Doc. 300.1.2

Date: 31/05/2023

Higher Education Institution's Response

- **Higher Education Institution:**
  Cyprus College

- **Town:** Limassol

- **Programme of study**
  Name (Duration, ECTS, Cycle)

  In Greek:

  Τεχνικός Ηλεκτρονικών Υπολογιστών Και Δικτύων

  (2 έτη πλήρους φοίτησης ή 4 έτη μερικής

  φοίτησης) Δίπλωμα.

  In English:

  Computer and Network Technician (2 years full

- **Language(s) of instruction:** Greek

- **Programme's status:** Currently Operating

- **Concentrations (if any):**

  In Greek: Concentrations
  In English: Concentrations

ΚΥΠΡΙΑΚΗ ΔΗΜΟΚΡΑΤΙΑ
REPUBLIC OF CYPRUS

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ANNEX 1

Cyprus College

Limassol Campus

MINUTES
Administrative Committee
Minutes taken on 05 April 2023

Decision Number: 2023/03 A

Participant:
George Pallaris
Panikos Kanakis
Kyriakos Pallaris
Alexandros Liasides
Katerina Nikolaou
Korina Theodorou

The meeting started at 9:00 - Ended 11:00

Regarding the suggestions of the External Evaluation Committee (EEC) that made for the Computer and Network Technician Diploma, the Administrative Committee continued with the following actions:

MATTERS ARISING:
The Administrative Committee members reviewed and discussed about:
1. The need of hiring full-time academic staff.
2. The importance of investing in academics career development.
3. The importance of providing training to ensure QA processes.
4. The importance of adding some extra teaching hours for the part-time academic staff.
5. The need to proceed with modifications in contracts to provide a clear content of academics' workload.
6. The importance of marketing to attract international students and promote diversity.
7. The need to create a budget for equipment.

DECISIONS OF THE ADMINISTRATIVE COMMITTEE:
The Administrative Committee members approved the following:
1. Proceed with HR Hiring process.
2. Support all academic staff (full-time and part-time) who wish to start research. By reducing the teaching hours and workload and by providing all necessary sources, academics will have the opportunity to allocate their time accordingly to continue with their research.

1

3. Renew the contracts of the academic staff and give some additional teaching hours to consult students properly, provide feedback to various assignments and mentoring students.
4. Include in academics' contracts more information regarding their workload. (Teaching staff training, contributions to course revisions, correcting assignments, providing feedback, consultation, and mentoring hours)
5. Implement a strategic plan to attract students from Greece.
6. Proceed with the feasibility study whether be possible to introduce a program in English language and attract international students.
7. Create a marketing plan through which opportunities for females in this industry will be highlighted.
8. Inform communities regarding the range of the job opportunities that this program offers to both genders and emphasize on the soft skills that females own and could apply to proceed with real-life problem-solving creations. (e.g., smart home & interior designing)
9. An annual budget will be set to support the upgrades of the lab's equipment. (e.g., RAMs, consumables, etc.)

George Pallaris
Campus Director

ANNEX 2

https://galileo.wd3.myworkdayjobs.com/en-US/european_university_cyprus_career_site/details/Instructor-in-Computer-Engineering--Cyprus-College-Limassol_R-13855-1?locations=cb6e761df69f0100f75c57b28d090000

https://galileo.wd3.myworkdayjobs.com/en-US/european_university_cyprus_career_site/job/Instructor-in-Computer-Engineering--Cyprus-College-Limassol_R-13855-1?locations=cb6e761df69f0100f75c57b28d090000

ANNEX 3

ΔΙΠΑΕ
CYQAA

ΦΟΡΕΑΣ ΔΙΑΣΦΑΛΙΣΗΣ ΚΑΙ ΠΙΣΤΟΠΟΙΗΣΗΣ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΗΣ ΑΝΩΤΕΡΗΣ ΕΚΠΑΙΔΕΥΣΗΣ
CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION

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TABLE 2: COURSE DISTRIBUTION PER SEMESTER

A/A	Course Type	Course Name	Course Code	Periods per week	Period duration	Number of weeks/ Academic semester	Total periods/ Academic semester	ECTS
A Semester								
1.	Major Requirement	Introduction to Computer Technology	DCT100	3	50'	14	42	6
2.	Major Requirement	Introduction to Digital Logic Design	DCT105	3	50'	14	42	6
3.	Major Requirement	Introduction to Networks	DCT110	3	50'	14	42	6
4.	Major Requirement	Operating Systems I	DCT115	3	50'	14	42	6
5.	General Education	Upper Intermediate English ή Επιλογή	ENH101	3	50'	14	42	6
B Semester								
6.	Major Requirement	Introduction to Programming	DCT120	3	50'	14	42	6
7.	Major Requirement	Discrete Mathematics for Informatics	DCT125	3	50'	14	42	6
8.	Major Requirement	Organization and Computer Architecture	DCT130	3	50'	14	42	6
9.	Major Requirement	Networks and Communications I	DCT135	3	50'	14	42	6
10.	Major Requirement	Basic Principles of Technical Support I	DCT140	3	50'	14	42	6
C Semester								
11.	Major Requirement	Operating Systems II	DCT200	3	50'	14	42	6
12.	Major Requirement	Basic Principles of Technical Support II	DCT205	3	50'	14	42	6
13.	Major Requirement	Introduction to Cloud Computing	DCT210	3	50'	14	42	6
14.	Major Requirement	Information Systems Administration	DCT215	3	50'	14	42	6
15.	General Education	Advanced English or Elective	ENH102	3	50'	14	42	6
D Semester								
16.	Major Requirement	Networks and Communications II	DCT220	3	50'	14	42	6
17.	Major Requirement	Introduction to Web Technologies	DCT225	3	50'	14	42	6
18.	Major Requirement	Advanced Technical Support	DCT230	3	50'	14	42	6
19.	Major Requirement	Network Security	DCT235	3	50'	14	42	6
20.	Major Requirement	TCP / IP Network Analysis and Troubleshooting	DCT240	3	50'	14	42	6

TABLE 3: TEACHING STAFF, COURSES AND TEACHING PERIODS IN THE PROGRAMME OF STUDY

A/A	Name and Surname	Discipline / Specialization	Teaching courses in the programme of study under evaluation (Diploma of Computer and Network Technician)		Periods/ week
			Code	Course title	
1.	Georgios Pallaris	Information Technology/ Computer Science/Information Systems Management	DCT115 DCT210	Operating Systems I Introduction to Cloud Computing	3 3
2.	Mayia Koliarou	Networks Systems Engineering/Informatics	DCT100 DCT105 DCT130 DCT120 DCT235	Introduction to Computer Technology Introduction to Digital Logic Design Organization and Computer Architecture Introduction to Programming Network Security	3 3 3 3 3
3.	Antonis Othonos	Mathematics	DCT125	Discrete Mathematics for Informatics	3
4.	Vasilki Stournara	English Language and Literature	ENH101 ENH102	Upper Intermediate English Advanced English	3 3
5.	Themis Christodoulou	Communication Networks and Software/ Electrical & Electronic Engineering	DCT110 DCT215 DCT135 DCT240 DCT220	Introduction to Networks Information Systems Administration Networks and Communications I TCP / IP Network Analysis and Troubleshooting Networks and Communications II	3 3 3 3 3
6.	Alexandros Costa	Computer Engineering / Computer Technology	DCT140 DCT205 DCT230	Basic Principles of Technical Support I Basic Principles of Technical Support II Advanced Technical Support	3 3 3
7.	Andreas Polycarpou	Management Technology&Quality	DCT225	Introduction to Web Technologies	3

ΔΙΠΑΕ
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ΦΟΡΕΑΣ ΔΙΑΣΦΑΛΙΣΗΣ ΚΑΙ ΠΙΣΤΟΠΟΙΗΣΗΣ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΗΣ ΑΝΩΤΕΡΗΣ ΕΚΠΑΙΔΕΥΣΗΣ
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TABLE 4: TEACHING STAFF, QUALIFICATIONS, AND TOTAL TEACHING PERIODS

A/A	Name and Surname	Qualifications	Rank*	FT/PT**	Programme of study	Periods / week	Total periods /week
1.	Georgios Pallaris	Ph.D. in Educational Technology (Candidate) MSc Information Systems Management BSc Computing	STP	FT	Computer & Network Technician	15	15
2.	Mayia Koliarou	MSc Networks Systems Engineering BSc Informatics	SS	PT	Computer & Network Technician Bachelor Computer Science	6 3	9
3.	Antonis Othonos	MSc in Mathematics BSc in Mathematics	SS	PT	Office Administration Business Administration Dip.	3 3	6
4.	Vasilki Stournara	MA in Applied Linguistics BA School of English	SS	PT	Computer & Network Technician Business Administration Dip. Office Administration	3 3 3	9
5.	Themis Christodoulou	Master of Business Amdinsitration(University of Cyprus) MSc Communication Networks and Software(University of Surrey Beng Electrical&Electronic Engineering(Univ.Of Surrey)	SS	PT	Computer & Network Technician	6	6

| 6. | Alexandros Costa | Diploma in Computer Technology (Cyprus College Limassol) BSc. in Computer Engineering (European University Cyprus) | SS | PT | Computer & Network Technician | 6 | 6 |
| 7. | Andreas Polycarpou | MSc Management Technology&Quality(Open University of Cyprus) MBA (Open University of Cyprus) Infor.&Com. Scienc.Engineer of Technologic.Train.(TEI Seres) | SS | PT | Computer & Network Technician | 3 | 3 |

* Rank: Professor (P), Associate Professor (Assoc. P), Assistant Professor (Assis. P), Lecturer (L), Special Teaching Staff (STS), Visiting Professor (Vis. P), Special Scientist (SS),
Lab Assistant (LA)
** Full Time (FT), Part Time (PT)

ANNEX 4

B. PROGRAMME'S CONTENT

1. Programme's purpose and objectives

General Objectives:
1. To provide an education leading to a vocational degree in Computer and Network Technology, which now includes cloud services and remote computer administration.
2. To foster an understanding of emerging technologies such as cloud programming and data farm management.
3. To equip students with critical thinking, effective communication, and creative problem-solving skills.
4. To instill respect for social, moral, and ethical values as the foundation of relationships and responsibilities within the community and country.
5. To cultivate student's analytical, decision-making, and communication competencies along with qualities of self-reliance, responsibility, integrity, and self-awareness that will promote personal achievement and contribution to organizations.
6. To build a breadth of perspective through the general education requirements and provide sufficient specialization to meet advanced professional and career requirements in the evolving technological landscape.

Specific Objectives:
1. To prepare students for professional careers in industry, government, and various institutions that involve advanced technologies such as cloud services.
2. To provide students with the skills and knowledge required to:
   - Assemble, maintain, and repair desktops and laptops.
   - Install and adjust operating systems.
   - Manage computer systems and data farms.
   - Install, regulate, and secure computer networks.
   - Understand and manage cloud services.
   - Conduct market research and make suggestions for installing IT systems.
   - Communicate effectively with customers to process computer troubleshooting tasks.
   - Administer remote computer systems.
3. To prepare graduates for careers as IT service technicians with a background that supports lifelong learning and professional development.
4. To equip students with the skills and character required to respond positively and effectively to their roles as IT technicians and other related fields such as problem-solving, design, installation and configuration tasks, maintenance, backup and recovery principles.
5. To help students develop and utilize systematic and effective ways of acquiring further knowledge and skills in Computer and Network Technology, including emerging technologies.
6. To assist students in developing skills and abilities used in solving problems in their field, especially in the context of cloud services and data farm management.
7. To expose students to independent study and development.
8. To provide the student with the opportunity to gain additional professional certifications in his field.

2. Intended learning outcomes in accordance with the European qualifications framework

With the successful completion of this program it is expected that students will:

1. **Master troubleshooting and maintenance of local/hybrid/cloud systems**:
Students will develop skills to diagnose, troubleshoot, and maintain cloud systems, including regular system checks, software updates, security audits, and optimization of cloud resources. In addition, they will be able to describe data transmission concepts, recognize different network types, and analyze network security and policies. In addition.

2. **Acquire knowledge of Cloud Computing and Data Farm Management**:
Students will obtain a detailed understanding of the principles, theories, and technical concepts related to Cloud Computing and Data Farm Management. This includes comprehension of the architecture, design, and management of cloud infrastructure and services, and the principles of distributed data storage, scalability, elasticity, and security in a cloud environment.

3. **Develop practical skills in Remote Computer Administration**:
In addition to being proficient in disassembly/assembly work, system maintenance, and troubleshooting tasks for personal computers and laptops, students will develop the practical skills needed for remote computer administration. This encompasses managing, maintaining, and securing remote desktop environments using effective remote administration tools.

4. **Understand advanced networking concepts, including cloud networking**:
Along with the ability to install local network equipment, manage Local Area Networks, and propose networking proposals, students will gain a nuanced understanding of advanced networking concepts with an emphasis on cloud networking. They will be proficient in managing virtual networks, designing network architecture for cloud environments, and implementing network security in the cloud.

5. **Apply security measures for cloud and network systems**:
Along with the ability to describe Operating System organization, install and maintain operating systems, students will learn to implement advanced security measures for cloud and network systems. This includes securing network infrastructure, managing access control, implementing encryption and security protocols, and securing data and applications in cloud environments.

3. Programme's language of instruction

Greek

ANNEX 5

Cyprus College

Limassol Campus

MINUTES
Academic Committee
Minutes taken on 04 April 2023

Decision Number: 2023/10 A

Participant:
George Pallaris
Kyriacos Pallaris
Maria Menelaou
Panikos Kanakis
Christos Giallouras
Dr. Marios Theofilou
Elena Pallari
Pavlides Christos
Katerina Charalambou
Alexandros Liasides

The meeting started at 12:00 am- Ended 14:00 am

Regarding the suggestions that were introduced by the External Evaluation Committee (EEC) for the Computer and Network Technician Diploma, the Academic Committee continued with the following actions:

MATTERS ARISING:

The Academic Committee members reviewed and discussed about:

The connection between programme's courses and current market.

The importance of providing the opportunity to all students to experience the industry needs by themselves.

The importance of receiving students' feedback regarding the current market and needs.

The importance of offering the Computer and Network Technician Diploma in English language.

1

The need to add another source of feedback to the new Program Evaluation Review Framework.

The need to review the programs' curriculum, courses titles, courses content, objectives and learning outcomes.

DECISIONS OF THE ACADEMIC COMMITTEE:

The Academic Committee members approved the following:

Conduct research regarding the feasibility of adding a new optional course that would provide all students with the relevant industry experience and strengthen the industry's participation in the programme.

Conduct research regarding the feasibility of creating a source of receiving feedback from students that participate in this optional course and help the programme to remain up to date by revising the content in a regular manner.

Conduct a feasibility study whether be possible to offer Computer and Network Technician Diploma in English language.

Add an Advisory Board as an extra source of feedback for the Program Evaluation Review Framework. The Advisory Board was decided to consist of three different parties: an undergraduate, a graduate and ACE Networks.

Review and make the necessary changes on syllabi, course titles, course content, objectives, learning outcomes, delivery mode and Teaching and Learning Process.

George Pallaris
Campus Director

ANNEX 6

Course title	Introduction to Computer Technology			
Course code	DCT100			
Course type	Major Requirement			
Level	Diploma (1st Cycle)			
Year / Semester	1st/1st			
Teacher's name	Koliarou Mayia			
ECTS	6	Lectures / week	2 Periods	Laboratories / week	1 Period
Course purpose and objectives	This course aims to introduce students to the world of information technology by providing basic knowledge of modern computer systems, studying the basic concepts, terminology and theory of computers, networks and other related topics. It also aims to equip students with practical knowledge in the use of applications that are now widely used in all workplaces. The student will be able to use these applications himself but also to provide technical support to other users.			
Learning outcomes	Upon completion of the course the learner is expected to be able to: 1. describes the basic concepts of information technology and communications 2. describes the main material parts of an information system 3. describes the basic types of software 4. manages a modern and popular operating system 5. uses and manages word processing and presentation applications 6. uses and configures data analysis and management applications 7. demonstrates knowledge of recent developments and trends in the field of information technology			
Prerequisites	None	Required		
Course content	Week 1: Introduction to computers: Understanding the basic functions and the evolution of computers. Week 2: Analysis of different types of computers, hardware components, processor, memory, and input/output devices. Week 3: Detailed exploration of storage media, software, networks and communications, and the Internet. Week 4: Discussion on PC applications, security, and legislation. In-depth analysis of the parts that make up a PC. Week 5: Practical part introduction: Overview of the operating system and various applications. Operating system basics: Basic use, settings, file and folder management. Week 6: Text editing practice: Basic use of word processing software - creating, editing, and formatting documents, printing, data import, and application settings.			

	Week 7: Mid-term Examination
	Week 8: Spreadsheets practice: Basic use of spreadsheet software - data entry, use of formulas and functions, graph input, document formatting, printing, and application settings.
	Week 9: Presentations practice: Basic use of presentation software - creating, editing, configuring, and distributing presentations, graphs, slide and object effects, and application settings.
	Week 10: Databases practice: Basic use of database software - creating and using databases, tables, relationships, data entry, filtering, query retrieval, creating reports and forms.
	Week 11: Introduction to recent developments and current issues: Cloud Computing, Internet of things (IOT), Virtualization.
	Week 12: Continuation of recent developments and other applications: Web browsing, email, antivirus applications, e-learning platforms.
	Week 13: Review and Recap.
	Week 14: Final Examination.
Teaching methodology	Class Instruction: 42 Hours Consultation: 28 Hours Student Workload: 84 Hours Total 154 Hours
Bibliography	**Required Bibliography:** 7 σε 1 : windows 10, office 2016 : βήμα προς βήμα / Μαίρη Γκλαβά. Behrouz Forouzan, Firouz Mosharraf. 2015. Εισαγωγή Στην Επιστήμη Των Υπολογιστων. Εκδ. 3η. Εκδόσεις Κλειδάριθμος

Assessment	Exams
	  • Mid-Term Exam : 30%
	  • Final Exam: 40%
	
	Assignments/Projects: 20%
	
	Participation: 10%

Language	Greek

Course title	Introduction to Digital Logic Design
Course code	DCT105
Course type	Major Requirement
Level	Diploma (1st Cycle)
Year / Semester	1st/1st
Teacher's name	Koliarou Mayia

ECTS	6	Lectures / week	2 Periods	Laboratories / week	1 Period

Course purpose and objectives	The course aims to provide students with a basic knowledge of Boolean algebra, Boolean functions, also truth tables, also Karnaugh tables, also first inductors, minimization of combinational circuits, and design and analysis of sequential circuits with registers.
Learning outcomes	Upon completion of the course the learner is expected to be able to: 1. Applies techniques for converting numbers from one number system to another. 2. Performs simple mathematical operations on the binary and hexadecimal systems 3. Describe and explain the operation of fundamental digital gateways 4. Performs minimization of combinational circuits, Boolean algebra, Karnaugh arrays 5. Designs and operates practical digital logic circuits 6. Analyzes standard combinational circuits, including encoder, decoder, multiplexer, demultiplexer, and adder 7. Analyzes the operation of sequential circuits, the flip-flop and examines the relevant timing diagrams 8. Analyzes the operation of meters and sliders
Prerequisites	None	Required	
Course content	Week 1: Introduction, Analog and digital systems, digital circuits binary, decimal & hexadecimal numerical parity. Week 2: Logic Circuit Description: Boolean Algebra, Logic Gates, Combinatorial Circuits. Week 3: Digital Logic Function Design: Simplification of Logic Circuits with Boolean Algebra and Karnaugh Tables. Introduction to Experiment 1 - Laboratory equipment and basic operations.

