DATA CENTER OPERATIONS ENGINEERING - CERTIFICATE

With the rapid acceleration of technology through innovation on a global basis, industries recognize the need for young engineers who possess base line knowledge in areas of data system management and an understanding of the system level of complex data center processing systems. In both government and industry there is a growing need for undergraduate engineering students that possess the requisite knowledge and skill sets pertaining to complex data systems management and this certificate program includes a set of courses to assure students develop this knowledge and skill set. Completion of this certificate requires completion of the following educational outcomes:

1. to know and apply principles of engineering management
2. to understand principles of systems level engineering and their application to specific data center system operations
3. to be able to go beyond understanding concepts and demonstrate appropriate usage of systems engineering principles in a design context

Program Requirements

Code	Title	Semester Credit Hours
ISEN 440	Systems Thinking	3
Select one of the following:		4
CSCE 110	Programming I	
CSCE 111	Introduction to Computer Science Concepts and Programming	
CSCE 206	Structured Programming in C	
Select two of the following:		6
CSCE 438	Distributed Systems	
CSCE 444	Structures of Interactive Information	
CSCE 470	Information Storage and Retrieval	
ECEN 455	Digital Communications	
ISEN 340	Operations Research II	
ISEN 350	Quality Engineering	
ISEN 411	Engineering Management Techniques	
ISEN 413	Advanced Data Analytics for Industry	
ISEN 414	Total Quality Engineering	
ISEN 442	Organizational Systems	
MEEN 421	Thermal-Fluids Analysis and Design	
MEEN 436	Principles of Heating, Ventilating and Air Conditioning	
MEEN 461	Heat Transfer	
Total Semester Credit Hours		**13**

Students must make a grade of C or better in all courses.