Karnavas Apostolos

Digital Systems Engineer

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EDUCATION

University of West Attica, Aigaleo — *Integrated Masters*

October 2016 - September 2022

Finished my integrated masters degree at the University of West Attica, majoring in Computer Science with a focus on digital hardware and embedded systems for networking applications.

Kareas High School, Kareas - Athens

October 2013 - September 2016

UNIVERSITY RELATED PROJECTS

FPGA Cryptography system for UAV Applications — *Masters Thesis*

For my thesis I chose to develop a cryptography system using FPGA technology. The purpose of this system is to encrypt incoming telemetry and video data from a flight controller and output them to a RF transmitter.The communication between the FPGA , flight controller and RF transmitter was achieved using the UART protocol and the cryptographic algorithm that was used was the AES.

Data Logging Arduino System — *Internet of Things Lab*

For this lab a wireless sensor network for data logging applications was developed using the arduino board and a raspberry-pi. Its function was to record and transmit environmental data using the Arduino microcontroller board. The transmission of data was achieved using the NRF24L01 module. The raspberry-pi received the data and displayed them on a local web server.

EXPERIENCE

Embedded Systems Engineer, Athens National Technical University of Athens— Junior *Researcher*

November 2022 – PRESENT

Currently I am working as Junior researcher at the National Technical University of Athens on a project regarding the implementation of a testbench for satellite communication systems.

SKILLS

- C/C++ for embedded systems
- RTL coding with VHDL
- Xilinx vivado
- Arduino,STM32 programming
- UART,SPI,I2C,TWI,USB,CAN
- Digital Systems Design
- JAVA,JAVAFX
- MicroPython

LANGUAGES

- University of Michigan : Certificate of proficiency in English
- Greek - Native

HOBIES

- Dancing
- Gaming
- Reading

Hellenic Republic

UNIVERSITY OF WEST ATTICA

SCHOOL OF ENGINEERING

DEPARTMENT OF INFORMATICS AND COMPUTER ENGINEERING

UNIVERSITY OF WEST ATTICA
Campus 1

Ag. Spyridonos , Attica Aegaleo

Tel.: 210-5385312 I Email: ice@uniwa.gr I Webpage: http://ice.uniwa.gr

DIPLOMA SUPPLEMENT

The purpose of the Diploma Supplement is to provide sufficient independent data to improve the international 'transparency' and fair academic and professional recognition of qualifications (diplomas, degrees, certificates etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It is free from any value judgements, equivalence statements or suggestions about recognition. This Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO.

COUNCIL OF EUROPE
CONSEIL DE L'EUROPE

europass

United Nations Educational, Scientific and Cultural Organization

1. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

1.1	Last name(s)	KARNAVAS
1.2	First name(s)	APOSTOLOS
1.3	Father's name	EFSTATHIOS
1.4	Mother's name	ARETI
1.5	Date of birth (dd/mm/yyyy)	18/11/1998
1.6	Student identification number or code (if available)	711161050

2. INFORMATION IDENTIFYING THE QUALIFICATION

2.1	Name of qualification and (if applicable) title conferred (in original language)	Integrated Master of Informatics and Computer Engineering
2.2	Main field(s) of study for the qualification	Information and Communication Technologies and Engineering
2.3	Name and status of awarding Institution (in original language)	Panepistimio Dytikis Attikis, (University of West Attika), Public University.UNIWA has in place an Internal Quality Assurance System (IQAS)
2.4	Name and status of institution (if different from 2.3) administering studies (in original language)	As in 2.3
2.5	Language(s) of instruction/ examination	Greek

3. INFORMATION ON THE LEVEL AND DURATION OF THE QUALIFICATION

3.1 Level of the qualification: **First Cycle - EQF Level 7**

3.2 Official duration of programme in credits and/or years

300 ECTS- 5 Years- 10 semesters

3.3 Access requirements(s)

1. Success in national entrance exams upon completion of upper secondary education or
2. Success in university entrance exams only for university graduates

4. INFORMATION ON THE PROGRAMME COMPLETED AND THE RESULTS OBTAINED

4.1 Mode of study

1. Full time or 2. Part time upon request and approval as a special case

4.2 Programme learning outcomes

A graduate student of the Department of Informatics and Computer Engineering is able to:
GENERAL SKILLS

- Apply requirement analysis procedures and techniques to design applications and systems.
- Identify relevant technologies and specifications which are necessary for the architectural design of projects, applications or the improvement of existing infrastructures of information systems.
- Select the appropriate technical solutions for the development of a multitude of applications.
- Configure system hardware, software, or network components appropriately to ensure their interoperability.
- Complete hardware and software components to create new systems.
- Leverage control standards and procedures to maintain the integrity of all system operations and their reliability.
- Design data structures and construct the structure of system models according to the results of prior analysis.
- Create complete systems that respond to the operational constraints and meet their requirements.
- Follow a systematic methodology for the analysis and construction of the required components and interfaces.
- Design and implement security policies.

