## **GRADUATE CERTIFICATE IN DATA ENGINEERING**

## Requirements **Effective Fall 2022**

Additional coursework may be required due to prerequisites.

Code	Title	Credits
Theoretical Foundations (TF)		
Select a minimum of	6 credits from the following: <sup>1</sup>	6-9
ECE 514	Applications of Random Processes	
ECE 520	Optimization MethodsControl and Comm.	
or ENGR 510	Engineering Optimization: Method/Application	on
ECE 652	Estimation and Filtering Theory	
ECE 656	Machine Learning and Adaptive Systems	
SYSE 571	Analytics in Systems Engineering	
Applications (AP)		
Select a minimum of for specific engineeri	3 credits from the following list of courses ng application domains:	3-6
AP: Signal and Image Processing		
ECE 512	Digital Signal Processing	
ECE 513	Digital Image Processing	
AP. Biomedical Engineering		
ECE 517/ BIOM 517	Advanced Optical Imaging	
BIOM 526/ ECE 526	Biological Physics	
ECE 537/ BIOM 537	Biomedical Signal Processing	
AP. Computer Engineering		
ECE 528/CS 528	Embedded Systems and Machine Learning	
ECE 554	Computer Architecture	
ECE 561/CS 561	Hardware/Software Design of Embedded Systems	
ECE 658/CS 658	Internet Engineering	
AP: Systems Engineering		
SYSE 532/ ECE 532	Dynamics of Complex Engineering Systems	
SYSE 569	Cybersecurity Awareness for Systems Engineers	
Drawner Tatal Credit	•	10

Program Total Credits

12

\*This certificate may have courses in common with other graduate certificates. A student may earn more than one certificate, but a given course may be counted only in one certificate.

1 ECE 520 and ENGR 510 cannot be both taken to satisfy this requirement.