

Course Title	Practical Electrical Installations				
Course Code	ETECH 225				
Course Type	Compulsory				
Level	First Cycle				
Year / Semester	Second Year / Spring				
Teacher's Name	Evangelos Agiotis				
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>• Familiarize students with tools and equipment used in electrical installations</li> <li>• Teach students how to measure electrical quantities (e.g. current, voltage, resistance, etc) using measuring and testing equipment</li> <li>• Educate students on how to properly wire and install electrical systems</li> <li>• Introduce students to installation methods and techniques used in electrotechnology</li> <li>• Provide practical experience on the installation and testing of electrical systems for commercial and industrial applications</li> <li>• Provide practical experience on the installation of cables for data communications and networks</li> </ul>				
Learning Outcomes	<p>After completion of the course students are expected to:</p> <ul style="list-style-type: none"> <li>• Know how to properly lay out wires and cables for residential and industrial electrical installations</li> <li>• Know how to properly plan and install electrical systems for lighting and sockets</li> <li>• Know how to fit switches, sockets, light fixtures, dimmers, fans, emergency lights, etc</li> <li>• Know how to troubleshoot an installation in order to identify faults or shorts</li> <li>• Know how to plan and lay out cables for networking and data communication</li> <li>• Know how to test of an electrical installation</li> </ul>				
Prerequisites	None	Required	None		
Course Content	<ul style="list-style-type: none"> <li>• Pipe bending techniques (plastic or metal)</li> <li>• Measurement techniques and acquaintance with measuring instruments</li> <li>• Proper use of tools and equipment</li> <li>• Cable threading, connecting, and joint boxes</li> <li>• Cutting and fitting methods</li> <li>• Installation of plastic or metallic trucking and conduits</li> </ul>				

	<ul style="list-style-type: none"> <li>• Installation of a ring and radial circuit</li> <li>• Single switch lighting</li> <li>• Two-way switch lighting</li> <li>• Bonding and earthing methods</li> <li>• Fitting switches, sockets, light fixtures, fans, dimmers, emergency lights</li> <li>• Installation of boiler, cooker, washing machines, etc.</li> <li>• Installation of sensor-controlled devices and lights</li> <li>• Installation of protective devices (e.g. circuit breakers, etc)</li> <li>• Wiring of distribution boards and connection of electrical control panels</li> <li>• Insulation resistance test, polarity test, earth electrode test, measuring the earth fault loop impedance, ring circuit test, continuity test for protective conductors, functional test</li> <li>• Fault finding and troubleshooting</li> <li>• Installation of coaxial cables, cat-5 cables, telephone cables, etc.</li> <li>• Fitting TV sockets, Ethernet sockets, telephone sockets, antennas, hubs, Wi-Fi, etc.</li> </ul>
Teaching Methodology	Lectures, in-class examples, exercises, practical.
Bibliography	<p><u>Compulsory</u></p> <ul style="list-style-type: none"> <li>• Requirements for Electrical Installations: IEE Wiring regulations (16<sup>th</sup> Edition) (2004), IEE (British Standard), IEE, ISBN: 0 86341 373 0</li> <li>• On-Site Guide (BS 7671:2001) Wiring Regulations 16<sup>th</sup> Edition (2004), IEE (British Standard), IEE, ISBN: 0 86341 374 9</li> <li>• Lecturers notes.</li> </ul>
Assessment	<p>Homework: 10%</p> <p>Participation: 10%</p> <p>Laboratory: 20%</p> <p>Mid Term: 20%</p> <p>Final Exam: 40%</p>
Language	Greek