Fall 2019 Courses

Course Title: Digital System Design
Course Type: Required
Number of Credits: 2
Number of Hours per week: 3
Course Description:
This course is to teach students how to design a simple digital system chip with FPGA. Students need to have the basic concept of digital logic such as fundamental logic gates. Students do not need to bring any tools for this course.

Course Title: Technical English
Course Type: Core Elective
Number of Credits: 3
Number of Hours per week: 3
Course Description:
This course will go through readings on the technical articles on technology issues like liquid crystal applications, artificial intelligence, expert systems, superconductors, system software, new superconductors, transformers and transistor amplifiers. Scenario-based teaching method will be adopted to enhance reading comprehension and writing skill on technical materials.

Course Title: Introduction to Industry 4.0
Course Type: Core Elective
Number of Credits: 3
Number of Hours per week: 3
Course Description:
Industry 4.0 utilize the Cyber-Physical System(CPS) as the kernel of manufacturing systems. It combines the technologies of Internet of Things (IoT) and Internet of Service (IoS) to construct the smart factory and to form the novel business opportunities and business models with smart manufacturing and smart service. And it can successfully help to maintain the worldwide competitive advantages of German manufacturing. From [Industry 4.0] of Germany, [Advanced Manufacturing Partnership, AMP] of USA, and [Industry Internet]of USA, we can summarize the key technologies of smart factory, include internet of things, cloud computing, big data analysis and cyber-physical systems.

Course Title: Intelligent Robot Application Practice
Course Type: Core Elective
Number of Credits: 2
Number of Hours per week: 4
Course Description:
This course describes the basic concepts, design methods and application techniques of intelligent robots. It aims to establish students' design concepts and related knowledge in robot systems. Since robot systems include multiple communication and electromechanical integration technologies, integrating various technologies to construct robots system is main issue for elaboration through lectures and example demonstration. This course will be designed and applied practically to establish robotics related knowledge and applied practical techniques.

Course Title: Image Processing Application and Practice
Course Type: Core Elective
Number of Credits: 2
Number of Hours per week: 4
Course Description:
All key concepts of Digital Signal Processing（DSP）are covered in the course. Practical problems will be presented and solved. Advanced applications of DSP for sound and images are also investigated.

Course Title: Motor Theory and Control Practice
Course Type: Core Elective
Number of Credits: 2
Number of Hours per week: 4
Course Description:
The course covers power semiconductor switching components, converters and inverters in AC and DC motor drives. Moreover, we will also illustrate the operating characteristics of various motors and their drive control techniques.