	Week 4: Implementation of Digital Circuit with Gates. Experiment 2 - Investigating the logical behavior of various integrated circuit (IC) gates.
	Week 5: Sequential Circuits: Latches, SR, JK, and D Flip-Flops. Experiment 3 - Design, construction, and testing of logic circuits and majority logic circuits.
	Week 6: Using Flip-Flops. Experiment 4 - Design of combinational circuits and their application using multiplexers.
	Week 7: Mid-term Examination.
	Week 8: Digital Arithmetic: Circuits for Addition, Subtraction. Experiment 5 - Construction, testing, and investigation of operation of various circuits of multi-dimensional multiplexers, SR Latch, RS flip-flop, D flip-flop, etc.
	Week 9: Meters & Registers: Asynchronous & Synchronous Meters, Displacement Registers. Experiment 6 - Design, construction, and testing of modern sequence circuits.
	Week 10: Using Simulation Software: Logisim simulation software practice, circuit design example for combination circuits, arithmetic and circuits.
	Week 11: Sequence circuits, registers, and counters in Logisim. Simplifying logic circuits, creating truth tables, and Karnaugh maps using Logisim.
	Week 12: Review of all theoretical topics and experiments. Discussion on doubts, if any, and additional practice with simulation software.
	Week 13: Recap and Revision. Preparation for the Final Examination.
	Week 14: Final Examination.
Teaching methodology	Class Instruction: 42 Hours Consultation: 28 Hours Student Workload: 84 Hours Total: 154 Hours
Bibliography	**Required Bibliography:** Mano Morris, Ciletti Michael. 2018. Ψηφιακή Σχεδίαση. Έκδοση: 5η **Recommended Bibliography:** Ρουμελιώτης, Μάνος, Σουραβλάς, Σταύρος Ι. Ψηφιακή σχεδίαση: Αρχές και εφαρμογές. Εκδότης Τζιόλα Tocci, Widmer, & Moss, 2016. Digital Systems: Principles & Applications. 12th Edition, Pearson Professional
Assessment	Exams • Mid-Term Exam: 30% • Final Exam: 40% Assignments/Projects: 20%

	Participation: 10%
Language	Greek

Course title	Introduction to Networks
Course code	DCT110
Course type	Major Requirement
Level	Diploma (1st Cycle)
Year / Semester	1st/1st
Teacher's name	Themis Christodoulou

ECTS	6	Lectures / week	2 Periods	Laboratories / week	1 Period
Course purpose and objectives	This course aims to introduce the student to networking technologies and their application in order to prepare him for the networking and communications courses that will follow. During the course the student will understand the basic concepts of networking and will become familiar with the various media, devices, architectures and protocols. Finally, he will practice in the construction of cables and in the design and installation of local networks.				
Learning outcomes	Upon completion of the course the learner is expected to be able to: 1. Describes concepts related to data transmission, communication protocols and networking media 2. Identify the primary topologies, protocols and types of networks and identify their characteristics, as well as determine which of them would be most appropriate for a proposed network. 3. Describes basic communication protocols, such as OSI and TCP / IP 4. Distinguish between local area networks (LANs) and wide area networks (WANs) and identify the elements used to extend a LAN to a WAN. 5. Recalls multiplexing techniques and their applications applies practical techniques for building network cables and connecting computers to a network.				
Prerequisites	None		Required		
Course content	**Theoretical part:** Introduction: What is network, concept of networking, utility. Network types (LAN / WAN). Network arrangement, topologies. Basic network media and devices: Wiring, network interface cards, transponders, nodes, bridges, routers, wireless networking. Network Architectures: Access methods, data transmission (packets), Ethernet, Token ring, FIBER Network operating systems: Introduction - software components, Windows Server, Linux / Unix Introduction to Networking Standards: OSI Models, TCP / IP, IEEE 802.X IP addressing: Introduction to IP addresses, types of IP addresses, subnet masks, IP addressing.				

	Network design and installation: Inventory of existing network, Map creation, Structured cabling, Wireless device installation, device selection, FTTH (Fiber to The Home). **Student Centered Project:** **Making Project : Board/Trivia Puzzle Game** **Practical part:** Students will work both individually and in groups of 2 or 3 people, under the Consultation and supervision of their instructor. The internship will focus mainly on understanding and using the hands-on approach to network design and installation. More specifically, it will include the following laboratories: Workshop 1: Installation of network devices (network cards, routers, conveyors) Workshop 2: Structured Wiring Network cables and RJ-45 plugs, cable termination - punch down, cable routes, cable stands, wiring skills.Construction of UTP/STP cables with RJ-45, cable termination, punch-down, cable testing, installation of telecommunication sockets, interface board wiring. Workshop 3: LAN / WIFI design with structured cabling.
Teaching methodology	Class Instruction: 42 Hours Consultation: 28 Hours Student Workload 84 Hours Total: 154 Hours
Bibliography	**Required Bibliography:** Kurose, J.F. 2021. Δικτύωση Υπολογιστών, 8η Έκδοση, Γκιούρδας Wendell, Odom. Δίκτυα υπολογιστών: Το πρώτο βήμα. CISCO. 1η εκδ. Κλειδάριθμος. ISBN: 9602099402. 2005. **Recommended Bibliography:** Αλεξόπουλος, Αριστείδης, Λαγογιάννης, Γεώργιος. 2016. Τηλεπικοινωνίες και δίκτυα υπολογιστών: Ασύρματα συστήματα, τηλεφωνία, δίκτυα. Εκδότης: Παπασωτηρίου Tanenbaum, Andrew. Δίκτυα υπολογιστών. 4η εκδ. Κλειδάριθμος Peterson, Larry. Δίκτυα υπολογιστών: Μια προσέγγιση από τη σκοπιά των συστημάτων. 6η εκδ. Κλειδάριθμος
Assessment	Exams • Mid-Term Exam: 25% • Final Exam: 35% Student Centered Project: 30% Participation: 10%
Language	Greek

ΔΙΠΑΕ CYQAA ΦΟΡΕΑΣ ΔΙΑΣΦΑΛΙΣΗΣ ΚΑΙ ΠΙΣΤΟΠΟΙΗΣΗΣ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΗΣ ΑΝΩΤΕΡΗΣ ΕΚΠΑΙΔΕΥΣΗΣ
CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION

eqar//// enqa.

Course title	Operating Systems I
Course code	DCT115
Course type	Major Requirement
Level	Diploma (1st Cycle)
Year / Semester	1st/1st
Teacher's name	Pallaris George

ECTS	6	Lectures / week	2 Periods	Laboratories / week	1 Period

Course purpose and objectives	Students will gain an in-depth knowledge of the modern management of an operating system (such as a Windows environment) for personal computers, graphical environments as well as console environments. Finally, students will specialize in installing, maintaining, and troubleshooting an operating system.
Learning outcomes	Upon completion of the course the learner is expected to be able to: 1. Describe what an operating system is, the parts of an operating system 2. Describe the Operating System Organization 3. Assess the needs of an operating system in hardware 4. Install an operating system (Windows) (in a virtual machine environment) 5. Use management tools in graphical and console (Windows) environments 6. Troubleshoot and maintain operating systems

Prerequisites	None	Required	

Course content	Theoretical part: - Introduction: What is an Operating System (OS), Attempts to Define OS - MS and Computer Systems Architecture, Multiprogramming / Parallel Systems - Operating System Structures, General Characteristics of OS: Main OS Services - System Programs, Process Management, Memory Management, System Calls - Switching Operating Environment, Communication with Peripherals and Devices - Holiday Operation - Execution Yarns: Processes and Yarns, User Level / Core Yarns, Multi-Yarn Models

	• Synchronizing Processes in Common Memory: Critical Components, Algorithms and Solutions **Practical part:** Workshop 1: Virtual Machine Installation / Installation of Latest Windows Operating System / Partition Construction Workshop 2: Installing Latest Windows Operating System with AIK Automation / Installing Updates / Antivirus / Programs,Startup Programs, New Users, Virtual Memory, Device Drivers Workshop 3: Language and Area Changes, System Resources Monitoring, System Files, Remote Desktop Workshop 4: Console Use (CLI), Batch Files Workshop 5: Disk Maintenance, Task Manager, Scheduling for Future Program Execution, Backup Workshop 6: System Restore, Network Cards, Sharing Workshop 7: Installing and Using Printers Workshop 8: Windows Security - Files, User Accounts, Network Workshop 9: Windows Troubleshooting
Teaching methodology	Class Instruction: 42 Hours Consultation: 28 Hours Student Workload 84 Hours Total: 154 Hours
Bibliography	**Required Bibliography:** Silberschatz, Galvin, 2021. Λειτουργικά συστήματα. ΙΩΝ **Recommended Bibliography:** Andrew Tanenbaum, 2018. Σύγχρονα λειτουργικά συστήματα, Κλειδάριθμος

Assessment	Exams
	        •Mid-Term Exam: 30%
	        •Final Exam: 40%
	
	Assignments/Projects: 20%
	
	Participation: 10%

Language	Greek

ΦΟΡΕΑΣ ΔΙΑΣΦΑΛΙΣΗΣ ΚΑΙ ΠΙΣΤΟΠΟΙΗΣΗΣ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΗΣ ΑΝΩΤΕΡΗΣ ΕΚΠΑΙΔΕΥΣΗΣ
ΔΙΠΑΕ
CYQAA
CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION

eqar//// enqa.

Course title	Upper Intermediate English				
Course code	ENH101				
Course type	General Education				
Level	Diploma (1st Cycle)				
Year / Semester	1st/1st				
Teacher's name	Stournara Vasiliki				
ECTS	6	Lectures / week	1	Laboratories / week	
Course purpose and objectives	The course is a comprehensive course designed for intermediate level students. It covers all four language skills with particular emphasis on the acquisition of learning strategies that are essential for autonomous learning.				
Learning outcomes	Upon completion of the course the student will have: A good Level in English reading and writing with emphasis on comprehension and written expression. Listening and speaking skills in English as well as a basic understanding of language functions. Skills in autonomous learning.				
Prerequisites	None		Required		
Course content	Through a variety of authentic materials and texts, students develop their language skills. The course integrates and presents the language in understandable texts and offers a variety of exercises to improve students' speaking, listening, reading and writing skills. Writing Skills: Starting from the mechanisms of the main paragraph, students are led to the effective writing of reports. This includes structure, composition and composition. Different types of written language are developed such as formal / informal letters, reports, dialogues and reports. Listening skills: Students develop their listening skills through the use of genuine audio from real-life situations such as interviews, text messages, lectures, announcements and discussions. Speech skills: From the beginning, students are encouraged to express themselves orally, through role interpretations, simulations and open discussions on topics that concern them, students are encouraged to develop their oral performance. Grammar: Grammatical structures include tenses, italics, referential sentences, hypothetical terms, present and past participles, passive voice, causal,				

	phrasal verbs, prepositions, adverbs, adjectives, conjunctions and exclusive verbs. Language Features: Linguistic functions include: requesting / offering information, suggestions, invitations, offers / suggestions, description, comparison, contradiction, conjecture, complaint, hypotheses, expression of emotions. Recent development and current topics related to the topic of the course.
Teaching methodology	Class Instruction: 42 Hours Consultation: 28 Hours Student Workload 84 Hours Total: 154 Hours
Bibliography	**Required Bibliography:** McCarthy, M et al. Viewpoint 1. Student's Book. Cambridge University Press. McCarthy, M et al. Viewpoint 1. Workbook. Cambridge University Press. **Recommended Bibliography:** Clare, A. (2006). Total English : Intermediate : Students' Book and Workbook. Essex: Pearson Longman
Assessment	Exams 50% Assignments / Participation / Continuous Assessment 50% Total 100%
Language	English

ΔΙΠΑΕ
CYQAA
ΦΟΡΕΑΣ ΔΙΑΣΦΑΛΙΣΗΣ ΚΑΙ ΠΙΣΤΟΠΟΙΗΣΗΣ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΗΣ ΑΝΩΤΕΡΗΣ ΕΚΠΑΙΔΕΥΣΗΣ
CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION

eqar//// enqa.

Course title	Introduction to Programming			
Course code	DCT120			
Course type	Major Requirement			
Level	Diploma (1st Cycle)			
Year / Semester	1st/2nd			
Teacher's name	Koliarou Mayia			
ECTS	6	Lectures / week	2 Periods	Laboratories / week	1 Period
Course purpose and objectives	The course provides students with an introduction to the C programming language and standard programming practices used in the language context. Introduces the C programming language as a structured, intermediate language that provides a summary of Total tools for programming and developing high-level applications.			
Learning outcomes	Upon completion of the course the learner is expected to be able to: 1. Designs, creates and executes programs in C/C++ language. 2. Uses primitive data types in variable statements. 3. Uses selection and iteration control structures. 4. Uses tables. 5. Implements solutions to basic programming problems.			
Prerequisites	None	Required		
Course content	This course begins with the presentation of an appropriate programming environment and its use to create a simple program in C/C++, through which the student learns the basic structure of a program and how he can use this software to write, compile, fix and run a simple program in C/C++. The following are the commands used to display results on the computer screen (printf) and to receive data from the keyboard (scanf), which will be stored in variables declared in appropriate formats and will be used in the program. Design tools such as pseudocode, algorithms and flowcharts are also described and students are asked to design their own solutions to various programming problems using these tools.			

The if, if… else and switch selection structures and the for, while, do… while iteration structures are also presented and students apply these structures to the design and development of structured programs to solve programming problems.

The idea of using functions is then analyzed and students make use of both C-core library functions and self-written functions in their programs. Finally, students learn to use arrays in their programs to store and process data and practice using tables in conjunction with iterative structures and functions.

Practical training/Student Centered Project
During the course, students are asked each week to solve a series of programming problems by designing, writing and executing their own programs in C/C++ language, which will help them understand the subjects they have been taught and offer them the Required Practice in programming.

Project Example:

Automated Plant Watering System

Objective: In this project, students will leverage their C/C++ programming skills to create an automated plant watering system using the Arduino platform. This system will monitor the moisture level of the soil and automatically water the plant when needed.

Description: This project encourages students to apply their programming knowledge to a real-world problem, building a tangible solution. Key programming concepts such as variables, loops, conditionals, functions, and array manipulation will be applied, offering a comprehensive application of their learning.

Week 1-3: During the initial weeks, students will be introduced to the Arduino platform and will be tasked to design their system. This includes creating pseudocode, an algorithm, and a flowchart for their automated plant watering system. They should also list out the components they will require for the system.

Week 4-6: Students will be taught how to interface their Arduino with the moisture sensor, water pump, and other necessary components. They will learn to write simple programs to test these components, thereby developing their understanding of hardware-software integration.

Week 8-9: Students will then work on integrating all the components together. They will start writing the code for their watering system, focusing on monitoring the moisture levels and controlling the water pump based on these levels.

	Week 10-11: With the basic functionality of the watering system in place, students will now add additional features to their system, such as a display showing the current moisture levels or a buzzer that alarms when the water reservoir is empty. Week 12: Students will present and demonstrate their automated plant watering system to the class. They will explain their design and the challenges they faced during implementation and how they overcame them. Week 13: Final Presentation - Students will be asked to prepare their project report, which should include the design process, implementation details, testing results, issues faced, and possible improvements in the future.
Teaching methodology	Class Instruction: 42 Hours Consultation: 28 Hours Student Workload 84 Hours Total: 154 Hours
Bibliography	**Required Bibliography:** Deitel, Abbey, Deitel, Harvey M. C Προγραμματισμός, 7η Έκδοση, Εκδότης: Γκιούρδας Μ. ISBN13: 9789605126414. 2014 **Recommended Bibliography:** Deitel & Deitel. 2016. C Προγραμματισμός. Εκδόσεις Γκιούρδας Mitchel. C Βήμα προς βήμα. Εκδόσεις Γκιούρδας. 5η εκδ. QA76.73.C15W35216 2005. K. Kernighan. Η γλώσσα προγραμματισμού C. Κλειδάριθμος. 2η εκδ. QA76.73.C15K4715 2008 Herbert Schildt .Οδηγός της C. Εκδόσεις Γκιούρδας. 6η εκδ. QA76.73.C15S3516 2011

Assessment	Exams
	    •Mid-Term Exam: 30%
	    •Final Exam: 40%
	
	Student Centered Project: 30%

Language	Greek

ΔΙΠΑΕ CYQAA **ΦΟΡΕΑΣ ΔΙΑΣΦΑΛΙΣΗΣ ΚΑΙ ΠΙΣΤΟΠΟΙΗΣΗΣ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΗΣ ΑΝΩΤΕΡΗΣ ΕΚΠΑΙΔΕΥΣΗΣ**
CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION

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Course title	Discrete Mathematics for Informatics			
Course code	DCT125			
Course type	Major Requirement			
Level	Diploma (1st Cycle)			
Year / Semester	1st/2nd			
Teacher's name	Othonos Antonis			
ECTS	6	Lectures / week	2 Periods	Laboratories / week	1 Period
Course purpose and objectives	The course aims to get acquainted with the basic mathematical concepts, so that students can better understand the use of mathematics as a means of expression when dealing with distinct structures. It also intends to equip professionals with aspects of mathematical knowledge related to the fields of information technology and related subjects.			
Learning outcomes	Upon completion of the course the student is expected to be able to: 1. Apply standard methods of propositional and categorical calculus. 2. Calculate Odds, Substitutions and Combinations for simple problems 3. Draw Venn diagrams or use other methods to provide evidence / feedback to various problems 4. Records the basic principles of array algebra and calculates solutions of systems of linear equations using tables 5. Identifies the complex thread of relationships between linear systems, arrays, delimiters, linear representations and eigenvalues			
Prerequisites	None		Required	
Course content	Propositional Calculus: Propositions, Symbolic Logic, Truth Tables (Construction and Applications), Laws of Algebra, Subtraction and Proof Sets: What is a Total? New Updated Series, Venn Charts and Participation Tables, Laws of Algebra, Measurements, Exercises, Relationships Categorical Calculus: predicates, combination of predicates, Quantified predicates, Substitution, rules of inference, Reasoning with quantitative predicates Probabilities: Introduction, Simple Combinatorial, Independent and Exclusive Events, Conditional Probability, Stochastic Processes and Probability Trees Tables: Insertion, Addition and Subtraction, Multiplication, unit array, Elementary sequence operations, inverse array, solution of equation systems, Homogeneous systems of linear equations, delimiter illustration, Determinant calculation with its expansion, Properties of			

	Calculation: The Percent Percentage Change, Instantaneous Rate of Change, Derivatives (and related information provided), Simple Function Differentiation, Fixed Points and Optimization, Completion
Teaching methodology	Class Instruction: 42 Hours Consultation: 28 Hours Student Workload 84 Hours Total: 154 Hours
Bibliography	**Required Bibliography:** Sussana S. Epp, Διακριτά Μαθηματικά με Εφαρμογές, Εκδ. 3η, Κλειδάριθμος, 2010, ISBN 978-960-461-325-0 **Recomended Bibliography** Νίκος Καρυδάς, *Διακριτά Μαθηματικά*, Εκδόσεις Τζιόλας 2011, ISBN 978-960-418-305-0 Γιώργος & Κώστας Δαρδανός. Διακριτά μαθηματικά: Τα μαθηματικά της επιστήμης των υπολογιστών. Προβλήματα και λύσεις. Εκδόσεις Gutenberg.ISBN13: 9789600112399. 2008 Richard Johnsonbaugh, *Discrete Mathematics,* 2009, Pearson Prentice Hall, ISBN 978-0-13-135430-2 Μαρκελλος Βασιλειος. *Εφαρμοσμενα Μαθηματικα*. Έκδ. 1. Εκδότης ΓΚΟΤΣΗΣ ΚΩΝ/ΝΟΣ & ΣΙΑ Ε.Ε. ISBN: 9789609427289. 2013. Παναγιωτόπουλος Αντώνιος, *Διακριτά Μαθηματικά, Εκδόσεις Σταμούλη,* 1999, ISBN 9603512273 Κυρούσης Λ, *Διακριτά Μαθηματικά*, Gutenberg - Γιώργος & Κώστας Δαρδανός, 1999, ISBN 9600106614
Assessment	Exams •Mid-Term Exam: 30% •Final Exam: 40% Assignments/Projects: 20% Participation: 10%
Language	Greek

Course title	Organization and Computer Architecture
Course code	DCT130
Course type	Major Requirement
Level	Diploma (1st Cycle)
Year / Semester	1st/2nd
Teacher's name	Koliarou Mayia

ECTS	6	Lectures / week	2 Periods	Laboratories / week	1 Period

Course purpose and objectives	The course aims to introduce the student to the way in which the hardware components of a computer interact with each other, so as to achieve the transfer of commands and data to and from the processor and the decoding and execution of these commands. It also analyzes issues related to data representation, command format, memory management, process synchronization, computer performance, and storage media.
Learning outcomes	Upon completion of the course the learner is expected to be able to: 1. describes the basic material parts that make up a typical computer and the Central Processing Unit (CPU). 2. applies number conversion techniques from one number system to another. 3. recognizes and analyzes commands of a simple command set architecture. 4. creates simple programs in assembly language and machine language. Distinguish the differences between architectural design methods and evaluate how these methods affect CPU performance. 6. describes the basic CPU input / output function and analyzes issues related to memory management.

