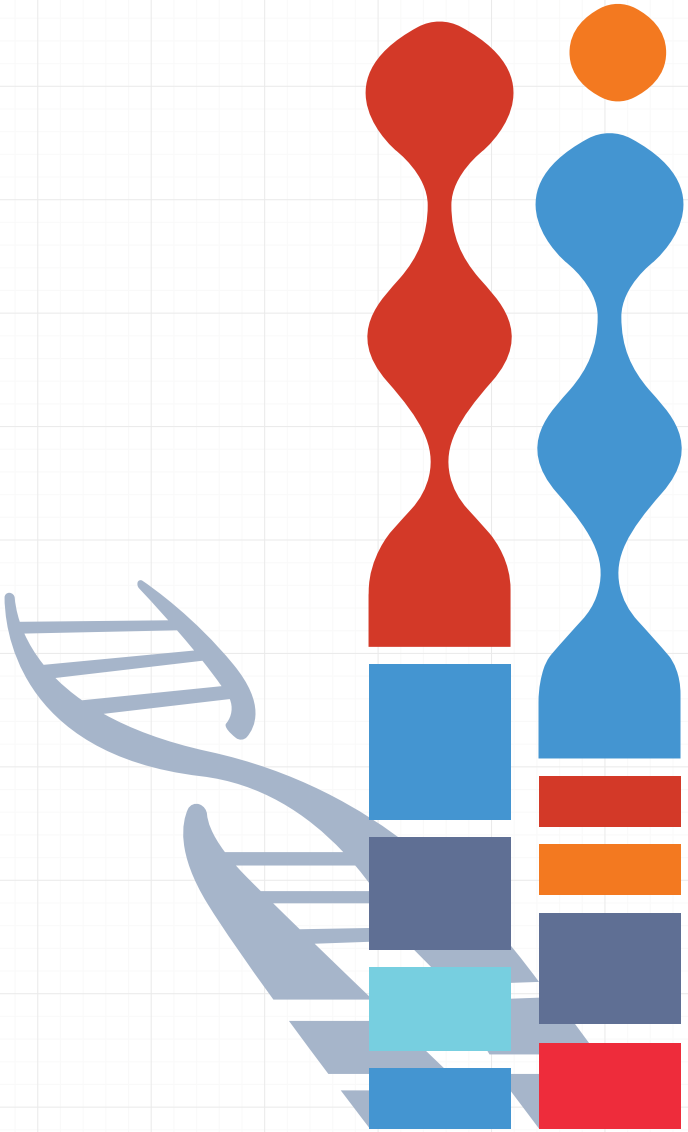
UNIVERSITY OF THESSALY

Advanced Experimental and Computational Biosciences



DEPARTMENT OF
Biochemistry & Biotechnology
UNIVERSITY OF THESSALY

Program Overview

The Graduate Program in Advanced Experimental and Computational Biosciences aims at the in-depth study of advanced approaches in biochemistry, molecular biology, genomics, and bioinformatics, and their applications in health, agri-food, and the environment.

The mission of the Graduate Program in Advanced Experimental and Computational Biosciences is to train our students to research excellence across the biosciences workforce, be that academia, research infrastructures or industry. We bring together committed faculty and talented students in a collaborative and supportive environment across continents, to probe the mechanisms of biological phenomena and discover new knowledge. We hold as key values research excellence, good mentorship, collaboration across disciplines and inclusion.

Our vision is to advance scientific excellence in life sciences and to foster a strong and dynamic culture of collaboration, supporting risk-taking and interdisciplinary research toward breakthrough discoveries. The program provides high-level practical training in the life sciences, develops candidates' research skills, and prepares them for entering a PhD program or staffing research centers. Hence, why we give our students the unique opportunity to train and exchange with our top-of-the-industry collaborating Institutions at the **University of Edinburgh in the UK, McGill University in Canada, and Western Sydney University in Australia**.

