



<b>COURSE TITLE:</b>	<b>Industry 4.0 and cloud services as a part of the Smart Grid</b>
<b>Institute/Division:</b>	Department of Electrical Engineering Faculty of Electrical and Computer Engineering
<b>Course code:</b>	E-I4CS
<b>Number of contact hours</b>	45
<b>Course duration:</b>	1 semester (Spring/Summer)
<b>ECTS credits:</b>	6
<b>Course description:</b>	The power distribution system in Industry 4.0 is a key element for developing a smart grid system. It could be done on a small and large scale. Based on cloud services we could exchange data between subsystems and analyze it from a general perspective. Based on those concepts students will know how this system works, and how we can exchange data between structures of the different subsystems as part of the general grid. Designing Low Voltage switchgear is a complex concept. In the lecture, the student will learn the basic equipment and its purpose and learn how it can be used in protection, control, and diagnostics systems. Thanks to basic knowledge about the apparatus, he will be able to design industrial switchgear. As part of the course, students familiar with the structure of the communication network, and communication standards such as IEC61850 and PROFINET. Based on the above knowledge students could verify their knowledge in a real application, and cloud services that are available in our laboratory. They could create their own virtual panel to analyze their data.
<b>Course type:</b>	Lectures (20h), Laboratory (20h), Project (5h)
<b>Literature:</b>	Catalog of the equipment which could be taken as an example of design (ABB, Siemens, Schneider, General Electric, Eaton etc.) Manuals and guidelines from Manufacturers
<b>Assessment method:</b>	Project and laboratory exercises
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