Prerequisites	None	Required	

Course content	In the introduction of the course the basic definitions and parts of a computer system are analyzed, the specifications of a computer example are studied and reference is made to the standardization organizations, the historical evolution of the computer, the hierarchy of levels in a computer and the model Von Neumann. Then the way in which the data is represented on a PC using different number systems (decimal, binary, octal and

hexadecimal) is analyzed and techniques for converting quantities from one number system to another are developed. A detailed analysis of how each part of the computer interacts with the rest to achieve data flow is analyzed and a processor model and its ISA set architecture are analyzed.

The student develops skills in recognizing and decoding commands written in assembly language or machine language and practices creating simple programs using assembly language.

A deeper analysis of command sets is then performed and students' skills in comparing different types of commands and recognizing how they affect system performance are developed.

Issues are also developed regarding the organization and hierarchy of memory in a computer, the measurement of computer performance, output input, transmission and data storage.

Recent developments and current issues related to the subject of the course are also discussed during the course.

Practical training:

Through a simulator (MARIE) the student has the ability to write simple programs in assembly language, execute them and monitor the result of their execution step by step, as commands and data move between memory, registers, arithmetic unit and channels.

Student Centered Project:

Project Description:
The objective of this project is to design and implement a sensor-based system using Arduino that demonstrates the basic principles of computer organization and architecture. The system should include a variety of components that work together to process inputs and generate outputs, highlighting the interaction between different hardware elements, data representation, command execution, memory management, and input/output function.

Components Required:

- Arduino Uno board
- A selection of sensors (e.g., temperature sensor, light sensor, distance sensor)
- LEDs
- Resistors, capacitors
- Breadboard
- Jumper wires

- 3D Printer

Proposed Steps:

Designing the System: Students should first design their system on paper, detailing what sensors they will use, how the data from these sensors will be processed, and what outputs will be generated as a result. This should include a basic schematic of how the components will be connected.

Number System Conversion: Students will be required to use different number systems in their programming and data management. This could be demonstrated by programming the Arduino to interpret sensor data in different ways depending on the number system used.

Assembly and Machine Language Programming: Students will write simple programs for the Arduino in assembly language. These programs will be used to control the sensors and LEDs, demonstrating how commands are executed by the CPU.

Input/Output and Memory Management: The system should demonstrate basic input/output function and memory management. This could be achieved by storing sensor data in the Arduino's memory and using this data to control the output of the LEDs.

Performance Measurement: Students should implement a method for measuring the performance of their system, such as the time taken to process sensor data and generate an output.

System Analysis: Once the system is built, students should analyse its performance and identify any potential improvements that could be made. They should also discuss how changes to the system's architecture could affect its performance.

Documentation: The final step of the project is for students to document their work, detailing the design and implementation of their system, the challenges they faced, and the solutions they implemented.

This project should help students to apply and understand the principles of computer organization and architecture in a practical, hands-on way, reinforcing the theoretical knowledge gained in the course.

Teaching methodology	Class Instruction: 42 Hours
	Consultation: 28 Hours
	Student Workload 84 Hours
	Total: 154 Hours
Bibliography	**Required Bibliography:** Δημήτριος Β. Νικολός. 2017. Αρχιτεκτονική Υπολογιστών. **Recommended Bibliography:** Hennessy, John L., Patterson, David A. 2020. Αρχιτεκτονική υπολογιστών: Ποσοτική προσέγγιση. Εκδότης Τζιόλα Stallings, William. 2020. Οργάνωση και αρχιτεκτονική των υπολογιστών: Σχεδίαση με στόχο την απόδοση Εκδότης Τζιόλα
Assessment	Exams •Mid-Term Exam: 30% •Final Exam: 40% Student Centered Project (Arduino) & Active Participation: 30%
Language	Greek

ΔΙΠΑΕ CYQAA **ΦΟΡΕΑΣ ΔΙΑΣΦΑΛΙΣΗΣ ΚΑΙ ΠΙΣΤΟΠΟΙΗΣΗΣ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΗΣ ΑΝΩΤΕΡΗΣ ΕΚΠΑΙΔΕΥΣΗΣ**
CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION

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Course title	Networks and Communications I			
Course code	DCT135			
Course type	Major Requirement			
Level	Diploma (1st Cycle)			
Year / Semester	1st/2nd			
Teacher's name	Themis Christodoulou			
ECTS	6	Lectures / week	2 Periods	Laboratories / week	1 Period
Course purpose and objectives	This course is the first part of a course aimed at familiarizing students with modern communications networks and networks. Students will be engaged in tasks related in foundational knowledge and practical skills in network principles, architecture, and Fiber to the Home (FTTH) technology. The objectives are to help students understand the key concepts of data communication networks, IP addressing, subnetting, and fiber optic technology, while developing their problem-solving and hands-on abilities through practical training and real-life project scenarios.			
Learning outcomes	Upon completion of the course the learner is expected to be able to: 1. Demonstrate basic knowledge of network principles, architecture, and technologies used in data communication networks. 2. Understand and apply concepts of IP addresses, network classes, and subnetting in problem-solving scenarios. 3. Convert between decimal and binary number systems and identify network classes (A, B, C, D, E). 4. Describe the structure and classification of data communication networks, and the OSI model of ISO. 5. Discuss the evolution of computer network technologies and historical development of network models. 6. Explain the fundamentals of Fiber to the Home (FTTH) networks, including the history and evolution of fiber optic technology, its advantages, and applications. 7. Apply practical skills in network design and problem-solving through hands-on training and workshops. 8. Work effectively in individual and group settings to analyze, optimize, and implement network solutions for real-life projects.			
Prerequisites	DCT110	Required	-	

Course content	Basic knowledge regarding the principles of networks, their architecture and the technologies used. IP Addresses, Network Classes, Subnetting and problem solving.Decimal to Binary, Binary to Decimal, Network Classes (A, B, C, D, E), Subnetting. Basic knowledge related to the structure, classification, operation and use of data communication networks, regardless of their specific characteristics, basic knowledge related to the architecture of computer networks and in particular their structure at levels, according to the OSI model of ISO, basic knowledge related to the evolution of computer network technologies, basic knowledge of network models, and their historical development. Fiber to the Home. Introduction to Fiber Optics and FTTH,History and evolution of fiber optic technology,Advantages of fiber optic communication, Overview of FTTH,Applications and benefits of FTTH **Practical training (Network Classes and Subnetting)** Students will work both individually and in groups of 3 or 4 people, under the consultation and supervision of their instructor. The internship will focus mainly on understanding and using problem solving approach to network design scenarios. More specifically, it will include the following laboratories: Workshop 1: Known Network Subnet Mask. Identify IP Address, IP Broadcasting, Available IP Addresses Workshop 2: Real-Life Problem-Solving project. (e.g., Real Organization Project Analysis and/or network optimization). **Student Centered Assignments (Projects)** **Assignment 1: Network Design and Analysis Objective: Develop students' ability to design, analyze, and optimize a local area network (LAN) based on specific requirements.** Instructions: 1. Form groups of 3-4 students. 2. Each group will be provided with a unique set of network requirements (e.g., number of devices, security considerations, specific applications, and budget constraints). 3. Using the knowledge acquired during the course, design a LAN that meets the given requirements, incorporating FTTH technology where applicable.

	4. Prepare a detailed report outlining the chosen network architecture, components, IP addressing scheme, and subnetting plan.
	5. Include a section in the report that discusses the advantages and challenges of your proposed network design.
	6. Present your findings to the class in a 10-15 minute presentation.
	Assignment 2: FTTH Deployment Case Study Objective: Enhance students' understanding of the real-world challenges and considerations in deploying FTTH networks.
	Instructions:
	1. Individually, choose a real-world case study of an FTTH deployment in a city or community (either successful or unsuccessful).
	2. Research and analyze the chosen case study, focusing on factors such as network architecture, deployment strategies, costs, benefits, and challenges faced during implementation.
	3. Write a 4-5 page report summarizing your findings. Include sections on the following aspects:
	• Background of the case study (location, demographics, and existing network infrastructure)
	• FTTH architecture and deployment strategy used
	• Challenges faced during implementation and the solutions employed
	• Evaluation of the project's success or failure, and lessons learned
	4. Submit the report for evaluation and feedback.
Teaching methodology	Class Instruction: 42 Hours Consultation: 28 Hours Student Workload 84 Hours Total: 154 Hours
Bibliography	**Required Bibliography:** Kurose, J.F. 2021. Δικτύωση Υπολογιστών, 8η Έκδοση, Γκιουρδας Cisco Networking Academy, 2021. Networking Essentials Lab Manual **Recommended Bibliography:** Cisco Networking Academy, 2022. Networking Essentials Companion Guide.

	Αλεξόπουλος, Αριστείδης, Λαγογιάννης, Γεώργιος. 2016. Τηλεπικοινωνίες και δίκτυα υπολογιστών: Ασύρματα συστήματα, τηλεφωνία, δίκτυα. Εκδότης: Παπασωτηρίου Stallings, William. 2018. Επικοινωνίες υπολογιστών και δεδομένων. 6η εκδ. Τζιόλα James. Kurose. Keith. 2021. Δικτύωση υπολογιστών: Προσέγγιση από πάνω προς τα κάτω με έμφαση στο διαδίκτυο. 8η εκδ. Γκιούρδας

Assessment	Exams
	    •Mid-Term Exam: 30%
	    •Final Exam: 40%
	
	Assignments/Projects: 20%
	
	Participation: 10%

Language	Greek

ΔΙΠΑΕ CYQAA
ΦΟΡΕΑΣ ΔΙΑΣΦΑΛΙΣΗΣ ΚΑΙ ΠΙΣΤΟΠΟΙΗΣΗΣ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΗΣ ΑΝΩΤΕΡΗΣ ΕΚΠΑΙΔΕΥΣΗΣ
CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION

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Course title	Basic Principles of Technical Support I
Course code	DCT140
Course type	Major Requirement
Level	Diploma (1st Cycle)
Year / Semester	1st/2nd
Teacher's name	Alexandros Costa

ECTS	6	Lectures / week	2 Periods	Laboratories / week	1 Period

Course purpose and objectives	This course is the first of a series of two courses that aim to familiarize the student with the tasks he / she will have as a computer systems support technician. The student will be informed about the basic safety principles that must be applied in his workplace. This course focuses primarily on the maintenance and troubleshooting of desktop computers. Students will first become familiar with essential workplace safety practices and hardware and software tools. Then they will be trained in the disassembly / assembly of the computer as well as its start-up, control and regular maintenance. Students will also be involved in installing and maintaining printers. Finally, they will practice the use of tools and procedures to detect and troubleshoot hardware and software. This course aims to cover material similar to professional certification material (such as CISCO ITE, CompTIA A +, EUCIP IT Administrator or other) so that students have the opportunity to take exams and obtain the corresponding professional certification.
Learning outcomes	Upon completion of the course the learner is expected to be able to: 1. Applies safe methods of using the laboratory 2. Demonstrates skills in the proper use of tools 3. Describes the basic parts of a personal computer system 4. Performs disassembly / assembly of personal computer 5. Implements procedures of regular control and maintenance of personal computer 6. Performs replacement parts of personal computer 7. Performs printer installation and maintenance work 8. Detects and fixes problems on personal computers using a troubleshooting process.

Prerequisites	DCT100, CISCO ITE PC Hardware and Software examination or corresponding or	Required	

	higher professional certification	
Course content	**Theoretical part** Introduction to personal computers (Cases, power supplies, motherboards, processors, cooling systems, RAM, ROM, expansion cards, storage media, cables). Safe laboratory procedures and use of tools (Safety procedures, laboratory hazards, presentation of materials, software and organizational tools. Proper use of tools). PC assembly (Installation of power supply, motherboard, CPU, RAM, storage media, expansion cards, internal / external cables. Initial computer startup, boot troubleshooting, BIOS setup). Basic principles of preventive maintenance and troubleshooting: Understanding the purpose of preventive maintenance, identifying steps in the troubleshooting process, data protection purpose, identifying a problem on the PC, finding possible sources of the problem, identifying the exact source of the problem, implementing the problem solution, confirming the problem solution and system functionality, documenting findings and procedures. Operating Systems: Purpose of operating system, comparison of operating systems (purpose, limitations, compatibility), verification of suitable operating system based on user needs, minimum system requirements and compatibility, installation of operating system (hard disk preparation, installation, creation of user accounts, installation options, settings boot and other settings, navigation, configuration and use of operating system (control panel, administrative tools), installation / uninstallation of applications, upgrade, creation of preventive maintenance plan, scheduling of automatic procedures, backup plan, troubleshooting common problems in the operating system. Basic network principles: Principles and advantages of networking, types of networks (LAN, WAN WLAN, Peer to peer, client / server), basic concepts and networking technologies (bandwidth, data transmission, IP addressing, DHCP, IP protocols, applications, ICPMP), networking devices, types cable, LAN topologies and architectures, standardization organizations, wired and wireless Ethernet, OSI, TCP / IP standards, NIC and modem installation and configuration, other interconnection technologies (telephony, power transmission, broadband, VoIP, VPN), proxy maintenance and troubleshooting of networks. **Practical training** Within each module the student has the opportunity to practice in the subject of that module. The topics covered by the internship as it seems most commonly include: computer solution and grouting, operating system installation. The student also has the opportunity to practice installing desktop or laptop parts from their own space and time using the respective CISCO Desktop and Laptop Simulators.	

	Workshop 1: Basic Safety Practices and Use of Tools (Basic Workplace Safety Practices, Use of Hardware and Software Tools, and Disposal of Hazardous Materials). Workshop 2: Identification of basic computer hardware (cases, motherboards, power supplies, processors, memory modules, expansion cards, internal cables, external cables, input / output devices). Workshop 3: Computer disassembly (Removing external cables, opening box, taking antistatic measures, removing cables, memory, processor, expansion cards, disk drives, motherboard, power supply). Computer reassembly. Initial start-up process. Workshop 4: Replacement of computer parts and implementation of preventive maintenance measures. Workshop 5: UEFI / BIOS settings, hard disk formatting, backups, data recovery. Workshop 6: Printer installation, settings and preventive maintenance. Workshop 7: Use of diagnostic software tools (disk management, format, scandisk / chkdsk, defrag, disk cleanup, sfc) and hardware (multimeter, power supply tester, loopback adapter, external HDD enclosure). Workshop 8: Practice troubleshooting hardware, software and printers.
Teaching methodology	Class Instruction: 42 Hours Consultation: 28 Hours Student Workload 84 Hours Total: 154 Hours
Bibliography	**Required Bibliography:** Cisco Networking Academy, 2020. IT Essentials v7, Cisco Press Cisco Networking Academy, 2020. IT Essentials Companion Guide v7, Cisco Press
Assessment	Exams •Mid-Term Exam: 30% •Final Exam: 40% Assignments/Projects: 20% Participation: 10%
Language	Greek

Course title	Operating Systems II
Course code	DCT200
Course type	Major Requirement
Level	Diploma (1st Cycle)
Year / Semester	2nd/3rd
Teacher's name	Pallaris Georgios

ECTS	6	Lectures / week	2 Periods	Laboratories / week	1 Period

Course purpose and objectives	Students will gain an in-depth knowledge of advanced operating system concepts, Linux operating system management, and the integration of makerspaces into computing curricula. The course will focus on hands-on activities, such as 3D printing and Raspberry Pi programming, to develop and make a universal operating systems thin client. Students will also learn about various computing concepts such as cloud computing, OS scheduling, and distributed computing.
Learning outcomes	Upon completion of the course the learner is expected to be able to: 1. Describe what an operating system is and the components of an operating system. 2.Understand advanced concepts in operating systems, such as processes, threads, scheduling, memory management, and virtual memory. 3.Describe memory management, file/disk management, and device management. 4.Assess the needs of an operating system in hardware. 5.Install a UNIX-based operating system (e.g., Linux) in a virtual machine environment. 6.Utilize management tools in graphical and console environments (Linux). 7.Troubleshoot and maintain operating systems. 8.Apply the knowledge of Linux operating systems to manage and troubleshoot real-world systems. 9.Utilize makerspace technologies, including 3D printing and Raspberry Pi, to create a functioning thin client. 10.Analyze the benefits and potential applications of the thin client within a university setting. 11.Develop collaboration, communication, critical thinking and creativity skills through collaborative project-based making activities and project presentations.

