



## MINIMUM REQUIRED COURSEWORK

CR	Interdisciplinary Core	CR	Research Core	CR	Concentration Courses	****Overall Total Minimum Required = 72
2	CAHS 7120: Interprofessional Education and Practice	3	STAT 7010: Biostatistics 1	*12	CAHS 9001: Advanced Topics	
1x3	CAHS 9010: Doctoral Seminar-Research in Healthcare	3	STAT 7020: Biostatistics 2	**15	CAHS 9210: Investigation of a Problem	
2	CAHS 7001: Learning Theories in Health Professions Education	3	STAT 7130: Introduction to Epidemiology	***18	CAHS 9300 Dissertation	
1	CAHS 7002: Determining Learning Objectives and Competencies	1	MPHC 8011: Ethical Conduct in Research	Total Concentration = 45		
1	CAHS: 7003: Assessment Methods Module	3	CAHS 8130: Grant Writing			
		4	CAHS 8503: Research Process			
		1	CAHS 8012: Scientific Communications			
<b>Total Interdisciplinary Core = 9</b>		<b>Total Research Core = 18</b>		<b>Total Concentration = 45</b>		

\* Minimum total credits. Courses can be 3, 4 or 5 credits each. Consult the program director.

\*\* Minimum total credits. Taken every semester starting 2<sup>nd</sup> semester of first year until approval of dissertation proposal.

\*\*\* Minimum total credits.

\*\*\*\* Full-time students including international students must register for at least 9 credits per semester. For international students: 1) one course can be an online course for not more than 3 credits; 2) consult the program director for a customized plan of study.



## PROGRAM OF STUDY FOR A FULL-TIME STUDENT

### YEAR 1

CR	Fall	CR	Spring	CR	Summer	Total
2	CAHS 7120: Interprofessional Education and Practice	1	CAHS 9210: Investigation of a Problem	2	CAHS 9210: Investigation of a Problem	
3	STAT 7010: Biostatistics 1	2	CAHS 9210: Investigation of a Problem	3	CAHS 9001: Advanced Topics (Concentration course)	
4	CAHS 8503: Research Process	3	STAT 7020: Biostatistics 2	3	CAHS 9001: Advanced Topics (Concentration course) (or Fall of year 2)	
1	MPHC 8011: Ethical Conduct in Research	3	CAHS 8130: Grant Writing	1	CAHS 9010: Doctoral Seminar-Research in Healthcare	
		1	CAHS 8012: Scientific Communications	2	CAHS 7001: Learning Theories in Health Professions Education	
10		10		11		

### YEAR 2

CR	Fall	CR	Spring	CR	Summer	Total
3	CAHS 9210: Investigation of a Problem	2	CAHS 9210: Investigation of a Problem	5	CAHS 9210: Investigation of a Problem: (1) Comprehensive Examinations and (2) Dissertation Proposal (both must be completed no later than 7 <sup>th</sup> semester)	
3	CAHS 9001: Advanced Topics (Concentration course)	3	CAHS 9001: Advanced Topics (Concentration course)			
1	CAHS 9010: Doctoral Seminar – Research in Health Care	1	CAHS 9010: Doctoral Seminar- Research in Healthcare			
1	CAHS 7002: Determining Learning Objectives and Competencies	1	CAHS: 7003: Assessment Methods Module			
		3	STAT 7130: Introduction to Epidemiology			
8		10		5		<b>21</b>

### YEARS 3-5

CAHS 9300: Dissertation Research. For doctoral *candidates* only. Taken every semester (minimum 5 credits per semester) until completion of dissertation (minimum 18 total credits). Students must be in candidacy for a minimum of 2 semesters and a maximum 9 semesters (i.e., must graduate by the 9<sup>th</sup> semester of candidacy)



## ELECTIVE COURSES

Work with your Advisor to select the courses that are not in your JagTrax. Most of them will be your Concentration courses including electives. Attach a letter to the coursework approval form stating that you meet (or will) the pre-requisites and that the instructors will let you enroll. Email the form to the Advisory Committee ahead of time. Get the members to approve the selections in the first meeting. If you wish to take elective courses that are not listed below, explain why you think they will be of benefit to your doctoral training. Consult with the Program Director. Courses offered at AU are posted here: <http://catalog.augusta.edu/content.php?catoid=37&navoid=4541>

