| NAME:  | _____________________________ |
| DATE:  | _____________________________ |

### Undergraduate Biomedical Engineering Preparation:

1. **Molecular Biomedical Engineering** (e.g., BME 3010-Fall, no lab version of BME 3010-Fall, BEE 3600-Spring). If you have not taken at least one course, then take at least three credits as a technical elective course (see technical electives section). Please note that BEE 3600 satisfies both the Molecular BME and Cellular BME “Undergraduate BME Preparation” requirements. If completed, please list courses already taken:

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2. **Cellular Biomedical Engineering** (e.g., BME 3020-Spring, no lab version of BME 3020-Spring, BEE 3600-Spring). If you have not taken at least one course, then take at least three credits as a technical elective course (see technical electives section). Please note that BEE 3600 satisfies both the Molecular BME and Cellular BME “Undergraduate BME Preparation” requirements. If completed, please list courses already taken:

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3. **Quantitative Engineering Physiology I** (renal, respiratory, cardiovascular, and musculoskeletal systems) (e.g., BME 4010-Fall or BME 4810 - Spring). If you have not taken at least one course, then take at least three credits as a technical elective course (see technical elective section). Please note that BME 4810 satisfies both Quantitative Engineering Physiology I and II “Undergraduate BME Preparation” requirements. If completed, please list courses already taken:

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4. **Quantitative Engineering Physiology II** (chemical and electrical control and communication systems) (e.g., BME 4020-Spring or BME 6501-Spring or BME 4810 - Spring). If you have not taken at least one course, then take at least three credits as a technical elective course (see technical elective section). Please note that BME 4810 satisfies both Quantitative Engineering Physiology I and II “Undergraduate BME Preparation” requirements. However, students interested in orthopedic biomechanics are strongly encouraged to take BME 4010. If completed, please list courses already taken:

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### Undergraduate Biology Preparation:

1. **Molecular and Cellular Biology**, e.g., Biochemistry (e.g., BIOMG 3300-Fall or Spring), Genetics (e.g., BIOMG 2810-Fall or Spring), Cell Biology (e.g., BIOMG 4320-Spring), Microbiology (e.g., BIOMI 2900-Fall or Spring). If you have not taken at least one course, then take at least three credits as a technical elective course (see technical elective section). If completed, please list courses already taken:

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2. **Physiology**, e.g., Neurobiology (e.g., BIONB 2220-Spring), Animal Physiology (e.g., BIOAP 3110-Fall), Mammalian Physiology (e.g., BIOAP 4580-Spring), Developmental Biology (e.g., BIOMG 3850-Fall), Embryology (e.g., BIOMG 4890-Spring-NOT OFFERED THIS YEAR). **Taking both BME 4010 and BME 4020 satisfies this requirement.** If you have not taken at least one course, then take at least three credits as a technical elective course (see technical elective section). If completed, please list courses already taken:

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Last Updated: 7/6/2011
## Masters of Engineering
### BS Engineering curriculum

**Requirements for Everyone (10 Credits):**

<table>
<thead>
<tr>
<th>Credit</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Engineering design: BME 5500 - Product Engineering and Design in Biomedical Engineering. Fall.</td>
</tr>
<tr>
<td>6</td>
<td>MEng Project (6 credits): BME 5910 - (2 credits-1st semester) and BME 5920 - (4 credits- 2nd semester)</td>
</tr>
<tr>
<td>1</td>
<td>BME Seminar (graded S/U): BME 5010 Bioengineering Seminar. Fall or Spring.</td>
</tr>
</tbody>
</table>

**Concentration (12 credits minimum in your MEng program—need at least 1 course in each of the areas either in your MEng program or previously):**

**Cellular engineering, tissue engineering, and drug delivery concentration (below is a list of courses available for this concentration):**

**Fall Courses:**
- CHEME 5430 – Bioprocess Engineering
- BME 5850 – Practice in Tissue Engineering
- BME 5400 – Biomedical Computation
- BME 6310- Principles of Drug Delivery

**Spring Courses:**
- BME 7600/BEE 7600 – Nucleic Acid Engineering
- AEP 5520 – Physics of Life
- CHEME 5440 - Systems Biology in Biotechnology and Medicine
- BME 6410 – Biomedical Engineering Analysis of Proteins for Medicine
- BME 5600 - Biotransport and Pharmaceutical Delivery
- BME 6650 – Principles of Tissue Engineering (offered next 2012-2013)

**Biomedical mechanics and biomaterials (below is a list of courses available for this concentration):**

**Fall Courses:**
- BME 5810 – Soft Tissue Biomechanics
- BME 6640/MAE 6640 – Mechanics of Bone

**Spring Courses:**
- BME 5390/FSAD 4390 – Biomedical Materials and Devices for Human Body Repair
- BME 5620/MSE 5620 – Biomineralization: The Formation and Properties of Inorganic Biomaterials
- BME 6501 - Natural Engineering: Developmental Biology Paradigms for Regenerative Medicine
- BME 5690/MAE 5690 - Clinical Biomechanics of Musculoskeletal Tissues
- MAE 4640/BME 4640 - Orthopaedic Tissue Mechanics
- MSE 4610 – Biomedical Materials and their applications

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**Bioinstrumentation and diagnostics (below is a list of courses available for this concentration):**

<table>
<thead>
<tr>
<th>Fall Courses:</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEE 6590 – Biosensors and Bioanalytical Techniques</td>
</tr>
<tr>
<td>BME 4110 – Science and Technology in Human Health</td>
</tr>
<tr>
<td>BME 6180 – Principles of Medical Imaging</td>
</tr>
<tr>
<td>BME 6670/AEP 6630 – Nanobiotechnology</td>
</tr>
<tr>
<td>BME 7310 – Advanced Biomedical Engineering Analysis of Biomedical Systems</td>
</tr>
<tr>
<td>ECE 5040 - Neural and Bioelectronic Interfaces</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spring Courses:</th>
</tr>
</thead>
<tbody>
<tr>
<td>BME 4910/BIONB 4910 – Principles of Neurophysiology</td>
</tr>
<tr>
<td>BME 5780/ECE 5780 – Computer Analysis of Biomedical Images</td>
</tr>
<tr>
<td>BME 6260 – Biomedical Optics, Imaging, and Spectroscopy</td>
</tr>
</tbody>
</table>

**Optional Technical Electives:**

Courses that are automatically approved are:

1. Any course at the 5000 level or above offered by the College of Engineering
2. Any course at the 4000 level or above offered by the Department of Physics (College of Arts and Science), the Department of Chemistry and Chemical Biology (College of Arts and Sciences), or the various departments in the College of Agriculture and Life Sciences or the College of Arts and Sciences that participate in the Biological Sciences.
3. Any courses in the Johnson Graduate School of Management in the NBA or NCC categories at 5000 level or above (e.g., NBA 5070 - Entrepreneurship for Scientists and Engineers. Fall or Spring).

Please list courses to be taken as part of your MEng degree program at Cornell:

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Last Updated: 7/6/2011