

Program-Level Assessment Plan

Program: Health Data Science	Degree Level (e.g., UG or GR certificate, UG major, master’s program, doctoral program): MS
Department: Health and Clinical Outcomes Research (HCOR)	College/School: School of Medicine
Date (Month/Year): March 2022	Primary Assessment Contact: Dr. Paula Buchanan and Dr. Divya S. Subramaniam

Note: Each cell in the table below will expand as needed to accommodate your responses.

#	Student Learning Outcomes What do the program faculty expect all students to know or be able to do as a result of completing this program? Note: These should be measurable and manageable in number (typically 4-6 are sufficient).	Curriculum Mapping In which courses will faculty intentionally work to foster some level of student development toward achievement of the outcome? Please clarify the level at which student development is expected in each course (e.g., introduced, developed, reinforced, achieved, etc.).	Assessment Methods	
			Artifacts of Student Learning (What) 1. What artifacts of student learning will be used to determine if students have achieved this outcome? 2. In which courses will these artifacts be collected?	Evaluation Process (How) 1. What process will be used to evaluate the artifacts, and by whom? 2. What tools(s) (e.g., a rubric) will be used in the process? Note: Please include any rubrics as part of the submitted plan documents.
1	Identify and define an analytic/operational question.	<ol style="list-style-type: none"> HDS 5210 Programming for Data Scientists (introduced and developed) ORES 5300 Foundations of Outcomes Research 1 (introduced, developed, and reinforced) HDS 5310 Analytics and Statistical Programming (introduced and developed) HDS 5230 High Performance Computing (developed and reinforced) HDS 5960 Capstone (Achieved) 	<ol style="list-style-type: none"> We will utilize the final project from HDS 5210 Programming for Data Scientists. We will utilize the final paper from ORES 5300 Foundations of Outcomes Research. We will utilize the final group project from HDS 5310 Analytics and Statistical Programming. We will utilize the final exam from HDS 5230 High Performance Computing. We will utilize the final brief report 	<ol style="list-style-type: none"> The selected artifact from a maximum of 10% of the students, 5 students, or all the students in each course will be assessed by 2 faculty members of the department. If there is a disagreement a 3rd faculty member will be brought in to assess the artifact. We will use the attached rubric to assess the final papers from both courses

			from HDS 5960 Capstone.	
2	Apply appropriate statistical methods.	<ol style="list-style-type: none"> 1. HDS 5310 Analytics and Statistical Programming (introduced and developed) 2. HDS 5320 Inferential Modeling (developed and reinforced) 3. HDS 5330 Predictive Modeling and Machine Learning (introduced and developed) 4. HDS 5960 Capstone (Achieved) 	<ol style="list-style-type: none"> 1. We will utilize the final group project from HDS 5310 Analytics and Statistical Programming. 2. We will utilize the final exam from HDS 5320 Inferential Modeling. 3. We will utilize the final project/exam from HDS 5330 Predictive Modeling and Machine Learning. 4. We will utilize the final brief report from HDS 5960 Capstone. 	<ol style="list-style-type: none"> 1. The selected artifact from a maximum of 10% of the students, 5 students, or all the students in each course will be assessed by 2 faculty members of the department. If there is a disagreement a 3rd faculty member will be brought in to assess the artifact. 2. We will use the attached rubric to assess the final papers from both courses
3	Apply appropriate data management strategies.	<ol style="list-style-type: none"> 1. ORES 5160 Data Management (introduced, developed, and reinforced) 2. HDS 5210 Programming for Data Scientists (introduced and developed) 3. HDS 5230 High Performance Computing (developed and reinforced) 4. HDS 5960 Capstone (Achieved) 	<ol style="list-style-type: none"> 1. We will utilize the final project from ORES 5160 Data Management. 2. We will utilize the final project from HDS 5210 Programming for Data Scientists. 3. We will utilize the final exam from HDS 5230 High Performance Computing. 4. We will utilize the final brief report from HDS 5960 Capstone. 	<ol style="list-style-type: none"> 1. The selected artifact from a maximum of 10% of the students, 5 students, or all the students in each course will be assessed by 2 faculty members of the department. If there is a disagreement a 3rd faculty member will be brought in to assess the artifact. 2. We will use the attached rubric to assess the final papers from both courses