<b>Rehabilitation Science Concentration</b>	<b>Diagnostic Science Concentration</b>	<b>Health Outcomes Concentration</b>
<p><b>PTHP 7211 Applied Physiology</b>            3 cr, Fall. Instructor: Colleen Hergott            Advanced discussions on topics of integrated applied physiology with respect to normal and pathologic responses and adaptations to various stimuli (e.g., exercise, aging, environmental stress, medications) as well as laboratories to develop clinical skills related to fitness assessment.</p>	<p><b>BIOM 8021 Biochemistry and Gene Regulation</b>            5 cr, Fall. Instructor: Jan van Riggelen            Includes metabolism: enzyme structure, kinetics and mechanisms: RNA, DNA, and protein biogenesis: DNA repair and recombination; cell cycle control, cancer genetics. Classroom time includes lectures, discussion, and demonstrations using traditional and alternative teaching methods.</p>	<p><b>MPHM 7210 Health Care Performance Improvement.</b>            3 cr, Spring. Instructor: Pavani Rangachari            Introduces concepts in quality management. Areas discussed include continuous quality improvement, utilization and risk management, accrediting functions, six-sigma and statistical process control, balanced scorecards, outcomes and disease management.</p>
<p><b>PTHP 8003 Applied Neuroscience</b>            4 cr, Fall. Instructor: Chandramohan Wakade            Interdisciplinary study of neuroanatomy, neurophysiology, and clinical neuroscience with integrative coverage of nervous function and dysfunction through case-based application.</p>	<p><b>BIOM 8022 Molecular Cell Biology</b>            5 cr, Fall. Instructor: Pat Schoenlein            Focuses on the study of the cell as the fundamental structural and functional unit of which all living organisms are constructed. Cell biology serves as a bridge between molecular biology, basic biochemistry, physiology, and morphology at the gross anatomical level and is increasingly a principal area of focus for biomedical research. In this course, the properties of cells are analyzed initially by viewing the structural organization, functional interactions, and biogenesis of cellular components with particular emphasis on understanding of processes involved in regulating the specific composition and interactions of cellular organelles. This understanding forms a basis for the subsequent consideration of cell-cell interactions at the cellular and the tissue level.</p>	<p><b>MPHI 8001 Public Health Informatics</b>            3 cr, Spring. Instructor: Vibha Kumar            An overview of the field of public health informatics, integrating themes from information sciences, public health, computer science and medical science. Topics include: utilization of health information services, organization and management of online current and emerging public health technology collections, automation of information technology, and public health professional knowledge as a component of evidence-based practice.</p>
<p><b>BIOM 8022 Molecular Cell Biology</b>            5 cr, Fall. Instructor: Pat Schoenlein            Focuses on the study of the cell as the fundamental structural and functional unit of which all living organisms are constructed. Cell biology serves as a bridge between molecular biology,</p>	<p><b>BIOM 8033 Integrated Systems Biology</b>            6 cr, Spring. Instructor: Jessica Filosa            Includes basic anatomy, physiology, and pharmacology of all the organ systems. Special topics also covered include</p>	<p><b>MPHI 8400 Health Data Management and Knowledge Discovery.</b>            3 cr, Fall. Instructor: Yoon-Ho Seol            Focuses on the acquisition and use of patient level data to support population, administrative and clinical decision-</p>