The landscape of science is changing rapidly. As such, our graduates will be well prepared to be leaders, bringing our key values to advance research in the complex world of life sciences. They will be provided with opportunities in four different renowned Institutions, in three different continents, to develop skills and awareness that will enhance their success. Consequently, our trainees will flourish in the current era of big data science and cutting-edge technology to contribute to the rapid pace of discovery we now enjoy.

Join our program and be prepared to meet the exciting challenges and enjoy the rewards that a career in life sciences provides. The faculty of the Advanced Experimental and Computational Biosciences are committed to offer you a fruitful and enjoyable journey to your success in biological training and research.

Why Us

Diversity: An international environment with students from all over the world and throughout many continents.

Travel: Study abroad period through the European Erasmus+ program (the University currently has more than 600 Erasmus Bilateral Agreements with more than 40 different countries).

Prestige: Our students have the opportunity to train and exchange with our collaborating Institutions at the University of Edinburgh in the UK, McGill University in Canada, and Western Sydney University in Australia and practically get the best of the entire world!

Flexibility: If needed, students can remotely attend the theoretical courses (AEC-101, 102, 103, 203 & 402) using our remote e-learning platform. Hands-on laboratory work (AEC-202 and 301), on the other hand, requires physical presence either in Larissa or in the collaborating laboratories of Edinburgh, McGill, or Western Sydney Universities.

Teacher Expertise: High quality teaching in a truly international environment and by renowned experts of the field. Our diverse international faculty is committed to the superb training of our students and postdoctoral scholars.

Research Opportunities: The University and our Department encourage research through the creation of modern research structures, increase infrastructure and utilize its assets and funds from the EU with the research programmes Horizon 2020, RFSR, FP6, FP7, Erasmus+, INTERREG, and LIFE.

Rankings: The University of Thessaly has significantly advanced itself in the recent past. It now ranks in the **top 800 Universities internationally**, according to World University Rankings, one of the best-known university ranking lists in the world.

Career Office Support

Education is much more than obtaining a degree. It's also about preparing for a successful professional career, and the Career Office of the University of Thessaly is here to help our students make that goal a reality. The office also aims to connect our students with schools, alumni associations, and businesses to achieve a successful career.

International Student Support

The newly formed Office of Global Services aims to assist international students by easing the transition into student life and community building, so that they can start building a network of their own. From orientation programs to providing information regarding immigration and government regulations, this office is dedicated helping international students with a variety of issues, including non-academic matters such as adjusting to their new environment.

Housing Accommodation

The University of Thessaly offers on-campus housing in Larissa for eligible students. The Residence consists of 8 buildings with a total capacity of 502 residents. The criteria for accommodation eligibility are the financial and family status of the students. In addition, health reasons as well as other factors that could affect the financial situation are considered.

For more information, contact the Student Residence
by phone at +30 2410-684431, +30 2410-684393, +30 2410-684572, or
via email at vpapadop-at-bio.uth.gr.

Financial Housing Support

Alternatively, undergraduate students from Greece or other countries of the European Union, could apply for a housing allowance of 1,000 euros if the conditions are met. The applications are submitted online through the website of the Ministry of Education and Religions (https://stegastiko.minedu.gov.gr). When additional documents are required from beneficiaries, these should be sent to the Student Welfare services by post or online within 30 days from the date of submission of the application.

For more information, contact for Student Welfare at the Department
via email at vpapadop-at-bio.uth.gr or
by phone at 2410-565273.

Student Life & the Extended Community

Our Campus: Larissa

Larissa is one of the largest Greek cities with a population of about 145,000 inhabitants. Its name is pre-Hellenic of Pelasgian origin and means a fortified hill or citadel. It is an important shopping center, communications and transportation hub and is famous for its agricultural production as it is located in the Thessalian plain. The emblem of Larissa is the Horse of the Thessalian plain, which traditionally supported all agricultural work. The famous Alcazar Park is an important green lung for the city and its inhabitants. Viopolis and Gaiopolis are the two university campuses of Larissa with more than 12 thousand students.

