

MASTER DEGREE IN INNOVATION ENGINEERING AND TECHNOLOGY TRANSFER (MIETT)

A unique assisted master degree focusing on Intellectual Property in the framework of green transition and digital transformation toward sustainability



WHERE YOU WILL STUDY ?

National School of Sciences and Advanced Technologies of Borj Cedria

A unique place to embrace innovation and best professional practices

The National School of Sciences and Advanced Technologies of Borj Cedria, (French acronym ENSTAB) is a national engineering school that opened its doors for students in September 2014 within Carthage university. The main goal of ENSTAB is to train multidisciplinary engineers and students with multiple skills in the advanced technology domain and green practices.

ENSTAB is part of a larger campus regrouping two other Institutions : the Higher Institute for Information and Communication Technologies (ISTIC), and the Higher Institute for Environmental Sciences and Technologies, the campus regroups also a Technopole which is composed by 4 Research Centers specialized in energy, water, biotechnology and materials, in addition of an Entrepreneurship Center dedicated to support student's journey.

This large campus covers curricula and specialties linked to sustainable development and is part of an outstanding Japanese scientific collaboration project in Africa, with the name of Med Campus project. One of the important partners in this project is the University of Tsukuba Japan.



World Intellectual Property Organization (WIPO)

The World Intellectual Property Organization (WIPO) is the global forum for intellectual property services, policy, information and cooperation. With 193 member states, its mission is to lead the development of a balanced and effective international intellectual property (IP) system that enables innovation and creativity for the benefit of all. WIPO's mandate, governing bodies and procedures are set out in the WIPO Convention, which established WIPO in 1967.

WIPO ACADEMY

The WIPO Academy is the center of excellence for IP education, training and skills-building for WIPO member states, in particular developing countries, least developed countries (LDCs) and countries in transition. The Academy works to help build human capacity in IP, which is essential to innovation and creativity. Its three programs cover a rich portfolio of both general and specialized courses on IP, and cater to different target audiences. Courses combine residential and distance learning methodologies, and are taught by IP experts. The aim of the University Partnerships program is to support access to IP higher education, especially to participants from developing countries, LDCs and countries in transition.

The University Partnerships Program provides support to universities and teaching institutions who are seeking to offer IP higher education in developing countries, LDCs and countries with economies in transition. To help achieve this objective, WIPO will assist the Carthage University by sponsoring IP experts to review and evaluate the existing curriculum and syllabi of the Professional Master's Degree on Innovation Engineering and Transfer of Technology (MIETT). In addition, WIPO will designate professors/experts to deliver IP lectures as part of the program.

ABOUT THE PROGRAM

"There's a way to do it better. Find it."
Thomas Edison (1847 - 1931), Inventor



The Master in Innovation Engineering and Technology Transfer trains managers in research and development, researchers, heads of research centers and all persons working on the valorization of scientific research by meeting the real needs of the economic system, it enhances also the journey of entrepreneurs working in innovative startups.

Based on the three main axes students will acquire hard and soft skills allowing them to be effective professionals in innovation and technology transfer, a very important needed skill.

Axis 1 : Analysis and technology

This first axis covers technical modules in mathematical modelling, statistical data analysis, Big Data and IoT as well as Industry 4.0 and 5.0, developed over three semesters, allowing the student to acquire hard skills in modelling and understanding economic trends to better satisfy issues linked to digital transformation and green transition.

Axis 2 : Management of innovation and technology

This second axis focuses on modules of management sciences and develops skills linked to business analysis of innovative projects and startups.

Axis 3 : Technology transfer

Intellectual property issues, drafting of patent contracts are presented through the three semesters, skills that the Tunisian and international market still lack. The student's learning journey is enhanced and supported by the scientific resources of WIPO (Books, online courses with certificate and offline courses in ENSTAB with WIPO experts).

This same axis also devotes a module of drafting technical reports, in addition to the techniques of handling international tenders. Moreover, the ability to communicate with the aim of understanding and clearly explaining research results and knowing how to argue the interest of investing in innovations are covered through a module dedicated to communication and negotiation techniques.

LEARNING OUTCOMES

- Learn the basic skills necessary to ensure the link between Research, Transfer and Innovation closely linked to each other by a synergistic and complementary relationship focusing on the main actors of this relationship: scientists on the one hand and decision-makers and economic actors on the other.
- Master the operational transfer process to a beneficiary (company/unit/organization).
- Develop knowledge and professional skills that enable to manage the dynamics and techniques of strategic management of scientific research.
- Establish a controlled transformation of research activities in order to determine a value and an economic orientation resulting from this process.
- Promote project engineering aiming at structuring, implementing and managing innovative projects from research or industry.

