ACADEMIC GUIDE
Interdepartmental Master's Program
«APPLIED MATHEMATICS» 2023-24
Department of Civil Engineering

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DEMOCRITUS UNIVERSITY OF THRACE

SCHOOL OF ENGINEERING DEPARTMENT OF CIVIL ENGINEERING

INTERDEPARTMENTAL POSTGRADUATE PROGRAM

"APPLIED MATHEMATICS"

ACADEMIC YEAR 2023-2024

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DEMOCRITUS UNIVERSITY OF THRACE

SCHOOL OF ENGINEERING

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Department of Electrical and Computer Engineering

Department of Environmental Engineering

ACADEMIC GUIDE

2023-2024

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THRACE

Greek Thrace is a small part of the geographical area known in history as the "Greater Thrace". Incorporated into Greece in 1920, it is located on the northeastern mainland and adjoins eastward with Turkey and northward with Bulgaria, with which it is connected by road and rail.

The Greek Thrace constitutes, along with the An. Macedonia, special administrative region of the Greek state with the capital of Komotini. It consists of three prefectures (Xanthi, Rodopi and Evros) with the capitals of Xanthi, Komotini and Alexandroupolis, respectively. Samothrace also belongs to the prefecture of Evros, one of the most beautiful islands of the Aegean Sea.

In addition to agriculture and livestock farming, which were the traditional domains of the economy in the region, the development of the industry has been seen in the last few years.

The Commission's proposals are in line. Thrace, due to its key geographical location, has developed into a "gateway" of Europe to Turkey and the East, as well as an important transportation hub to and from the central Balkan region. These developments, combined with the development of the University in four cities of Thrace (Xanthi, Komotini, Alexandroupolis, Orestiada), result in the gradual development of the area and the rise of the living and spiritual level of its inhabitants.

In Greek Thrace are located important archeological sites such as Abdera (home of Democritus from which the name of the University was derived), Maroneia, Mesembria, Samothrace etc. Also, Thrace has extremely important wetlands, such as the delta rivers Nestos and Evros and the lagoon of Vistonida, and one of the most important national parks in Greece where some of the most rare species of birds of prey in Europe, the forest of Dadia, live.

XANTHI

Built amphitheatrically at the foot of the Rhodope Mountain range, Xanthi is located in Thrace (Northern Greece), the crossroads of the Black Sea and the Aegean, Europe and Asia. The Kosythos River divides the city into the western part, where the old and modern part of the city are located, and the eastern part, in which, the "Samakov district", a rich natural environment is being maintained. Both parts still maintain their traditional atmosphere, charming the visitors with their courtesy and their greatness. The narrow-cobbled streets of the old town are decorated with gorgeous mansions, whose architecture combines the local and Ottoman architecture, as well as the Greek neoclassical architecture. Along with the Byzantine churches and picturesque squares, the old town of Xanthi could be considered to be an open museum, the glory of which remains intact over time. The modern part of the city is located in a beautiful square with the central clock and the renovated tobacco warehouses, such as the famous "P", on Kapergon Street, which was named after the shape of the buildings constructed in 1890.

One can deepen in the rich history of the region through one's visit to the Museum of Folk Art, Museum of Natural History, Municipal Art Gallery and Abdera archeological site. Numerous cultural events organized throughout the year offer opportunities for one to visit Xanthi. Old Town Festival in September, where all events take place in the narrow cobblestone streets of the old town of Xanthi, the Youth Festival and the Music Festival of the Nestos River in summer, are especially popular among young people.

Central Xanthi Square

ENTERTAINTMENT

XANTHI COASTLINE

All over the southern part of prefecture of Xanthi stretch beautiful beaches, open to the Thracian Sea, which are delimited west by the Nestos Delta and east by the lagoons of the complex of Vistonida: Beaches and tourist destinations well organized and equipped are those of Erasmio, Mangana, Myrdatos, Abdera and Mandra. Access from the city is fast and the road network is sufficient. These beaches stand out for their cleanliness, the shallow waters, vast beaches and picturesque coves that attract holidaymakers but also artisanal fishermen. These areas offer a sublime beauty in the winter months as well as many opportunities for bird watching.

CARNIVAL OF XANTHI

The longest-lived institution is that of the Blonde Carnival - Thracian Folklore Holidays which took place for the first time in 1966. Born in an era of urbanization and industrialization - a time critical to economic issues and identity issues - it has erased a fifty-year course, passed various phases of development and mutation reaching our days. The Carnival Blonde demonstrates a series of events regarding music, dance and theater, exhibitions with visual or other content, lectures, book presentations and film screenings. During these two weeks of events in the city of Xanthi very important position occupies another form of social performance, the feast, which is encountered in many different places and forms. The institution closes with the carnival parade and the custom of burning the Tzaros effigy.

OLD TOWN FESTIVAL

The second festive institution in Xanthi is the Old Town festival, which has been uninterrupted taking place since 1991, with the advent of Autumn. Most of these events take place in the traditional preserved settlement of Xanthi, the so-called "Old Town", in the alleys of which the stands of the cultural and carnival clubs offer food and drink. The club's haunts are reveled, while festivals similar to those of Carnival are held in the same place.

Xanthi Old Town

YOUTH CELEBRATION

The third festive institution, the Youth Celebrations, was launched in the same year with the Old Town Celebrations and, as the title reveals, it is focused on the student youth of the city. These celebrations enable students to become protagonists both on the stage and the audience. Hence, people experience the events of the urban area either through a process of creation - production or through a participation procedure - consumption.

HADJIDAKIS FESTIVAL

This is the Hadjidakis Festival "Xanthi: Cities of Musical School Dreams" which was inaugurated in 2014, in honor of the great Greek Composer who was born and raised in Xanthi. Music Schools from all over Greece have the opportunity to attend the festival taking place at the Municipal Amphitheater of the city whereas in squares all over the city.

Xanthi, Central Square

DEMOCRITUS UNIVERSITY OF THRACE

HISTORICAL BACKGROUND

The Democritus University of Thrace was founded in July 1973 by the Law Decree No. 87 of 27 July 1973, and the first students attended in the academic year of 1974-1975. DUTH was named after Democritus, the ancient Greek philosopher, who descended from the city of Abdera in Thrace. The administration building of DUTH is located in Komotini, which is also the capital of the Administrative Region of Eastern Macedonia and Thrace. DUTH plays an important role in the strengthening of the national and cultural identity of the region of Thrace and contributes to the high level of higher education studies in Greece. With the quality of teaching and the level of its research, DUTH has secured a place among the best Greek Higher Educational Institutions. As a Higher Educational Institution, DUTH is a Public Law Corporation with full self-government. It is supervised and funded by the State through the Ministry of Education and Religious Affairs. The Board of Directors currently operates eight Faculties which include twenty Departments, in four cities of Thrace: five (5) in Xanthi, nine (9) in Komotini, four (4) in Alexandroupolis and two (2) in Orestiada. In DUTH more specifically, the following Departments are currently operating per city (in brackets the starting year of each Department):