4	Critically evaluate methodological designs.	<ol style="list-style-type: none"> 1. ORES 5300 Foundations of Outcomes Research (Introduced and Developed) 2. HDS 5960 Capstone (Achieved) 	<ol style="list-style-type: none"> 1. We will utilize the final study proposal from ORES 5300 Foundations of Outcomes Research. 2. We will utilize the final brief report from HDS 5960 Capstone. 	<ol style="list-style-type: none"> 1. The selected artifact from a maximum of 10% of the students, 5 students, or all the students in each course will be assessed by 2 faculty members of the department. If there is a disagreement a 3rd faculty member will be brought in to assess the artifact. 2. We will use the attached rubric to assess the final papers from both courses
5	Understand organization and financing of healthcare and resulting data sets.	<ol style="list-style-type: none"> 1. HMP 5000 Healthcare Organization and Policy (Introduced and Developed) 2. HDS 5960 Capstone (Achieved) 	<ol style="list-style-type: none"> 1. We will utilize the final project from HMP 5000 Healthcare Organization and Policy. 2. We will utilize the final brief report from HDS 5960 Capstone. 	<ol style="list-style-type: none"> 1. The selected artifact from a maximum of 10% of the students, 5 students, or all the students in each course will be assessed by 2 faculty members of the department. If there is a disagreement a 3rd faculty member will be brought in to assess the artifact. 2. We will use the attached rubric to assess the final papers from both courses
6	Effectively communicate results of analyses.	<ol style="list-style-type: none"> 1. HDS 5310 Analytics and Statistical Programming (introduced and developed) 2. ORES 5210 Foundations of Med Diagnosis and Treatment. (Introduced and developed) 3. ORES 5160 Data Management (introduced and developed) 4. HDS 5330 Predictive Modeling and Machine Learning (developed and reinforced) 5. HDS 5320 Inferential Modeling (developed and reinforced) 	<ol style="list-style-type: none"> 1. We will utilize the final group project from HDS 5310 Analytics and Statistical Programming. 2. We will utilize the final project from ORES 5210 Foundations of Med Diagnosis and Treatment. 3. We will utilize the final project from ORES 5160 Data Management. 4. We will utilize the final project from HDS 5330 Predictive Modeling and Machine Learning. 5. We will utilize the final exam from HDS 5320 Inferential Modeling. 	<ol style="list-style-type: none"> 1. The selected artifact from a maximum of 10% of the students, 5 students, or all the students in each course will be assessed by 2 faculty members of the department. If there is a disagreement a 3rd faculty member will be brought in to assess the artifact. 2. We will use the attached rubric to assess the final papers from both courses

		6. HDS 5960 Capstone (Achieved)	6. We will utilize the final brief report from HDS 5960 Capstone.	
--	--	---------------------------------	---	--

Use of Assessment Data

1. How and when will analyzed data be used by program faculty to make changes in pedagogy, curriculum design, and/or assessment practices?

At the end of each academic year, department faculty will score these artifacts using the rubric and use the data to make necessary changes. Results of these rubric evaluations will then be used by the curriculum committee. Assessments are used to identify problem areas and to make curricular changes across all courses to ensure student proficiency in all core areas. Curricular changes are documented and results of assessments and changes to curriculum are reported back to HCOR faculty.

2. How and when will the program faculty evaluate the impact of assessment-informed changes made in previous years?

Results of the assessment done after informed changes have been made will be compared to the assessment of the same outcomes prior to the changes. If no or minimal improvement in performance is detected additional changes to the curriculum will be made.

Additional Questions

1. On what schedule/cycle will program faculty assess each of the program’s student learning outcomes? (Please note: It is not recommended to try to assess every outcome every year.)

We will assess outcomes 2, 3 and 4 in one year, and then outcomes 1, 5 and 6 the following year.

2. Describe how, and the extent to which, program faculty contributed to the development of this plan.

The HCOR curriculum committee developed this plan which was presented to other department faculty members for suggested changes and final approval.

IMPORTANT: Please remember to submit any rubrics or other assessment tools along with this plan.