Fay W. Boozman College of Public Health

Master of Science (MS) in Healthcare Data Analytics

Program Director: Mick Tilford
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Advisee's Name _____ Student ID Number _____ Faculty Advisor _____

	Completion Date
ACADEMIC INTEGRITY TRAINING	
Certification Test	
WRITING MILESTONE	
Skills Certification	
IPE CURRICULUM	
Exposure Workshop	
Bridge Transition	
Quadruple Aim Project	
Simulation Activity	
Competency Workshop	
Required Practice Activity	
Student Educator Activity	

Academic Integrity Training Requirement: All students in the COPH must adhere to the highest standards of professional and ethical conduct. Among these standards is the recognition that student written work must be original and appropriately cited. In order to facilitate understanding of this standard, all students must complete the on-line course "*How to Recognize Plagiarism: Tutorials*" at https://plagiarism.iu.edu/tutorials/ and complete the Certification Test at https://plagiarism.iu.edu/certificationTests/index.html. Upon successful completion of the test, students must provide a copy of the Validation Certificate to the COPH Office of Student and Alumni Affairs at cophoffice@uams.edu. The requirement must be completed by the first day of classes. Requirement approval date: 09.02.2020.

Writing Milestone Requirement: All students who enter the College of Public Health are required to complete a Writing Skills Assessment at the beginning of their first semester. The Assessment will identify strengths and weaknesses and highlight opportunities for improvement. Students who do not meet a predetermined score will be required to complete an online COPH 50000 Public Health Writing Workshop course. This course will address the fundamentals of good writing, writing with scholarly sources, revision strategies, and other topics in the interest of improving student writing skills. This is a non-credit curriculum requirement. Requirement approval date: 09.02.2020.

IPE Curriculum Requirement: All COPH degree-seeking students are required to complete the UAMS Quadruple Aim Interprofessional Education (IPE) Program prior to graduation. According to the World Health Organization (WHO), *"Interprofessional Education occurs when two or more professions learn with, from and about each other to improve collaboration and the quality of care."* The IPE Program is noncredit hour earning and consists of several workshops and other activities. All aspects of the IPE Program must be completed prior to degree program completion as a condition of graduation. For more information on **IPE**, please consult the Office of Student and Alumni Affairs, the Associate Dean for Student and Alumni Affairs or visit our website: https://secure.uams.edu/cophstudent/student-handbook.aspx#ipe. Requirement approval date: 2015.

IPE CURRICULUM FOR THE MS in HCDA			
1. IPE UNIV 11000 EXPOSURE WORKSHOP **Format/Event:** Onsite/Online workshop in August. **Timeline:** 1st semester. **Course Association:** NA **Notes:** Enroll 1st semester and complete by the end of 12th credit hour. Your IPE Program Contact will determine what date you attend.	**2. IPE UNIV 12000 EXPOSURE BRIDGE TRANSITION** **Format/Event**: Exposure Bridge Transition. Any onsite event posted on the IPE website. **Timeline:** 1st semester **Course Association:** NA **Notes:** Enroll 1st semester. Requirements include submitting a reflection and verification form into Blackboard within 7 days of activity. Complete by the end of 12th credit hour.	**3. IPE UNIV 13000 IMMERSION QUADRUPLE AIM PRJECT (QAP) WORKSHOP** **Format/Event:** Quadruple Aim Project (QAP) Workshop. Any event posted on the IPE website. **Timeline:** 12th—24th credit hour **Course Association:** NA **Notes:** Enroll the semester of your 12th credit hour.	**4. IPE UNIV 14000 IMMERSION SIMULATION** **Format/Event:** Onsite— Any event posted on the IPE website. **Timeline**: 12th—36th credit hour **Course Association:** NA **Notes:** Enroll the semester of your 12th credit hour.
5. IPE UNIV 15000 COMPETENCE WORKSHOP* **Format/Event:** Any onsite Competence Workshop event posted on the IPE website. **Timeline:** 12th and 36th credit hour **Course Association:** NA **Notes:** Enroll the semester of your 12th credit hour.	**6. IPE UNIV 16000 COMPETENCE PRACTICE ACTIVITY** **Format/Event:** Onsite Competence Practice Activity—Any event posted on the IPE website **Timeline:** 24th—48th credit hour **Course Association:** NA **Notes:** Enroll the semester of your 24th credit hour. Requirements include submitting a reflection into Blackboard within 7 days of activity. This activity should be completed within your 2nd year of the program.	**7. IPE UNIV 17000 COMPETENCE STUDENT EDUCATOR ACTIVITY** **Format/Event:** Onsite Student Educator Activity—Any event posted on the IPE website. **Timeline:** 24th—48th credit hour **Course Association:** NA **Notes:** Enroll the semester of your 24th credit hour. Requirements include submitting a reflection into Blackboard within 7 days of activity. This activity should be completed within your 2nd year of the program.	Note: For onsite versus online/ distance options as approved events. Please ensure you are registered in the correct GUS course for the delivery method (onsite v. online/distance). If you need to switch courses, you must process a course swap in GUS. If you are faculty or currently working in a healthcare environment, you may be eligible for alternate IPE pathways for advanced learners. If you have questions regarding this, please contact ipe@uams.edu. IPE CURRICULUM 07.01.2022