XANTHI

1.   Department of Civil Engineering (1974)

2.   Department of Electrical Engineering and Computer Engineering (1975)

3.   Department of Environmental Engineering (1995)

4.   Department of Architecture Engineering (1999)

5.   Department of Production and Management Engineering (2000)

KOMOTINI

1.   Department of Law (1974)

2.   Department of Physical Education & Sport Science (1984)

3.   Department of History and Ethnology (1991)

4.   Department of Social Policy (1994)

5.   Department of Greek Literature (1995)

6.   Department of Social Work (1996)

7.   Department of Economic Sciences (1999)

8. Department of Language, Literature and Culture of Black Sea Countries (2000)

9. Department of Political Science (2009)

ALEXANDROUPOLI

1.   Department of Medicine (1985)

2.   Pedagogical Department of Municipal Education (1986)

3.   Department of Education Sciences at Preschool Age (1987)

4.   Department of Molecular Biology and Genetics (2000)

ORESTIADA

1.   Department of Forestry and Environment and Natural Resources (1999)

2.   Department for Rural Development (1999)

ADMINISTRATION OF DUTH

The administration of the Board of Directors is exercised by the Council of the Foundation, the Rector and the Senate. The Senate consists of the Rector, the Deans of the Faculties, the Heads of the Departments. The Presidents representation proccess is decided by the Rector. Also, a representative of the undergraduate students, a representative of the postgraduate students and a representative of the doctoral candidates, may they be, are elected for one-year service without the possibility of re-election. It also includes a representative of each category of staff, with a two-year service, without possibility of re-election, elected by a single ballot in terms of consensual voting of the members of the relevant category of staff and participating, with the right to vote, when matters concerning the relevant category of staff are discussed. The exact composition and the number of members of the Senate with the right to vote, as well as the conditions and any matter relating to the implementation of the above, are predicted by the Agency and the Rules of Procedure of the Board respectively. The Senate meetings are attended without the right to vote by the rector's deputies and the Secretary of the Foundation. The Rector and Vice-Rectors in the academic year 2023-2024 are the following:

Rector: F. Maris

Professor of the Department of Civil Engineering

Vice Chancellor of Finance, Planning and Development: C. Chalioris
Professor of Department of Civil Engineering

Vice-Chancellor of Academic Affairs and Student Care: M. Grigoriou

Professor of Department of Molecular Biology and Genetics

Vice-Chancellor of Research and Lifelong Learning:
G. Broufas
Professor of Department for Rural Development

Vice Chancellor of Administrative Affairs:

V. Gourgoulis

Professor of Physical Education and Sports Science

ADMINISTRATION OF THE SCHOOL OF ENGINEERING

The administration of the School of Engineering consists of the General Assembly, the Deanery and the Dean. The General Assembly consists of the General Assemblies of the Departments while the Dean, the Presidents of the Faculty and a representative of the students of each Department participate in the Deanery.

The Dean is elected for three years by an electoral body composed of the total of electoral bodies that elect the Presidents of the Departments which belong to the School.

Dean: Professor A. Gaseratos   Department of Production and Management Engineering

Deputy Secretary: T. Spanidou

This page is a Technical School Jewel:

http://www.eng.duth.gr

LIBRARY OF THE SCHOOL OF ENGINEERING

The library owns 75,000 volumes and 2000 titles of magazines, with the current subscriptions being mostly electronic. The book borrowing by the students is based on the Senate Rules of Operation of the Central Library approved by the Senate.

The library is accessible online.

One is able to search online the books of both the School of Engineering and all other Faculties and Departments of the University, as well as of all the academic libraries of the country with network services.

The library, over the Heal Link network, provides access in 5,000 magazine titles. Information research instructions are provided by the library staff. Students can also be informed/guided online.

Library page: http://www.lib.duth.gr

STUDENT CARE

Domain manager: E. Kravaritou Feeding

No charge feeding to the students of the School of Engineering is being provided under conditions. Relevant information (students who qualify for free meal, documents and dates of application) is provided by the Student Care Office in Xanthi.

Housing

The Student House (SH) affords a large number of apartments located at the University Campus area. SH also provides a restaurant with the capacity to serve 1,000 people.

Qualification for SH depends on student's financial situation in proportion to the number of members of the student's family and other criteria appointed by the Senate of the DUTH relating to the rules of operation of SH.

SH application period for the new-entrants is the registration period defined by each School of DUTH. No application shall be admissible beyond this period.

HEALTH CARE

Medical, hospital and pharmaceutical care is provided to the students of the University (N.E.S. 327/1983 (FEK 117/7-9-83(a)). Medical care is provided by the city doctors who are affiliated with the State.

Health, medical and hospital care is provided to undergraduate and postgraduate students of Higher Educational Institutions, citizens and foreigners. After the period, provided for as a minimum duration of undergraduate studies of a course increased by two (2) years, the benefits provided to students, such as Health and Hospital Care, Performance Grants and Scholarships for Aid Loans, Free Food, Accommodation and Supply of Textbooks or Other Aids, Mobility Facilitation etc., are not granted. (Art. 9 par. Point 10 of Annex I. 2083/92).

ADVISORY AND ACCESSIBILITY STRUCTURE (AAS)

The Advisory and Accessibility Structure (AAS) of the Democritus University of Thrace was established with the number 40/51/12.12.2017 Decision of the Senate. It started operating in 2018 and during the initial phase of its operation it is funded by the NSRF 2014-2020, through the Act "Support of Social Care Interventions of Students NT".

The aim of AAS is the promotion of constructive learning, academic success and socialization of the students of DUTH, with specific features and disabilities.

Specifically, the aim of the AAS is:

•   Equal access to educational activities of students with special needs and disabilities: educational environment adjustment, IT technology support, space and knowledge accessibility.

•   Personal development and socialization of students with special features and disabilities, in and outside the Campus.

Therefore, actions developed by AAS address problems related to the following difficulties:

•   Studies: learning difficulties, reading comprehension issues, decision-making issues, inability to concentrate, testing anxiety, incompatibilities of educational spaces, means and materials due to disability.

•   Academic life: educational environment adjustment difficulty, time management issues, negative attitude towards the subject of studies.

•   Social life: friends and family relationship issues, isolation, low self-esteem, acceptance and social integration issues.

•   Other problems: psychosomatic disorders, emotional problems, addictions.

The Headquarters of AAS is based in Komotini and Branches are located in the cities of Xanthi, Alexandroupolis and Orestiada.

It is scientifically supervised by members of the Board with scientific work related to AAS's aim and consists of the Counseling and Psychosocial Support and the Accessibility Department.

Contact:

Call center: 25310-39050, -39163 E-mail: dosyp@duth.gr

Website: https://dosyp.duth.gr

Counseling and Psychosocial Support Department

The Department is staffed by Psychiatrist, psychologists and social workers.

Services

•   Individual counseling for students who have difficulties with their studies (learning difficulties, difficulties in reading comprehension, inability to concentrate, test stress etc) or with other issues of psychological and social nature.

•   Periodic assessment of the psychosocial needs of students.

•   Group counseling.

•   Networking with health and social services.