What do the surrounding areas of Thessaly offer?

Beautiful Beaches: Magnesia & Sporades Islands

The beaches in the wider area of Volos and the exquisite Sporades Islands (Alonissos, Skopelos or Skiathos) are among the best-loved in Greece. Thousands of visitors each year flock to their beaches, all of which offer stunning scenery and many recreational facilities. The coast of Magnesia has one of the mildest climates in the Mediterranean. Cool summers and exceptionally mild winters create ideal conditions for enjoying the sea during all seasons of the year.

Mountainous Travels: Pelion

Pelion is an absolute natural paradise. It is a huge mountain dotted with picturesque traditional villages and fringed by mesmerizing beaches. The gems of Pelion are hands down its quaint villages. They are made up of traditional little houses with grey stone roofs and paved alleys that ooze charm in abundance. This paradise is also full of drinking fountains, plane and apple trees, oaks, gardenias, hydrangeas, and camellias.

Archaeological Wonders: Meteora

Meteora is certainly one of the most impressive regions of the country. Located north of Trikala, this spectacular place is included in the UNESCO World Heritage List since 1989 and an official holy place for Greece since 1995. The famous monasteries date back to the Byzantine era, and they lie on the top of massive rock formations. Interesting fact: the breathtaking natural landscape was shaped approximately 60 million years ago.

Amazing Scenery & Forestry: Lake Plastiras

Lake Plastiras is surrounded by an idyllic landscape of incomparable natural beauty that captivates the mind at first sight. The stunning blue lake is surrounded by snow-capped mountains and verdant pine forests, captivating visitors at any time of the year. Dreamlike in all aspects, it is one of the largest artificial lakes in Greece created in a location where in antiquity we could find the confluence of the rivers Tavropos and Achelous.

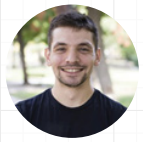
Testimonials

Afrodite Katsaouni

In September 2020, I was accepted to the Master's program "Advanced experimental and computational Biosciences" of the Department of Biochemistry and Biotechnology, a PhD-oriented program considered one of the most interesting and demanding ones in our department. It is a remarkable program and during those two years, due to the rigorous training we obtained from our professors and all the knowledge they happily transferred to us, I was able to develop new skills and a newfound passion for science, which proved important tools for my PhD studies.

Jenny Koukara

I had a great experience attending the lessons in Advanced Experimental and Computational Biosciences. I was challenged to stay focused, comprehend new concepts, and follow deadlines, thus I was sufficiently prepared for a career in the demanding research field.



Nikolaos Delkis

During my studies at the University of Thessaly, I was really lucky to be selected for the MSc program "Advanced Experimental and Computational Biosciences" in the Department of Biochemistry and Biotechnology. It is an exceptional and intensive 2-year program, focused on people who would like to continue their academic trajectory to a PhD. It comprised a detailed overview of cutting-edge tools in biochemistry, molecular biology, and bioinformatics, as well as training on oral presentations and literature review (through weekly oral presentations and bi-weekly journal clubs).

Magdalini Tsitsikli

My undergraduate studies provided me with a comprehensive foundation of scientific knowledge, but it was my postgraduate studies at the Master's level that allowed me to specialize and sharpen my theoretical and practical skills in academic research. For example, the laboratory visiting rotation scheme, which is part of the Master's program, enabled me to acquire a plethora of experimental technical skills and add them to my portfolio. Moreover, the process of composing a grant proposal for research funding as part of my academic studies served as a means to stimulate and sharpen my critical thinking skills.

Myrto Chatziaggelou

The skills I obtained from the Master program: "Advanced Experimental and Computational Biosciences" include:

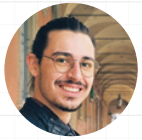
1. Learning to work under pressure, completing assignments in short time periods.
2. Exploring different scientific subjects in depth.
3. Learning new scientific approaches and methodologies in practice due to the one-year lab experience.
4. Introduced to multiple bioinformatic tools useful in scientific research.
5. Learning to present specific scientific subjects with English terminology and write research proposals.