SPECIAL SKILLS

- Investigates and instigates any corrective actions to address any security breaches.
- Creates and executes software quality and reliability control procedures.
- Organizes and implements educational activities on general and specific IT topics.
- Designs and implements digital systems that meet specific specifications.
- Utilizes the appropriate software tools as well as the digital circuit design principles to implement embedded computing devices.
- Designs, installs, configures, modifies, controls, and maintains computer systems that meet specific operational requirements.

4.3 Programme details, individual credits gained and grades/marks obtained

No	Code	Course title	Examination Period	Course Type / Course Category	Credits ECTS	Grade
1	ICE1-1001	Mathematical Analysis I	2016 Fall	CC	5	7,0
2	ICE1-1002	Linear Algebra	2020 Fall	CC	4	7,0
3	ICE1-1003	Introduction to Computer Science	2016 Fall	CC	5	6,0
4	ICE1-1004	Computer Programming	2016 Fall	CC	6	5,0
5	ICE1-1005	Discrete Mathematics	2016 Spring	CC	5	5,0
6	ICE1-1006	Physics	2020 Fall	CC	5	5,0
7	ICE1-2001	Algorithms Design & Analysis	2016 Fall	CC	5	5,0
8	ICE1-2002	Probability and Statistics	2016 Spring	CC	4	6,0
9	ICE1-2003	Mathematical Analysis II	2020 Spring	CC	5	6,0
10	ICE1-2004	OBJECT ORIENTED PROGRAMMING	2017 Spring	CC	6	6,0
11	ICE1-2005	Logic Design	2016 Spring	CC	5	6,6
12	ICE1-2006	CIRCUIT THEORY	2020 All	CC	5	9,6
13	ICE1-3001	Algorithms and Complexity	2019 All	CC	5	6,0
14	ICE1-3002	ELECTRONICS	2020 All	CC	5	6,0
15	ICE1-3003	Data Structures	2018 Spring	CC	5	9,0
16	ICE1-3004	Computer Networks I	2017 Fall	CC	5	7,8
17	ICE1-3005	OPERATING SYSTEMS I	2017 Fall	CC	5	6,8
18	ICE1-3006	Computer Architecture	2017 Fall	CC	5	7,5
19	ICE1-4001	DATABASES I	2017 Fall	CC	5	8,5
20	ICE1-4002	Computer Networks II	2017 Spring	CC	4	5,8
21	ICE1-4003	OPERATING SYSTEMS II	2017 Spring	CC	4	8,5
22	ICE1-4004	APPLICATIONS DEVELOPMENT TECHNOLOGIES	2019 All	CC	5	9,0
23	ICE1-4005	DIGITAL SYSTEM DESIGN	2017 Spring	CC	5	7,5
24	ICE1-4006	Signals and Systems	2018 Spring	CC	5	6,4
25	ICE1-4007	TECHNICAL WRITING	2020 All	CC	2	8,0
26	ICE1-5001	DATABASES II	2017 Spring	CC	5	7,0
27	ICE1-5002	NETWORK PROGRAMMING	2020 Fall	CC	5	7,1
28	ICE1-5003	ANALYSIS AND DESIGN OF INFORMATION SYSTEMS	2018 Fall	CC	5	6,3
29	ICE1-5004	Artificial Intelligence	2018 Fall	CC	5	6,0
30	ICE1-5005	Digital Signal Processing	2019 All	CC	5	5,0
31	ICE1-5006	INTRODUCTION TO PARALLEL COMPUTING	2018 Fall	CC	5	6,0
32	ICE1-6001	Software Engineering	2018 Fall	CC	5	5,4
33	ICE1-6002	Information Technology Security	2018 Spring	CC	5	7,7

