

Date:	Examination No.:	Version:2023-2024	Start:1/9/2023
Module Name - Code	Distributed Generation – 21303		
Module Language:	English		
Responsible:	Sarkar Jawhar Nanakali		
Lecture (s):	Sarkar Jawhar Nanakali		
College:	College of Engineering – Salahaddin University-Erbil		
Duration:	15 week – 1 semester		
Course outcomes:	The aim of this course is to acquaint students with the detail knowledge of distributed generation technologies. Students will get a wide knowledge of fossil and renewable methods of power generation; Available fossil technologies: Engine Combustion generators and Micro turbines. Renewable energy technologies: Solar energy, Wind Energy, Energy from tides and waves, Biomass and Bioenergy, Geothermal energy and Small hydro.		
Course Content:	The course contents are: Introduction to distributed generation, Solar Energy, Wind Energy, Ocean Energy, Biomass and Bioenergy, Fuel Cell, Geothermal, Small Hydro, Engine Combustion generators and Micro turbines.		
Literature:	<p>Castro and Dantas, “Distributed Generation: International Experiences and Comparative Analyses”, 2017</p> <p>Boyle, “Renewable Energy- Power for a sustainable future”, 3rd edition, 2013.</p> <p>Twidell John & Weir Tony, "Renewable Energy Resources", 2nd edition, 2006.</p> <p>Nelson,"ENERGY & ENVIRONMENT- INTRODUCTION TO RENEWABLE ENERGY ", 2011.</p> <p>Quaschnig, “UNDERSTANDING RENEWABLE ENERGY SYSTEMS”, 2005</p>		
Type of Teaching:	3 hrs. in lectures		
Pre-requisites:	None		
Frequency:	Fall Semester		
Requirements for credit points:	<p>For the award of credit points, it is necessary to pass the module exams. It contains:</p> <p>Three examinations during the academic semester, Quizzes and Assignments and Final examination.</p> <p>Student's attendance is required in all classes.</p>		
Credit point:	4		
Grade Distribution:	<p>The following grade system is used for the evaluation of the module exam:</p> <p>The module exam is based on the summation of two categories of evaluations:</p> <p>First: (40%) of the mark is based on the academic semester effort which includes</p> <ul style="list-style-type: none"> - Three examinations during the academic semester = 30%. - Quizzes and Assignments = (10%). <p>Second: (60%) of the mark is based on final examination that is comprehensive for the whole of the study materials reviewed during the academic semester.</p>		
Work load:	The workload is 120 hrs. It is the result of 45 hrs. attendance and 75 hrs. self-studies (Assignments, preparation for exam and applications).		