

Course Title	Electrical Installations II (Advanced Principles)				
Course Code	ETECH 220				
Course Type	Compulsory				
Level	First Cycle				
Year / Semester	Second Year / Fall				
Teacher's Name	Evangelos Ayiotis				
ECTS	6	Lectures / week	1 ½	Laboratories / week	1 ½
Course Purpose and Objectives	<p>The main objectives of the course are to:</p> <ul style="list-style-type: none"> <li>• Supplement students with additional skills and abilities needed to organize a productive and safe work environment in electrotechnology</li> <li>• Introduce students to more advanced tools and equipment commonly used in electrical installations</li> <li>• Provide specialized and in-depth knowledge on the types of electrical systems</li> <li>• Equip students with advanced knowledge and hands-on practical experience on wiring different types of systems</li> <li>• Provide in-depth understanding on protection devices and techniques commonly used in residential and industrial environments</li> <li>• Familiarize students with standard techniques used for inspection and testing of an installation</li> <li>• Provide sufficient understanding of the operation of motors and machines</li> <li>• Introduce students to techniques used for identifying and repairing faults</li> <li>• Introduce students to calculations for proper system design</li> </ul>				
Learning Outcomes	<p>After completion of the course students are expected to:</p> <ul style="list-style-type: none"> <li>• Know advanced concepts and practices involved in electrotechnology</li> <li>• Have advanced knowledge and extended practical experience on the types of electrical systems used in electrical installations</li> <li>• Know how to properly wire complex electrical systems for different applications</li> <li>• Perform fault protection techniques in single and three-phase electrical systems</li> <li>• Perform calculations for proper design of an electrical installation</li> <li>• Perform electrical installation at special locations</li> <li>• Know how to properly inspect and test an electrical installation</li> <li>• Identify and repair a system fault in an existing electrical installation</li> <li>• Know the proper operation and wiring of motors and machines</li> </ul>				

Prerequisites	None	Required	None
Course Content	<ul style="list-style-type: none"> <li>• Electrical systems and components</li> <li>• Electricity supply systems and protection</li> <li>• Electrical machines and motors</li> <li>• On-site communication (e.g. layout drawings, site plans, circuit diagrams, fuses, MCBs, isolation, etc.)</li> <li>• Installation of protective devices</li> <li>• Calculations (e.g., Earth fault loop impedance, voltage drop in cables, current carrying capacity of cables, etc.)</li> <li>• Installation of buildings and structures</li> <li>• Inspection, testing, and commissioning</li> <li>• Fault diagnosis and repair</li> <li>• Restoring systems to working order</li> </ul>		
Teaching Methodology	Lectures, in-class examples, exercises, practical.		
Bibliography	<u>Compulsory</u> <ul style="list-style-type: none"> <li>• Advanced Electrical Installation Work (2008), Trevor Linsley, ELSEVIER, ISBN: 978 0 7506 8752 2</li> <li>• Lecturers notes.</li> </ul>		
Assessment	Homework: 10% Participation: 10% Laboratory: 20% Mid Term: 20% Final Exam: 40%		
Language	Greek		