

# KU BIOENGINEERING GRADUATE PROGRAM

The University of Kansas

## Doctor of Philosophy in Bioengineering Track: Biomechanics & Neural Engineering

Students entering SP20 to present

Track Director: Terence Mccliff, Ph.D. (tmciff@kumc.edu)

| CORE | 6 hours required |
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| CPE 756  | Intro to Bioengineering (3)                        |
| BIOE 800 | Bioengineering Colloquium (.5) (2 total hours req) |
| BIOE 801 | Responsible Conduct of Research in Engineering (1) |

| DEPTH | 15 hours required |
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### 1. Mechanics (2 course min)

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| ME 633  | Basic Biomechanics (3)                      |
| ME 722  | Modeling Dynamics of Mechanical Systems (3) |
| ME 750  | Biomechanics of Human Motion (3)            |
| ME 751  | Exp. Methods in Biomechanics (3)            |
| ME 753  | Bone Biomechanics (3)                       |
| ME 755  | Computer Simulation in Biomechanics         |
| ME 757  | Biomechanical Systems (3)                   |
| ME 760  | Biomedical Product Design (3)               |
| ME 765  | Biomaterials (3)                            |
| ME 854  | Continuum Mechanics for Soft Tissues (3)    |
| CPE 751 | Basic Rheology (3)                          |

### 2. Physiology (2 course max)

|                   |                                   |
|-------------------|-----------------------------------|
| ME 758            | Physiological System Dynamics (3) |
| HSES 810          | Advanced Exercise Physiology (3)  |
| PHSL 800 or above |                                   |

### 3. Computing/Signal Processing (2 course max)

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| EECS 639 | Introduction to Scientific Computing (3)        |
| EECS 739 | Parallel Scientific Computing (3)               |
| EECS 868 | Mathematical Optimization with Applications (3) |
| EECS 644 | Intro to Digital Signal Processing (3)          |
| EECS 744 | Digital Signal Processing (3)                   |
| EECS 861 | Random Signals & Noise (3)                      |

| BREADTH | 18 hours minimum |
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*Choose appropriate courses from the Master Breadth Course List.*

1. Advanced Engineering (700 or above) (1 course minimum)
2. Life Sciences (1 course minimum)
3. Math, Statistics, Numerical Methods (1 course minimum)

| RESEARCH | 18 hours minimum - 24 hours maximum |
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| BIOE 999 | Independent Investigation (Dissertation)<br><i>These hours are taken under your advisor/committee chair.</i> |
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### MINIMUM HOURS REQUIRED FOR DEGREE: 60

No more than 3 classes may be taken at the 500-600 level and counted towards the graduate degree.