•   Where to address in case of an issue.

Workshops / Seminars

Experiential and interactive seminars and workshops aiming students' empowerment and personal development.

Volunteerism

Volunteering network aiming at socialization and voluntary activities within the community.

Accessibility Department

The Department is staffed by Electrical Engineers and Computer Engineers.

 Online accessibility services

• Educational environment adjustment by utilizing digital accessibility tools.

• Accessible computer, library and internet workstations.

• Digital/online environment for counseling, psychosocial support and accessibility issues.

• Accessible educational material, projects, and literature/bibliography.

• Individual assisting technology by applicant student and training in IT technologies and software.

Accessibility Services to Buildings and Infrastructure of DuTh

• Study on the accessibility of buildings and other infrastructure.

• Evaluate modifications to improve accessibility of DuTh buildings and provide knowhow to other entities.

Teaching Assistance Software

Free software and assistive technology applications offered.

Volunteerism

The Accessibility Department collaborates with volunteers in order to convert educational material into accessible format.

STUDENT PASS

Students apply for pass electronically through the website:

https://submit-paso.minedu.gov.gr using their personal online access codes on the portal of the School of Engineering: https://unistudent.duth.gr/ .

After the application has been admitted by the relevant Secretariat, each student may obtain his/her Bulletin from the point of delivery chosen in his/her application. Delivery points (commercial stores) have been defined and approved by the project contractor.

The new pass is a credit card type, meets all the modern standards, with built-in photo of the beneficiary, a security hologram and Latin characters (for one to use it abroad).

The beneficiaries are:

(1)   First level students (bachelor degree) provided that they have not exceeded the n+2 years of study (where n is the duration provided in the indicative program of studies).

(2)   Second level students (master's degree) for as many years as they study, in accordance with the indicative program.

(3)   Third level students (PHD), for 4 years from the date of their enrollment.

Please note that students who have exceeded the 29th year are not entitled to a pass.

Furthermore, the discontinuation of student status for any reason automatically entails termination of the right to hold the pass, which in this case is being returned to the secretariat of the Department concerned.

Each Secretariat is connected to the Central Information System through an online application from in order to monitor students' applications.

First-year students, until 30 September, can use public transportation with discount demonstrating the certificate of their registration provided by the Secretariats of the Departments and their civil ID, until they receive their official Bulletin.

TRANSPORT

Students are served (for their mobility to and from Campus where the rooms of the Student Dorm are located, the Student Club restaurant and the new buildings of the Department), by means of transport chosen by the University, as well as by emergency lines University - Student Club during lunch hours with starting point the bridge of the Samakov district.

MILITARY CONSCRIPTION

Students who have not fulfilled their military obligations are entitled to deferment of conscription for the completion of their studies.

The postponement shall be granted for a period equal to that resulting from the accounting aggregation of the year of granting the postponement and the study years plus two.

Further information can be obtained from the local recruitment offices.

CULTURAL EVENTS

Students have the opportunity to attend a number of Cultural Events of the Municipality of Xanthi, as mentioned above. Moreover, the two student clubs "Bridge"" and "Inmates of the Student Center of Xanthi" organize cultural events of photography, cinema etc.

COMPUTER CENTER - NETWORK MANAGEMENT CENTER

Director: N. Kasapidis

Staff: N. Grigoriadis

I. Plevridis

P. Hatzopoulos

The Computational Center of DuTh began to operate in 1976 with the installation of the first UNIVAC 90/30 computer system and was basically used by the Polytechnic School. Today the Computational Center - Network Management Center of MESS is an institutionalized body, organize-based, approved by Senate decision, serves the entire University throughout Thrace, with DUTHnet, and affords computers and all modern applications such as email, high-speed Internet access and more.

By decision of the Senate (21/01/18, September 2014) from September 2014 a new Commission with the title of 'Communications and Networks Committee' of DuTh has been established, which replaces the previous Computational Center and Network Management Committees and Telecommunications Committee having being abolished.

Y.K. Website - N.A.:

http://www.noc.duth.gr

Computer lab

CAREER OFFICE

Head: D. Tsitsis

The Liaison Office of the Democritus University of Thrace was established as part of the Operational Program of Education and Initial Vocational Training (EPAE). Through this newly established institution, the Liaison Office is an information center for students and graduates of our university, a link between the University and the Production Community, in order to help students and graduates meet their professional goals/aims. Career Office affords facilities in the cities of Xanthi, Komotini and Alexandroupolis.

Study Liaison Office website and

In the course of a career:

https://dasta.duth.gr

ERASMUS

Coordinator for the Civil Engineering Department: I. Kagalu, Professor.

The Erasmus+ program is the main education and training program in the EU, focusing on student and staff mobility and cooperation between higher education institutions. Erasmus+ supports the creation and establishment of the European Charter of Higher Education, thus increasing innovation, growth and employment.

Through the program, students are offered the following possibilities:

1)   Student exchanges for course monitoring at European universities with mutual recognition of educational programs by sending and hosting universities. This is done with the implementation of the provisions of the European Credit Transfer and Accumulation System (European Credit Transfer and Accumulation System ECTS) and a similar system at the host university. Under the Bilateral Agreements that the University has concluded with foreign institutions, the students of the Civil Engineering Department of the IPOA may go to study at one of these Institutions for a period which may not be less than 3 months or more than one year. The conditions for participation are detailed at the website http://erasmus.duth.gr/node/4 .

2)   Practical traineeships 2 to 4 months in Business, Non-Governmental Organizations, Research Centers, Educational Institutions, diplomatic missions etc. from students from all courses (pre-graduates - postgraduates – PhD candidates) and recent graduates of the Board of Directors. Q. I. in European countries (http://erasmus.duth.gr/node/16). In both cases, the Erasmus+ program provides participants with a scholarship to meet the additional costs, free tuition fees and recognition of the period of studies they are undergoing at the foreign University or organization. The International Relations Office of the Board of Directors has the general and financial management of the Erasmus+ Program for the outgoing and incoming mobility of students, teachers for teaching and staff for training.

For the Department of Civil Engineering, Academic Coordination is the Erasmus Committee of the Department, composed of 3 members of the faculty. The Committee defines in advance the procedure for the selection of students to be included in mobility, publish calls for expression of interest and chooses students (criteria-based choice). The Erasmus+ Committee of the Department has drawn up a roadmap to assist outgoing students before and after their mobility.

For studies abroad the Department of Civil Engineering has concluded the following active Cooperation Agreements with universities (by country):

Germany: Ruhr-Universität Bochum

              Technische Universität Dortmund

Spain: Universidad de Granada

Italy: Università degli Studi della Tuscia Politecnico di Bari

Cyprus: Cyprus University of Technology

Hungary: Buda pest i Műs zaki és Gazdaságtudományi Egyetem

Romania: Technical University of Cluj-Napoca

Turkey: Kırklareli Üniversitesi

Commission recommends students to contact the host institutions where the practical training will take place and to obtain a Letter of Acceptance and Working Program, in which the traineeship program will be described in detail, as well as the tasks of the trainee which should be relevant to the subject of the study. The letter must be submitted together with the other necessary supporting documents in the application file. The Department of Civil Engineering supports and encourages mobility through the Erasmus+ because:

•   It contributes to interaction with other Countries' cultures.

