

## Biomedical Engineering – Program Map:

### Bioimaging (Neuroimaging) Focus Area

Semester	Course 1	Course 2	Course 3	Course 4	Course 5	Seminar
1	Principles Chem I / Lab <b>CHEM:1110</b> <i>(Math &amp; Science)</i>	Engr Calculus I <b>MATH:1550</b> <i>(Math &amp; Science)</i>	Intro Engineering Problem Solving <b>ENGR:1100</b> <i>(Engineering Core)</i>	Rhetoric <b>RHET:1030</b> <i>(Gen Ed)</i>	—	
2	Principles Chem II / Lab <b>CHEM:1120</b> <i>(Math &amp; Science)</i>	Engr Calculus II <b>MATH:1560</b> <i>(Math &amp; Science)</i>	Engr Matrix Algebra <b>MATH:2550</b> <i>(Math &amp; Science)</i>	Physics I / Lab <b>PHYS:1611</b> <i>(Math &amp; Science)</i>	Intro Engr Computing <b>ENGR:1300</b> <i>(Engineering Core)</i>	BME Forum <b>BME:1010</b>
3	Foundations of Biology / Lab <b>BIOL:1411</b> <i>(Math &amp; Science)</i>	Engr Diff Equations <b>MATH:2560</b> <i>(Math &amp; Science)</i>	Statics <b>ENGR:2110</b> <i>(Required Engineering)</i>	Electrical Circuits <b>ENGR:2120</b> <i>(Required Engineering)</i>	Intro to Behavioral Neuroscience <b>PSY:2701</b> <i>(Gen Ed)</i>	BME Prof Seminar <b>BME:2010</b>
4	Fund Human Physiology <b>HHP:2400</b> or <b>BME:3260</b> Quantitative Physiology <i>(Math &amp; Science)</i>	Biostatistics <b>BIOS:4120</b> or <b>STAT:3510</b> <i>(Math &amp; Science)</i>	Systems, Instrum, & Data Acquisition / Lab <b>BME:2200</b> <i>(Biomedical Core)</i>	Bioimaging & Bioinformatics / Lab <b>BME:2210</b> <i>(Biomedical Core)</i>	Computers in Engineering <b>ENGR:2730</b> <i>(Focus Area Required)</i>	
5	Cell Biology for Engr / Lab <b>BME:2400</b> <i>(Biomedical Core)</i>	Biomaterials & Biomechanics / Lab <b>BME:2500</b> <i>(Biomedical Core)</i>	Medical Imaging Physics <b>BME:5210</b> <i>(Focus Area Required)</i>	Neurobiology I <b>BIOL:3253</b> <i>(Focus Area Elective)</i>	Intro AI & Machine Learning <b>ENGR:3110</b> <i>(Required Engineering)</i>	
6	Intro to Cognitive Neuroscience <b>PSY:2975</b> <i>(Focus Area Elective)</i>	Neurobiology II <b>BIOL:3254</b> <i>(Focus Area Elective)</i>	Cultural Perspectives, Values, and Society <i>(Gen Ed)</i>	Intro to Software Design <b>ECE:3330</b> <i>(Focus Area Required)</i>	Be Creative <i>(Gen Ed)</i>	
7	BME Senior Design I <b>BME:4910</b> <i>(BME Core)</i>	Deep Learning in Med Imaging <b>BME:5240</b> <i>(Focus Area Elective)</i>	Physics II / Lab <b>PHYS:1612</b> <i>(Math &amp; Science)</i>	Image Processing <b>ECE:5480</b> <i>(Focus Area Required)</i>	Research Methods & Data Analysis II <b>PSY:2812</b> <i>(Focus Area Elective)</i>	
8	BME Senior Design II <b>BME:4920</b> <i>(BME Core)</i>	Biomed Signal Proc <b>BME:5200</b> or <b>ECE:5490</b> Multidim Image Analysis Tools & Tech <i>(Focus Area Elective)</i>	Cogn Neurosci <b>PSY:4025</b> or <b>PSY:4035</b> Comp Neurosci Lab <i>(Focus Area Elective)</i>	Approved Gen Ed course	Approved Gen Ed course	

At least two Focus Area Electives must be from the list of Engineering Topics.

\*Substituting PSY:2811 for Biostats may be better preparation for PSY:2812. Could substitute additional Psy for BIOL:3254