



SCHOOL OF ENGINEERING
DEPARTMENT OF MECHANICAL ENGINEERING

CALL FOR DOCTORATE APPLICATIONS FOR THE
ACADEMIC YEAR 2023-2024

The **Department of Mechanical Engineering** invites applications for its PhD Program for the Academic Year **2023-2024**:

1. PhD Program in Mechanical Engineering (28 positions)

The positions are related to Mechanical Engineering domains such as:

- Renewable Energy Sources (RES) and Hydrogen Technologies
- Simulations in Metal Hydride Compressors (MHC)
- Development of advanced CNC programming functions in an integrated software tool with post-processing capabilities.
- Food Security - Aquaculture Engineering
- Engineering Economic Analysis of Energy Efficient Technologies
- Internal combustion engine (ICE) non-premixed and premixed combustion modelling, and computational fluid dynamics (CFD) simulation of flow, combustion and emissions.
- Development of computational fluid dynamics (CFD) methodology incorporating reduced and optimised chemical kinetics mechanisms for gas fuels combustion and emissions prediction
- Design and Simulation of Additive Manufacturing Processes and Products
- Design and simulation of adhesive bonding and composite materials for light-weight applications
- Energy assessment of the built environment
- Assessment of waste to energy conversion technologies
- Advance design and simulation of carbon fibre parts

- Design and construction of advanced machine elements and devices
- Reverse engineering, 3D printing and scanning of complex parts
- Further penetration of RES using Pumped Storage
- Green (RES/Hydrogen) Energy Supply Systems
- Construction of phantoms of human-organs to be used in various medical imaging modalities research and automation techniques for motions of medical phantoms to be used in various medical imaging modalities research
- Surveying environmental radioactivity in Cyprus: gamma and alpha (air, water, soil)
- Monte Carlo simulations in solid state systems (metals, semiconductor alloys)
- Medical Imaging algorithms (SPECT/PET): optimization and development
- Future Aircraft Design Synthesis and Multidisciplinary Optimisation
- Unmanned Aerial Vehicle (UAV) Design and Autonomous Flight
- Aircraft Flight Aerodynamics, Performance, Dynamics and Simulation
- Road Vehicle Aerodynamic Design and Performance Analysis
- Automotive Shock absorber Smart Continuous Fault Detection
- Driver behaviour recognition system for avoiding abnormality in driving
- Design of new road restraint systems
- Automotive crashworthiness and Crashworthy deformation of thin-walled structures

Doctoral Program Coordinator

Professor Varnavas Serghides

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Deadline for submission of applications: September 15th, 2023

Admission Criteria

The Doctoral Program is based on the European Credit Transfer and Accumulation System (ECTS). The award of the PhD degree requires the completion of 180 ECTS and the normal duration of the program is three years.

Eligible applicants must hold a Master's degree relevant to the proposed research area of PhD studies. The Master's degree must be granted by an Institution recognized in the country where it operates. Applicants who do not hold their Master's degree at the time of application, but will hold such a degree before the commencement of the Doctoral Program, are also eligible to apply but must submit a letter from their University's Registrar verifying that they are eligible to graduate. The decision on their admission does not become official until the degree has been successfully received. All candidates must have a very good knowledge of the English language.

For more information visit the University's Web site ([HERE](#)).

Applications

All applicants must submit an application in due time, which must include:

- A completed **Application Form**, available online ([HERE](#))
- An up-to-date **Curriculum Vitae**
- **Statement of Research Interests** (up to 600 words) describing the proposed area in which the candidate is interested in conducting research
- **Two (2) Letters of Recommendation**, at least one from an academic referee
- **Certified copies of all relevant Degrees and Transcripts**
- **Copies of any other supporting material**, such as, exams, awards, etc.
- **Proof of English Language proficiency**, such as, TOEFL, IELTS, IGCSE, Cambridge Certificate of Proficiency in English or any other equivalent language examination. Candidates, who have completed an undergraduate or graduate program where the language of instruction was English, satisfy the proof of English language proficiency requirement.

All application material must be submitted **in English**.

Candidates who meet all the admission criteria will be invited for an interview.

Tuition Fees

Tuition fees and program specific scholarships are published on the Frederick University website ([HERE](#)). Further special tuition waiver leading up to 90% tuition funding is also available.

Information

For more information, please contact:

Frederick University Admissions Office in Nicosia tel. +357 22394394, and
Limassol tel. + 357 25730975

E-mail address: admissions@frederick.ac.cy