No	Code	Course title	Examination Period	Course Type / Course Category	Credits ECTS	Grade
34	ICE1-6003	Compilers	2020 Spring	CC	5	7,5
35	ICE1-6004	MICROELECTRONICS	2020 Spring	CC	5	5,7
36	ICE1-6005	DISTRIBUTED SYSTEMS	2020 Spring	CC	5	7,5
37	ICE1-6006	DIGITAL COMMUNICATIONS	2019 Spring	CC	5	6,7
38	ICE1-7001	Computer System Enginnering	2019 Fall	CC	5	7,2
39	ICE1-7002	THEORY OF COMPUTATION	2019 Fall	CC	5	9,5
40	ICE1-7104	KNOWLEDGE MANAGEMENT	2019 Fall	CE	5	8,0
41	ICE1-7203	INDUSTRIAL INFORMATICS	2020 Fall	CE	5	8,5
42	ICE1-7204	EMBEDDED SYSTEMS	2019 Fall	CE	5	6,5
43	ICE1-7301	Advanced Networking Technologies	2018 Spring	CE	5	7,5
44	ICE1-7302	NETWORKS AND COMMUNICATIONS SECURITY	2018 Spring	CE	5	8,8
45	ICE1-7304	INTERNET OF THINGS	2019 Fall	CE	5	6,5
46	ICE1-7308	TELECOMMUNICATION SYSTEMS	2020 Fall	CE	5	7,0
47	ICE1-7404	LEGAL ISSUES AND CYBERETHICS	2020 Fall	CE	5	9,0
48	ICE1-8202	ADVANCED COMPUTER ARCHITECTURE	2021 Spring	CE	5	10,0
49	ICE1-8301	Mobile Communication Networks	2019 Spring	CE	5	7,0
50	ICE1-8302	CLOUD COMPUTING AND SERVICES	2019 Spring	CE	5	8,0
51	ICE1-8303	WIRELESS SENSOR NETWORKS	2019 Spring	CE	5	7,0
52	ICE1-8304	SOFTWARE DEFINED NETWORKING	2019 Spring	CE	5	7,7
53	ICE1-8305	Broadband Networks	2019 Spring	CE	5	6,5
54	ICE1-8306	MULTIMEDIA AND MULTIMEDIA COMMUNICATIONS	2018 Spring	CE	5	7,0
55	ICE1-8307	Mobile Devices Technology and Programming	2019 Spring	CE	5	9,3
56	ICE1-9010	DISSERTATION	2021 Spring	CC	30	10,0
Total sum of course credits ECTS					300	

CC : Compulsory Course, CE : Compulsory Elective

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(*) Dissertation / Diploma Thesis Title: (ECTS: 30)

«SECURE UAV FLIGHT CONTROL WITH FPGA»

4.4 Grading system and, if available, grade distribution table

The grading scale runs from 1 to 10. Passing grades run from 5 to 10 as follows:

- **8.50 – 10 = excellent**
- **6.50 – 8.49 = very good**
- **5.00 - 6.49 = good**

4.5 Overall classification of the qualification (in original language)

7,36 (Very Good (Λίαν Καλώς))

5. INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1 Access to further study

Access to postgraduate studies

5.2 Access to a regulated profession (if applicable)

6. ADDITIONAL INFORMATION

6.1 Additional information

6.2 Further information sources

Website of the Department of Informatics and Computer Engineering: https://ice.uniwa.gr
Website of University of West Attica: www.uniwa.gr
Website of the Ministry of Education and Religious Affairs: www.minedu.gov.gr
European Union Website: https://europa.eu
Eurydice: https://eacea.ec.europa.eu/national-policies/eurydice/index_en
https://www.doatap.gr

7. CERTIFICATION OF THE SUPPLEMENT

Date		Official stamp or seal
2/12/2022		
Head of Department	Vice Rector of Academic and Student Affairs	Head of Secretariat
Ioannis Voyiatzis	**Papageorgiou Efstathia**	**Ioanna Zarra**
Professor	Professor	Administrative Staff

8. INFORMATION ON THE NATIONAL HIGHER EDUCATION SYSTEM

Key Features of the Education System

The provision of free education to all citizens and at all levels of the state education system is a constitutional principle of the Greek State. The Greek educational system is centralised. National laws, presidential decrees and ministerial acts are prevalent within it. The central administrative body for the education system across all fields, agencies and levels is the Ministry of Education and Religious Affairs. It takes the key decisions related to long-term objectives. It also regulates various issues, such as curricula content, staff recruitment and funding.

According to the Greek Constitution (article 16), higher education is public. It is provided only by institutions which are legal entities of public law. HEIs enjoy full self-administration and academic freedom. They are subject to state supervision. The government finances them. No private HEIs exist in the country. Admission of students has to do with their performance in the national panhellenic exams at the end of grade C of lykeio (upper secondary school).

