SORBONNE UNIVERSITY ABU DHABI

Master in Physics Specialisation in Non-Destructive Characterisation with Applications for Cultural Heritage

Master Programmes

The proposed Master in Physics - Specialisation in Non-Destructive Characterisation with Applications for Cultural Heritage degree is awarded by Sorbonne University in Paris and delivered by world-class academics in Sorbonne University Abu Dhabi.
The programme delivers an outstanding cross-disciplinary education in Physics and Non-Destructive analysis and their applications to heritage science.

The Master in Physics - Specialisation in Non-Destructive Characterisation with Applications for Cultural Heritage introduces students to a unique combination of scientific disciplines (Physics, Engineering, and Data Sciences): it equips them with a strong background in Non-Destructive Characterisation, with methods widely used in many fields, from aerospace and oil and gas, to forensic science and archeology and art. Through the focus on Cultural Heritage, students are exposed to real-life data challenges associated with their core studies, and they learn how to manage interdisciplinary collaborations.

The ability of the graduates to contribute to research and development projects, and to perform cross-disciplinary and innovative analyses, makes them excellent candidates for employment in Cultural Heritage, Archeology and Art domain, as well as in all the fields where Non-Destructive Characterisation is applied and thorough analysis required, like Material Science, Oil and Gas sector, Aerospace, Environment, Forensic Sciences or Architecture Engineering.

The curriculum is taught by Abu Dhabi based faculty members, specialists in Physics, Non Destructive Characterisation and Archeology, and by visiting professors coming from the Laboratory of Molecular and Structural Archeology, and the Department of History of Art and Archeology at Sorbonne Université.

Overview

Programme highlights

A unique multidisciplinary program in Non-Destructive Characterisation

Designed by experts in their field, the program delivers an outstanding cross-disciplinary education in Physics and Non-Destructive Characterisation. In order to address scientific research questions related to cultural heritage, the programme will introduce students to a unique assembly of scientific disciplines, brought together with valuable cross-cutting and transferrable skills, including interdisciplinary collaboration in cultural heritage and many other fields where non-destructive analysis is applied, like forensics, material science, environment or aerospace.

Enhancing individual & national development

Over the last decade, Abu Dhabi has invested strongly in expanding and upgrading its cultural offering with significant projects such as the Saadiyat Island Cultural District and continues to further emphasize the developments for Sustainable Heritage, in collaboration with the industry. This rapid economic development and climate-related phenomena creates major challenges within conservation science, research on ancient materials and environments, as well as sustainable use of cultural heritage. This programme has been developed to provide society with Heritage Scientists who will be able to support conservation and understanding in archaeological science, heritage management, or wider societal engagement with heritage related topics such as heritage values and ethics.

Networking

Each class will have a reduced number of students from different countries. A strict entry selection procedure will guarantee the quality of the degree and will allow you to expand your personal network with high potential peers.

International recognition

Sorbonne University Abu Dhabi provides the combined experience of Sorbonne University and Université Paris Cité. This rich heritage of joint excellence is now available in Abu Dhabi under the Ministry of Education and is recognised worldwide.

The Master in Physics – Specialisation in Non-Destructive Characterisation with Applications for Cultural Heritage was specially designed to educate high-value scientists with ability to work cross-domains, in the very demanded field of non-destructive analysis

The degree in Physics – Specialisation in Non-Destructive Characterisation with Applications for Cultural Heritage is taught in English and covers a total of three semesters on campus and one semester in internship. At the end of this degree, you will have a total of 120 ECTS credits. During the three semesters on campus, classes are scheduled between 9:00 am and 6:00 pm.

Structure

Year 1
Semester 1 - Courses
Quantum Physics: Basis and Applications
Fundamental of Statistical Physics
Experimental Methods in Material Physics
Scientific Computing (Python & MATLAB)
Experimental or Numerical Group Project in Heritage Sciences 1
Heritage Science course 1 (History of Art, Archeology, Physical Geography)
Non-Destructive Characterisation in Heritage Sciences
Language 1 (French or another foreign language for French speakers)
Semester 2
Introduction to Atomic and Molecular Physics
Project Management
Vibrations, Acoustics and Control Sensor
Spectroscopy Techniques and Applications
Introduction to Artificial Intelligence for Big Data and Signal Processing
Experimental or Numerical Group Project in Heritage Sciences 2
Heritage Science Course 2 (History of Art, Archeology, Physical Geography)
Language 2 (French or another foreign language for French speakers)