Prerequisites	DCT115	Required	
Course content	Week 1: Introduction to Operating Systems II •Theory: Review of Operating Systems 1 course •Theory: Introduction to Linux operating systems and their components •Introduction to makerspaces, making 3D printing, and Raspberry Pi •Group formation and registration to Makerspace LMS Platform •Home assignment: 3D printing the group's avatar Week 2: Virtual Machines and Linux Installation •Theory: Introduction to Ubuntu OS, Microprocessors and Raspberry Pi •Workshop 1a: Install Linux (e.g., Ubuntu) Using Virtual Box •Workshop 1b: Introduction to Ubuntu Linux graphical management •Home assignment: Find, download, and 3D print a Raspberry Pi 4 case work on the project "Thin Client Development" Week 3: Linux Graphical and Console Management •Follow-up (20 min): Reviewing the Raspberry Pi 4 case designs and discussing progress on the Thin Client Development project •Workshop 2: Command Line Management via Linux console •Home assignment: Download and install Ubuntu OS on Raspberry Pi work on the project "Thin Client Development" Week 4: OS Processes/Threads, Bash Scripts and SSH Protocol •Follow-up (20 min): Discussing the Ubuntu OS installation process and Raspberry Pi setup •Theory: OS Processes and Threats •Workshop 3a: Managing via Linux batch files (Bash Scripts) •Workshop 3b: Installing SSH Interactive Protocol (OpenSSH) Server •Workshop 3c: Manage remotely using SSH protocol Week 5: Linux Security and Troubleshooting •Theory: Linux Security - Files, User Accounts, Network (IPTABLES) •Linux Troubleshooting •Home assignment: Sync data between MS Windows and Raspberry Pi using Always Sync, install Apache Web Server on Raspberry Pi Ubuntu, and remotely access Raspberry Pi using a smartphone work on the project "Thin Client Development" Week 6: OS Scheduling •Follow-up (20 min): Discussing experiences with Linux security, troubleshooting, and the home assignment tasks •Theory: Operating Systems Scheduling •Home assignment: 3D print an SD card case, work on the project "Thin Client Development"			

	Week 7: Midterm Exam
	Week 8: Introduction to Thin Clients and Virtualization
	•Follow-up (20 min): Reviewing the 3D-printed SD card cases and discussing progress on the Thin Client Development project
	•Introduction to thin clients
	•Home assignment: Identify and evaluate software needed for making Thin Client v1.0, identify usability and security tasks work on the project "Thin Client Development"
	Week 9: Cloud Computing
	•Follow-up (20 min): Discussing software evaluations and identifying usability and security tasks
	•Theory: Cloud Computing, Cloud VDI, IAAS, SAAS, PAAS, Azure, AWS
	•Home assignment: Build Thin Client Alpha Version (1.0) using the current printed case and makerspace infrastructure
	Week 10: Distributed Computing
	•Follow-up (50 min): Demonstrate Thin Client Alpha Version (1.0), identify usability issues usability issues
	•Theory: Distributed Computing
	•Home assignment: Identify areas where the university can benefit from the Thin Client work on the project "Thin Client Development", Further develop Thin Client (Release Candidate)
	Week11: File Systems & Storage
	•Follow-up (60 min): Discussing potential benefits for the university and the Thin Client project, Present Release Candidate
	•Theory: File Systems & Storage: Peripherals, Disk Management, Troubleshooting, and Reliability. Cheap Storage, File / Catalog Systems, Disk and Pagination
	•Home assignment: Further develop Thin Client (Release Candidate)
	Week12: OS Memory Management / Virtual Memory
	•Follow-up (30 min): Reflection on Thin Clients prior final presentation
	•Theory: Memory Management: Basic Concepts and Execution Model, Assignment to Consecutive Sections, Logical and Physical Address Space, Pagination, Segmentation, Switching, Virtual Memory: On-Demand Pagination, Page Replacement, Drop performance
	•Home assignment: Prepare a PowerPoint presentation from Week 1 to the end, including making activities with photos, demonstration of the Thin Client, comments/issues, and recommendations for Thin Client v2.0 work on the project "Thin Client Development"
	Week 13: Final Presentation and Demonstration, Course Review
	•Presentation and demonstration of the Thin Client and group making activities
	•Evaluation and feedback from peers and instructors

	•Follow-up (20 min): Discussing the presentations, reflecting on the course, and sharing feedback •Review of course material, Q&A sessions Week 14: Final Exam
Teaching methodology	Class Instruction: 42 Hours Consultation: 28 Hours Student Workload 84 Hours Total: 154 Hours
Bibliography	**Required Bibliography:** NDG Linux Essentials course. Online through CISCO Networking Academy. Silberschatz, Galvin, 2021. Λειτουργικά συστήματα, ΙΩΝ **Recommended Bibliography:** Andrew Tanenbaum, 2018. Σύγχρονα λειτουργικά συστήματα, Κλειδάριθμος

Assessment	Exams
	     •Mid-Term Exam: 30%
	     •Final Exam: 40%
	
	Student Centered Project: 30%

Language	Greek

ΔΙΠΑΕ
CYQAA
ΦΟΡΕΑΣ ΔΙΑΣΦΑΛΙΣΗΣ ΚΑΙ ΠΙΣΤΟΠΟΙΗΣΗΣ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΗΣ ΑΝΩΤΕΡΗΣ ΕΚΠΑΙΔΕΥΣΗΣ
CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION

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Course title	Basic Principles of Technical Support II				
Course code	DCT205				
Course type	Major Requirement				
Level	Diploma (1st Cycle)				
Year / Semester	2nd/3rd				
Teacher's name	Alexandros Costa				
ECTS	6	Lectures / week	2 Periods	Laboratories / week	1 Period
Course purpose and objectives	This course is the second in a series of two courses that aim to familiarize the student with the tasks he / she will have as a computer systems support technician. The second course focuses mainly on maintenance and troubleshooting on laptops, mobiles, devices, printers. The student will also become familiar with the various procedures to follow in terms of security, organization and communication with the client. He will be trained in matters of professional skills, ethics, law and professional conduct in his field as well as in the Management of personal data applying the regulations and laws. (GDPR). This course aims to cover material similar to professional certification material (such as CISCO ITE, CompTIA A +, EUCIP IT Administrator or other) so that students have the opportunity to take exams and obtain the corresponding professional certification.				
Learning outcomes	Upon completion of the course the learner is expected to be able to: 1. Identifies key parts of laptops and performs basic settings, and maintenance and troubleshooting tasks 2. Identifies the basic parts of mobile devices and their operating systems and performs basic settings, and maintenance and troubleshooting tasks 3. Identifies the main parts of different types of printers and performs basic adjustments, maintenance and troubleshooting 4. Develops security policies and applies basic security principles to computer hardware and software 5. Demonstrates professional and communication skills and professional behavior as a professional technician. 6. Recognizes the importance of Personal Data Management in enforcing regulations and legislation (GDPR). 7. Implements procedures for identifying and dealing with problems as well as tactics for recording the procedures that followed				
Prerequisites	DCT140		Required		

Course content	**Theory** Laptops and mobile devices: Uses of laptops, personal laptops and smartphones. Parts of a laptop and comparison with a desktop PC. Laptop settings, removal and installation of laptop parts. Basic principles of mobile devices, mobile operating systems, mobile telephony standards, preventive maintenance and troubleshooting on mobile devices (iOS, Android). Basic Printer Principles: Description of modern printing technologies and the different categories of printers used by computers. Impact Printers, Inkjet Printers, Laser Printers, Solid-Ink Printers, 3D Printers. Connecting printers to PC, installing and setting up printers (local and network installation, installation and updating drivers). Preventive maintenance and troubleshooting on printers. Basic safety principles: Importance of security, security threats (virus, worm, Trojan, web security, adware, spyware, grayware, denial of service, spam, popup windows, social engineering, TCP / IP attacks, hard disk corruption), security procedures (local security policy, hardware security, data security, wireless network security), preventive maintenance and security troubleshooting. Professional / Communication Skills and Professional Behavior: Relationship between communication and troubleshooting on computers, description of communication skills and professional behavior (customer problem identification, customer behavior, management, time and stress, service contracts, business policies, information retrieval, analytical thinking, problem solving, decision making, ability negotiation, teamwork, personal impact awareness), ethical and legal aspects of working with computers, work environment and technical responsibilities. Personal data management. Regulations and Legislation (GDPR) **Practical training** Within each module the student has the opportunity to practice in the subject of that module. The topics covered in the internship as shown above include: replacement of laptop parts, installation of printer and scanner, installation of network card, installation of anti-virus software and operating system updates. Workshop 1: Familiarity with laptops and identification of its parts. Replacement of laptop parts (battery, RAM, HDD / SSD / NvMe) Workshop 2: Preventive maintenance procedures on laptops. Workshop 3: Laptop Upgrade Workshop 4: Troubleshooting on laptops (overheating, memory, cables, network access, security) Workshop 5: Familiarity with mobile devices (smart phones, tablets). Troubleshooting on mobile devices. Workshop 6: Installation and Management of Printers (Laser, Inkjet, Thermal) Workshop 7: Installation and Management of Copier Network. Workshop 8: Preventive maintenance procedures on printers and photocopiers. Workshop 9: Troubleshooting printers and copiers. Workshop 10: Execution of realistic customer communication scenarios to provide technical support. (Use of software for remote technical support [preparation, connection, troubleshooting].

Teaching methodology	Class Instruction: 42 Hours Consultation: 28 Hours Student Workload 84 Hours Total: 154 Hours
Bibliography	**Required Bibliography:** Cisco Networking Academy, 2020. IT Essentials v7, Cisco Press Cisco Networking Academy, 2020. IT Essentials Companion Guide v7, Cisco **Recommended Bibliography:** Liza Wallach Kloski, Nick Kloski, 2016. Getting Started with 3D Printing: A Hands-on Guide to the Hardware, Software, and Services Behind the New Manufacturing Revolution, Maker Media

Assessment	Exams
	     •Mid-Term Exam: 30%
	     •Final Exam: 40%
	
	 Assignments/Projects: 20%
	
	 Participation: 10%

Language	Greek

ΔΙΠΑΕ CYQAA

ΦΟΡΕΑΣ ΔΙΑΣΦΑΛΙΣΗΣ ΚΑΙ ΠΙΣΤΟΠΟΙΗΣΗΣ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΗΣ ΑΝΩΤΕΡΗΣ ΕΚΠΑΙΔΕΥΣΗΣ
CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION

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Course title	Introduction to Cloud Computing
Course code	DCT210
Course type	Major Requirement
Level	Diploma (1st Cycle)
Year / Semester	2nd/3rd
Teacher's name	George Pallaris

ECTS	6	Lectures / week	2 Periods	Laboratories / week	1 Period

Course purpose and objectives	The aim of the course is to introduce student to Cloud Computing. In addition, methodologies and technologies for the implementation, maintenance, troubleshooting of applications that run and are offered in cloud computing are studied and analyzed. The course offers the theoretical and practical background of computing and storage clouds. This course aims to cover material similar to professional certification material (such as CompTIA Cloud) so that students have the opportunity to take exams and obtain the corresponding professional certification.
Learning outcomes	Upon completion of the course the learner is expected to be able to: 1. Understand and describe the basic models of cloud computing services 2. Understand and describe the basic principles and benefits of virtualization of available devices 3. Understand and describe how virtualization works in practice 4. Present and describe the basic approaches to cloud computing storage and processing 5. Describe how networking works in the cloud 6. Develop and manage applications in the cloud computing 7. Evaluate and choose the appropriate solutions depending on the problem they are called to solve
Prerequisites	DCT115, DCT135	Required

Course content	• Introduction to cloud computing
	• Objectives, challenges, areas of application, advantages
	    o Cloud computing and storage architectures
	    o Service contracts, phases of execution of works and services
	• Models for the development, interconnection, and management of cloud infrastructure

	o Models of distinct levels, service delivery, access, and development
	o Elasticity and scaling techniques
	o Information and billing management approaches
	
	• Implementation and operation of cloud computing
	    o Application level (Software as a Service)
	    o Platform as a Service Level
	    o Infrastructure as a Service
	    o Virtualization and resource management
	
	• Implementation and operation of storage clouds
	    o Distributed data object storage systems
	    o Storage and retrieval of content-based data
	    o Perform computational tasks on stored data
	
	• Service quality approaches
	    o Categories of parameters and requirements
	    o Supervision and control mechanisms
	    o Quality assurance technologies
	
	Practical training:
	Workshop 1: Familiarity with key Cloud Service Providers. Create an Amazon Web Services account, Microsoft Azure.
	
	Workshop 2: Create, Manage and Configure a cloud storage service. (eg AWS S3)
	
	Lab 3: Cloud storage service interface. (eg AWS S3) with software to achieve cloud backup.
	
	Workshop 4: Creating and Managing Microsoft Windows Server Cloud Machine (eg EC2)
	
	Workshop 5: Creating and Managing a Ubuntu Linux Virtual Machine in the Cloud (eg EC2)
	
	Workshop 6: Creating and Managing Virtual Private Network (VPN) in the cloud.

Teaching methodology	Class Instruction: 42 Hours Consultation: 28 Hours Student Workload 84 Hours Total: 154 Hours

Bibliography	**Required Bibliography:** A. Velte, T. Velte, R. Elsenpeter, «Cloud Computing Μια Πρακτική Προσέγγιση» (μεταφρασμένο) R. Buyya, J. Broberg, A. M. Goscinski, 2021. «Cloud Computing, Principles and Paradigms» **Recommended Bibliography:** T. Erl, 2013. «Cloud Computing: Concepts, Technology & Architecture» B. Sosinsky, 2010. «Cloud Computing Bible»G. Reese, «Cloud Application Architectures: Building Applications and Infrastructure in the Cloud»

Assessment	Exams
	    •Mid-Term Exam: 30%
	    •Final Exam: 40%
	
	Assignments/Projects: 20%
	
	Participation: 10%

Language	Greek

ΔΙΠΑΕ
CYQAA
ΦΟΡΕΑΣ ΔΙΑΣΦΑΛΙΣΗΣ ΚΑΙ ΠΙΣΤΟΠΟΙΗΣΗΣ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΗΣ ΑΝΩΤΕΡΗΣ ΕΚΠΑΙΔΕΥΣΗΣ
CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION

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Course title	Information Systems Administration				
Course code	DCT215				
Course type	Major Requirement				
Level	Diploma (1st Cycle)				
Year / Semester	2nd/3rd				
Teacher's name	Themis Chistodoulou				
ECTS	6	Lectures / week	2 Periods	Laboratories / week	1 Period
Course purpose and objectives	This course teaches students how to manage the Windows environment. The Microsoft Windows Server Management Lecture teaches students how to manage Windows workstations and Windows server systems. Additionally, students learn how to install, adjust and maintain the LS. Microsoft Windows Server, how to ensure server security, how to manage the Microsoft Active Directory, implement Dynamic DNS, and how to manage the Microsoft admin console. Participants learn the differences between versions of Microsoft Windows Server. Exercises include installing and configuring Windows workstations and Windows Server servers, creating users and groups, and setting security permissions on folders, files, and printers through Active Directory policies.				
Learning outcomes	Upon completion of the course the learner is expected to be able to: 1. Install and manage a server 2. Introduction to new technologies, server architecture and their compatibility 3. Develop an approach to server analysis and management and security policies 4. Understand and be able to troubleshoot servers and restore them 5. Ensure server security, install, and manage Active Directory & DNS 6. Install and manage services such as DHCP and GPO, IIS 7. Use network resources and files and manage shared network devices.				
Prerequisites	DCT135, DCT115	Required			
Course content	Theoretical part Introduction to Microsoft Windows Server Server OS: Server Architecture, Workgroups, Windows Compatibility, Active Directory Concepts, Windows Server Domains & Trees, Server Installation, System Specifications, Hardware Compatibility List, Installing on a New System, Upgrading Existing Operating Systems, Ways Licensing, Walkthrough Driver Installation, Server Configuration Wizard. Graphical user interface: Desktop appearance and feel, Boot menu, taskbar features, Control panel basics, Hardware settings, Advanced power				

management, USB device support, Windows management, Overview Microsoft Management Console, Hardware Troubleshooting, Exam Logging Microsoft Management Console: Import, use add-ons (Snap-Ins), computer management, disk management, system services management, device management, pre-configured consoles, custom consoles, workbooks, User & Group management, local user and group creation, user rights setup, policy accounts setup, user profile management, roaming profiles, logon scripts, network resource monitoring, control events.

Windows Server Directory Services: TCP / IP Configuration, Dynamic Host Configuration Protocol (DHCP), Domain Name System (DNS), Dynamic DNS Overview, Active Directory implementation, Mixed versus native mode relationships of trust

Disaster Recovery Plans: RAID, Mirror Image, Ratio Sets, Attachment Points, Windows Server Backup Utility, Safe Mode, Advanced System Restore, Command Console Recovery, Registry, Overview, Registry Exam / Restore, failure recovery.

Client Consistency: MS Windows, Remote Management Server, Terminal Server, File Systems, Disk Partitioning, Understanding File Systems, Basic & Dynamic Memory, Setting Quota Disks, Reducing Disk Capacity

File System Security: Overview, Security Licenses, Granting permissions to users and groups, Folder and file encryption, Windows Server Networking, networking concepts, network data configuration, network protocols

Security levels: Sharing resources across the network, setting security permissions, printing, terminology, installing local printers, managing printers

Practical part
Students will work in groups of 2-3 people under the supervision of the teacher. The laboratory part of the course is divided into sections. Each module will cover a series of sessions and will deal with specific tasks related to the material of the theoretical part. Students will exchange roles taking on different tasks as described in each section. The laboratory modules will be divided into workshops that will be performed each week.

Lab 1 (Windows): Install a recent MS Windows Server and Windows 10 or 11 virtual server.
Lab 2 (Windows): performance tuning and optimization of Windows Server machines. Learn how to monitor the performance of a machine through the MMC multimedia command and use performance meters, objects and presences. Diagnosing and repairing bottlenecks (in relation to processor, hard disk, memory or network resources)
Lab 3: Installation and configuration of the Active Directory Services of a Domain Controller, Active Directory Management (Add Users and Computers).
Lab 4: Join Windows 10/11 to an Active Directory
Lab 5: Group Policy Introduction and Regulation (GPO)
Lab Exam #1: Lab 1-5 Assessment
Lab 6: Set up and configure a file server.
Lab 7: Dynamic Host Configuration (DHCP) Setup and administration
Lab 8: Install and configure IIS web server

	Lab 9: Install and configure Windows Server Backup. Lab Exam #2: Lab 6-9 Assessment
Teaching methodology	Class Instruction: 42 Hours Consultation: 28 Hours Student Workload 84 Hours Total: 154 Hours
Bibliography	**Required Bibliography:** Windows Server 2019 administration fundamentals : a beginner's guide to managing and administering Windows Server environments / Bekim Dauti. by Dauti, Bekim. Mcsa windows server complete study guide : exams 70-740, 70-741, 70-742 / William Panek.
Assessment	LAB Exam #1: 20% LAB Exam #2: 20% Final Exam: 50% Participation: 10%
Language	Greek

Course title	Advanced English
Course code	ENH102
Course type	Major Requirement
Level	Diploma (1st Cycle)
Year / Semester	2nd/3rd
Teacher's name	Stournara Vasiliki

ECTS	6	Lectures / week	1	Laboratories / week	

Course purpose and objectives	This course is designed for intermediate and advanced level students. Through a variety of topics of general interest and exposure to more advanced language structures, the course aims to expand the use of English courses. This involves practicing and developing all four skills. To facilitate effective learning, a variety of methodologies are adopted, including intensive learning techniques.
Learning outcomes	Upon completion of the course the learner is expected to possess: • Ability to read and write in English, with emphasis on comprehension and written expression. Essay writing skills, paragraph structure, argumentation, narration, description and thought writing skills. • advanced listening / comprehension skills as well as understanding language functions at an advanced stage. • general speaking and self-expression skills, generalization of expression, clarification of a point, expression of agreement and disagreement, provoking discussion and criticism. • Independent learning and further independent research skills, in addition to the interdepartmental Class Instruction.