CORE (REQUIRED) – 24 Credit Hours		Credit Hours	Grade	Year	Semester
HPMT 53373	Data Quality Management	3			
HPMT 53353	Data Visualization for Healthcare Analytics	3			
HPMT 52173	Decision Analytics in Healthcare	3			
HPMT 53363	Data Mining in Healthcare	3			
PBHL 50033	*Introduction to Public Health	3			
BIOS 52103	Biostatistics II: Advanced Linear Models	3			
BMIG 60103	Database Systems and Data Warehousing	3			
BIOS 52133	Biostatistics Computing with SAS I	3			

*See Knowledge Credit for Public Health policy in the COPH Student Handbook.

SELECTIVES (with Approval of MS Advisor) - 9 Credit Hours		Credit Hours	Grade	Year	Semester
BIOS 53243	Analyzing Health Surveys	3			
HPMT 53383	Introduction to Natural Language Processing	3			
HPMT 54483	Social Network Analysis	3			
BIOS 52143	Categorical Data Analysis	3			
HPMT 63173	Performance Measurement, Reporting and Incentives	3			
BMIG 62003	Machine Learning for Biomedical Informatics	3			
BIOS 53173	Biostatistics Computing with SAS II	3			
BIOS 52233	Biostatistics III: Multivariate Analysis & Linear Models	3			
BMIG 60303	Natural Language Processing in Biomedical Informatics	3			
BMIG 50303	Computational Methods in Biomedical Informatics	3			
BMIG 50103	Information Modelling – From Data to Knowledge	3			
PSCI 51193	Applied Research Methods Using Retrospective Data Sources	3			
ENVH 54103	Geographic Information Systems in Public Health	3			
THESIS / CAPSTONE PROJECT (REQUIRED) – 3 Credit Hours		**Credit Hours**	**Grade**	**Year**	**Semester**
PBHL 5200V	Directed Study	3			

MINIMUM TOTAL HOURS = 36 hours

Program Name: MS in Healthcare Data Analytics		
Competency	Course	Assessment
1. Apply predictive analytic methods on healthcare data and interpret results of the analysis.	HPMT 53363 Data Mining in Healthcare	Final project. The final project requires students to use the R programming language to complete a predictive analytic model on a selected outcome using healthcare data. Students are required to take a healthcare data set, clean the data and define all necessary variables, and apply predicative analytic methods to construct a final predictive model. Students are required to assess the accuracy of the predictive model they create and to interpret the results of the model. The final project is graded using the rubric outlined in the syllabus.
2. Illustrate required skills needed to access and manage data using SQL	BMIG 60103 Database Systems and Data Warehousing	Homework (assignments). Homeworks require utilization of various types of SQL commands. These commands include querying (or accessing) the data, as well as management and manipulation of data to answer a specific question using healthcare data and databases. The weekly homeworks are graded based on the rubric outlined in the syllabus.
3. Propose solutions to improve health data quality.	HPMT 53373 Data Quality Management	A project deliverable, Deliverable 5, will ask students to identify the root causes of the data quality problems in their projects and propose solutions for improving data quality. The students will be graded according to whether they identified the correct root causes and whether they proposed realistic solutions for improving data quality.
4. Apply forecasting methods to inform decision-making in healthcare.	HPMT 52173 Decision Analytics in Healthcare	Final project. The final project requires students to interpret findings from forecasting techniques to answer a defined decision-making problem in healthcare. During the project students must not only interpret findings from the final chosen models, but the required techniques for forecasting require iterative interpretation of the analyses in order to determine the best final model choice. The final project is a decision-making problem and is graded using the rubric provided to students.
5. Construct appropriate data visualizations using healthcare data.	HPMT 53353 Data Visualization for Healthcare Analytics	Final project. The final project requires students to analyze healthcare data sets using Tableau software and to create visualizations that are appropriate in structure (e.g., bar chart vs line chart) and design (e.g., correct color choices and axes ranges). Students must be cognizant of the best choice in visualization based on the underlying data structure as well as the intended information to be portrayed to the audience. The final project is graded using a rubric provided to students.