PROGRAM STRUCTURE

Semester 1 (14 weeks)

Module 1 Data analytics I

- Applied statistical analysis to technologies
- Information and documentation systems
- Patents: mapping towards sustainable development

Module 2 Management of Innovation and Technology

- Economics of Innovation
- Supply chain and innovation
- Creativity, Research and Innovation Management

Module 3 Business Intelligence and Technology Transfer

- Business Intelligence
- Management of research projects and technology transfer (from project to new - product) 1
- Scientific and technical writing

Module 4 Project Management

- Entrepreneurship and corporate culture
- Team management
- Technical English 1
- Module 5 Soft Skills
- Communication and negotiation techniques level 1

PROGRAM

STRUCTURE

Semester 2 (14 weeks)

Module 6 Data Analytics II

- Big Data Analytics Data center
- Mathematical modelling applied to technological innovation
- Clusters in the service of technology transfer

Module 7 Innovation Management

- Industrial and operational agile management
- Management of research and technology transfer projects 2
- Marketing of innovation

Module 8 Intellectual Property and Patents

- Intellectual property - The patent
- Intellectual protection - Technology transfer: from detection to project implementation
- Technical English 2

Module 9 Management of Technology Transfer

- Management of change in organizations
- Technology transfer strategies - Leadership and organizations
- Professional project

Module 10 Soft Skills

- Communication and negotiation techniques Level 2
- Languages (optional)

PROGRAM STRUCTURE

Semester 3 (14 weeks)

Module 11 Data & Information Analysis

- Advanced machine learning for IOT and AI
- Cloud computing
- Agent based Modelling ABM of economics

Module 12 Technology Transfer Agreement

- Technology transfer contracts, Negotiating and managing a license
- Intellectual property - Analysis and optimization of the IP portfolio
- Technology transfer procedures (from project to new product) 2

Module 13 Technology transfer monitoring and evaluation

- Technical report writing techniques
- Environment and quality management
- Study of patents by technology field (water, energy, environment, ICT, Industry 4.0/5.0).

Module 14 Technology transfer and sustainable development

- Technical English 3
- CSR and SDG

Module 15 Soft Skills

- Communication and negotiation techniques Level 3
- Languages (optional)

Semester 4 (14 weeks)

End of studies project (12 to 14 weeks)

DURATION, LANGUAGE, AND TEACHING METHOD

Duration : 1st year from mid-september 2022 to mid-june 2023
2nd year from mid-september 2023 to mid-june 2024
Offline – ENSTAB Tunisia and Online.
French

WHO CAN APPLY

Undergraduate
student/
Postgraduate/
PhD (Applied
sciences and
computer
sciences)

Engineer

Manager
of
research
and
development
department

Professional
working
in
research center

Entrepreneurs/
innovative
startups

ACADEMIC STAFF

National experts and international experts from WIPO

ADMISSION PROCESS

Apply on <https://www.cursus.tn/index.xhtml> (Create your account and select “Mastere Professionnel Ingénierie de l’Innovation et Transfert de Technologie” Ecole Nationale des Sciences et Technologies Avancées – Université de Carthage)

Full text for the call for application : <http://www.enstab.rnu.tn/>

Results for 1st selection : 2nd September 2022

Start of the academic year : 3rd week of September 2022

FEES FOR INTERNATIONAL STUDENT

Tuition fees per year : 2000 Euro

FACILITIES FOR STUDENTS

The campus is :

- 2 mns walking from the bus station
- 18 mns walking from train station « Erriadh »
- 35 mns from Carthage international airport and the capital Tunis

Many facilities are available for students on site :

- A University Restaurant (Cafeteria) at 50 m from ENSTAB.
- A cultural and sports Complex at 200 m from ENSTAB.
- A dormitory is available for students.
- More than 12 clubs.

"The secret of change is to focus all of your energy, not on fighting the old, but building on the new."

Socrates (470-399 BC), Philosopher



CONTACT

Program director

Dr. Amira KADDOUR

✉ amira.kaddour@enstab.ucar.tn

Director of the school

Dr. Hamouda KHECHINI

✉ hamouda.khechini@enstab.ucar.tn

Carthage university international cooperation office

Mrs Rania BENGRICH

✉ rania.bengrich@ucar.tn