Prerequisites	ENH101 or equivalent	Required	

Course content	Through a variety of thought-provoking and motivating learning materials, students develop skills designed to develop their ability to read authentic texts, understand extensive oral speech, develop their written speech, and participate actively in discussions. Students are encouraged to develop study skills through a variety of learning strategies. Extensive reading is also introduced through literary texts to understand and appreciate the complexity of language. Specifically, emphasis is placed on the analysis of short novels (language, thematic content, style, characterization, etc.) Writing Skills: Through a logical writing process, students move on to more complex forms of writing. Emphasis is placed on the difference between formal and informal writing. Detailed coverage is provided in Advanced Level of

	various types of writing. Such types include: narration, theme development, thought development and argumentation. Listening skills: Students develop listening skills through the use of authentic audio material that they may encounter in their lifetime. Some of the skills include: predictive, intensive and extended listening. Reading skills: Through a variety of advanced authentic reading texts, students develop comprehension as well as their vocabulary. Skills such as fast reading, scanning and interpolation are developed and enhanced. Grammar: Advanced grammatical structures are covered such as: tenses, indirect speech, referential sentences, hypothetical tenses, forms of desire, exclusive verbs, adverbs, comparative degree, indefinite, gerunds, prepositions, phrasal verbs, passive voice, general voice, connecting words, connecting words and inversion. Recent developments and current issues concerning the subject of the course.
Teaching methodology	Class Instruction: 42 Hours Consultation: 28 Hours Student Workload 84 Hours Total: 154 Hours
Bibliography	**Required Bibliography:** McCarthy, M (2015) Viewpoint level 2: Student's book. Cambridge McCarthy, M (2015) Viewpoint level 2: workbook. Cambridge **Recommended Bibliography:** Estera, Santiago, "INFOTECH-ENGLISH FOR COMPUTER USERS", CUP, 2008. Clare, A. (2006). Total English: Intermediate : Students' Book and Workbook. Essex: Pearson Longman
Assessment	Exams •Final Exam: 50% Assignments: 50%
Language	English

Course title	Networks and Communications II			
Course code	DCT220			
Course type	Major Requirement			
Level	Diploma (1st Cycle)			
Year / Semester	2nd/4th			
Teacher's name	Themis Christodoulou			
ECTS	6	Lectures / week	2 Periods	Laboratories / week	1 Period
Course purpose and objectives	This course is the second part of a course aimed at familiarizing students with modern communications networks and networks. Students will be engaged in tasks related to the recognition of technology that should work but also in a more way so that there are the expected results of each technology.			
Learning outcomes	Upon completion of the course the learner is expected to be able to: 1. uses the basic services of the various types of Local Area Networks, to identify the components, features, standards and special network equipment of Local Area Networks. 2. install local network equipment and the operating system and make the basic settings and basic management actions of a Local Network. 3. can diagnose and deal with the basic problems that occur in a Local Area Network. 4. proposes alternative networking proposals in relation to the available means, topologies, access communication protocols, etc. 5. install a peer-to-peer network and install-uninstall new users or user groups on an existing network. 6. recognizes the architecture of the wide area networks and the special equipment used by the wide area networks and understands its operation. 7. connects and navigates the Internet and other known networks of a wide area, such as the under-established Pan-Hellenic educational network EDUnet. 8.use the basic Internet services and be able to set up and operate a basic Internet service delivery service station.			
Prerequisites	DCT135	Required		
Course content	Local Area Networks (LAN) and VLANs: • LAN access methods • Systems management and common issues • LAN standardizations and rules			

- Selection criteria for LANs based on interconnection units and transmission means
- Introduction to VLANs and their configuration

Routers and Routing:
- Network routers, their operation, and configuration
- Router simulators, such as Cisco Packet Tracer, Router Simulators/Emulators
- Router security and best practices

High-Performance Networks:
- Basic types, components, standards, and equipment
- Access methods and architecture
- Specialized equipment and its operation
- Historical development of high-performance LAN technology
- Standardizations attributed to high-performance LANs

Intranets, Internet Access, and Telecommunication Networks:
- Intranets, their operation, and services offered
- Access technologies and methods for the Internet
- Transmission of information over the Internet
- Introduction to telecommunication networks, including 4G and 5G technologies

Practical Training:

Workshop A: Network (LAN/VLAN) design software and diagrams, such as Edraw Network Diagram.

Workshops B - Router Simulators Workshop: Comprehensive Exploration and Configuration

Objective: This extended workshop aims to provide students with in-depth, hands-on experience using router simulators, with a focus on understanding router configuration, advanced networking concepts, troubleshooting, and network design. Students will work collaboratively, fostering a student-centered learning environment.

Materials:
- Computers with internet access
- Router simulator software (e.g., Cisco Packet Tracer or GNS3)
- Workshop handouts, including step-by-step guides and exercises

- A projector for demonstrations

Duration: 4 weeks (12 hours, 3 hours per week

Workshop B - Week 1/4:

1. Introduction (30 minutes)
    - Welcome and workshop objectives
    - Brief overview of router simulators and their importance in network design and troubleshooting
2. Getting Started with Router Simulators (1 hour 30 minutes)
    - Demonstration: Installing and launching the chosen router simulator
    - Hands-on activity: Students install and launch the router simulator on their computers
    - Demonstration: Navigating the simulator interface and understanding the available tools
    - Hands-on activity: Students explore the simulator interface and tools
3. Basic Router Configuration (1 hour)
    - Demonstration: Configuring a basic network topology with routers, switches, and end devices
    - Hands-on activity: Students create their own basic network topology
    - Demonstration: Configuring IP addresses, routing protocols, and default gateways
    - Hands-on activity: Students configure IP addresses, routing protocols, and default gateways for their topology

Workshop B - Week 2/4:

4. Internet Connectivity and Configuration (1 hour 30 minutes)
    - Demonstration: Configuring Internet static IP, DHCP, and port forwarding
    - Hands-on activity: Students configure Internet static IP, DHCP, and port forwarding in their network topology
    - Demonstration: Setting up DMZ and Internet access restrictions
    - Hands-on activity: Students set up DMZ and Internet access restrictions in their network topology

5. WiFi and Firewall Settings (1 hour 30 minutes)
    - Demonstration: Configuring WiFi settings, including SSID, encryption, and password
    - Hands-on activity: Students configure WiFi settings in their network topology
    - Demonstration: Implementing firewall rules and security best practices

- Hands-on activity: Students create and apply firewall rules in their network topology

Workshop B - Week 3/4:

6. Advanced Router Configuration (1 hour 30 minutes)
   - Demonstration: Configuring access control lists (ACLs) and virtual LANs (VLANs)
   - Hands-on activity: Students configure ACLs and VLANs in their network topology
   - Demonstration: Configuring advanced routing features, such as RIP and route redistribution
   - Hands-on activity: Students implement advanced routing features in their topology

7. Troubleshooting Network Issues (1 hour 30 minutes)
   - Demonstration: Identifying and troubleshooting common network issues using the router simulator
   - Hands-on activity: Students troubleshoot pre-designed network issues in the simulator
   - Group discussion: Sharing common issues and solutions encountered during the activity

Workshop B - Week 4/4:

8. Virtual Private Networks (VPNs) (1 hour 30 minutes)
- Lecture: Introduction to VPN concepts and their importance in secure communication
- Demonstration: Configuring site-to-site and remote access VPNs
- Hands-on activity: Students configure VPNs in their network topology

9. Design Challenge and Wrap-up (1 hour 30 minutes)
   - In groups, students receive a network design scenario with specific requirements and constraints
   - Students collaborate to design and configure a network topology in the router simulator that meets the given requirements
   - Each group presents their design to the class and explains their configuration choices
   - Discussion: Sharing insights, challenges, and lessons learned during the design challenge

10. Wrap-up and Reflection (1 hour)
    - Review of the workshop's key takeaways
    - Open discussion for questions, reflections, and feedback
    - Suggestions for further learning and resources related to router simulators, networking, and advanced concepts

Student Centered Project (Weight: 30%)

Title: Network Design and Implementation Project
Objective: The goal of this individual project is for students to apply the knowledge and skills acquired during the router simulators workshop to design and implement a real-life network scenario. The project will account for 30% of the students' final grade and will be spread over three weeks with a final presentation in the fourth week.

Project Scenario:

The student will act as a network consultant for a small-to-medium sized business that requires a new network infrastructure. The business operates in two office locations with a total of 60 employees, comprised of accountants, IT professionals, designers, sales representatives, secretaries, marketing specialists, and lawyers.

The company's infrastructure includes six copiers, 15 laptops, and a business smartphone for each employee. Both office locations feature cafeterias and dedicated spaces for guests, requiring separate guest WiFi access for internet connectivity. The chosen network equipment must be from the CISCO-Linksys product line. In addition, the managers of the business require secure VPN access to their computers for remote work purposes.

Each office location is equipped with two servers, specifically Windows servers, which need to be integrated into the network design. The network solution must be secure, reliable, and scalable to accommodate future growth and technological advancements.

The project aims to address the diverse needs of the employees by implementing a well-structured network design that takes into account the unique requirements of each department. The network should ensure seamless connectivity for all devices, including copiers, laptops, and smartphones, while maintaining a high level of security and data protection.

Guests should have access to a separate and secure WiFi network that provides internet access without compromising the company's internal resources. The project should also focus on creating a scalable solution to accommodate potential growth in the number of employees and devices, as well as evolving technological requirements.

The successful completion of this project will result in a comprehensive network design and implementation plan that meets the specific needs of the company while providing a secure, reliable, and scalable infrastructure to support its operations and growth

ΦΟΡΕΑΣ ΔΙΑΣΦΑΛΙΣΗΣ ΚΑΙ ΠΙΣΤΟΠΟΙΗΣΗΣ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΗΣ ΑΝΩΤΕΡΗΣ ΕΚΠΑΙΔΕΥΣΗΣ
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Week 1 Deliverable: Network Design, Equipment Selection, and Server Integration
1. Network topology design for both office locations, considering the unique requirements of each department
2. Selection of appropriate networking equipment from the CISCO-Linksys product line, including routers, switches, and wireless access points
3. Integration of Windows servers into the network design for each location

Week 2 Deliverable: Configuration, Security Implementation, and Guest WiFi Access
1. Configuration of IP addressing, routing protocols, and VLANs
2. Implementation of security features, such as firewalls, access control lists, and VPNs for remote managers
3. Configuration of WiFi settings, including separate guest WiFi access for internet connectivity in cafeterias and guest spaces
4. Ensuring seamless connectivity for all devices, including copiers, laptops, and smartphones

Week 3 Deliverable: Troubleshooting, Documentation, and Scalability Considerations
1. Troubleshooting and resolving potential network issues
2. Documentation of the network design, equipment, and configurations
3. Analysis of the network's scalability to accommodate future growth and technological advancements

Week 4: Final Presentation
1. Presentation of the network design, including the topology diagram, equipment selection, configurations, and security implementations
2. Discussion of the troubleshooting process and how potential network issues were resolved
3. Reflection on the challenges encountered during the project and lessons learned
4. Q&A session for feedback and discussion with classmates and the instructor

This project, spread over three weeks, allows students to progressively build their network design and implementation while receiving feedback on their weekly deliverables. The final presentation in the fourth week provides an opportunity for students to showcase their work, share their experiences, and learn from their peers.

Teaching methodology	Class Instruction: 42 Hours Consultation: 28 Hours Student Workload 84 Hours Total: 154 Hours
Bibliography	**Required Bibliography:** Cisco Networking Academy, 2020. Switching, Routing, and Wireless Essentials Companion Guide (CCNAv7) Kurose, J.F. 2021. Δικτύωση Υπολογιστών, 8η Έκδοση, Γκιουρδας **Recommended Bibliography:** Stallings, William. 2018. Επικοινωνίες υπολογιστών και δεδομένων. 6η εκδ. Τζιόλα Αλεξόπουλος, Αριστείδης, Λαγογιάννης, Γεώργιος. 2016. Τηλεπικοινωνίες και δίκτυα υπολογιστών: Ασύρματα συστήματα, τηλεφωνία, δίκτυα. Εκδότης: Παπασωτηρίου

Assessment	Exams
	    •Mid-Term Exam: 25%
	    •Final Exam: 35%
	
	Student Centered Project: 30%
	
	Participation: 10%

Language	Greek

ΔΙΠΑΕ
CYQAA
ΦΟΡΕΑΣ ΔΙΑΣΦΑΛΙΣΗΣ ΚΑΙ ΠΙΣΤΟΠΟΙΗΣΗΣ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΗΣ ΑΝΩΤΕΡΗΣ ΕΚΠΑΙΔΕΥΣΗΣ
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Course title	Introduction to Web Technologies				
Course code	DCT225				
Course type	Major Requirement				
Level	Diploma (1st Cycle)				
Year / Semester	2nd/4th				
Teacher's name	Andreas Polycarpou				
ECTS	6	Lectures / week	1 ½ Periods	Laboratories / week	1 ½ Periods
Course purpose and objectives	The aim of this course is to introduce students to the basic concepts of the technologies used on the Internet. This includes basic networking principles, electronic communications, iot, software, hardware, and client-server concepts. It is expected that by completing this course students will be able to describe the basic functions of the equipment and software which constitute the building blocks of the Internet. In addition, students will be introduced to CMS content management platforms (eg Wordpress). It is expected that upon completion of the course students will be able to create and manage websites based on CMS WordPress.				
Learning outcomes	Upon completion of the course the learner is expected to be able to: 1. recognizes and analyzes internet technologies 2. recognizes the modern architectural forms of network systems 3. recognizes and manages the various internet protocols as well as their uses 4. Describes how network systems can be developed to gain strategic and tactical advantages in business organizations 5. recognizes specific characteristics of Internet of Things 6. creates a simple web page using the appropriate applications				
Prerequisites	DCT110	Required			
Course content	Theoretical part Introduction to the Internet: Historical background. The World Wide Web (WWW). Standard setting bodies. Voice communication (VoIP) and data communication are also included. Additionally, standard protocols such as TCP / IP / OSI and networking types such as LAN / WAN are included. Network architectures. Types of networks. OSI Reference Model. Internet Protocol (TCP / IP) family. File transfer (FTP). E-mail (POP, SMTP). IP addresses. Subnet masks. DNS. Serial Line Internet Protocol (SLIP). Point to point protocol (PPP). Multicasting. Uniform				

	Resource Locators (URLs). Hypertext Transfer Protocol (HTTP). IP v6.
	Introduction to Internet of Things (IoT). Basic characteristics and IOT Architectures, security and privacy concernerns, services quality, energy efficiency and movement management. Microprocessors (RaspBerry Pi) and Arduino. Relays and sensors.
	Digital data transmission. Means of transport and their properties. Description of digital subscription line (DSL,FIBER,CABLE), modulator, satellite networks and cable internet connections. Wireless devices: wireless hardware and software. Description of the effects of using wireless internet and wireless LAN. Wide Area Network (WAN): 5G, lease line, chassis, VPN, and security concepts.
	Website design. Creating web pages using HTML as well as using CMS content management platforms (eg Wordpress, Joomla, Drupal). Other technologies (Ajax, JavaScript, PHP, XML, JSON), tools and applications (e-commerce, e-learning, social networking).
	Practical part
	In each course students will have the opportunity to practice on some of the most basic topics that have been taught. Workshop topics are one of the most important tasks a computer technician is likely to engage in as part of his or her duties. Students will also be involved in the construction of web pages using WordPress CMS, with the aim of introducing them to the field of web design, development and administration.
	More specifically, the laboratories will contain:
	Workshop 1: Connecting a computer to the Internet. NIC network device settings. (Dynamic IP, Static IP, DNS)
	Workshop 2: Browser settings. (Extensions, Tabs, Bookmarks, Proxy)
	Workshop 3: Create accounts and email settings in Microsoft Outlook, iOS and Android.
	Workshop 4: Creating use of Cloud Storage services (eg Google Drive, OneDrive, Drobox)
	Workshop 5: Introduction to the use of web hosting control panel software (eg cPanel).
	Workshop 6: Install XAAMP, Create a simple HTML page.
	Workshop 7: Install WordPress CMS content management system.
	Workshop 8: Creating a website using WordPress CMS.
	Workshop 9: Managing WordPress Website (Users, Themes, Pages, Posts, Plugins)
Teaching methodology	Class Instruction: 42 Hours
	Consultation: 28 Hours
	Student Workload 84 Hours
	Total: 154 Hours

Bibliography	**Required Bibliography:** Julie C. Meloni. 2021. Μάθετε HTML 5, CSS και JavaScript Όλα σε Ένα. Έκδ. 3η. Γκιούρδας Τσέλιος, Νικόλαος. Εισαγωγή στην επιστήμη του ιστού. 1η εκδ. Κλειδάριθμος. TK5105.875.I57T74 2007 David Hanes, etc., 2017. IoT Fundamentals: Networking Technologies, Protocols, and Use Cases for the Internet of Things, Cisco Press. **Recommended Bibliography:** Welling, Luke. 2017. Ανάπτυξη web εφαρμογών με PHP και MySQL. 5η εκδ. Γκιούρδας Julie C. Meloni. Μάθετε PHP, MySQL και Apache Όλα σε Ένα. Εκδ. 5η. Εκδότης: Γκιούρδας Μ. ISBN13: 9789605126551. 2014.

Assessment	Exams
	    •Mid-Term Exam: 30%
	    •Final Exam: 40%
	
	Student Centered Project & Active Participation: 30%

Language	Greek

ΦΟΡΕΑΣ ΔΙΑΣΦΑΛΙΣΗΣ ΚΑΙ ΠΙΣΤΟΠΟΙΗΣΗΣ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΗΣ ΑΝΩΤΕΡΗΣ ΕΚΠΑΙΔΕΥΣΗΣ
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Course title	Advanced Technical Support
Course code	DCT230
Course type	Major Requirement
Level	Diploma (1st Cycle)
Year / Semester	2nd/4th
Teacher's name	Alexandros Costa

ECTS	6	Lectures / week	2 Periods	Laboratories / week	1 Period
Course purpose and objectives	This course aims to familiarize the student with advanced Technical Support topics with emphasis on six axes of advanced technical support: (1) Personal computers (2) Operating systems (3) Laptops, Smartphones, Tablets (4) Printers and scanners (5) Networks (6) Security

This course aims to cover material similar to professional certification material (such as CISCO ITE, CompTIA A +, EUCIP IT Administrator or other) so that students have the opportunity to take exams and obtain the corresponding professional certification. | | | | |
Learning outcomes	Upon completion of the course the learner is expected to be able to: 1. Determine and apply in detail preventive maintenance techniques for personal computers 2. Thoroughly select an appropriate operating system based on the needs of the end user. 3. Describe in detail preventive maintenance procedures for laptops, smartphones and tablets. 4. Manage corporate photocopiers 5. Identify potential security risks and implement appropriate network-related security procedures 6. Describe in detail security requirements based on the real needs of the end users. 7. Implement the Security Policy of an organization.				
Prerequisites	DCT205	Required			
Course content	Advanced PC topics: - Differences between a technical on site, a remote technician and a laboratory technician. - Safe laboratory operating procedures and use of tools. - Troubleshooting computer peripherals and peripherals.				

