



**UNIVERSITY OF  
GEORGIA**

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## University Council

August 17, 2018

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Dear Colleagues:

The attached draft proposal to create a new Data Literacy Requirement will be an information item for the August 24, 2018, Full University Curriculum Committee meeting.

Sincerely,

John Maerz, Chair

University Curriculum Committee

cc: Interim Provost Libby Morris  
Dr. Rahul Shrivastav

## **Data Literacy Requirement**

### **1. Consideration of Proposal**

Data Literacy Requirement to be submitted for consideration by University Curriculum Committee, x,xx, 2018

### **2. Proposed Policy**

Data literacy has become essential to research and scholarship, to learning at all levels, to translational endeavors, and to future student career success. From quantitative to qualitative fields of study, the acquisition, management, analysis, and use of data has become a required skillset for college graduates that extends beyond a disciplinary focus. Data literacy includes an understanding of the influence of data on individuals and society.

The university defines data broadly as a group of unorganized facts that may be quantitative or qualitative in nature. A data literate graduate of UGA is competent in the ethical use and interpretation of data, has the ability to communicate data-based insights, and understands the role of data in society.

Twenty-first-century challenges require 21<sup>st</sup>-century skills. These skills can be more accurately described as ways of thinking (e.g., critical thinking, problem solving, and computational thinking). There has been a shift from learning facts to acquiring inquiry skills that are critical in a data-driven society. Critical thinking is integral in this process and can be considered a civic skill as well as one of the foundations for 21<sup>st</sup>-century thinking and data literacy. A citizen's ability to ask the right questions and be critical of concepts, claims, and arguments is essential. This is especially true with the explosion of uncurated information perpetuated online and on social media platforms. Due in part to this massive and continuous flow of information, problem solving is no longer the act of making simple logical decisions; it has evolved into a series of complex issues, often with multiple layers. Data literacy is a broader concept than statistical or information literacy and should be thought of as a separate entity.

Data literacy is an educational expectation; it is required for all citizens, regardless of how often they communicate via digital means. Data literacy needs to be an element of all education in the same way that literacy and reasoning must be.

A committee was appointed to consider how data literacy and quantitative reasoning skills could be incorporated into the current curriculum. The committee met regularly from March 2018 through October 2018, including a two-day meeting at the 2018 UGA Academic Affairs Symposium in April 2018 to discuss the background and outline of a data literacy requirement for the university.

This requirement may be completed by curricular or co-curricular experiences. The curricular requirement will be across courses or co-curricular activities. Within each course, a substantial portion of the course needs to be dedicated to the specific data literacy Student Learning Outcomes. A Data Literacy subcommittee of the University Curriculum Committee will review

and approve courses and co-curricular experiences to meet the Data Literacy requirement based on the student learning outcomes described in this proposal. Co-curricular experiences may include internships, research activities, and other non-credit-bearing activities. For a co-curricular activity, students will be expected to complete an assessment tool to show successful completion of a Data Literacy student learning outcome.

### **3. Learning Outcomes for University-Wide Data Literacy Requirement**

Students will be able to:

1. Discuss what data are and the role of data in society.
  - Students should be cognizant of data sources and be able to ascertain the validity of data that are presented to them. Students should know the role data plays in decision making at various levels of society.
2. Identify and select data appropriate to an inquiry.
  - Students should be able to identify and select appropriate data for a given level of inquiry.
3. Conduct analysis and interpretation of data in a critical manner.
  - Students should be able to select an analysis of the data that allows an appropriate interpretation of that data. This analysis encourages students not only to solve problems that might have mathematical answers, but also to develop policies or strategies that lead to solution of abstract problems.
4. Communicate data-based insights.
  - Students should be able to communicate in multiple media modes.
5. Differentiate between ethical and unethical use of data.
  - Students as consumers and producers of data should be aware of the ethics of how the data they generate are used, ethical dimensions of data they consume, and legal issues surrounding data. An informed citizen of the 21<sup>st</sup> century should be aware of the ethical uses and misuses of data.

**INFORMATION ITEM**

**Data Literacy Requirement - Rubric for Assessment and Evaluation**

<b>Student Learning Outcomes</b>		<b>Conceptual 1</b>	<b>Core Competencies 2</b>	<b>Core Competencies 3</b>	<b>Advanced 4</b>
<b>SLO #1</b> Discuss what data are and the role of data in society	Data Culture	Knowledge and understanding of data uses	Supports an environment that fosters critical use of data for learning		
<b>SLO #2</b> Identify and select data appropriate to an inquiry.	Data Tools	Knowledge of data analysis tools and techniques	Selects appropriate data analysis tools or techniques		Applies data analysis tools and techniques
	Data Discovery and Collection	Performs data exploration	Identifies useful data; critically assesses source for trustworthiness		Collects data and critically evaluates datasets for errors or problems
<b>SLO #3</b> Conduct analysis and interpretation of data in a critical manner.	Basic Data Analysis	Develops analysis plans	Applies analysis methods and tools	Conducts exploratory analysis and evaluates results	Compares results with other findings
	Data Interpretation	Reads and understands tables, charts, graphs, and maps	Identifies key take-away points and integrates them with other important information		Identifies discrepancies within data
	Data-driven decisions	Prioritizes information from data	Converts data into actionable information	Weighs merits and impacts of possible solutions	Implements decisions/solutions
<b>SLO #4</b> Communicate data-based insights.	Data Visualization and Presentation	Creates meaningful tables to organize and visually present data	Evaluates effectiveness of graphical representations; assesses audience needs	Creates meaningful graphical representations of data; assesses desired outcome for presentation	Critically assesses graphical representations for accuracy; presents arguments and/or outcomes clearly and coherently
<b>SLO #5</b> Differentiate between ethical and unethical use of data.	Data Ethics	Awareness of legal and ethical issues associated with data	Applies and works with data in an ethical manner		

SLO 1 and 5 are data competencies and SLO 2-4 are data-related skills.

**4. Process for Implementation**

Using the learning outcomes stated above, schools, colleges, and other campus units will be invited to submit proposals for courses and co-curricular activities that will satisfy one or more of the Data Literacy student learning outcomes. It will be expected that no one course or co-curricular activity will meet all the data literacy student outcomes. Students must meet all five Data Literacy student learning outcomes to successfully complete the requirement. A Data Literacy subcommittee of the University Curriculum Committee will evaluate proposed courses or co-curricular activities and make a recommendation to the full University Curriculum Committee for approval.

DRAFT