

Software Development KSAs for Curriculum Alignment

1. Database, Networking, Distributed System Fundamentals						
	KSA Description	Knowledge, Skill, or Ability?	Bloom's Taxonomy Level?	Cross-cutting KSAs	Course Number/Name	Learning Outcome
a	Ability to normalize a database through 3rd normal form.	Ability	3	Data Management 2j		
b	Define various types of databases	Knowledge	3			
c	Ability to perform database schema design.	Ability	3			
d	Apply SQL data manipulation language such as Select (From), Insert, Update, Delete, JOIN (inner, outer, full, left, right), Where, Group By, Order By, etc.	Ability	3	Data Management 1l		
e	Knowledge of HTTP, HTTPS, SSL.	Knowledge	3			
f	Describe Infrastructure as code.	Knowledge	2			
g	Demonstrate an understanding of cloud architecture and the capabilities of services such as AWS, Azure, IBM, Oracle and Google.	Knowledge	2	Cyber Security 4d, Networking 1a, Data Management 1p, Machine Learning 1i		
h	Ability to install and configure software.	Ability	3	Cybersecurity 1d, Data Management 1s, Networking 5a		
i	Knowledge of computer hardware.	Knowledge	2			
j	Ability to touch type.	Ability	2			
k	Identify and describe basic file types and demonstrate fundamental file management.	Skill	2	Data Management 1r, Cybersecurity 1g, Networking 5f		
l	Explain data security in terms of authentication, authorization, access and auditing.	Knowledge	3	Networking 4g		
m	Understand the components that make an large-scale system (e.g. SAN, load balancer).	Knowledge	3			
n	Identify and apply Transmission Control Protocol and Internet Protocol (TCP/IP), Internet Protocol Version 4 (IPv4), Internet Protocol Version 6 (IPv6) applications and services (e.g., rlogin, Simple Mail Transfer Protocol [SMTP], Telecommunications Network [Telnet], File Transfer Protocol [FTP], Domain Name System [DNS], Network File System [NFS], Voice over Internet Protocol [VoIP], Internet Control Message Protocol [ICMP]).	Skill	2	Networking 2h		
o	Identify and differentiate structured vs unstructured data.	Knowledge	2	Data Management 1g		