- Advanced preventive maintenance techniques for PC components and how these techniques are identified and applied

Advanced operating system issues
- Professional process of selecting an appropriate operating system based on the actual needs of the end user.
- Configuration installation methods and optimization of an operating system.
- Advanced Operating System Troubleshooting Methodologies.

Advanced Topics on Laptop and electronic devices
- Wireless communication methods for laptops and laptops.
- Methodologies for selecting laptop components and laptops.
- Preventive maintenance procedures for laptops and laptops.

Advanced Topics on printers, scanners, professional photocopiers
- Potential security hazards and security procedures associated with photocopiers and scanners.
- Installation and configuration of Local and Network Printer.
- Preventive maintenance techniques for printers and scanners
- Troubleshooting printers and scanners and corporate photocopiers.

Advanced topics on networks
- Potential security risks and how network security procedures must be applied.
- Telecommunication networks (LTE, 5G) how they are implemented in a corporate environment.

Advanced security issues
- Defining security policy requirements based on customer needs.
- Selection of security elements based on customer needs.
- Procedures for implementing a customer's security plan.
- Preventive maintenance methods related to safety.
- Specialized security troubleshooting procedures

Practical training
Workshop 1: Remote technical support. MS Remote Assistant (MSRA) and Third Party Remote Support Softwares (eg TeamViewer, Anydesk).
Workshop 2: Remote technical support using Augmented Reality technologies. Technical Support Scenarios using Mobile Phone with TeamViewer AR.

	Workshop 3: Ghost Imaging. Upgrade laptop's hard drive using Acronis True Image. (HDD to SSD). Workshop 4: Troubleshooting Computer Hard Drives. Hard disk drive removal, use external storage and Recuva software for data recovery. Workshop 5: Scanning documents using photocopying. Creating a Job for Scan, connect to Operating System using SMB and FTP protocols. Scan to an email account. Workshop 6: Use of telecommunication network (eg 5G) as a backup option. Workshop 7: Define safety policies based on specific Case Studies presented by the instructor at the beginning of the workshop.
Teaching methodology	Class Instruction: 42 Hours Consultation: 28 Hours Student Workload 84 Hours Total: 154 Hours
Bibliography	**Required Bibliography:** Cisco Networking Academy, 2020. IT Essentials Companion Guide v7, Cisco Press

Assessment	Exams
	    •Mid-Term Exam: 30%
	    •Final Exam: 40%
	
	Assignments/Projects: 20%
	
	Participation: 10%

Language	Greek

Course title	Network Security				
Course code	DCT235				
Course type	Major Requirement				
Level	Diploma (1st Cycle)				
Year / Semester	2nd/4th				
Teacher's name	Koliarou Mayia				
ECTS	6	Lectures / week	2 Periods	Laboratories / week	1 Period
Course purpose and objectives	The aim of the course is to present the principles and practice in network security. Emphasis is placed on the basic principles and techniques of network security with examples of how to apply them in practice. Students will need to understand network security issues and challenges, the role of encryption, access control and intrusion detection techniques, and the latest technology. Upon completion of this course, students are expected to have developed a critical approach to network security analysis and be able to apply this approach to future network security decisions. In addition, they will develop practical skills that will include the implementation of a security protocol.				
Learning outcomes	Upon completion of the course the learner is expected to be able to: 1. understands the issues and challenges in network security 2. develop a critical approach to the analysis of network security and policies as well as their management 3. misunderstands the role of the encryption system, access control techniques and systems breach detection 4. describe and understand the sources of vulnerability and the use of fire belts; 5. describe and explain with examples the fundamental concepts of security and vulnerabilities of the network and systems by hackers 6. interpret, classify and explain the types of computer viruses and countermeasures 7. declare and describe concepts related to issues of authenticity, confidentiality and IP services (email and network security) 8. revoke and explain the details concerning commercial applications of network security and application security				
Prerequisites	DCT135		Required		

Course content	Theoretical part
	Preparing for information security:
	An explanation of how assets are attacked, an explanation of how assets are secured.
	Implement a secure calculation reference line:
	Introduction to the trusted calculation base, creating a secure reference line, monitoring a secure reference line, computer insurance, maintaining a secure reference line.
	Information Security through authentication and access control:
	Introduction to access control, implementation of an authentication strategy, implementation of access control strategy
	Use encryption for information security:
	Introduction to encryption, use of symmetric encryption, use of fragmentation functions, use of public key encryption.
	Use Public Key Infrastructure (PKI) for Information Security: Certificate Introduction, Public Key Infrastructure Introduction, Certificate Development and Management.
	Internet Application Security and Components:
	Internet server security, Internet protocol security configuration, security for web browsers, database security configuration, Virtual Private Networks (VPN).
	Email and instant messaging application: Email server security, email client security, instant message security.
	Directory Security for Domain Services and Domain Name Systems (DNS): Directory Services Security against common threats, DNS insurance against common threats.
	Data transmission security: Identification of threats for network devices, security application for the common data transmission system, security application for remote access, security application for wireless network traffic.
	Implementation and monitoring of perimeter network security: Introduction to perimeter networks, safeguarding of incoming and outgoing network traffic, monitoring network traffic.
	Business security management: Establishing security policies and procedures, educating users on security policies, implementing security policies for business management, resolving ethical dilemmas in securing assets.
	Maintaining Business Continuity: Preparing for Disaster Recovery, Communicating Risk Impacts, Backing Up for Security, and Troubleshooting
	Dealing with security incidents: Identifying security incidents, dealing with security incidents, investigating security incidents
	Practical part
	Workshop 1: Preparation for information security, organization of machines and installation of tools
	Workshop 2: Basic Security Management / System Vulnerability Analysis (MBSA) and MBSA Account Security
	Workshop 3: Use encryption and decryption for information security

	Workshop 4: Use and management of certificates. Installation, revocation and how to read and understand the information contained in a certificate.
	Workshops 5: Network Server Security, Protecting Customers from Active Content Email Server Security
	Workshop 6: Implementation and monitoring of the security of perimeter networks
	Workshop 7: Business Security Management - Laboratory analysis of security policies, assets and risks
	Workshop 8: Maintaining business continuity and dealing with security incidents
	Workshop 9: Set Up and Activate a Virtual Private VPN Server (eg OpenVPN)
	Workshop 10: Configuration of Virtual Private VPN Network on Microsoft Windows, Android, iOS.
Teaching methodology	Class Instruction: 42 Hours Consultation: 28 Hours Student Workload 84 Hours Total: 154 Hours
Bibliography	**Required Bibliography:** Computer and information security handbook / edited by John R. Vacca. - Third edition. - Cambridge, MA : Morgan Kaufmann Publishers, [2017] ISBN: 9780128039298; 0128039299 Ασφάλεια υπολογιστών : αρχές και πρακτικές / William Stallings, Lawrie Brown ; [μετάφραση Γιώργος Στάμου] ; [επιμέλεια κειμένου Παναγιώτης Αρκουδέας], Αθήνα : Κλειδάριθμος, 2016 Stallings, William. Κρυπτογραφία και ασφάλεια δικτύων: Αρχές και εφαρμογές. Εκδόσεις Ίων. ISBN13: 9789605080341. 2012. **Recommended Bibliography:** Cisco Networking Academy, 2020. Switching, Routing, and Wireless Essentials Labs and Study Guide (CCNAv7) The basics of hacking and penetration testing : ethical hacking and penetration testing made easy / Dr. Patrick Engebretson, David Kennedy ISBN: 9780124116443 (2013)

Assessment	Exams
	   •Mid-Term Exam: 30%
	   •Final Exam: 40%
	
	Student Centered Project & Active Participation: 30%

Language	Greek

ΔΙΠΑΕ CYQAA ΦΟΡΕΑΣ ΔΙΑΣΦΑΛΙΣΗΣ ΚΑΙ ΠΙΣΤΟΠΟΙΗΣΗΣ ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΗΣ ΑΝΩΤΕΡΗΣ ΕΚΠΑΙΔΕΥΣΗΣ
CYPRUS AGENCY OF QUALITY ASSURANCE AND ACCREDITATION IN HIGHER EDUCATION

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Course title	TCP / IP Network Analysis and Troubleshooting				
Course code	DCT240				
Course type	Major Requirement				
Level	Diploma (1st Cycle)				
Year / Semester	2nd/4th				
Teacher's name	Themis Christodoulou				
ECTS	6	Lectures / week	2 Periods	Laboratories / week	1 Period
Course purpose and objectives	The course focuses on the analysis of protocols and issues currently faced by network administrators and technicians. Initially, the emphasis was on repairing the most important web protocols. The emphasis then shifts to understanding and troubleshooting TCP / IP applications. This knowledge is enhanced by practice exercises designed to enable students to identify problems and identify solutions to them. The course includes discussions and exercises on error detection and isolation, information interconnection, data optimization techniques, response time analysis, protocol statistics, and trend forecasting.				
Learning outcomes	Upon completion of the course the learner is expected to be able to: 1. Understand the TCP / IP protocol 2. Operate packet loggers (Wireshark / NMAP) 3. Interpret recorded packets at different TCP / IP levels 4. Suggest corrective actions for the operation of the TCP / IP network at normal service levels 5. Install and administer various Servers [TCP/IP Server-Client] (Apache Webserver, SSH / Telnet Server, FTP Server, SIP Server)				
Prerequisites	DCT110	Required			
Course content	Repetition of Basic Network Principles taught in DCT110 Protocols, Encapsulation, Network Hardware, Traffic Items) Introduction to packet analysis (Packet Sniffers eg Wireshark) Cable penetration (Hubs / Switches / Port Mirroring) Introduction to Wireshark, installation, use Use captured packages (package files, package discovery, package printing, time usage, package acquisition instruction, filters) Wireshark advanced features (edge analysis, protocol hierarchy statistics, auto-naming, packet sizes) Common low level ARP / IP / TCP / UDP / ICMP protocols Common high-level DHCP / DNS / HTTP protocols				

	Basic realistic scenarios (Statistics, DNS, HTTP) Packet Analysis for Network Security (SYN Scan, ARP Cache Poisoning, Trojan Horses) Slow network speed control (TCP iterations, window size, latency, baseline for comparison) Practical training Workshop 1: Installation and use of packet recording software (Wireshark). Discovery, collection, analysis, printing of packages. Workshop 2: Analysis of DHCP packets. Workshop 3: Installing Apache Web Server HTTP and HTTPS packet analysis. Workshop 4: Analysis of IP and DNS packets. Workshop 5: Install Telnet and SSH Server. TCP packet analysis. Workshop 6: Connection to wireless networks, different security protocols WEP, WPA, WPA2. 802.11 packet analysis. Workshop 7: Analysis of NAT packets. Workshop 8: FTP Server Installer. Package Analysis. Detect differences ftp, ftps. Workshop 9: Installing SIP Server. Package Analysis
Teaching methodology	Class Instruction: 42 Hours Consultation: 28 Hours Student Workload 84 Hours Total: 154 Hours
Bibliography	**Required Bibliography:** Laura Chappell, 2019. Wireshark Workbook 1: Practice, Challenges, and Solutions (A Wireshark Solution Series Book), Chappel University. Chris Sanders, Practical Packet Analysis, No Starch Press. **Recommended Bibliography:** Website : web page, IP address, internet protocol, web server, internet, local area network / editors : Lambert M. Surhone, Miriam T. Timpledon, Susan F. Marseken (2010) ISBN: 9786130323417

Assessment	Exams
	  •Mid-Term Exam: 30%
	  •Final Exam: 40%
	
	Assignments/Projects: 20%
	
	Participation: 10%

Language	Greek

ANNEX 7

PLAGIARISM

Plagiarism is representing the work of somebody else as one's own. It includes the following:

i. Submission of another student's work as one's own.

ii. Paraphrasing or summarizing without acknowledgement of source material.

iii. Direct quoting or word copying of all or part of a work, ideas, or scholarship of another without identification or acknowledgement or reference.

iv. Submitting as one's own work purchased, borrowed or stolen research, papers, or projects.

Academic Misconduct, on the other hand, is a broader term that includes several unethical practices in academic work:

i. **Cheating**: This involves using or attempting to use unauthorized materials, information, or study aids in any academic exercise.

ii. **Fabrication**: Fabrication involves falsification or invention of any information or citation in an academic exercise.

iii. **Facilitating Academic Dishonesty**: Knowingly helping or attempting to help another to violate any rules of academic integrity.

iv. **Unauthorized Collaboration**: Sharing of work or working together on an assignment or test without explicit permission.

v. **Misrepresentation**: Misrepresentation involves providing false information to an instructor or any other university official.

CHEATING EXPANDED

Cheating is giving or receiving unauthorized help for unfair advantage before, during, or after examinations, tests, presentations or other assessments, such as:

i. Collaboration beforehand if it is specifically forbidden by the instructor

ii. Verbal collaboration during the examination, unless specifically allowed by the instructor;

iii. The use of notes, books, or other written aids during the examination, unless specifically allowed by the instructor;

iv. The use of electronic devices and mobile telephony to store, transmit or photograph information to or from an external source;

v. The use of codes or signals to communicate with other students in the examination room;

vi. Looking upon another student's papers and / or allowing another student to look upon one's own papers during the examination period;

vii. Passing on any examination information to students who have not yet taken the examination;

viii. Falsifying exam identification by arranging with another student to take an examination in their place or in one's own place;

ix. Pretending to take the exam but not submitting the paper, and later claiming that the instructor lost it.

14. Research activities of the teaching staff involved in the programme and synergies between research and teaching

SEE (ANNEX 3) Page 156-178

ANNEX 8

Cyprus College

Limassol Campus

MINUTES
Research Committee
Minutes taken on 03 April 2023

Decision Number: 2023/03

Participant:
Dr. Marios Theofilou
Kyriakos Pallaris
George Pallaris
Maria Panagiotou
Panikos Kanakis
Korina Theodorou

The meeting started at 15:00- Ended 17:00

Regarding the suggestions that were made by the External Evaluation Committee (EEC) for the Computer and Network Technician Diploma, the Research Committee continued with the following actions:

Matters arising:
The Research Committee members reviewed and discussed about:
1. The importance of connecting students to their relevant industries.
2. The improvement of teaching and learning processes.

Decision of the research committee:
The Research Committee members approved the following:
1. Introduce Experiential Learning as new research method that would help academics improve their teaching methods, help students with the learning processes and simultaneously provide data which academics could use to proceed with their research and then continue with a publication.
2. Promote the use of pre-assessment and post-assessment tools to measure the effectiveness of Experiential Learning Methodologies.
3. Integrate in the program an optional course through which students will experience a type of internship/placement and they will have the opportunity to bring new ideas to the College by providing feedback from the industry's trends. This course could also be used as a reference for experiential learning for students and become a source of research for academics.

George Pallaris
Campus Director

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ANNEX 9

DCT110 – Introduction to Networks

Learning Experience

Table of Contents

Previous Course Outline (Pre-Making)

ΜΑΘΗΜΑ:	DCT110 – Introduction to Networks	ΤΕΤΡΑΜΗΝΟ:	

ΣΥΝΑΝΤΗΣΗ ΕΒΔΟΜΑΔΑ	ΘΕΜΑ	ΜΑΘΗΣΙΑΚΑ ΑΠΟΤΕΛΕΣΜΑΤΑ	ΦΟΡΤΟΣ ΕΡΓΑΣΙΑΣ ΦΟΙΤΗΤΗ			Αξιολόγηση 100 %
			Ώρες Διδασκαλίας	Υπολ. ώρες μελέτης	Πραγμ. ώρες μελέτης	
1	Εισαγωγή στα Δίκτυα Επικοινωνίας	1,5	3	9		
2 -3	Εισαγωγή στα Δίκτυα Επικοινωνίας (Συνέχεια) Δικτυακά Πρότυπα (OSI) -Το Φυσικό Επίπεδο (Physical Layer) Συσκευές Δικτύωσης	1,2,5	6	9		
4	Το επίπεδο σύνδεσης Δεδομένων (Data Link Layer) , Διευθυνσιοδότηση IP & Δομημένη καλωδίωση	2,3,4,5	3	9		
5-6	ΕΡΓΑΣΤΗΡΙΑ Κατασκευή καλωδίων UTP με RJ-45, τερματισμός καλωδίων, punch-down, δοκιμή καλωδίου, εγκατάσταση υποδοχών τηλεπικοινωνίας, καλωδίωση πλάκας διασυνδέσεων. Κατασκευή Οπτικής Ένωσης Πτώσης και τερματισμός οπτικού καλωδίου. Ένωση (splicing) οπτικού καλωδίου.	3,4,5	6	9		
7	**Ενδιάμεση Εξέταση**		2			**30%**
8	Το επίπεδο Δικτύου (Network Layer) Το επίπεδο μεταφοράς (Transport Layer)	3	3	9		
9	Σχεδίασης τοπικού δικτύου (LAN) Αρχιτεκτονική Δικτύου FTTH	3,6	3	9		
10 -11	ΕΡΓΑΣΤΗΡΙΑ Σχεδιασμός LAN / Wifi με δομημένη καλωδίωση. Σχεδιασμός FTTH δικτύου (Οπτική ένωση- οπτικός κατανεμητής)	3,4,6	6	9		
12	Το επίπεδο εφαρμογών (Application Layer)	3,4,6	3	9		
13-14	**Διακοπές Χριστουγέννων**					
15	Το επίπεδο εφαρμογών (Application Layer) (Εφαρμογές)	3,4,6	3	9		
16-17	**Τελικές Εξετάσεις**		2,5			**40%**
Εργασίες						**20%**
Συμμετοχή/ Παρακολούθηση						**10%**
ΣΥΝΟΛΟ						**100%**

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New Course Outline (Making Inclusive)