## ELECTIVE COURSES

<p>basic biochemistry, physiology, and morphology at the gross anatomical level and is increasingly a principal area of focus for biomedical research. In this course, the properties of cells are analyzed initially by viewing the structural organization, functional interactions, and biogenesis of cellular components with particular emphasis on understanding of processes involved in regulating the specific composition and interactions of cellular organelles. This understanding forms a basis for the subsequent consideration of cell-cell interactions at the cellular and the tissue level.</p>	<p>integrated biosystems and feedback, physiological genomics, modern drug discovery, and hot research topics.</p>	<p>making in healthcare organizations. Course emphasis is in data mining and knowledge discovery techniques including the advanced treatment of statistical analysis and methods of communicating the outcomes of health interventions.  <i>Prereqs: MPHI 8000 [Fall] and MPHC 8800 [Summer]</i></p>
<p><b>BIOM 8033 Integrated Systems Biology</b>          6 cr, Spring. Instructor: Jessica Filosa          Includes basic anatomy, physiology, and pharmacology of all the organ systems. Special topics also covered include integrated biosystems and feedback, physiological genomics, modern drug discovery, and hot research topics.</p>	<p><b>BIOM 8215 Fundamentals of Oncology I</b>          2 cr, Spring. Instructor: Bal Lokeshwar          Covers fundamental aspects of cancer biology with emphasis on the etiology, natural history, epidemiology of cancer, host-tumor relationships, immunobiology and principles of chemotherapy and radiotherapy.  <i>Prereqs: 8021 &amp; 8022.</i></p>	
<p><b>BIOM 8080 Neurosciences I</b>          4 cr, Spring. Instructor: David Kozlowski          The cell and molecular biology of neurons and synapses, motor systems, somatosensory, vision, audition, chemical senses, tastes and olfaction, glia and neuroimmunology, regulatory, autonomic and neuroendocrine systems.  <i>Prereqs: SGS 8022 Molecular Cell Biology.</i></p>	<p><b>BIOM 8230 Biology of Proteins in Disease</b>          2 cr, Spring. Instructor: Ahmed Chadi          Advanced study of protein function in cell biology and how this relates to the pathogenesis of disease.  <i>Prereqs: BIOM 8021 and BIOM 8022</i></p>	
<p><b>BIOM 8215 Fundamentals of Oncology I</b>          2 cr, Spring. Instructor: Bal Lokeshwar          Covers fundamental aspects of cancer biology with emphasis on the etiology, natural history, epidemiology of cancer, host-tumor relationships, immunobiology and principles of chemotherapy and radiotherapy.  <i>Prereqs: 8021 &amp; 8022.</i></p>	<p><b>BIOM 8240 Introduction to Immunology and Infectious Disease</b>          2 cr, Spring. Instructor: Stuart Thompson          Basic instruction on fundamentals of immunology, microbiology, and virology.</p>	



## ELECTIVE COURSES

### Other elective courses which our PhD students have taken include the following.

- **CAHS 7110 Principles of Human Physiology**, 3 cr, Fall. Offered through the PA department
- **MPHC 7209 Health Law and Ethics**, 3cr, Fall. Overview of the law and its administration as it applies to questions of policy and procedure development for health data requirements in a healthcare setting. Includes basic ethical principles and situations of ethical dilemma and ethical decision-making processes
- **MPHM-8280 Quantitative Methods in Health Administration**, 3 cr, Fall. Instructor: Vahe Heboyan. This course is an introduction to modern applied research methods in health sciences research such as linear, logistic, and Poisson regression, survival analysis, etc. Course emphasizes the underlying similarity of these methods, the choice of the right method for specific problems and data types, common aspects of model construction, variable selection, testing of model assumptions, and the use of graphical and other methods to present results that are readily understood by various audiences
- **PHAS 7120 Human Physiology for the Clinician**, 5 cr, Summer
- **CAHS 9001 Advanced Topics: Multivariate Applied Statistics**, 3 cr, Summer. Instructor: Raymond Chong. This course is designed to extend knowledge of univariate statistics such as analysis of variance and multiple regression to cases where multiple dependent (and sometimes multiple predictor) variables are considered in research designs. The content, presentation style, and assignments are applied in nature, focusing on *which* statistical technique should be used based on the research question, *why* it should be used, *how* it should be programmed and interpreted, *what* information should be included in a journal results section, and *how* it should be communicated for maximum coherency. An emphasis is placed on a systematic, comprehensive approach to understanding the conceptual and practical issues relevant to the use of multivariate statistics. The topics covered in this course include MANOVA, discriminant function, canonical correlation, and factor analysis

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### ***Example email to the course instructor requesting permission to enroll in their course:***

Dear xx,

I am a doctoral student in the Applied Health Sciences program. One of the things we need to do is identify courses which we can take as an elective. I came across the course xxxxx in which you are listed as the instructor and that the course will be offered in the xxx semester. I understand that there are no pre-requisites for taking this course. My research will be in the area of xxxxx. I feel that this course will be beneficial to my doctoral training.

I would like to get your permission to take this course. However, since I will be taking this course as an elective, I will be registering for CAHS 9100 instead. You may either let me take the course in its entirety by following everything that the other students are required to do, or you may want me to work on a special/additional assignment, e.g. write a paper. The paper can be in addition to the coursework, or it may be used to replace parts of the course if I were to skip some of the course contents. Grading the special assignment can be done by you or my doctoral advisor.

In order to determine what is best for me to do in this course, I would like to schedule a meeting with you to discuss the matter. We normally meet with the potential instructor alone. However, if you prefer my advisor (Dr. xxx) or the doctoral program director (Dr. Raymond Chong) to be present, please let me know and I will arrange it.