•   It offers outgoing students the opportunity to familiarize themselves with educational systems and working environment in other Countries.

•   It promotes fluent learning of foreign languages and technical terminology.

•   Creates a framework for new academic and professional possibilities.

•   It contributes to the further academic constitution of students.

More information can be found in the relevant regulation posted on the website of the Department (link).

IAESTE

Head: T. Papadopoulos,

Op. Professor of Electrical Engineering and Computer Engineering.

I.A.E.S.T.E. (International Association for the Exchange of Students for Technical Experience) is an international organization, for the purpose of exchanging students of applied disciplines (Technical University, Economics Universities, etc.) between the countries - members of the organization, for internship related to the subject of their studies, outside the limits of their country.

In our country there is the I.A.E.S.T.E National Council Greece and in cities with Higher Educational Institutions there are the Local Committees. The Technical School of Xanthi has been established and operates the Local I.A.E.S.T.E Committee Xanthi. The aim of this Committee is to find each year a number of reception places for foreign students in Greek companies. These posts ensure the possibility of sending students of the Xanthi Polytechnic School to countries abroad for internship, which is considered so essential for engineering studies, that many of the departments of the Polytechnic School of Xanthi have included it in their curriculum.

 Web page IAESTE Xanthi:

https://iaeste.duth.gr

THE DEPARTMENT OF CIVIL ENGINEERING

ADMINISTRATION OF THE DEPARTMENT

The governing bodies of the Department are the President, the General Assembly of the Department, the Directors of the Sectors and the General Assemblies of the Sectors of the Department. The duties of these bodies are defined by the legislation.

The General Assembly of the Department consists of the Professors of the Department, one (1) representative per category of the members of EPE, EPE, ETEP, ETEP, one (1) representative of the undergraduate and postgraduate students of the Department.

The Head of the Department is elected for a two-year term by the Professors of the Department.

The directors of the Sectors are elected every year.

Head of the Department of Civil Enginerring:

Professor Lazaros Iliadis

Debuty Head:

Associate Professor Christos Akratos

Secretary of the Department of Civil Engineering:

Mrs Paraskevi Tsobanaki

Administrative staff: Mrs Olga Chavra   Mrs Ioakimidou Sevasti

Civil Engineering Department Facilities

STRUCTURE OF THE CIVIL ENGINEERING DEPARTMENT

The Department of Civil Engineering consists of the following Sectors:

- Sector of Construction Science

- Sector of Transport and Communications

- Sector Hydraulic Works

- Sector of Geotechnical Engineering

- Sector of Mathematics, Programming and General Courses

Sectors are subdivided into Laboratories as follows:

- **Sector of Construction Science**

i.   Laboratory of Static and Dynamics of Construction

ii.   Laboratory of Reinforced Concrete and Earthquake Structures

iii.   Laboratory of Metal Constructions

iv.   Laboratory of Technical Engineering

v.   Laboratory of Building Design

vi.   Laboratory of Construction Materials

- **Sector of Hydraulics works**

i.   Laboratory of Hydraulic Engineering and Environment

ii.   Laboratory of Hydrology and Hydraulics Works

iii.   Laboratory of Coastal and Port Works

- **Sector of Geotechnical Engineering**

i.   Laboratory of Soil Engineering and Foundations

ii.   Laboratory of Technical Geology and Groundwater Research

•   **Sector of Mathematics, Programming and General Courses**

i.   Laboratory of Organization and Planning

ii.   Laboratory of Mathematics and Informatics in Science of Civil Engineering

iii.   Laboratory of Geodesy

•   **Sector of Transportation Projects and Communication**

i.   Laboratory of Road and Road Safety

ii.   Laboratory of Transportation Techniques and Design-Organization of the Site

Civil Engineering Department Facilities

DECLARATION OF QUALITYASSURANCE POLICY

The Department of Civil Engineering in cooperation with the Quality Assurance Unit (QMV) of the International University of Athens and the competent services of the Foundation has harmonized the Quality Policy of the Undergraduate Program of Studies (MMA) and the Programs of Postgraduate (PMS) and Doctoral Studies (PPS) offered with the Quality Policy of the University of Thrace.

Mission

The Department of Civil Engineering is committed to working closely with students, business, authorities and society to disseminate knowledge for the common benefit, improve everyday life and provide solutions to address global challenges. The JPM contributes collectively to society as it focuses on modern education through student-centered learning that is based on actions and experience, but also integrates digital transformation of sciences and profession. The Department trains Civil Engineers capable of engaging with the completion of their studies, in study, design, composition, construction, supervision, in the maintenance of the built or landscaped environment, including, but not limited to, cities and infrastructure projects, roads, bridges, dams, buildings, industrial, craft and tourist facilities, tunnels, water and waste water treatment facilities, water and sewage projects and networks, ports, airports, transport networks, etc. (In detail see: 'Diploma Annex ICMP ICP'). Moreover, the Department, as it owes, prepares its graduates, following the developments on a global scale in all areas of science, research and the profession of Civil Engineer, making its graduates eligible and competitive in the labor market and academic environment. The Department provides education and research, with a balance in learning and application, through a modern and competitive international curriculum. Attendance at the ICP's JPM is a modern training experience for students as the JPM has: (a) modern facilities and laboratories, (b) highly trained staff, (c) internationally renowned scientific staff, (d) national and international scientific staff and students, (e) internal quality system, (f) extended student care, (g) presence on the international university ranking lists, with a prominent position in the evaluation of Greek university education.

Vision

The JPM's vision is the continuous effort towards quality and excellence. The JPM invests in student-centered learning, the educational process, the human resources, but also in research, contributing to society and successfully addressing the challenges of the modern era by using the means of modern digital technology.

Content Of Studies

The object of the FRP of the LBB is:

i)   The development through the training of a strong background in the science of Civil Engineering, through a student-centered learning process, which includes knowledge either classical or cutting-edge technology, the acquisition of experience and practical application, analysis, synthesis and evaluation of data, limitations and possibilities.

ii)   The preparation and direction of professional careers, eligibility and competitiveness of its graduates through the understanding of science with modern technological means and methods, based both on literature, research and modern digital media.

iii)   The development of graduates' digital skills in our modern digital age, the adjustment of our graduates in an ever-growing society characterized by a rapid knowledge increase their enrolment under the changing requirements of the labor market, their continuous intellectual development and training, facing the fourth industrial revolution by acquiring new skills and competences,

iv)   Getting familiarized with research tools and environments (basic and applied) not only in the area of Civil Engineering but in interdisciplinary fields as well. Last but not least, monitoring the developments of science and expanding its scope.

v)   Its contribution to the reconstruction and development of the wider region and the country, in cooperation with productive bodies and enterprises through self-energy, team work, excellence, research, innovation, production and entrepreneurship.