Marianna Kyrgiafini

I attended the MSc program "Advanced Experimental and Computation Biosciences" during 2019-2021. My experience with this MSc was both challenging and exciting. This program is of a high standard and I especially liked its organization which incorporated lectures, presentations by students, and active discussions on many scientific topics. It also helped me to develop my soft and hard skills and get state-of-the-art knowledge. Overall I felt that the MSc program supported me in my professional career and has given me the tools to be more competitive in my field. I believe that it is a great choice for someone who wants to be involved in research.

Marialena Georgopoulou

During my candidature, I was exposed to an in-depth learning of Molecular Biology and Biochemistry techniques. The learning schedule was tough but very effective. From learning tasks and journal clubs to rotations and my MSc thesis, all were extremely important. Being exposed to different tasks I managed to collect a range of skills that made me confident enough to apply to one of the world's most competitive Universities for my PhD, the University of Melbourne. Based on my personal experience I would say that AEBC is great for anyone interested in doing a career in research, academia, or in industry, while it is a great preparation for people that want to do a PhD degree next.



Dimitris Rallis

Going through Advanced Experimental and Computational Biosciences is a long journey that pays off in the end. During the first year, weekly presentations got me involved in studying the current literature from different fields of biological research, advanced my already existing knowledge, and helped me highlight the current research trends. Additionally, being introduced to a variety of different scientific subjects assisted to follow the one that intrigued me the most. Another major part of the AEC program is the one-year-long thesis, which gives the candidate the opportunity to start a project of his own. This process got me involved in a scientific project that inspired me to follow up to the PhD level while writing a research proposal on this topic was a novel experience and essential knowledge for anyone intending to follow a research career. Currently, I'm in the first PhD year working on a field of my interest with the confidence that AEC provided me with the motivation, skills, and mindset to reach that peak.

Degree Program Details

Applications will be processed on a rolling basis at the latest by August 15th or until the maximum number (15) of successful candidates is achieved.

Admission Requirements

All holders of biosciences-related bachelor's programs (e.g. biology, biochemistry, biotechnology, chemistry, molecular biology, genetics, but also medical schools) are eligible to apply to AEC. Good knowledge of English is a prerequisite for applying. For applicants whose mother tongue is not English, at least a B2 level degree and good command of the language during the interview are required.

Evaluation of candidates

Evaluation is based on the following criteria:

1. Overall bachelor's degree grade (grade in a decimal scale multiplied by 1.5, max 15%);
2. Experimental/computational undergrad thesis (thesis grade in a decimal scale multiplied by 0.5, max 5%);
3. Relevant publications, announcements in conferences, etc (max 10%);
4. Other relevant graduate degrees (grade in a decimal scale multiplied by 0.5, max 5%);
5. Relevant research activity (2% for each year of experience, max 5%);
6. Recommendation letters (max 10%);
7. Interview (50%).

The interview is an essential part of the selection procedure. Interviews include questions on biochemistry, molecular biology, cell biology, microbiology, and genetics, as well as questions on subjects of wider scientific interest. The purpose is to assess whether the candidate is capable of critically using basic biological information in order to address specific research-related problems.

Curriculum

In the first semester, two basic theoretical courses are offered: Methods of Biochemical Analysis (AEC-101) and Methods of Molecular Biology and Genomics (AEC-102). During the second semester, students are taught Topics in Computational Genomics and Systems Biology (AEC-201) and take Advanced Laboratory Exercises (AEC-202), i.e., small rotations in different research laboratories. At the same time, during these two semesters, the students critically present original scientific articles (AEC-103 and AEC-203). In the third and fourth semesters, the students prepare an original, yet intensive and hands-on, dissertation (AEC-301 and AEC-401), while in the last semester, they also write a research proposal (AEC-402), which may be the preamble of their doctoral dissertation.

How to Reach out

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