ΜΑΘΗΜΑ:	DCT110 – Introduction to Networks	ΤΕΤΡΑΜΗ ΝΟ:				
ΣΥΝΑΝΤΗΣΗ ΕΒΔΟΜΑΔΑ	**ΘΕΜΑ**	**ΜΑΘΗΣΙΑΚΑ ΑΠΟΤΕΛΕΣΜΑΤΑ**	**ΦΟΡΤΟΣ ΕΡΓΑΣΙΑΣ ΦΟΙΤΗΤΗ**			**Αξιολόγηση 100 %**
			Ώρες Διδασκαλίας	Υπολ. ώρες μελέτης	Πραγμ. ώρες μελέτης	
1	**Εισαγωγή στη δικτύωση (Θεωρία)** - Τι είναι ένα δίκτυο, η έννοια της δικτύωσης, χρησιμότητά της - Τύποι δικτύων (LAN/WAN) - Διάταξη δικτύου και τοπολογίες **Making** - Εισαγωγή στο Makerspace, τρισδιάστατη εκτύπωση και έντυπο συγκατάθεσης - Δημιουργία ομάδας και εγγραφή στην πλατφόρμα Makerspace LMS	1,5	3	9		
2	**Βασικά μέσα και συσκευές δικτύου (Θεωρία)** - Καλωδίωση, κάρτες διασύνδεσης δικτύου, αναμεταδότες, κόμβοι, γέφυρες, δρομολογητές, ασύρματη δικτύωση **Making** - Κατ' οίκον εργασία: Εισαγωγή στα βασικά της τρισδιάστατης εκτύπωσης, τρισδιάστατη εκτύπωση απλού μοντέλου και απογυμνωτές καλωδίων	1,2,5	6	9		
3	**Αρχιτεκτονικές δικτύων (Θεωρία)** - Μέθοδοι πρόσβασης, μετάδοση δεδομένων (πακέτα), Ethernet, Token ring, FIBER **Making** - Κατ' οίκον εργασία: Σχεδιασμός και τρισδιάστατη εκτύπωση μαγνητών δικτύου, καταιγισμός ιδεών για ένα παιχνίδι με χρήση μαγνητών δικτύου					
4	**Λειτουργικά συστήματα δικτύου και δομημένη καλωδίωση (Θεωρία)** - Εισαγωγή στα λειτουργικά συστήματα δικτύου - στοιχεία λογισμικού, Windows Server, Linux/Unix - Δομημένη καλωδίωση: καλώδια δικτύου και βύσματα RJ-45, τερματισμός καλωδίων - punch down, διαδρομές καλωδίων **Making** - Εργαστήριο κατασκευής καλωδίων UTP/STP με RJ-45	2,3,4,5	3	9		
5	**Πρότυπα δικτύωσης και διευθύνσεις IP (Θεωρία)** - Εισαγωγή στα πρότυπα δικτύωσης: IEEE 802.X. - Διευθυνσιοδότηση IP: Εισαγωγή στις διευθύνσεις IP, τύποι διευθύνσεων IP, μάσκες υποδικτύου, διευθυνσιοδότηση IP	3,4,5	6	9		
6	**Σχεδιασμός και εγκατάσταση δικτύου (Θεωρία)** - Απογραφή του υπάρχοντος δικτύου, δημιουργία χάρτη, δομημένη καλωδίωση - Εγκατάσταση ασύρματων συσκευών, επιλογή συσκευών, FTTH (Fiber to The Home) **Making (Problem-Based)** - Εργαστήριο για το σχεδιασμό LAN/WIFI με δομημένη καλωδίωση, δημιουργία καλωδίου VGA σε Ethernet και επίλυση προβλήματος για τη σύνδεση ενός υπολογιστή με μια τηλεόραση χρησιμοποιώντας εναλλακτικές μεθόδους. (Μεθοδολογία Problem-Based Learning (PBL).					
7	**Ενδιάμεση εξέταση**		2			**30%**
8	**Making – Project-Based** Εισαγωγή στο μαθητοκεντρικό έργο - Παιχνίδι παζλ γνώσεων "Εισαγωγή στα δίκτυα" - Καταιγισμός ιδεών και αρχικός σχεδιασμός **Making** - Κατ' οίκον εργασία: Σχεδιασμός του παιχνιδιού και δημιουργία τρισδιάστατων μοντέλων, τρισδιάστατη	3	3	9		

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	εκτύπωση των εξαρτημάτων του παιχνιδιού και συναρμολόγηση των μαγνητών				
9	**Ανασκόπηση μέσων και συσκευών δικτύου (Θεωρία)** - Επανάληψη και συζήτηση των βασικών μέσων και συσκευών δικτύου **Making** - Κατ' οίκον εργασία: Ανάπτυξη κανόνων και οδηγιών παιχνιδιού, δοκιμή του παιχνιδιού και βελτίωση του σχεδιασμού	3,6	3	9	
10	**Αρχιτεκτονικές δικτύων και πρωτόκολλα Ανασκόπηση (Θεωρία)** - Επανάληψη και συζήτηση των αρχιτεκτονικών και πρωτοκόλλων δικτύων	3,4,6	6	9	
11	**Λειτουργικά συστήματα δικτύου και ασφάλεια (Θεωρία)** - Ανασκόπηση των λειτουργικών συστημάτων δικτύου - Εισαγωγή στις αρχές και τις βέλτιστες πρακτικές ασφάλειας δικτύων				
12	**Πρότυπα δικτύωσης και διευθύνσεις IP Αναθεώρηση (Θεωρία)** - Ανασκόπηση των προτύπων δικτύωσης και της διευθυνσιοδότησης IP **Making** - Κατ' οίκον εργασία: Προετοιμασία για την τελική παρουσίαση, εξάσκηση της παρουσίασης και τελειοποίηση της παράδοσης	3,4,6	3	9	
13-14	**Διακοπές Χριστουγέννων**				
15	**Making (Project Final Presentation)** Τελική παρουσίαση του μαθητοκεντρικού έργου - Τελική παρουσίαση του παιχνιδιού παζλ γνώσεων "Εισαγωγή στα δίκτυα" - Αξιολόγηση και ανατροφοδότηση από τους συμμαθητές και τους διδάσκοντες **Επανάληψη (Θεωρία)**				
16-17	Τελικές Εξετάσεις		2,5		40%
Εργασίες					20%
Συμμετοχή/ Παρακολούθηση					10%
ΣΥΝΟΛΟ					100%

Syllabus Learning Experience: Introduction to Networks

Course Purpose and Objectives: This course aims to introduce students to networking technologies and their application in order to prepare them for the networking and communications courses that will follow. During the course, the student will understand the basic concepts of networking and will become familiar with the various media, devices, architectures, and protocols. Finally, students will practice constructing cables and designing and installing local networks while incorporating makerspace activities for hands-on learning experiences.

Learning Outcomes: Upon completion of the course, the learner is expected to be able to:

1. Describe concepts related to data transmission, communication protocols, and networking media.

2. Identify the primary topologies, protocols, and types of networks and determine which of them would be most appropriate for a proposed network.

3. Describe basic communication protocols, such as OSI and TCP/IP.

4. Distinguish between local area networks (LANs) and wide area networks (WANs) and identify the elements used to extend a LAN to a WAN.

5. Recall multiplexing techniques and their applications, and apply practical techniques for building network cables and connecting computers to a network.

Course Content:

Theoretical Part:

1. Introduction: What is a network, the concept of networking, utility. Network types (LAN/WAN). Network arrangement, topologies.

2. Basic network media and devices: Wiring, network interface cards, transponders, nodes, bridges, routers, wireless networking.

3. Network Architectures: Access methods, data transmission (packets), Ethernet, Token ring, FIBER

4. Network operating systems: Introduction - software components, Windows/Unix

5. Introduction to Networking Standards: OSI Models, TCP/IP, IEEE 802.X

6. IP addressing: Introduction to IP addresses, types of IP addresses, subnet masks.

7. Network design and installation: Inventory of existing network, map creation, structured cabling, wireless device installation, device selection, FTTH (Fiber to The Home).

Student-Centered Making Project:

- Making a "Computer Networks" Trivia Puzzle Game using Makerspace Equipment and Resources e.g. 3D printing, magnets, and a small whiteboard & The theory of the course.

Practical Part (Making Activities):

1. Workshop 1: Installation of network devices (network cards, routers, conveyors) and an introduction to 3D printing and makerspaces.

2. Workshop 2: Structured Wiring - Network cables and RJ-45 plugs, cable termination - punch down, cable routes, cable stands, wiring skills. Construction of UTP/STP cables with RJ-45, cable termination, punch-down, cable testing, installation of telecommunication sockets, interface board wiring. Incorporating 3D printed wire strippers and network magnets.

3. Workshop 3: Structured cabling - Create a VGA to Ethernet cable, and solving a case study on connecting a PC to a TV using alternative methods.

Throughout the course, the makerspace activities provide students with hands-on, experiential learning opportunities that align with the course objectives and foster a deeper understanding of networking concepts. By incorporating makerspace activities into the curriculum and using informal assessments to evaluate students' progress, the course effectively integrates makerspaces into computing curricula.

Assessment Methods:

- Midterm Exam: 30%

- Final Exam: 40%

- Assignments: 20%

- Participation: 10%

- Making Projects etc. are excluded from Assessment BUT feedback is provided to the students.

Instructions for the Instructor:

Before the Course Starts:

1. Review the course outline and familiarize yourself with the topics and learning objectives.

2. Gather necessary resources, including textbooks, articles, and other materials.

3. Prepare lecture slides, handouts, and other instructional materials.

4. Sign-in at the Makerspace LMS Platform and upload relevant content, such as tutorials, videos, and assignments.

5. Obtain any necessary equipment for in-class demonstrations and workshops, such as 3D printers, network devices, cables, and tools.

Important Notes:

- Encourage questions and active participation during lectures.

- Encourage students to use Makerspace LMS

- Offer additional resources and support when needed.

- Monitor students' progress and provide timely feedback on assignments.

    - Keep Instructor Diary

- Foster a collaborative learning environment, promoting peer review and teamwork.

- Continuously adapt your teaching methods to meet the needs of your students.

Course Introduction Script for Instructor(s)

[Instructor enters the classroom and greets the students]

Instructor: Good morning, everyone! Welcome to Introduction to Networking. I'm [Instructor's Name], and I'll be your instructor for this course. I'm really excited to be here with all of you, and I hope you are too.

This course aims to provide you with a strong foundation in networking technologies and their applications, preparing you for more advanced networking and communications courses in the future. We'll cover a wide range of topics, including basic concepts of networking, network media and devices, network architectures, communication protocols, IP addressing, and network design and installation.

One of the unique aspects of this course is that it combines both theory and hands-on learning, which we believe will greatly enhance your understanding of the material. Our mission for this experiential course is to not only teach you networking concepts but also to give you opportunities to apply those concepts in real-world scenarios.

During the first week, we'll be introducing you to networking basics, as well as the concept of makerspaces and 3D printing. You'll have the chance to form groups and register on our Makerspace LMS Platform, where you'll find resources and assignments throughout the course.

Throughout the semester, we'll be conducting workshops and hands-on activities to help you gain practical skills in networking. We'll also be working on a student-centered project, where you'll collaborate with your teammates to create an "Introduction to Networks" trivia puzzle game using 3D printing, magnets, and a small whiteboard. This project will not only test your understanding of the course material but also help you develop important teamwork and communication skills.

I encourage all of you to actively participate in class discussions, ask questions, and engage with your peers. We'll be fostering a collaborative learning environment that promotes peer review and group work. I'll be here to guide you, provide feedback, and help you achieve your learning goals.

So, let's get started on this exciting journey together! If you have any questions, please don't hesitate to ask.

[Instructor begins the first lecture on networking basics and topologies]

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Instructor Training Session (CPD)

1-2 Months before Academic Semester commence.

Title: Training Session for Instructors on Makerspace Tools

Objective: To familiarize instructors with the makerspace tools that will be used in the Introduction to Networking course, ensuring they are confident in guiding students through hands-on activities and workshops.

Duration: 2 hours

Materials needed:

- 3D printer (Anycubic Mega X)
- 3D printer filament
- 3D models for printing
- Ultimaker Cura software
- Computer with SD card slot or SD card reader
- Soldering iron
- VGA Male & Female Plug Socket DB15 15-Pin D-SUB
- Ethernet cables (Cat6)
- RJ-45 plugs and jacks
- Punch down tool
- Wire stripper
- Network tester

Agenda:

1. Introduction (10 minutes)
   - Welcome and overview of the training session
   - Explanation of the role of makerspace tools in the Introduction to Networking course

2. 3D Printing (30 minutes)
   - Introduction to the Anycubic Mega X 3D printer
   - Loading and unloading filament
   - Overview of Ultimaker Cura software
   - Preparing 3D models for printing

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- Loading models onto the SD card

- Hands-on practice: Instructors print a simple 3D model

3. Soldering (20 minutes)

- Safety precautions and best practices for using a soldering iron

- Basic soldering techniques

- Hands-on practice: Instructors solder VGA Male & Female Plug Socket DB15 15-Pin D-SUB

4. Ethernet Cable Construction (30 minutes)

- Overview of Cat6 Ethernet cables and RJ-45 plugs

- Cutting and stripping cables using a wire stripper

- Terminating cables with RJ-45 plugs

- Hands-on practice: Instructors create an Ethernet cable using the 568B wiring model

5. Punch Down Tool and Wiring (20 minutes)

- Introduction to the punch down tool and its use

- Wiring an RJ-45 jack using a punch down tool

- Hands-on practice: Instructors wire an RJ-45 jack

6. Network Cable Testing (10 minutes)

- Overview of the network tester and its functions

- Testing Ethernet cables for proper connections

- Hands-on practice: Instructors test the Ethernet cables they created

7. Conclusion (10 minutes)

- Recap of the training session

- Discussion of how the makerspace tools will be used in the course

- Addressing any questions or concerns

Assessment Tools

Title: Rubric for Grading the Final Artifact - "Introduction to Networks" Trivia Puzzle Game

Objective: To evaluate the quality of the final artifact created by each team for the student-centered project. This rubric provides criteria for assessing the game design, 3D printed components, and overall presentation.

Criteria	Excellent (4)	Good (3)	Fair (2)	Poor (1)
Game Design	Creative, engaging, and well-thought-out game design	Good game design with some creative elements	Basic game design with limited creativity	Incomplete or poorly designed game
Relevance to Course	Game strongly demonstrates understanding of course material	Game demonstrates some understanding of course material	Game demonstrates limited understanding of course material	Game does not demonstrate understanding of course material
3D Printed Components	High-quality 3D printed components with attention to detail	Good quality 3D printed components with some attention to detail	Fair quality 3D printed components with limited attention to detail	Poor quality or incomplete 3D printed components
Magnet Integration	Magnets are well-integrated and functional in the game	Magnets are mostly integrated and functional in the game	Magnets are somewhat integrated and functional in the game	Magnets are not integrated or functional in the game
Clarity of Instructions	Clear, concise, and easy-to-understand instructions	Mostly clear instructions with some room for improvement	Instructions are somewhat unclear or incomplete	Instructions are unclear or missing
Presentation	Well-organized and engaging presentation; team members demonstrate strong understanding of the project	Good presentation; team members demonstrate some understanding of the project	Fair presentation; team members demonstrate limited understanding of the project	Poor or incomplete presentation; team members demonstrate little or no understanding of the project

To calculate the final score for the artifact, simply add up the scores for each criterion. The highest possible score is 24 points.

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Insightful Snapshots from Fall 2021 & Fall 2022 Experimental Courses
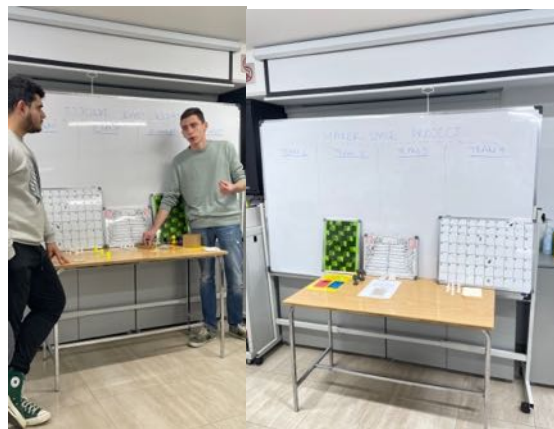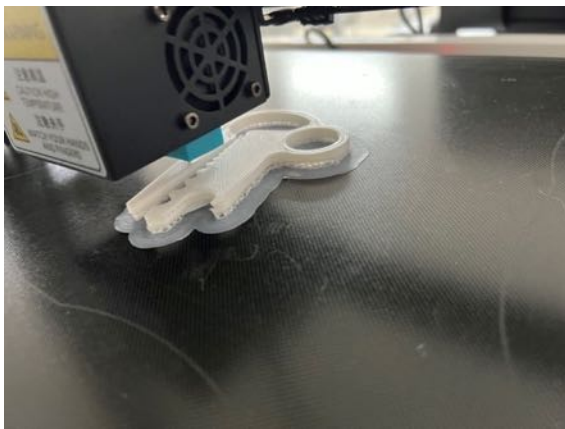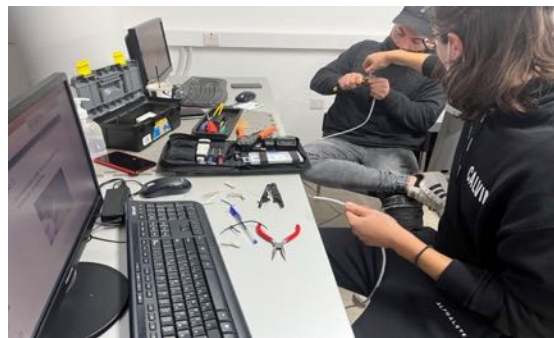
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DCT200 – Operating Systems II

Learning Experience

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Previous Course Outline (Pre-Making)

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ΣΥΝΑΝΤΗΣΗ / ΕΒΔΟΜΑΔΑ	**ΘΕΜΑ**		**ΜΑΘΗΣΙΑΚΑ ΑΠΟΤΕΛΕΣΜΑΤΑ**	**ΦΟΡΤΟΣ ΕΡΓΑΣΙΑΣ ΦΟΙΤΗΤΗ**			**Αξιολό γηση*1 100 %**
				Ώρες Διδασκ αλίας	**Υπολ. ώρες μελέτης**	**Πραγμ. ώρες μελέτης**	
1	**Εισαγωγή στα Λειτουργικά Συστήματα II** - Θεωρία: Λειτουργικά Συστήματα 1		1	3	9		
2-3	**Εικονικές μηχανές και εγκατάσταση Linux (VirtualBox)** Δομές Λειτουργικών Συστημάτων Προστασία και ασφάλεια Linux Εντολές Linux		1,2	6	18		
4-5	Linux Συνέχεια Ubuntu		3,4,5	3	18		
6-7	**ΕΡΓΑΣΤΗΡΙΑ** 1. Εγκατάσταση Linux (π.χ. Ubuntu) 2. Γραφική διαχείριση Linux 3. Διαχείριση μέσω κονσόλας Linux 4. Διαχείριση μέσω batch files Linux		1,2,3,4,5,6	6	18		
8	Χρονοπρογραμματις Νήματα Κατανεμημένη Πληροφορική Λειτουργικά Συστήματα σε Σύννεφο "Cloud"		2,3,8	3	9		
9	**ΕΝΔΙΑΜΕΣΗ ΕΞΕΤΑΣΗ**			2			30%
10-12	**ΕΡΓΑΣΤΗΡΙΑ** 1. Εγκατάσταση Εικονικής Μηχανής / Εγκατάσταση Πρόσφατου Λειτουργικού Συστήματος Linux / Κατασκευή Partition 2. Ασφάλιση Linux – Αρχεία, Λογαριασμοί Χρηστών, Δίκτυο 3. Αντιμετώπιση Προβλημάτων Linux 4. Remote Assistance MS Windows MSRA 5. RDP MS Windows		1,2,3,4,5,6,7,8	6	18		
13-14	**ΔΙΑΚΟΠΕΣ ΧΡΙΣΤΟΥΓΕΝΝΩΝ**						
15	Διαχείριση μνήμης – Κύρια και Εικονική μνήμη Διαχείριση χώρου μόνιμης αποθήκευσης Επανάληψη		2,3,8	3	9		
16-17	**ΤΕΛΙΚΕΣ ΕΞΕΤΑΣΕΙΣ**			2,5			40%
Εργασίες							20%
Συμμετοχή							10%
Σύνολο							100%

