SAINT LOUIS UNIVERSITY.

Program Assessment Plan

Program: MS in Health Data Science

Department: SLUCOR

College/School: SLUCOR

Date: 12/01/2017

Primary Assessment Contact: Dr. Leslie Hinyard

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

#	Program Learning Outcomes	Assessment Mapping	Assessment Methods	Use of Assessment Data
	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).*	From what specific courses (or other educational/professional experiences) will artifacts of student learning be analyzed to demonstrate achievement of the outcome? Include courses taught at the Madrid campus and/or online as applicable.	What specific artifacts of student learning will be analyzed? How, and by whom, will they be analyzed? ■ *Note: the majority should provide direct, rather than indirect, evidence of achievement.* Please note if a rubric is used and, if so, include it as an appendix to this plan.	How and when will analyzed data be used by faculty to make changes in pedagogy, curriculum design, and/or assessment work? How and when will the program evaluate the impact of assessment-informed changes *made in previous years*?
1	Identify and define an analytic/operational question.	1. We will utilize the final exam from HDS 5330 Predictive Modeling and Machine Learning. 2. We will utilize the final brief report from HDS 5960 Capstone.	We will use a rubric that is attached to assess the final papers from both courses	At the end of each academic year, SLUCOR 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 SLUCOR faculty.

2	Apply appropriate statistical methods.	1. We will utilize the final exam from HDS 5310 Analytics and Statistical Programming. 2. We will utilize the final brief report from HDS 5960 Capstone.	We will use a rubric that is attached to assess the final papers from both courses	At the end of each academic year, SLUCOR 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 SLUCOR faculty.
3	Apply appropriate data management strategies.	1. We will utilize the final project ORES 5160 Data Management. 2. We will utilize the final brief report from HDS 5960 Capstone.	We will use a rubric that is attached to assess the final papers from both courses	At the end of each academic year, SLUCOR 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 SLUCOR faculty.
4	Critically evaluate methodological designs.	1. We will utilize the final paper from ORES 5300 Foundations of Outcomes Research I. 2. We will utilize the final brief report from HDS 5960 Capstone.	We will use a rubric that is attached to assess the final papers from both courses	At the end of each academic year, SLUCOR 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 SLUCOR faculty.
5	Understand organization and financing of healthcare, and resulting data sets.	1. We will utilize the final report and education video from ORES 5210 Foundations of Medical Diagnosis and Treatment. 2. We will utilize the final presentation and policy brief from HDS 5130 Healthcare Organization, Management and Policy.	We will use a rubric that is attached to assess the final papers from both courses	At the end of each academic year, SLUCOR 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 SLUCOR faculty.
6	Effectively communicate results of analyses.	1. We will utilize the final project ORES 5160 Data Management. 2. We will utilize the final brief report from HDS 5960 Capstone.	We will use a rubric that is attached to assess the final papers from both courses	At the end of each academic year, SLUCOR 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 SLUCOR faculty.

Additional Questions

1. On what schedule/cycle will faculty assess each of the above-noted program learning outcomes? *(It is <u>not recommended</u> to try to assess every outcome every year.)*

   > We will assess outcomes 2, 3 and 4 next 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 SLUCOR faculty members contributed to the development of this plan.

3. On what schedule/cycle will faculty review and, if needed, modify this assessment plan?

   > The SLUCOR faculty committee will review the first 4 years of program learning outcomes and then make decisions accordingly.

IMPORTANT: Please remember to submit any assessment rubrics (as noted above) along with this report.

MS in Health Data Science Program Assessment Rubric

#	MS in Health Data Science Program Learning Outcomes	High Mastery (3)	Average Mastery (2)	Low Mastery (1)
1	Identify and define an analytic/operational question.	• Clearly identifies high value question • Question identifies a gap in the current literature/knowledge base • Background and contextual information flow seamlessly into a well stated analytic/operational question that has potential to add to the professional knowledge base • Identifies dataset that can answer the question	• Identifies question correctly but more could have been done with background information and dataset.	• Question lacks clarity and is not answerable • Dataset does not answer the question
2	Apply appropriate statistical methods.	• Utilize appropriate statistical methods to analyze data in the chosen content area • Clearly describes the types of variables used • Clearly describes the outcomes of the data analysis • Display the data analysis visually using a graph, table, etc. • Factors that may have contributed to the data	• Most statistical methods were correctly applied but more could have been done with the data.	• Some statistical methods were applied but with significant errors or omissions.

		• obtained • Implications of the data analyzed		
3	Apply appropriate data management strategies.	• Utilizes appropriate data management strategies to analyze data in the chosen content area • Clearly describes steps utilized to extract data • Clearly describes steps utilized to clean data	• Most data management strategies to analyze data in the chosen content area were correctly applied but more could have been done with the data.	• Does no utilize appropriate data management strategies to analyze data in the chosen content area • Does not describe steps utilized to extract data • Does not describe steps utilized to clean data
4	Critically evaluate methodological designs.	• Original, clear, creative, and innovative • Provides thorough and comprehensive description • Flows from question and theory • Uses state-of-the-art tools, techniques, or approaches • Applies or develops new methods, approaches, techniques tools, devices, or instruments • Uses multiple methods • Analysis is sophisticated, robust, and precise • Uses advanced, powerful, cutting-edge techniques	• Appropriate for the problem • Uses existing methods, techniques, or approaches in correct and creative ways • Discusses why method was chosen • Analysis is objective, thorough, appropriate, and correct • Uses standard methods	• Lacks a method • Uses wrong (statistical) method for the problem • Uses (statistical) method incorrectly • Methods do not relate to question or theory • Is fatally flawed or has major confound • Does not describe or describes poorly (insufficient detail) • Is minimally documented Shows basic competence • Analysis is wrong, inappropriate, or incompetent
5	Understand the organization and financing of healthcare, and resulting datasets	• Utilizes datasets correctly • Utilizes codes appropriately	• Utilizes datasets minimally	• Does not utilize appropriate dataset

		• Provides necessary historical and background information on your issue • Includes data that are most important for your audience • Presents different sides of controversial issues, if any • States current state of law or policy • Includes data or information that is necessary to the reader's understanding • Presents necessary data in best format (text, bar graph, line graphs, etc.) • States the policy recommendation that you support • Provides information in favor of the policy option you support • Anticipates and rebuts arguments against likely to be raised against your recommended policy option	• Utilizes codes minimally • Provides minimal background information • Presents one side of the argument • Provides minimum information of policy option	• Does not utilize correct codes • Does not provides background information • Does not provide information of policy option
6	Effectively communicate results of analysis.	• Results are aligned with question and theory • Sees complex patterns in the data • Iteratively explores questions raised by analyses • Results are usable, meaningful, and	• Links results to question and theory • Substantiates the results • Provides plausible arguments and explanations	• Results are correct but not robust • Includes extraneous information and material • Has difficulty making sense of data • Interpretation is too simplistic

	- unambiguous - Presents data clearly and cleverly - Makes proper inferences - Provides plausible interpretations - Refutes or disproves prior theories or finding		- Data are wrong, insufficient, fudged, fabricated, or falsified - Data or evidence do not support the theory or argument - Interpretation is too simplistic, and not objective, cogent, or inferences - Overstates the results