Biomedical Engineering
Application for Minor

Name: ___________________________ UIN: ___________________________ Date: __________

Major: ___________________________ Email: ___________________________

Catalog: _______ TAMU Overall GPA: _______ Expected Graduation Date: ________________

Select one BMEN Minor Track:  Biomechanics  Bioinstrumentation  Biomaterials & Tissue Engineering

Requirements: In order to earn a Minor in Biomedical Engineering, students must meet and adhere to the following requirements and guidelines:

- Admitted into a College of Engineering major.
- In good academic standing within major department (GPR of 2.5 or higher).
- Maintain a cumulative 2.0 GPA in minor courses.
- Complete the courses listed for the selected BMEN minor track.
- Following acceptance into a particular track, change of BMEN minor track will not be permitted unless by petition and review by the Director of Undergraduate Programs.

Application steps: Eligible students must submit an application in order to be considered for and allowed to pursue a Minor in Biomedical Engineering.

1. Discuss this minor with your major advisor to determine if this will postpone graduation.
2. Once you receive approval from your major advisor, complete this application form and type a maximum half page essay on why you want a Minor in Biomedical Engineering.
3. Turn the signed application form and essay in to the BMEN Office in ETB 5045. The deadline is December 1 for Spring admission and April 1 for Fall admission.
4. Applications will be reviewed and decisions will be announced prior to the start of the fall semester. Enrollment into BMEN courses will not be granted until decisions have been made.

BMEN Minor Tracks & Courses: Track descriptions, course titles, and approved substitutions can be found on page 2.

<table>
<thead>
<tr>
<th>Required Courses Per Area</th>
<th>Biomechanics</th>
<th>Bioinstrumentation</th>
<th>Biomaterials &amp; Tissue Engineering</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIBS 289 (243)</td>
<td>VIBS 289 (243)</td>
<td>VIBS 289 (243)</td>
<td>VIBS 289 (243)</td>
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<td>BMEN XXX</td>
<td>BMEN XXX</td>
<td>BMEN XXX</td>
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<tr>
<td>BMEN 361*</td>
<td>BMEN 321**</td>
<td>BMEN 343***</td>
<td>BMEN 344</td>
<td>3</td>
</tr>
<tr>
<td>BMEN 341</td>
<td>BMEN 420</td>
<td>BMEN 344</td>
<td></td>
<td>3</td>
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<tr>
<td>Biomechanics Elective</td>
<td>Bioinstrumentation Elective</td>
<td>Biomaterials Elective</td>
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<tr>
<td>Biomechanics Elective</td>
<td>Bioinstrumentation Elective</td>
<td>Biomaterials Elective</td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Total Hours 15

Student Signature ___________________________ Date __________

Major Department Authorization ___________________________ Date __________

***MAJOR ADVISORS: Please do not add this minor to the student’s record until you receive notification from a BMEN advisor that the application was approved!***

BMEN OFFICE USE: Date received: _______ Decision: _______ Notified: _______ Cohort: _______
Course Numbers and Names
VIBS 289 (243)  Introduction to Histology
BMEN XXX  BMEN 101 Introduction to Biomedical Engineering
BMEN 253 Medical Device Design I
BMEN 450 Case Studies
BMEN 321**  Biomedical Electronics
BMEN 341  Biofluid Mechanics
BMEN 343***  Introduction to Biomaterials
BMEN 344  Biological Responses to Medical Devices
BMEN 361*  Biosolid Mechanics
BMEN 420  Medical Imaging
Electives  List available from BMEN Academic Advisor

No more than 6 hours of courses from your home department can be used towards the minor.
* Can be replaced by CVEN 305, MEEN 368 or equivalent course approved by BMEN academic advisor and director.
**Can be replaced by ECEN 214, ECEN 215, or equivalent course approved by BMEN academic advisor and director.
***Can be replaced by MEEN 222, CHEN 313, MSEN 310 or equivalent course approved by BMEN academic advisor and director.

Descriptions of Tracks:

Bioinstrumentation Track
The Bioinstrumentation Track is designed to equip BMEN students for the medical device and imaging instrumentation field, which covers clinical and lab instrumentation from the nanoscale to the whole body. This track equips students with focus in either imaging or instrumentation, and provides guidance to select coursework in several application areas for each of the focus topics. Students will gain an understanding of medical device design, underlying physics and instrumentation for measuring physiological parameters and forming medical images, signal/image processing and control systems.

Biomaterials and Tissue Engineering Track
The Biomaterials and Tissue Engineering Track is designed to equip BMEN students for the rapidly developing field at the multi-disciplinary interface of engineering, material science, biology, chemistry, and medicine. This track will provide students with a broad educational foundation with an emphasis on the principles and applications of biomaterials, particularly tissue engineering. Students will gain an understanding of biomaterial preparation and characterization, structure/property relationships, as well as cellular, blood, and tissue interactions with biomaterials. Selection and design of biomaterials for tissue engineering, artificial organs, drug delivery, and medical devices is presented.

Biomechanics Track
The Biomechanics Track is designed to educate BMEN students in the field of biomechanics that spans from small-scale applications in molecular and cellular mechanics, tissue-scale applications such as cardiac and orthopedic implants, and whole body-scale applications for studying injury prevention and developing assistive devices. This track will provide students the opportunity to gain greater depth of knowledge in their particular interests related to biomechanics. Through these courses, students will gain experience applying mechanics principles to biomedical systems to aid in understanding the function of the human body and various medical conditions, and in the development of medical devices.