

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"> • Familiarize students with tools and equipment used in electrical installations • Teach students how to measure electrical quantities (e.g. current, voltage, resistance, etc) using measuring and testing equipment • Educate students on how to properly wire and install electrical systems • Introduce students to installation methods and techniques used in electrotechnology • Provide practical experience on the installation and testing of electrical systems for commercial and industrial applications • Provide practical experience on the installation of cables for data communications and networks 				
Learning Outcomes	<p>After completion of the course students are expected to:</p> <ul style="list-style-type: none"> • Know how to properly lay out wires and cables for residential and industrial electrical installations • Know how to properly plan and install electrical systems for lighting and sockets • Know how to fit switches, sockets, light fixtures, dimmers, fans, emergency lights, etc • Know how to troubleshoot an installation in order to identify faults or shorts • Know how to plan and lay out cables for networking and data communication • Know how to test of an electrical installation 				
Prerequisites	None	Required	None		
Course Content	<ul style="list-style-type: none"> • Pipe bending techniques (plastic or metal) • Measurement techniques and acquaintance with measuring instruments • Proper use of tools and equipment • Cable threading, connecting, and joint boxes • Cutting and fitting methods • Installation of plastic or metallic trucking and conduits • Installation of a ring and radial circuit • Single switch lighting • Two-way switch lighting • Bonding and earthing methods 				

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