

Fall 2019			
Note: BDSI PhD students register for courses through their primary institution, regardless of where the course is taught. For MUSC students, the BDSI mnemonic is used for all MUSC and Clemson courses. For Clemson students, see the footnotes below.			
Area 1 - Biomedical Informatics Foundations and Applications - 15-16 hours		Area 2 (continued) - Computing, Math, Stats, and Engineering - 18 hours	
Research Foundations - Choose 1		Math - Choose 1	
3 CLEM HLTH 8210	Health Research 1: Design and Measurement	3 CLEM MATH 8050	Data Analysis
3 MUSC ¹ HIN 708	Applied Statistical and Research Methods	3 CLEM STAT 8010	Statistical Methods
3 MUSC ² DHA 866	Applied Research	4 MUSC ³ BMTRY 700	Introduction to Clinical Biostatistics
Biomedical Informatics Foundations - Both		Machine Learning/Data Science - Choose 1	
3 MUSC ¹ BDSI 701	Intro to Biomedical Informatics	3 CLEM CPSC 8100	Intro to Artificial Intelligence
3 MUSC ² BDSI 702	Biomedical Data Standards and Terminologies	3 CLEM CPSC 6300	Applied Data Science
Track Specific Course - Choose 1		3 MUSC ¹ BDSI 721	Applied Machine Learning
3 MUSC ¹ BDSI 711	Precision Medicine Informatics	Other - Choose 1	
3 MUSC ² BDSI 712	Clinical and Translational Informatics	3 CLEM STAT 8190	Biostatistics
3 CLEM HLTH 8900	Population Health Informatics	3 CLEM HLTH 8310	Quantitative Analysis in Health Research I
BDSI Electives - Choose 1-2 (minimum 3)		4 MUSC ³ BMTRY 701	Biostatistical Methods II
3 CLEM CPSC 8450	Bioinformatics Algorithms	3 CLEM CPSC 8650	Data Mining
2 MUSC ² BMTRY 783	Statistical Methods for Bioinformatics	3 CLEM ECE 8560	Pattern Recognition
3 MUSC ² NEW BMI	Panomics	3 CLEM CPSC 8480	Network Science
2 MUSC ² NEW BMI	Consumer and Quantified Self	3 CLEM MATH 8070	Applied Multivariate Statistical Analysis
2 MUSC ² BDSI 732	Health Enterprise Analytics	3 MUSC ¹ BMTRY 719	Bayesian Biostatistics
2 MUSC ² BDSI 731	Microbiome Informatics	3 CLEM CPSC 8040	Data Visualization
Area 2 - Computing, Math, Stats, and Engineering - 18 hours		3 CLEM CPSC 8810	Deep Learning
Systems and Data Base Management - Choose 1		3 CLEM ECE 6310	Introduction to Computer Vision
3 CLEM CPSC 6620	Database Management System	3 CLEM ECE 8770	Computer Vision
3 CLEM CPSC 8620	Database Management System Design	3 CLEM ECE 8470	Digital Image Processing
3 CLEM CPSC 8470	Introduction to Information Retrieval	3 CLEM BIOE 6310/11	Medical Imaging
3 MUSC ¹ HIN 700	Database Management	3 MUSC ¹ BIOMI 812	Signal and Image Processing
3 CLEM CPSC 6550	Computational Science: Methods & Software Systems	3 CLEM MATH 6410	Introduction to Stochastic Models
3 CLEM ECE 6780	General Purpose Computation on GPUs	3 CLEM ECE 6420	Knowledge Engineering
3 CLEM ECE 8780	High-Performance Computing with GPUs	3 CLEM IE 8030	Engineering Optimization and Applications
3 CLEM CPSC 8200	Parallel Architectures	3 CLEM IE 8520	Prescriptive Analytics
3 CLEM ECE 6730	Introduction to Parallel Systems	3 CLEM PADM 8420	GIS for Public Administrators
3 CLEM ECE 8750	Peer-to-Peer, Wireless, and Cloud Computing	3 MUSC ¹ DPHS NEW	GIS and Mapping for Public Health
3 CLEM CPSC 8490	Principles of Scientific Computing	3 CLEM CPSC 8400	Design & Analysis of Algorithms
3 CLEM CPSC 8300	Systems Modeling	3 CLEM CPSC 8380	Advanced Data Structure
3 CLEM CPSC 6140	Human and Computer Interaction	Decision Analysis/ Knowledge Integration/ Modeling	
3 CLEM HCC 8310	Fundamentals of Human-Centered Computing	Geospatial Analysis	
3 CLEM IE 6880	Human Factors Engineering	Algorithms and Data Structures	
3 CLEM IE 8000	Human Factors Engineering		
3 CLEM CPSC 8710	Foundations of Software Engineering		
3 CLEM CPSC 8700	Software Design		
Area 3 - Population Health, Health Systems, and Policy - 5-6 hours		Area 4 - Domain Biology/Medicine - 3-4 hours	
Choose 2 - Course Titles Must Be Different		Choose 1	
3 CLEM HLTH 8110	Health Care Delivery Systems	3 CLEM BIOE 8460	Biomedical Basis for Engineered Replacement
3 CLEM HLTH 8020	Health Economics	3 MUSC ¹ CGS 765	Proteins: Dynamic Structure and Functions
3 CLEM HLTH 8100	Health Policy	4 MUSC ¹ CGS 766	Genes: Inheritance and Expression
3 MUSC ¹ HAP 704-02	Health Policy	3 MUSC ¹ CGS 767	Cells: Organization and Communication
2 CLEM HLTH 8140	Health Systems Quality Improvement	3 CLEM BCHM 6360	Molecular Biology: Genes to Proteins
3 MUSC ¹ HAP 632-02	Quality Management of Health Services	3 CLEM BCHM 6430	Molecular Basis for Disease
3 MUSC ¹ HAP 735-02	Health Law and Risk Management	3 CLEM GEN 6700	Human Genetics
3 MUSC ¹ HIN 716	Ethical, Legal, and Regulatory Issues in Health Informatics	3 CLEM BIOL 6030	Introduction to Applied Genomics
2 CLEM HLTH 8130	Population Health and Research	Foundations of Biomedical Science	
3 CLEM HLTH 8090	Epidemiology	Biochemistry/ Pathology	
3 MUSC ¹ BMTRY 736	Foundations of Epidemiology I	Genetics	
3 MUSC ¹ BMTRY 747	Foundations of Epidemiology II	Genomics	
3 MUSC ¹ DHA 850	Population Health Management		
Area 5 - Seminars/Lab Rotations/Research Hours - 24 hours		Seminars - 4 hours	
		1 ___ BDSI 700 ²	Seminar
		1 ___ BDSI 700 ²	Seminar
		1 ___ BDSI 700 ²	Seminar
		1 ___ BDSI 700 ²	Seminar
		Lab Rotations - 4 hours	
		1 ___	Lab Rotation
		1 ___	Lab Rotation
		1 ___	Lab Rotation
		1 ___	Lab Rotation
		Research Hours - 18 hours	
		3 ___ BDSI 970/90 ³	Dissertation Research
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¹ Clemson students taking MUSC courses will register with course number CPSC 8810

² Clemson students taking BDSI 700 will register with course number CPSC 9500

³ Clemson students taking BDSI 970/90 will register with course number CPSC 9910