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New Course Outline Outline (Making Inclusive)

ΜΑΘΗΜΑ:	DCT200 – Operating Systems II		ΤΕΤΡΑΜΗΝΟ:					
ΣΥΝΑΝΤΗΣΗ / ΕΒΔΟΜΑΔΑ	**ΘΕΜΑ**		**ΜΑΘΗΣΙΑΚΑ ΑΠΟΤΕΛΕΣΜΑΤΑ**	**ΦΟΡΤΟΣ ΕΡΓΑΣΙΑΣ ΦΟΙΤΗΤΗ**				**Αξιολό γηση**[1] **100 %**
				Ώρες Διδασκ αλίας	**Υπολ. ώρες μελέτ**	**Πρα γμ. ώρε**		
1	**Εισαγωγή στα Λειτουργικά Συστήματα II (Θεωρία)** - Θεωρία: Λειτουργικά Συστήματα 1 - Θεωρία: Εισαγωγή στα λειτουργικά συστήματα Linux και τα χαρακτηριστικά τους **Making** - Εισαγωγή στο Makerspace, την τρισδιάστατη εκτύπωση και το Raspberry Pi - Δημιουργία ομάδας και εγγραφή στην πλατφόρμα Makerspace LMS - Κατ' οίκον εργασία: Τρισδιάστατη εκτύπωση του avatar της ομάδας		1	3	9			
2	**Εικονικές μηχανές και εγκατάσταση Linux (Θεωρία/Πρακτική)** - Θεωρία: Εισαγωγή στο λειτουργικό σύστημα Ubuntu, μικροεπεξεργαστές και Raspberry Pi - Εργαστήριο 1α: Εγκατάσταση Linux (π.χ. Ubuntu) με τη χρήση του Virtual Box - Εργαστήριο 1β: Εισαγωγή στη γραφική διαχείριση του Ubuntu Linux **Making** - Κατ' οίκον εργασία: Εύρεση, λήψη και 3D εκτύπωση θήκης για Raspberry Pi4. ("Thin Client Development Project")		1,2	6	1 8			
3	**Γραφική διαχείριση του Linux και διαχείριση μέσω κονσόλας (Θεωρία/Πρακτική)** - Εργαστήριο 2: Διαχείριση γραμμής εντολών μέσω της κονσόλας του Linux **Making** - Ανασκόπηση και συζήτηση της εργασίας για το σπίτι της προηγούμενης εβδομάδας (20 λεπτά) - Κατ' οίκον εργασία: Λήψη και εγκατάσταση του λειτουργικού συστήματος Ubuntu στο Raspberry Pi εργασία στο έργο "Thin Client Development"							
4	**Διαδικασίες/διαδρομές του λειτουργικού συστήματος, σενάρια Bash και πρωτόκολλο SSH (Θεωρία)** - Θεωρία: Διαδικασίες και απειλές του λειτουργικού συστήματος - Εργαστήριο 3α: Διαχείριση μέσω αρχείων δέσμης Linux (Bash Scripts) - Εργαστήριο 3β: Εγκατάσταση του διακομιστή του διαδραστικού πρωτοκόλλου SSH (OpenSSH) - Εργαστήριο 3γ: Διαχείριση εξ αποστάσεως μέσω του πρωτοκόλλου SSH **Making** - Ανασκόπηση και συζήτηση της εργασίας για το σπίτι της προηγούμενης εβδομάδας (20 λεπτά)	3,4,5		3	1 8			
5	**Linux Security and Troubleshooting (Θεωρία)** - Θεωρία: Linux Security - Files, User Accounts, Network (IPTABLES) - Αντιμετώπιση προβλημάτων Linux **Making** - Κατ' οίκον εργασία: Συγχρονισμός δεδομένων μεταξύ MS Windows και Raspberry Pi χρησιμοποιώντας το Always Sync, εγκατάσταση του Apache Web Server στο Raspberry Pi Ubuntu και απομακρυσμένη πρόσβαση στο Raspberry Pi χρησιμοποιώντας ένα smartphone "Thin Client Development project"							

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6	**Χρονοπρογραμματισμός λειτουργικού συστήματος (Θεωρία)** **Making** - Ανασκόποπηση (20 λεπτά): Συζήτηση εμπειριών σχετικά με την ασφάλεια του Linux, την αντιμετώπιση προβλημάτων και τις εργασίες της κατ' οίκον εργασίας - Κατ' οίκον εργασία: Τρισδιάστατη εκτύπωση θήκης SD, εργασία μέρος του έργου "Thin Client Development"	1,2,3,4,5,6	6	1 8	
7	**Ενδιάμεση εξέταση**				30%
8	**Εισαγωγή στους Thin Clients και την εικονικοποίηση** Ανασκόποπηση των SD που εκτυπώθηκαν με τρισδιάστατη εκτύπωση και συζήτηση της προόδου του έργου "Ανάπτυξη Thin Client. - Εισαγωγή στους Thin Clients **Making** - Ανασκόποπηση (20 λεπτά): και συζήτηση της εργασίας για το σπίτι της προηγούμενης εβδομάδας - Κατ' οίκον εργασία: Προσδιορισμός και αξιολόγηση του λογισμικού που απαιτείται για την κατασκευή του Thin Client v1.0, προσδιορισμός των εργασιών ευχρηστίας και ασφάλειας εργασία στο έργο "Thin Client Development"	2,3,8	3	9	
9	**Υπολογιστικό νέφος (Θεωρία)** - Θεωρία: Cloud Computing, Cloud VDI, IAAS, SAAS, PAAS, Azure, AWS **Making** - Ανασκόποπηση και συζήτηση της εργασίας για το σπίτι της προηγούμενης εβδομάδας (20 λεπτά). Συζήτηση για την αξιολόγηση του λογισμικού και τον προσδιορισμό των εργασιών ευχρηστίας και ασφάλειας - Κατ' οίκον εργασία Κατασκευή Thin Client Alpha Version (1.0) χρησιμοποιώντας την τρέχουσα εκτυπωμένη θήκη και την υποδομή του makerspace	1,2,3,4,5,6,7,8	2	18	
10	**Κατανεμημένος υπολογισμός (Θεωρία)** - Θεωρία: Κατανεμημένος Υπολογισμός **Making** - Ανασκόποπηση και συζήτηση της εργασίας για το σπίτι της προηγούμενης εβδομάδας (50 λεπτά) - Επίδειξη Thin Client Alpha Version (1.0), εντοπισμός ζητημάτων ευχρηστίας ζητημάτων ευχρηστίας - Κατ' οίκον εργασία: Προσδιορισμός των τομέων στους οποίους το πανεπιστήμιο μπορεί να επωφεληθεί από την εργασία Thin Client στο έργο "Thin Client Development", Περαιτέρω ανάπτυξη Thin Client (Release Candidate)	1,2,3,4,5,6,7,8	6	1 8	
11	**Συστήματα αρχείων και αποθήκευση (Θεωρία)** - Θεωρία: Συστήματα αρχείων και αποθήκευση: Περιφερειακά, διαχείριση δίσκων, αντιμετώπιση προβλημάτων και αξιοπιστία. Φθηνή αποθήκευση, συστήματα αρχείων/καταλόγων, δίσκος και σελιδοποίηση **Making** - Ανασκόποπηση και συζήτηση της εργασίας για το σπίτι της προηγούμενης εβδομάδας (20 λεπτά). Συζήτηση πιθανών οφελών για το πανεπιστήμιο και το έργο Thin Client, Παρουσίαση της υποψήφιας έκδοσης (Release Candidate) - Αρχική ανάθεση: Περαιτέρω ανάπτυξη του Thin Client (Υποψήφια έκδοση)				

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12	**Διαχείριση μνήμης λειτουργικού συστήματος / εικονική μνήμη (Θεωρία)** - Θεωρία: Διαχείριση μνήμης: Βασικές έννοιες και μοντέλο εκτέλεσης, ανάθεση σε διαδοχικά τμήματα, λογικός και φυσικός χώρος διευθύνσεων, σελιδοποίηση, τμηματοποίηση, εναλλαγή, εικονική μνήμη: Σελιδοποίηση κατ' απαίτηση, αντικατάσταση σελίδων, απόδοση πτώσης **Making** - Ανασκόποπηση και συζήτηση της εργασίας για το σπίτι της προηγούμενης εβδομάδας (20 λεπτά). Συζήτηση πιθανών οφελών για το πανεπιστήμιο και το έργο Thin Client, Παρουσίαση της υποψηφιας έκδοσης (Release Candidate) & Αναστοχασμός σχετικά με τους Thin Clients πριν από την τελική παρουσίαση - Κατ' οίκον εργασία Προετοιμασία τελικής παρουσίασης την η οποία θα περιλαμβάνει την πραγματοποίηση δραστηριοτήτων με φωτογραφίες, επίδειξη του Thin Client, σχόλια/προβλήματα και συστάσεις για την εργασία Thin Client v2.0 στο έργο "Thin Client Development"					
13-14	**ΔΙΑΚΟΠΕΣ ΧΡΙΣΤΟΥΓΕΝΝΩΝ**					
15	**(Θεωρία)** - Επανάληψη του υλικού του μαθήματος, ερωτήσεις και απαντήσεις **Making** Τελική παρουσίαση και επίδειξη, ανασκόπηση του μαθήματος - Παρουσίαση και επίδειξη του Thin Client και ομαδικές δραστηριότητες κατασκευής - Αξιολόγηση και ανατροφοδότηση από τους συμφοιτητές και τους διδάσκοντες					
16-17	**Τελική εξέταση**					40%
Εργασίες/ Συμμετοχή	**Project :** "Thin Client Development" Instructor Rubrics, Peer Assessment, Observation					30%
Σύνολο						100%

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Syllabus Learning Experience: Operating Systems II

Course Purpose and Objectives: Students will gain an in-depth knowledge of advanced operating system concepts, Linux operating system management, and the integration of makerspaces into computing curricula. The course will focus on hands-on activities, such as 3D printing and Raspberry Pi programming, to develop and make a universal operating systems thin client. Students will also learn about various computing concepts such as cloud computing, OS scheduling, and distributed computing.

Learning Outcomes: Upon completion of the course, the learner is expected to be able to:

1. Describe what an operating system is and the components of an operating system.

2. Understand advanced concepts in operating systems, such as processes, threads, scheduling, memory management, and virtual memory.

3. Describe memory management, file/disk management, and device management.

4. Assess the needs of an operating system in hardware.

5. Install a UNIX-based operating system (e.g., Linux) in a virtual machine environment.

6. Utilize management tools in graphical and console environments (Linux).

7. Troubleshoot and maintain operating systems.

8. Apply the knowledge of Linux operating systems to manage and troubleshoot real-world systems.

9. Utilize makerspace technologies, including 3D printing and Raspberry Pi, to create a functioning thin client.

10. Analyze the benefits and potential applications of the thin client within a university setting.

11. Develop collaboration, communication, critical thinking and creativity skills through collaborative project-based making activities and project presentations.

Assessment Methods:

- Midterm Exam: 30%

- Final Exam: 40%

- Thin Client Project (including development, functionality, and presentation): 30%

Instructions for the Instructor:

Before the Course Starts:

1. Course Preparation: Before the course starts, familiarize yourself with the course material, including the learning outcomes, weekly course outline, and assessment methods. Ensure that you have access to all necessary resources, such as textbooks, presentation slides, software, and hardware (e.g., 3D printers and Raspberry Pi devices).

2. Classroom Setup: Make sure the classroom is equipped with computers that have access to the required software (e.g., VirtualBox, Tinkercad, Raspberry Pi OS, etc.) and internet connectivity. Arrange for access to a makerspace with 3D printers and other necessary tools for the Thin Client project.

3. Engaging Students: Encourage students to actively participate in class discussions, workshops, and brainstorming sessions. Use real-world examples to illustrate the concepts being taught and facilitate group activities that promote collaboration and teamwork.

4. Monitoring Progress: Track each group's progress on their Thin Client project and provide guidance as needed. Regularly check-in with students during follow-up sessions to ensure they understand the concepts and are making progress on their assignments.

5. Assessing Learning: Evaluate student performance through quizzes, exams, and project-based assessments. Provide timely feedback to help students improve and succeed in the course.

6. Hands-On Activities: Guide students through hands-on activities and workshops, including installing operating systems, managing Linux environments, using 3D printing and Raspberry Pi technologies, and troubleshooting systems. Encourage students to explore and experiment while working on their projects.

7. Presentations and Demonstrations: Facilitate final presentations and demonstrations of the Thin Client project. Provide constructive feedback and encourage peer evaluation to help students learn from each other's experiences.

8. Course Review and Reflection: At the end of the course, review the material covered and address any remaining questions or concerns. Encourage students to reflect on their learning experiences and provide feedback on the course structure, content, and teaching methods.

9. Continuous Improvement: Analyze student feedback and performance to identify areas of improvement for future iterations of the course. Update the course material, structure, and teaching methods as needed to ensure a meaningful and engaging learning experience for students.

Important Notes:

- Encourage questions and active participation during lectures.

- Encourage students to use Makerspace LMS

- Offer additional resources and support when needed.

- Monitor students' progress and provide timely feedback on assignments.

  - Keep Instructor Diary

- Foster a collaborative learning environment, promoting peer review and teamwork.

- Continuously adapt your teaching methods to meet the needs of your students.

Course Introduction Script for Instructor(s)

[Instructor enters the classroom and greets the students]

Instructor: Good morning/afternoon everyone! I hope you're all excited to embark on this journey with me as we explore the fascinating world of operating systems and makerspaces. My name is [Instructor's Name], and I'll be your instructor for this course, "Operating Systems II."

[Instructor provides a brief overview of the course]

In this course, we will delve into the fundamentals of operating systems, focusing on Linux and its various components. We'll also explore the exciting world of makerspaces, 3D printing, and Raspberry Pi devices. Our primary goal is to integrate makerspace technologies into the computing curricula, providing you with practical, hands-on experience.

Throughout the semester, we'll engage in a variety of workshops and activities to help you better understand the concepts and applications of operating systems. You'll be working in groups on a Thin Client Development project, which will give you the opportunity to apply your theoretical knowledge to real-world situations.

In addition to the workshops and group project, we will cover essential theories such as OS protection and security, scheduling, threads, distributed computing, and cloud operating systems. Our learning outcomes include describing and understanding the various parts of an operating system, memory management, file and disk management, device management, and troubleshooting.

I'm looking forward to working with you all as we dive into the world of operating systems and makerspaces. Feel free to approach me with any questions or concerns you may have. Let's make this a fun and enriching learning experience for everyone!

[Instructor continues with the first lesson or icebreaker activity]

Instructor Training Session (CPD)

1-2 Months before Academic Semester commence.

Objective: To provide instructors with the necessary knowledge and skills to effectively teach the "Operating Systems II" course.

Duration: 8 hours (1-day session)

Agenda:

1. Introduction and Course Overview (1 hour)

   - Welcome and icebreaker activity

   - Review of the "Operating Systems II" course outline, syllabus, and learning objectives

   - Discussion of the course structure and expectations

2. Teaching Methodologies (1.5 hours)

   - Active learning techniques

   - Facilitating group work and collaboration

   - Balancing theory with practical workshops

   - Engaging students in makerspace activities

3. Operating Systems Concepts and Theories (2 hours)

   - In-depth review of OS protection and security, scheduling, threads, distributed computing, and cloud operating systems

   - Understanding memory management, file and disk management, and device management

   - Discussion of teaching strategies and activities for each topic

4. Lunch Break (1 hour)

5. Linux Operating System and Makerspace Technologies (1.5 hours)

   - Introduction to Linux and its components

   - Hands-on experience with Ubuntu OS installation and management

   - Overview of makerspaces, 3D printing, and Raspberry Pi devices

6. Thin Client Development Project (1 hour)

   - Introduction to the Thin Client Development project

   - Understanding the project objectives and timeline

- Strategies for facilitating group work and project management

7. Assessment and Evaluation (1 hour)

- Discussion of assessment methods, including exams, assignments, and group projects

- Strategies for providing constructive feedback to students

- Review of grading rubrics and evaluation criteria

8. Wrap-up and Q&A Session (30 minutes)

- Addressing any remaining questions or concerns

- Sharing tips and best practices for teaching the "Operating Systems II" course

- Evaluating the training session and gathering feedback for improvement

Assessment Tools

Title: Rubric for Grading the Final Artifact - "Thin Client Development"

a) Group Project Rubric (Thin Client Development)

Criteria/Points	1-5	6-10	11-15	16-20
Understanding of Project Goals	Limited understanding of the project goals	Some understanding of the project goals	Clear understanding of the project goals	Exceptional understanding of the project goals
Collaboration and Teamwork	Minimal contribution to group discussions and work	Moderate contribution to group discussions and work	Active contribution to group discussions and work	Outstanding contribution to group discussions and work
Technical Skills	Limited demonstration of technical skills	Adequate demonstration of technical skills	Strong demonstration of technical skills	Exceptional demonstration of technical skills
Problem Solving	Minimal problem-solving abilities	Moderate problem-solving abilities	Effective problem-solving abilities	Exceptional problem-solving abilities
Presentation	Poor presentation, unclear communication	Adequate presentation, some communication issues	Clear and engaging presentation	Exceptional presentation, excellent communication

b) Individual Assignment Rubric

Criteria/Points	1-5	6-10	11-15	16-20
Understanding of Concepts	Limited understanding of concepts	Some understanding of concepts	Clear understanding of concepts	Exceptional understanding of concepts
Technical Skills	Limited demonstration of technical skills	Adequate demonstration of technical skills	Strong demonstration of technical skills	Exceptional demonstration of technical skills
Creativity	Minimal creativity in assignment	Moderate creativity in assignment	High level of creativity in assignment	Exceptional creativity in assignment
Completion and Submission	Incomplete or late submission	Partially complete or barely on time submission	Complete and timely submission	Complete, timely, and well-organized submission

c) Peer Evaluation Form for Thin Client Project

Instructions: Please complete this evaluation form to assess the contributions of each of your group members, including yourself. Rate each member's performance in the following categories on a scale of 1 (lowest) to 5 (highest). Provide comments to justify your ratings. Be honest and objective in your evaluation.

Group Member Name: _____

Criteria	Rating (1-5)	Comments
Understanding of Project Goals		
Individual Contribution		
Technical Skills		
Problem Solving		
Communication and Collaboration		

Group Member Name: _____

Criteria	Rating (1-5)	Comments
Understanding of Project Goals		
Individual Contribution		
Technical Skills		
Problem Solving		
Communication and Collaboration		

Group Member Name: _____

Criteria	Rating (1-5)	Comments
Understanding of Project Goals		
Individual Contribution		
Technical Skills		
Problem Solving		
Communication and Collaboration		

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Insightful Snapshots from Fall 2021 & Fall 2022 Experiential Courses

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