Machine Learning KSAs for Curriculum Alignment

	5. Data Ethics					
	KSA Description	**Knowledge, Skill, or Ability?**	**Bloom's Taxonomy Level?**	**Cross-cutting KSAs**	**Course Number/Name**	**Learning Outcome**
a	Identify how global legal, policy and/or ethical constraints might impact data analyses.	Knowledge	2	Generalist 5a, Data Analytics 8a		
b	Identify the established ethical and legal issues in data management facing organizations.	Knowledge	2	Generalist 5b, Data Analytics 8b, Data Management 3e		
c	Explain how ethical, compliance, and legal issues should/must be considered in data driven decision making.	Knowledge	1	Generalist 5c, Data Analytics 8c		
d	Explain the important issues around data governance.	Knowledge	2	Generalist 5e, Data Analytics 1b		
e	Present real world examples of data bias and the unintended consequences of using analytics, machine learning, and AI in making decisions.	Knowledge	2	Data Analytics 8e		
f	Discuss the importance of provenance, transparency, and explainability in data analysis and the ability to build trust.	Knowledge	2	Data Analytics 8d		
g	Explain the importance of personal privacy issues related to the collection and usage of data.	Knowledge	2	Generalist 5d, Data Analytics 8i, Data Management 3f		
h	Demonstrate an understanding of the way your machine learning algorithms are vulnerable and can be manipulated.	Knowledge	*2*			
i	Explain the limitations and potential unintended effects of machine learning when such algorithms encounter new scenarios.	Knowledge	2	Data Analytics 8j		
j	Understand potential societal impacts of using machine learning.	Knowledge	2			
k	Explain individual and data bias and the implications each has in data analysis.	Knowledge	3	Generalist 5f, Data Management 3j		