Please note that the JTF:

1.   It has adopted the credit system (ECTS) in accordance with the Bologna Accord.

2.   The RSP and the PCF include courses in which the performance of students is shaped through actions, work, midterm exams, alternative exams (not only by a final written examination) (formative evaluation),

3.   Uses experiential learning methods (e. educational tours, experiential workshops, laboratory tests, etc.).

4.   All the courses taught under the MSF and the MFA have course contours, which mention the titles of the 13 lectures (syllabus) and identify precisely additional activities and what part of the total ECTS cover (tasks, progress, workshops, off-class activities, etc.).

5.   It grants an Annex to the Diploma in Greek and English.

Operation

An organizational culture has been formed in the Department. Assembly days have a regularity, but are rotated so that the same lessons are not lost all the time. For all issues arisen, committees

are set up, investigate and make suggestions for the General Assembly to make the final decisions. The electronic data processing of the Department includes a number of information systems, such as (a) the Electronic Secretariat System (ClassWeb-Cardisoft), (b) the Integrated Information System (ICM) of the ICP Project Management System (resCom), (d) the Library Information System of the ICP, (e) the ICP Information System of the ICP, (f) the ICSD Electronic Assessment System. There are procedures and rules for the allocation and management of funding from each source. The LVP's logistical infrastructure is state-of-the-art and was delivered for use in 2016. For any emergency problem to be addressed there is regular monitoring by the help desk of the LBB Technical Service. The workshop's logistical infrastructure is being updated from research, regular budget, AMTH Region or the central government funding. The arrangements for replenishing the courses are decided by the General Assembly to cover the 13 weeks of instruction provided for by law. There are traineeships, mobility regulations, etc. and are posted on the website of the Department or LBB. There are predefined procedures and rules for student selection and all procedures are completely transparent.

Strategic planning

The strategic objectives of the Department are linked to those of the Foundation and include:

•   Providing high-level education, with an emphasis on student-centered learning, the continuous upgrading of the MSP and the MFA through the institutionalized annual review process of the MSP and the MFA and the updating and standardization of academic functions and focus on Learning Objectives and Learning Outcomes.

•   Upgrading the connection with the labor market, scientific bodies and graduates of the Department.

•   To improve the production of high-level research based on international developments by promoting research cooperation and the exploitation and dissemination of results for the benefit of the economy and society.

•   Support for Department funding through research programs by public and private bodies.

•   Promotion and recognition of excellence and innovation by encouraging, strengthening and rewarding the achievements of students and members of the university community in teaching and research, successes in student competitions, excellence in competitive submission of innovative proposals, student work awards, etc.

•   Extroversion through strengthening and promoting partnerships, networking and actions, as well as the international presence of the Department, through internationalization actions and benchmarking with universities of similar size, emphasizing the Department's distinction at local, national and international level.

- Efficiency of the administrative procedures and improvement of the infrastructure of the Department giving priority to Student Care and the strengthening of laboratory and educational equipment.

- Development of a unique personality that makes the ICP and its graduates unique in relation to respective Departments of higher education in Greece in order to appeal more students.

- Foster a two-way supply society between the academic community and students/graduates.

- Culture of quality and excellence.

At the same time, the strategic objectives of the Department are linked to the respective objectives of the Foundation which include:

Strengthening-upgrading the educational project.

Support-upgrade of research and innovation.

Funding raising.

Empowering and upgrading the human potential.

Strengthening and improving the management of the Foundation's infrastructure and services.

MASTER'S DEGREE IN APPLIED MATHEMATICS

AIM

The specific Master's program is part of the strategic planning of DUTH, is governed by scientific coherence and aims at the further promotion of knowledge and the development of research. The program meets the educational, research, social, cultural and development needs of the country, in high-level specialization of the graduates in theoretical and applied areas of specific branches of knowledge, special thematic units or sub-branches of the academic subjects of the first cycle of studies of the relevant Department.

It awards Master's degree in "Applied mathematics".

CURRICULUM

The total of Credit Units (ECTS) required to obtain the Master's degree is 90 (duration of study: three semesters).

To obtain the Master's degree compulsory attendance and a successful examination are required in all courses which are offered in the first two semesters of studies (A´ and B´). Of these, 4 are compulsory and 4 optional.

During the third (III) semester of studies, the successful completion of the Master thesis is required, the credits of which (ECTS) are set at 30.

GENERAL INFORMATION

"Applied Mathematics" is an interdepartmental Postgraduate Program of the School of Engineering of the Democritus University of Thrace and the department of Civil Engineering, Sector of Mathematics, Programming and General courses runs it.

Professor Lazaros Iliadis Department of Civil Engineering DUTH is the head of the "Applied Mathematics" graduate program.

Lazaros Iliadis Professor Tel: 25410 79649 email: liliadis@civil.duth.gr

Postal address: Department of Civil Engineering, DUTH, Xanthi-Kimmeria Campus, Building B – 1st floor 67100, Xanthi

The program has been running since 2015 as an Interdepartmental Master's program of the school of Engineering run by the Department of Civil Engineering in collaboration with the Department of Electrical and Computer Engineering and the Department of Environmental Engineering.

The main objectives of the Program are: postgraduate teaching, research and practical application of Mathematics in science and technology. The minimum duration of the program is set at eighteen (18) months (three academic semesters of study).

USEFUL LINKS

https://civil.duth.gr/en/applied-mathematics/

https://civil.duth.gr/en/the-department/

Xanthi, Old Town

TEACHING STAFF

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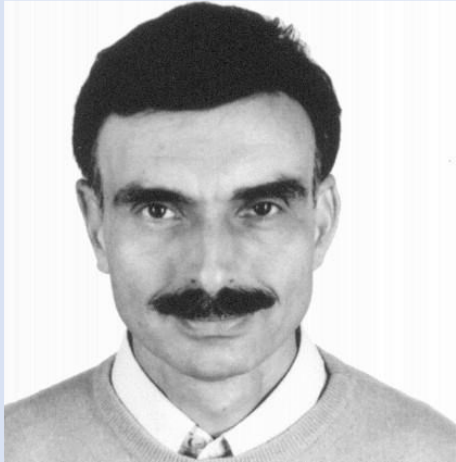
Dr. Ioannis Boutalis

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Dr. Victor Balopoulos

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Dr. Avrilia Konguetsof

Assistant Professor
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Kosynthos river, Xanthi

Xanthi, Old Town

Xanthi

TEACHING METHOD-DISTANCE LEARNING

Teaching is carried out completely (100%) by means of modern distance education. Exams are carried out with physical presence of the graduate students in the civil engineering department facilities. Some elective courses are graded by project assignments. The Department of Civil Engineering owns the appropriate infrastructure to support distance teaching (three certified video conference rooms and licenses to use appropriate video conference - distance learning software).

Distance teaching in the "Applied Mathematics" courses of the PMS refers exclusively to modern distance teaching, which takes place according to the timetable of the PMS. In order to carry out modern teaching, the Democritus University of Thrace has procured and provides free of charge to all its lecturers and undergraduate and postgraduate students, the Microsoft Teams platform. The Microsoft Teams platform can support simultaneous viewing of up to 49 participants. The Microsoft Teams platform also enables the exchange of files and messages between teachers and students in real time.

