Biostatistics & Data Science Learning Assessment Response Form

Name:	Date:

1 & 2: Learning goals & Outcome measures – please list the program's formal learning goals and associated outcomes measures	
Learning goal	*Outcome measure(s)*
1. Demonstrate understanding of central statistical concepts, apply appropriate statistical methods to research questions and use appropriate software to produce reproducible results	• Homework assignments, labs and written exams • Successful completion of *Biostatistics I with R* • Successful completion of *Categorical and Censored Data Analysis*

2. Manipulate, organize and visualize complex messy data efficiently and effectively and execute best practices for reproducible research as well as best coding practices	• Homework assignments, labs and written exams
	• Successful completion of *Data Science I (with R and Python)*
	  ○ Additional depth with another programming language: Elective course on "Statistical Programming with SAS"
	  ○ Additional depth in creation, organization and maintenance of databases: Elective on "Data Management"

3. Understand data generating processes, pros and cons of different study designs, bias and confounding and proficiency in critically reviewing and evaluating a study	• Homework assignments, quizzes and papers • Successful completion of *Study Design* ○ Additional depth in experimental designs: Elective on *Foundations in Biomedical Applications*

4. Understand the goals of a research problem, apply appropriate method to predict outcomes and establish causal effects of outcomes using appropriate advanced statistical and machine learning methods	• Written exams and projects
	• Homework assignments and labs
	• Successful completion of *"Data Science II – Statistical Learning"*
	  ○ Additional depth in causal inference: Elective on *Causal Inference*
	  ○ Additional depth in hierarchical modeling, missing data and clinical trials: Elective on *Advanced Topics in Biostatistics*

5. Ability to develop and succeed in cross-disciplinary teams to pursue common projects	• Successful prosecution of Capstone Project
6. Aware of issues and best practices in the responsible conduct of research and human subjects research	• Successful completion of CITI *Responsible Conduct of Research* and *Biomedical Investigators* courses
7. Able to present data and its analysis in a	• Graded end-of-term oral presentations

public forum, orally and in writing	(multiple courses) • Interim presentations of Capstone project (end of term) • Final presentation of Capstone project
3: Learning assessment – List the names of the meeting(s) that will be used to conduct learning assessment, including key participants	
Meeting title	*Key participants (eg, program chair, program dir., course dirs., student reps)*
1. End-of-term Education Committee meeting	Program Directors and staff review student progress at end of every term
2. Annual Curriculum Committee Meeting	Program Directors and Curriculum Committee
4: Learning assessment process – Confirm that annually the program will (a) discuss the overall approach to learning assessment (ie, in terms of learning goals, outcome measures, and review process), and (b) submit a report to the Dean of the Graduate School, summarizing the findings of the annual assessment review.	
(a) Annual discussion of approach to learning assessment: CONFIRMED / NOT CONFIRMED (b) Annual learning assessment report to Dean: CONFIRMED / NOT CONFIRMED	