Law 4521/2018 established the University of West Attica. It is the merger of two technological educational institutes: TEI of Piraeus and TEI of Athens. According to law 4610/2019 the University of West Attica has merged the National School of Public Health (ESDY).

First cycle of studies EQF Level 6

During the first cycle of studies, students attend a study programme, which leads to the award of a degree (titlos spoudon).Students complete their studies and receive their degree, when they have passed the courses specified in the curriculum and accumulated the required credits. Every academic year includes educational activities corresponding to 60 credits.

Within the first cycle of studies, every institution may organise short cycle study programmes, including modules corresponding to no more than 120 credits, leading to the award of a short cycle training certificate. This certificate is by no means equivalent to a first cycle studies' degree.

Pursuant to the system established by law 4610/2019, all the scientific fields of different departments of higher education are redefined. Based on the new system, faculties are grouped into scientific fields, depending on their fields of knowledge: Field 1: Humanities, Law and Social Sciences Field 2: Natural and Technological Sciences Field 3: Health and Life Sciences Field 4: Sciences of Economy and Informatics

Admission requirements: Graduates of lykeia (upper secondary schools) participate in the panhellenic exams being held simultaneously all over the country. The panhellenic exams are centrally supervised by the Ministry of Education and Religious Affairs. A central exams committee approves the exam topics, taking into consideration the curriculum relevant to grade C of lykeio (upper secondary school) or EPAL (vocational upper secondary school). The number of new entries in every department of higher education institutes follows the principle of numerus clausus and is defined by the Ministry of Education and Religious Affairs.

The duration of studies at the undergraduate level ranges from four (4) to six (6) years. The teaching load for each academic year is structured in two semesters, while each academic semester includes educational activities that correspond to thirty (30) credits (ECTS).

Enrolled students that chose to complete the study programme of the TEI Department they were originally admitted to (the

Second Cycle Programmes EQF Level 7

Departments of higher education institutions may organise second cycle programmes aiming at the specialisation of graduates in fields of knowledge adherent to the scientific fields of undergraduate study programmes. Furthermore, more than one departments of the same or other higher education institutions or research centres and institutes may organise second cycle programmes.

Autonomous departments of national HEIs collaborate with departments recognised as peer institutions or research centres and institutes abroad for the organisation and operation of joint postgraduate study programmes-PMS (law 4485/2017). By decision of the Minister of Education and Religious Affairs, the procedure for the establishment of the joint postgraduate study programmes (PMS) is defined. The issues are regulated in the EPS for any relevant topic (ministerial decision 41931/Z1/19-3-2018). The academic year begins on the 1st of September of each year and ends on the 31st of August of the following year. The educational programme of each academic year is divided into two semesters. A second cycle programme may begin during the winter or the spring semester.

Admission requirements:
All graduates of Greek Universities or of equivalent foreign institutions can be admitted to second cycle programmes. The selection is specified in the regulation of postgraduate studies taking into consideration the following academic criteria: The overall degree grades, the grades obtained in undergraduate modules relevant to those of the postgraduate programme, the student thesis, when a thesis is required at undergraduate level, any research experience the student might possess. Another prerequisite is the knowledge of at least one foreign language besides the official language of the second cycle programme the student attends. The language's knowledge level is defined by the regulation of postgraduate studies of each second cycle programme.

Programmes outside the Bachelor and Master Structure EQF Level 7

Completion of first cycle study programmes of 10 semesters minimum duration for the acquisition of a degree in higher education institutions, may lead, under conditions, to the acquisition of an integrated master's degree equivalent to the department's specialisation (law 4485/2017).

Doctoral studies EQF Level 8

Third cycle study programmes include the writing of a doctoral dissertation leading to the award of a doctoral degree. Autonomous university departments organise these programmes. The doctoral degrees are granted by the university the department is associated with. Eligible to apply for a doctoral thesis are postgraduate degree holders of: Greek higher education institutions, Equivalent foreign institutions, Integrated master's qualification according to law 4485/2017. In exceptional cases, non-Masters' Degree holders, may be accepted as PhD students.
Supervision arrangements: Writing a doctoral dissertation is a process which demands close cooperation between the doctorate candidate and his/her supervisor. The department's general assembly appoints for each doctorate candidate a supervisor and a three-member advisory committee. The committee's main duty is to provide mentoring to doctoral candidates. The supervisor is one of the three members of the advisory committee.

For a detailed description of the Hellenic National Higher Education System please consult the file compiled by the Hellenic Service of the European Network for Education EURYDICE

https://eacea.ec.europa.eu/national-policies/eurydice/content/greece_en

Source: Eurydice 2020/21