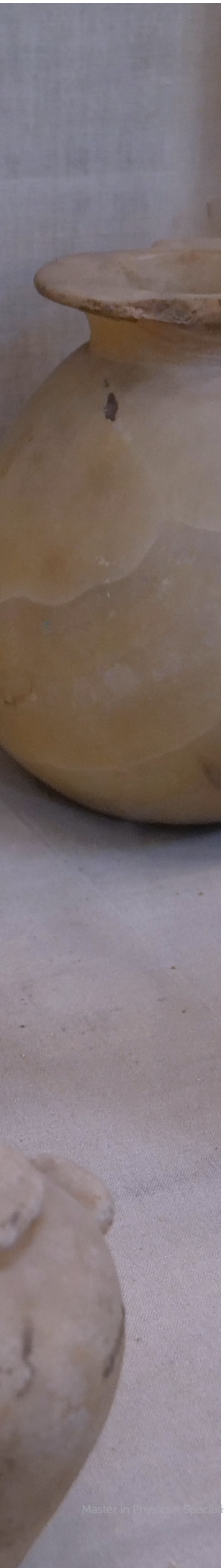
Internship

During the 6-month fulltime internship, students work on a research project of interest for the institution or company welcoming them, under the guidance of their mentors in both places. The internship gives them the opportunity to apply to a real-life project the skills and knowledge they developed over the three first semesters. They will build on the research methodology and techniques acquired in physics, blended with cross-disciplinary knowledge and methods from the Cultural Heritage field, or other fields, like oil & gas, forensics or material science. At the end of the internship, students submit a Master's Thesis and present their work in front of a panel.

Year 2
Semester 3 - Courses
Ultrasonic Non-Destructive Testing
Materials Characterisation in Cultural Heritage
Applications of Non-Destructive Characterisation
Experimental Study for the Characterisation of Real Materials related to Archaeological and Art Interest
Introduction to Artificial Intelligence for Cultural Heritage Science
Long term Practical On-site Project (cross-group, course common to the Master students in Archeology)
Language 3 (French or another foreign language for French speakers)
Semester 4
6 months full time Internship - Master thesis

Assessment & Graduation requirements

Throughout the year, there will be frequent assessments and evaluations. Students will be evaluated on individual assignments, presentations, reports and examinations. Attendance to all classes is mandatory and it is important that students are punctual and observe university regulations at all times.



Career prospects

There are abundant and rewarding opportunities at the regional and global level for Physics graduates specialized in Non-Destructive Characterisation, with a high demand in the GCC in federal and state government agencies, museums and historic sites, colleges and universities and departments ranging from police, municipality, planning commissions and private sector industries such as luxury goods sector. As high-level scientists or engineers, graduates are looking forward to positions in quality assurance, research, management, engineering design, training careers and teaching.

Admission to our master's programmes is selective and competitive and each applicant will be considered on his/her own merit. Our admission process ensures that every course has an ideal mix of people with talent, impressive interpersonal skills and a positive attitude.

Admission requirements

General entry requirements:

- Bachelor in a relevant field with a CGPA of 3 out of 4 or equivalent. Candidates with a GPA between 2.5 and 2.99 can be granted a conditional acceptance subject to a probation period of one semester

- IELTS certificate with minimum overall band of 6.0 with a validity of 2 years or TOEFL certificate with minimum score of 79 (or equivalent) with a validity of 2 years or Minimum EmSAT English score of 1400 with a validity of 18 months or, Native English speaker who completed 3 full years in an English-medium institution within a maximum period of 3 years.

Shortlisted candidates will be asked to attend an interview to assess the candidate's motivation, career expectations and relevant professional experience in the degree area. Applicants who earned their undergraduate degrees from universities outside the UAE must present a Certificate of Equivalency for their graduation certificates from the UAE Ministry of Education. Applicants, who are holders of undergraduate degrees issued by a licensed higher education institution in the UAE, are required to submit a copy of their degrees attested by the UAE Ministry of Education. For details on requirements, kindly visit the Ministry's website: **www.moe.gov.ae**

Tuition Fees
AED 166,400 (approximately US$ 45,344)

Scholarships are available for this programme*:
- 20% alumni discount
- 25% academic excellence scholarship
- 25% discount upon enrolment on a second master's degree
- 5%-15% corporate offer

Visit our website for more information.
*Conditions apply

Why Sorbonne University Abu Dhabi?

In today's fast-paced and globalised economies, knowledge and languages both serve an important role in creating progressive and vibrant societies. The French education system is known for its high level of rigorous critical thinking and debating skills, which play a significant role in developing future pioneers and leaders.

Sorbonne University Abu Dhabi is a globally recognised education institution that serves as a bridge between civilisations by offering a multicultural environment, which promotes and develops a strong culture of tolerance, curiosity, harmony and cultural awareness for today's modern economy. Students have access to internationally acclaimed faculty, world-class facilities and internationally certified degrees, which places them firmly on the right path in preparation for a successful career.

This degree is awarded by Sorbonne University in Paris and officially accredited by the UAE Commission for Academic Accreditation (www.caa.ae).

For more information, please contact:

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