

Machine Learning KSAs for Curriculum Alignment

4. Application of Machine Learning Models & Algorithms						
	KSA Description	Knowledge, Skill, or Ability?	Bloom's Taxonomy Level?	Cross-cutting KSAs	Course Number/Name	Learning Outcome
a	Explain evaluation metrics for machine learning algorithms (e.g., accuracy, precision/recall, ROC curves, R ²).	Knowledge	2			
b	Describe approaches to test for bias in data.	Knowledge	2			
c	Explain key troubleshooting techniques for machine learning algorithms (e.g., evaluate bias-variance tradeoff, use cross-validation).	Knowledge	2			
d	Explain sampling methods with respect to different applications, i.e. error estimates, surveys, A/B-testing.	Knowledge	2			
e	Train a machine learning model and use it to make predictions.	Skill	3			
f	Perform data manipulation using appropriate tools and software.	Skill	3	Generalist 3a, Data Analytics 4c		
g	Provide rationale for selecting the appropriate sampling methodology.	Skill	3	Data Analytics 5j		