The educational material is also available to postgraduate students through the e-class platform of DUTH, where notes, exercises and other auxiliary educational material, as well as open access books, are posted.

Examinations can be conducted both in person and by remote examination methods, depending on the teacher's perspective. Distant examination can be carried out in a variety of ways, such as

multiple-choice questions through the e-class platform, or through oral examinations using the Microsoft Teams platform, which enables the instructor to examine each student in a separate virtual room.

All professors' offices are equipped with the appropriate material for conducting distance education (e.g., computer, camera, microphone, speakers, etc.).

Students evaluate their professors also remotely by electronic means, using the information system of the MODIP of the DUTH. All postgraduate students using their institutional accounts are able to connect to MODIP's information system and fill out the evaluation questionnaires for all postgraduate courses electronically.

The teaching staff of the PMS "Applied Mathematics" is trained in the use of the specific distance education methods, as they were used both for the teaching of undergraduate and postgraduate courses at DUTH.

LEARNING OUTCOMES

The proposed Master's Program "Applied Mathematics" has a multiple character.

- ✓ It covers the required background of theoretical mathematics since it is covered in postgraduate taught courses, as in the compulsory courses: a) Applied Functional Analysis b) Differential Equations and Difference Equations c) Linear Algebra.
- ✓ Special emphasis is placed on Applications mainly in Engineering subjects and covers a wide range of the "Mathematics for Engineers" field (Engineering Mathematics) in all elective courses.
- ✓ There is a strong spirit of innovation both in the compulsory course "Fuzzy Logic" and in other optional courses.
- ✓ Particular weight is given to the research dimension. Indeed, a graduate of this Master's will be able to produce a research project in all the areas dealt with by the "Applied Mathematics" postgraduate Study Program, but mainly in the field "Mathematics for Engineers".

MASTER'S PROGRAM APPLIED MATHEMATICS CURRICULUM

Courses A (Winter) Semester 2023 /2024

Compulsory courses	ECTS	Professors
1. Applied Functional Analysis	7.5	B. Papadopoulos
2. Special Chapters on Differential Equations and Difference Equations	7.5	G. Papaschinopoulos / C. Schinas

Elective Courses	ECTS	Professors
1. Artificial Intelligence	7.5	I. Boutalis
2. Finite Elements	7.5	V. Balopoulos
3. Numerical Methods of Solving Ordinary Differential Equations	7.5	A. Konguetsof
4. Didactic of mathematics	7.5	V. Papadopoulos / C. Schinas

MASTER'S APPLIED MATHEMATICS CURRICULUM

Courses B (Spring) Semester 2023/24

Compulsory courses	ECTS	Professors
1. Fuzzy Logic and Applications	7.5	B. Papadopoulos
2. Special chapters of Linear Algebra	7.5	Ch. Schinas/G. Papaschinopoulos

Elective Courses	ECTS	Professors
1. Numerical Solution of Differential Equations with Partial Derivatives	7.5	A. Konguetsof
2. Intelligent Modeling Hybrid Soft Computing Systems	7.5	L. Iliadis
3. Applied Economics with a focus on the Environment-ESG	7.5	I. Nikolaou
4. Stochastic Time Series Analysis	7.5	A. Rigas
5. Graph Theory	7.5	S. Spartalis

TOTAL COURSES (4 compulsory and 4 elective courses)   60 ECTS

Master thesis   30 ECTS

Total   **90 ECTS**

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The table below indicates the teaching hours and academic credits per course and across the program. Each ECTS corresponds to 25 hours of workload.

Description	Teaching hours/course	Total amount of teaching hours	Total student workload	ECTS/course	ECTS/semester
A´: 4 courses	39	156	750	7,5	30
B´: 4 courses	39	156	750	7,5	30
C´: Master thesis	-	-	750	30	30
Total		312	2250		90

Xanthi

COURSES' OUTLINES AND DESCRIPTION

WINTER SEMESTER

COURSE TITLE (COMPULSORY):

APPLIED FUNCTIONAL ANALYSIS

INSTRUCTOR:

Professor Basil Papadopoulos

SYLLABUS:

Metric Spaces, Normed Spaces, Topology of Metric spaces, Banach spaces, Hirlbert spaces, The continuity of a function, Complete spaces, completion, totally bounded spaces, Compact spaces, compactifications, connected spaces, The Baire Category Theorem, Fixed point Theorems and applications, The space of continuous functions, pointwise and uniform convergence, The Stone Weierstrass theorem, Lebesgue measure, outer Lebesgue measure, Measurable sets, measurable functions, Theorems of approximation of measurable functions, Applications in probability, Lebesgue integral, L_p spaces with applications.

COURSE TITLE (COMPULSORY):

SPECIAL TOPICS IN DIFFERENTIAL AND DIFFERENCE EQUATIONS

INSTRUCTORS:

Professor Garyfalos Papaschinopoulos (Coordinator)

Professor Christos J. Schinas

SYLLABUS:

Basic theory of Ordinary and Partial Differential Equations. Method of Separation of variables. Initial and boundary value problems. The wave equation. The heat equation. The potential equation (Laplace equation). The wave equation in two dimensions. The overlapping principle. The heat equation in three dimensions. Bessel functions. Spherical harmonic coordinates.

Legendre polynomials. The Laplace equation in three dimensions. Linear vector spaces. Inner product. Linear subspaces.

Basic theory of difference equations, Linear difference equations of first order, Linear homogenous difference equations with constant coefficients, Linear non-homogenous difference equations: Method of undetermined coefficients, The method of variation of constants, Systems of difference equations, Fixed points (Equilibrium points) of a difference equation of first order: Hyperbolic fixed points, Nonhyperbolic fixed points, Stability of a hyperbolic fixed point, Stability of a nonhyperbolic fixed point, Stability of linear systems, Stability of difference equations of second order: Stability of a hyperbolic fixed point via linearization, Central manifolds, Stability of a nonhyperbolic fixed point via the central manifold, Attractivity of fixed points, Applications of difference equations in Population Dynamics, Biomathematics.

COURSE TITLE (ELECTIVE):

ARTIFICIAL INTELLIGENCE

INSTRUCTOR:

Professor Ioannis Boutalis

SYLLABUS:

Basic concepts and applications of artificial intelligence. Problem representation and solution. Solution searching techniques (Blind search algorithms, heuristics and informed solution searching, game algorithms, nature inspired algorithms). Evolutionary computations (Introduction to Genetic Algorithms, solution finding and optimization using GA, applications) Introduction to machine learning and Artificial Neural Networks (Basic concepts in neuronal computation, biological and artificial neurons, basic structures and ANN models, learning algorithms). Introduction to expert systems. Introduction to fuzzy systems (fuzzy logic, fuzzy sets, fuzzy relations, fuzzy linguistic description and reasoning).

COURSE TITLE (ELECTIVE):

NUMERICAL METHODS FOR THE SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS

INSTRUCTOR:

Assistant Professor Avrilia Konguetsof

SYLLABUS:

- Initial Value Problems. Difference Equations.

