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: [1]		6-9
ECE 514	Applications of Random Processes	
ECE 520	Optimization Methods-Control & Communication [1]	
or ENGR 510	Engineering Optimization: Method/Application	
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 3 credits from the following list of courses for specific engineering 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	
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.