

PHD Elective Courses ¹																				
Topics Areas & Courses	Course No.	Term	Credits																	
Rotating Topics																				
Advanced Special Topics in Biostatistics	140.850.01		1-4 variable credits																	
Foundations of Statistics																				
Foundations of Statistical Inference	140.773.01		3	4																
Foundations of Statistics II	140.774.01		4	4																
Causal Inference																				
Causal Inference in Medicine and Public Health I	140.664.01		3	4																
Causal Inference in Medicine and Public Health II	140.665.01		4	3																
Survival, Longitudinal & Multivariate																				
Survival Analysis	140.641.01		1	3																
Advanced Survival Analysis	140.741.01		2	3																
Risk Prediction and Precision Medicine	140.742.01		2	3																
Bayesian Methods																				
Bayesian Methods I	140.762.01		3	3																
Bayesian Methods II	140.763.01		4	3																
Statistical Computing & Machine Learning																				
Advanced Statistical Computing	140.778.01		2	3																
Statistical Machine Learning: Methods, Theory, and Application	140.644.01		3	4																
Applied Statistics																				
Analysis of Biological Sequences	140.638		2	3																
Statistics for Genomics	140.688.01		4	3																
Principles and Methods of Functional Neuroimaging I	140.682.01		3	4																
Principles and Methods of Functional Neuroimaging II	140.683.01		4	4																
Epidemiology																				
Introduction to Clinical Trials	340.645		2	3																
Biomedical Engineering²																				
NEURO DATA DESIGN I	580.697 (BME)																			
Data Science & Computer Science²																				
INTERMEDIATE PROGRAMMING	601.220 (CS)																			
DATA STRUCTURES	601.226 (CS)																			
DATABASES	601.615 (CS)																			
PARALLEL PROGRAMMING	601.620 (CS)																			
THEORY OF COMPUTATION	601.631 (CS)																			
INTRO ALGORITHMS	601.633 (CS)																			
AUGMENTED REALITY	601.654 (CS)																			
COMPUTER GRAPHICS	601.657 (CS)																			
COMPUTER VISION	601.661 (CS)																			
ARTIFICIAL INTELLIGENCE	601.664 (CS)																			
NATURAL LANGUAGE PROCESSING	601.665 (CS)																			
MACHINE LEARNING	601.675 (CS)																			
CAUSAL INFERENCE	601.677 (CS)																			
MACHINE LEARNING: OPTIMIZATION	601.681 (CS)																			
MACHINE LEARNING: DEEP LEARNING	601.682 (CS)																			
FOUNDATIONS OF COMPUTATIONAL BIOLOGY AND BIOINFORMATICS	601.688 (CS)																			
ADVANCED TOPICS IN DATA-INTENSIVE COMPUTING	601.723 (CS)																			
COMPUTATIONAL GENOMICS: APPLIED COMPARATIVE GENOMICS	601.749 (CS)																			
MACHINE LEARNING: LINGUISTIC & SEQUENCE MODELING	601.765 (CS)																			
MACHINE LEARNING: ADVANCED TOPICS	601.779 (CS)																			
Notes:																				
1. Some biostatistics courses are offered every other year																				
2. These courses are offered by departments at the Homewood campus. They are semester-long courses. Credits from these semester courses will be converted to biostatistics credits by multiplying 2.																				

