses are offered only once or twice a year. Complete mathematics and physics courses early since they are prerequisite to many engineering courses. Delaying these courses may delay completion of the program. Pay close attention to prerequisite and corequisite information listed on the right of the guide.

2. In the right hand columns
   - (a) denotes courses in a model program with a non-conflicting schedule for a full-time student;
   - (a) denotes courses likely to be available;
   - (*) denotes courses normally not available. Check the Class Schedule for current information.

3. Course number in { } denotes may be either a prerequisite or corequisite course.

4. Course number followed by “c” denotes a corequisite course.

5. Choose Technical Electives from this Department Approved List.

**Any course to fulfill a technical elective requirement that is not on this list of approved technical elective must have preapproval prior to the semester in which the course is being taken.**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Pre-req</th>
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<tbody>
<tr>
<td>BIE 4450</td>
<td>Tissue Engineering and Regenerative Medicine</td>
<td>ANT 3120 and (BME 4440)</td>
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<tr>
<td>BIE 4610 (3)</td>
<td>Clinical Engineering in the Developing World</td>
<td>PHY 2410, (Application and Department Permission)</td>
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<tr>
<td>BIE 4704 (4)</td>
<td>Advanced Medical Imaging</td>
<td>(BME 4704c)</td>
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<tr>
<td>BIE 4710 (3)</td>
<td>Optical Imaging</td>
<td>PHY 2140 and PHY 2410L</td>
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<td>BIE 4850 (3)</td>
<td>Six Sigma for Engineers</td>
<td>(Department Permission)</td>
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<tr>
<td>BIE 4950 (3)</td>
<td>Undergraduate Research in Biomedical Engineering II</td>
<td>(Department Permission)</td>
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<tr>
<td>BIE 4980 (3)</td>
<td>Undergraduate Special Topics in Biomedical Engineering II</td>
<td>(Department Permission)</td>
</tr>
<tr>
<td>BIE 4990 (3)</td>
<td>Undergraduate Independent Studies in Biomedical Engineering II</td>
<td>(Department Permission)</td>
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<tr>
<td>EGR 3940/3940</td>
<td>Engineering Internship</td>
<td>30 hours of internship will count as a 3 credit hour technical elective</td>
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<tr>
<td>ISE 3221 (3)*</td>
<td>Advanced Statistics for Engineers</td>
<td>ISE 2211</td>
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<tr>
<td>ISE 4300 (3)</td>
<td>Fundamentals of Human Factors Engineering</td>
<td>(ISE 2211), PSY 1010</td>
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<tr>
<td>ISE 4310 (3)</td>
<td>Ergonomics</td>
<td>ISE 2211</td>
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<tr>
<td>ISE 4400 (3)</td>
<td>engineering Economy</td>
<td>MTH 2300 or EGR 1010</td>
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<tr>
<td>ISE 4410 (3)</td>
<td>Technology Based Venture (DL)</td>
<td>Senior Status</td>
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<tr>
<td>BIE 4350 (3)</td>
<td>Computational Neuroergonomics &amp; Healthcare Applications</td>
<td>BME students must submit a pre-req petition to take this course</td>
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<tr>
<td>ME 4120 (3)</td>
<td>Finite Element Analysis</td>
<td>(MTH 2350 and ME 3120)</td>
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<tr>
<td>ME 4870 (3)</td>
<td>Machining</td>
<td>(ME 2210 and ME 2700) or (BME/ISE 3212), ME 4870c</td>
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11/9/17