- Single Step Methods. Runge-Kutta methods (Second order, Third order, Fourth order, Higher order). Calculation results. Convergence. Approximation of truncation errors). Elimination methods. Stability analysis. Implicit Runge-Kutta methods.

- Multistep Methods. Explicit multistep methods. (Adams, Bashforth, Nystrom, Types for j=0,1,3,5. Results of calculations with prediction methods). Implicit multistep methods. Multistep methods based on differentiation. General multi-step methods (determination of coefficients). Estimation of truncation error. Propagation Error Estimates). Prediction-Correction Methods.

- Numerical solution of systems of differential equations and differential equations of higher order.

- Convergence, stability of methods   - Numerov's method.

COURSE TITLE (ELECTIVE):

TEACHING OF MATHEMATICS

INSTRUCTORS:

Professor Basil Papadopoulos

Professor Christos Schinas

SYLLABUS:

PART A: Basic teaching principles. Principle of supervision. Principle of self-reliance. Principle of individuality. Principle of topicality. Principle of sociability. Principle of encouragement. Principle of active action. Teaching models: teacher-centered model, student-centered model. Classifications of teaching objectives. The teaching of mathematics. Awareness of basic math skills. Understanding of mathematical concepts. Counting strategy. Calculation and use of algorithms. The modernization of mathematics teaching. Aims and objectives of mathematics education. Presentations of virtual courses.

PART B: Applied teaching of Mathematics. Indicators and their necessity. Elements of mathematical logic and its necessity. Teaching Methods in Analysis. Teaching Methods in Algebra. Teaching methods of number theory. Teaching methods for bridging the gap between secondary and tertiary education.

SPRING SEMESTER

COURSE TITLE (COMPULSORY):

FUZZY LOGIC AND APPLICATIONS

INSTRUCTOR:

Professor Basil K. Papadopoulos

SYLLABUS:

Fuzzy logic **(**Definition, philosophy, fuzziness vs. probability), from crisp sets to fuzzy sets, Generalizations of classical operations, operations on fuzzy sets, Laws of contrability and excluded middle, Fuzzy Entropy and Subsethood, Kosko's Rectangular , Fuzzy Relations, Fuzzy Equivalence Relations, Fuzzy Orderability Relations with Applications, Fuzzy t-norms, Fuzzy t-conorms, Fuzzy Implications, with Applications in Approximate Reasoning, applications in MATLAB, a-cuts of fuzzy numbers, fuzzy arithmetic, Basic Theorems of fuzzy Logic, as the Theorem of Extended Principle, Fuzzy Numbers, Fuzzy Linear Regression Modeling, Hybrid Models (using statistical and fuzzy logic methods) in estimating of parameters.

COURSE TITLE (COMPULSORY):

SPECIAL TOPICS IN LINEAR ALGEBRA

INSTRUCTORS:

Professor Christos J. Schinas (Coordinator)

Professor Garyfalos Papaschinopoulos

SYLLABUS:

Inner products. Inner product spaces. Orthogonal projection. Gram-Smidt orthonormalization. Linear operators. Adjoint operators. Operators in inner product spaces. Orthonormal operators. Isomorphisms. Normal operators. Tranformation of symmetric matrices to diagonal form. Linear transformations. Quotient transformations. Basic theorems and applications. N-th root of a matrix.

COURSE TITLE (ELECTIVE):

FINITE ELEMENTS

INSTRUCTOR:

Associate Professor Victor Balopoulos

SYLLABUS:

Introduction. Motivations and general framework for applying the Finite Element Method (FEM). Presentation of the direct stiffness matrix solution methodology. M.P.S. in one-dimensional problems. Prismatic rod (in tension/compression, torsion, plane bending) with a general application approach (weak form and use of integral formulas) regardless of potential, minimum theorems, etc. Field integral differential equations, differentiability requirements, types of boundary conditions. Shape functions. Species (Lagrange, Hermite), analytical and numerical integration, stiffness and mass registers, and vectors of energy-equivalent ("consistent") epicondial charges. Programming elements. Multidimensional P.S. Types (simplex, DeCartes, serendipity, wedge, etc.) and corresponding shape functions. Isoparametric elements. Gaussian numerical integration. Solving large sparse linear systems.

Incomplete factorizations and iterative solving. Vector methods and Preconditioning. Combinations. Time dependence. Stepwise integration (direct and indirect schemes). Linear problems (idiosyncratic analysis, spectral analysis). Non-linearity. Sources (geometric, statutory). Treatment (quasi-Newton, etc.) Introduction to special topics. Multiple incompatible fields, mixed formats, locking, incomplete integration, finite turns, etc.

COURSE TITLE (ELECTIVE):

STOCHASTIC ANALYSIS OF TIME SERIES

INSTRUCTOR:

Emeritus Professor Alexandros Rigas

SYLLABUS:

Stochastic time series models. Parameter estimation using the method of least squares. Parameter estimation by maximizing the likelihood function. Short term forecasts. Examples. Determining the appropriate model. Health check. Calculation of residuals and estimation of their autocorrelation coefficient. The general state-space model. Stochastic time series models that are special cases of the general state-space model. Calculation of the likelihood function of correlated observations. Kalman filter. Iterative Kalman filter equations. Kalman filter prediction equations. Renewal equations of the Kalman filter. Applications. Steady state of state-space models. Selection of initial values. Kalman filter smoothing equations. Predictions and applications in noisy random walk and non-local linear stress models. Non-Gaussian and nonlinear state-space models. Bayesian models and their applications. The Monte Carlo Markov Chain method.

COURSE TITLE (ELECTIVE):

GRAPH THEORY

INSTRUCTOR:

Professor Spartalis Stefanos

SYLLABUS:

Introduction to Graphs and Graph theory

Basic concepts and mathematical definitions. Introduction to graphs - standard definition. Isomorphisms of Graphs. Representations of Graphs (adjacency matrix, incidence matrix, edge lists). Graphical sequence - Algorithm of graphical sequence. Graph Construction Operations in Graphs and properties (union-intersection-ring sum-coalescence-interchange-sum). Special (basic) Graphs - Complete Graph - Complementary Graph – Sub graph.

Directed Graphs

Connectivity (Menger's Theorem)

Walk - Paths – cycles

Hamilton's Theorems (Walks - paths - cycles)

Euler's Theorems (Walks - paths - cycles)

Trees
Definitions - theorems - properties – examples. Directed Trees - Binary Trees. Traversal (Algorithm - example). Spanning Trees. Representation of discrete structures in real world with examples of tree structures, examples of trees.

Planarity   Plane
and Planar Graphs. Definitions. Euler's Theorem - Euler's Formula. Solid polyhedra. Kuratowski´s Theorem. Minor Graphs Theory.

Graph Coloring

Definitions. The Five Color Theorem. The Four-Color theorem. Examples and exercises with graphs.

The Chinese postman problem and its applications in the modern world

The traveling salesman problem and its applications in the modern world

Applications of Graph Theory in Industrial Production

Examples of using Graph Theory Applications in Industrial Production (the production process - sequence of operations - minimize the total time of the machine - solving methods using directed graphs - Euler's and Hamilton's theorems).

