CONDITIONS OF ADMISSION

The selection will be made exclusively based on the submitted documents which must include:

- ***A handwritten request addressed to the director of the IMSP, specifying the chosen option ;***
- **A certified copy of the A-level degree or equivalent (+ certificate of authenticity file for foreign diplomas) ;**
- ***A certified copy of the* A-level *degree or equivalent degree* ;**
- ***A certifed copy of the transcripts from the A-level to the Bachelor degree* ;**
- ***A Curriculum Vitae* ;**
- ***A certified copy of the birth* ;**
- ***2 x ID photos (Passport format size)* ;**
- ***2 x letters of recommendation* ;**
- ***A receipt of payment for the application review fees*;**
- ***A file folder with a strap* ;**

The application review is **23 €**, non-refundable. The application must be submitted to the secretariat of the Institute of Mathematics and Physics in Dangbo (Benin). (secretariat.particulier@imsp-uac.org)

TUITION FEES

- Registration:	**80 €**
- Training:	**457 €**
- Laboratory and internship:	**152 €**
TOTAL :	**689 €**

MANAGEMENT OF INFORMATION SYSTEMS

Institution of Higher Education and Research : University of Abomey-Calavi (UAC)

Training and Research Entity : Institute of Mathematics and Physics (IMSP) / **Modelling Research and Mathematics Decision Unit (URMAD)**

Field of training : Science and Technology

Duration of the training : Two (2) years.

Training and Research Partner Structures :

- Cheikh Anta Diop University (UCAD-Senegal)
- Mohamed V University of Rabat (Morocco)
- National Research Institute for Computer Science and Automation (INRIA-France)
- Orange Labs (France)
- Polytechnique Montréal (Canada)
- University of Bourgogne (France)
- University of Clermont Auvergne (France)

Head : Guy DEGLA, PhD. Associate Professor (CAMES).
Principal Investigator (**TWAS**).
Tel : +229 97 067 677. Email : gdegla@imsp-uac.org

Contact

Centre of Excellence in Mathematical Sciences and Applications (CEA-SMA)/IMSP/PoBox 613, Porto-Novo, Benin..

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Centre d'Excellence Africain en Sciences Mathématiques et Applications
@cea_sma

MASTER IN OPERATIONAL RESEARCH

DECISION MATHEMATICS

Depuis 1968

MAIN OBJECTIVE

The Operational Research program at the Institute of Mathematics and Physics (IMSP) of the University of Abomey Calavi (UAC) offers:

- two-year Master's courses,

- three-year doctoral courses, and

- postdoctoral training.

It provides students with a solid multidisciplinary scientific background while introducing them to the world of scientific research for development. It will allow inception into professional sectors, particularly those that use computer science and mathematical tools.

As a discipline that combines scientific methods (data analysis, engineering, etc.) to solve problems arising from the efficient management of large organizations (public or private), Operational Research (OR) is a decision-making science. It is a recent, dynamic and expanding discipline.

OR deals with both the Mathematical Modeling of practical engineering problems, simulation, as well as the comparison of the results obtained with reality and their validation.

CONDITION FOR ADMISSION TO THE MASTER'S PROGRAM

To hold a Bachelor's degree in Mathematics (Pure or Applied), Statistics, Operational Research or Computer Science. Holders of a master's degree in one of these disciplines may also take part in this training, but they will be required to complete the full 2-year training.

TOPICS OF INTEREST

1- Modeling, Optimization and Control of dynamic systems for decision-making (Management, energy, Environment, Biomathematics)
2- Optimization
3- Algorithmic and Simulation methods
4- Stochastic and Heuristic methods
5- Game Theory
6- Data analysis
7- Logistics and Transport
8- Telecommunication and Networks
9- Automatic learning (Machine learning)
10- Cybersecurity and Artificial Intelligence

.

PROFESSIONAL SKILLS TO BE ACQUIRED

Acquisition and development of advanced quantitative skills in :

☑ **Planning and Resource Management :**
Logistics, Transport, Finance, Insurance, Information Technology, Energy production, Health, Life science, ...

☑ **Professional Sectors of activity :**
Scientific and Innovative Computing Laboratory, Project Engineering, Technical Consultancy, Banking and Insurance, Research and Development Engineering, Ranking Agency.

INTERNSHIP OPPORTUNITIES (4TH SEMESTER)

315h of internship punctuated by a thesis and a defense. It may take the form of an:
• Initiation to research internship in a research team in laboratory.
• Internship in a professional environment in a public or private company.

The practical training course, which is a natural outcome given the objectives of this field, begins in the third semester with a bibliographic search and is carried out in the fourth semester.

The diploma required for admission to Doctoral Training in OR is the Master in OR with an appreciable distinction.

OPPORTUNITIES

In industry : This training leads to the versatile professions of Operational Research Experts/Analysts in quantitative methods and decision-making tools in large scale institutions (Insurance, Banking ; e-Banking, Finance ; e-Commerce, ...), Airlines, Software development, Biometric data processing, Information Technology, Power or Water companies, Administration (public or private), Research and Development Organizations.

In academy : Doctor of Philosophy, Research Assistant, Project engineer.


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