COURSE TITLE (ELECTIVE):

INTELLIGENT MODELING – HYBRID SOFT COMPUTING SYSTEMS

INSTRUCTOR:

Professor Iliadis Lazaros

SYLLABUS:

Data Science: Data preprocessing Parameter correlation analysis Detection – Removal of outliers Identifying and algorithms overcoming the problem of Minority classes
Data Transformation Development of classes using Hybrid Computational Intelligence approaches.

Machine Learning Presentation of the Mathematical Model of Artificial Neural Networks. The Back Propagation Algorithm Examples to understand. The Gradient Descent optimization algorithm using Derivatives.

Learning Avoiding Memorization – Overtraining Developing Regression Patterns Using Machine Learning Classification and Use of Machine Learning algorithms

Feed Forward Multilayer Artificial Neural Networks K-nearest neighbors Recurrent Neural Networks Hybrid unsupervised algorithms Fuzzy c-means clustering

Deep Learning – Convolutional Neural Networks Image recognition Examples of Machine Vision programs

MNIST and Deep Learning Standards

COURSE TITLE (ELECTIVE):

NUMERICAL METHODS FOR THE SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS

INSTRUCTOR:

Assistant Professor Avrilia Konguetsof

SYLLABUS:

Approximation of partial derivatives using Finite Differences. Classes of Partial Differential Equations and known problems. Initial and boundary condition problems. Direct and indirect methods. Numerical solution of Parabolic Equations, Elliptic Equations and Hyperbolic Equations. Convergence, stability.

COURSE TITLE (ELECTIVE):

APPLIED ECONOMICS WITH A FOCUS ON THE ENVIRONMENT – ESG

INSTRUCTOR:

Professor Ioannis Nikolaou

SYLLABUS:

Introduction to economics, consumer theory analysis, cost theory analysis of firms, product theory analysis of firms, production function analysis, consumption, saving and public expenditure function analysis, two-sector mathematical model analysis, three-sector

mathematical model analysis, environmental performance theories of firms , techniques for applying environmental performance techniques for businesses, techniques for measuring the environmental performance of businesses, techniques for disclosing business environmental performance information and business collaboration techniques in environmental management and ESG information, GRI standards, SASBs and Integrative Reporting.

MASTER THESIS

In the "Master Thesis Preparation Regulation", which was unanimously approved at the 13/01-24-2002 General Assembly of the Department of Civil Engineering of DUTH and is available on the Department's website (https://civil.duth.gr/undergraduate/kanonismos/), includes: a) all the necessary information for the preparation of a complete thesis, so that the student is familiar with the procedure that will lead him to the most interesting topic for him and the Supervisor, as well as the way of writing the Master thesis and b) the obligations of Supervisors for the preparation of the Master thesis.

PhD

The "Regulations for the Preparation of Doctoral Thesis" have been published in the F.E.K. B' 503/2018, and posted on the following link: https://civil.duth.gr/didaktorikka/didaktorikka/ . On the same website, the older regulation is also posted (approval of the Department Assembly 12/10-04-2014 and the Senate of Special Composition 10/29-07-2015), which applies to older PhD candidates.

POST-DOC REASERCH

The Department's "Regulations for Postdoctoral Research" are in accordance with the standard Regulations for Postdoctoral Studies of DUTH (F.E.K. B' 1407/2020), and posted on the following hyperlink: https://civil.duth.gr/didaktorika/metadidaktoriki-reinna/

PLAGIARISM

The students assume the responsibility not to fall for the offense of plagiarism. If plagiarism is established, disciplinary proceedings shall be instituted as provided for in the Foundation Regulation.

The papers are also being subjected to electronic control plagiarism by the professor.

Any work submitted, undergraduate or postgraduate or doctoral, is accompanied by the following affidavit, which is attached to the final text before the contents page of the work:

"I confirm that I am the author of this work and that I have stated or referred to it, explicitly and specifically, all sources from which I have used data, ideas, suggestions or words, whether they are transposed precisely (in original or translated) or paraphrased. I also certify that this work was prepared by me personally especially for the specific research or the specific course/seminar/curriculum".

Any DuTh member found to has committed plagiarism, is referred by the President of the Department to the Ethics Committee of the Foundation.

The Department of Civil Engineering adopts the draft of the MO.DI.P. A guide against plagiarism, available at the following hyperlink, is IFRIC: https://civil.duth.gr/undergraduate/

APPENDIX A ABBREVIATIONS

D.U.Th. Democritus University of Thrace

T.P.M. Civil Engineering Department

MO.D.I.P. Quality Assurance Unit

G.S. General Assembly

G.S.E.S. Special Composition General Assembly

D.E.P. Teaching Research Staff

E.D.P. Scientific Teaching Staff

E.E.P. Special Educational Staff

E.T.E.P. Special Technical Laboratory Staff

Associate Professor

Adjunct Assistant Professor

NOT. Bachelor's thesis

M.D.E. Master's Degree in Specialization

P.P.S. Undergraduate Program

P.M.S. Postgraduate PROGRAMME

D.P.M.S. Interdepartmental Graduate Program

T.E.E. Technical Chamber of Greece

T.S.M.E.D.E. Pension Fund for Engineers and Public Works Contractors

APPENDIX B USEFUL HYPERLINKS

Study guide

https://civil.duth.gr/undergraduate/odigos-spoudon/

Regulation of the Academic Advisor of the Department of Civil Engineering

https://civil.duth.gr/undergraduate/kanonismos/

Master Thesis Preparation Regulation

https://civil.duth.gr/undergraduate/kanonismos/

Internship Regulation

https://civil.duth.gr/undergraduate/kanonismos/

Erasmus Mobility Regulation

https://civil.duth.gr/undergraduate/kanonismos/

"Applied Mathematics" Master's Program Regulations

http://mapmath.civil.duth.gr/

Regulations (old and new) for the preparation of a Doctoral Dissertation

https://civil.duth.gr/doctorates/doctorates/

Regulation of Postdoctoral Studies

https://civil.duth.gr/doctorate/metadoctorate-reyuna/

Anti-plagiarism guide

https://civil.duth.gr/undergraduate/kanonismos/

APPENDIX C SOURCES – REFERENCES

✓ The study guide for the 2021-22 undergraduate program of the Department of Civil Engineering DUTH

https://civil.duth.gr/wp-content/uploads/2022/03/%CE%91_%CE%9F%CE%94%CE%97%CE%93%CE%9F%CE%A3_%CE%A3%CE%A0%CE%9F%CE%A5%CE%94%CE%A9%CE%9D_2021_2022__%CE%A4%CE%95%CE%A5%CE%A7%CE%9F%CE%A3_rev4 .pdf

✓ The website of the municipality of Xanthi

https://www.cityofxanthi.gr/

✓ The website of the DUTH

https://duth.gr/

✓ The website

https://pixabay.com/

Xanthi

Pixabay.com

Municipality Library of Xanthi