

UNIVERSITÉ
CÔTE D'AZUR

GRADUATE SCHOOL
LIFE AND HEALTH
SCIENCES

 **mabdesign**
THE BIOTHERAPY EXPERT

University Degree

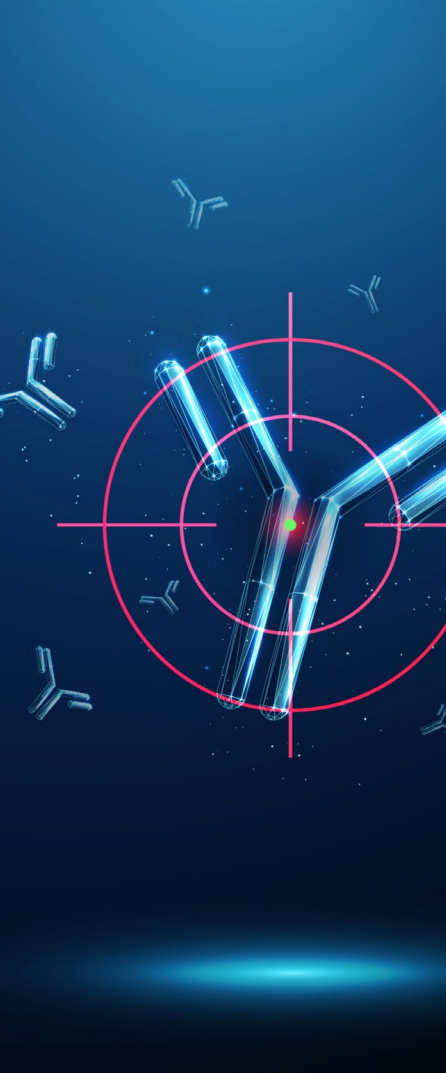
Diplôme Universitaire

AINSI

**ARTIFICIAL INTELLIGENCE
AND SYSTEMS
IMMUNOLOGY**



univ-cotedazur.fr



PRESENTATION

Artificial intelligence (AI) has become essential in immunology, enabling, for example, the prediction of antigens and neoantigens, the spatial and temporal dynamics of immune cells, and improvements in immunotherapeutic engineering.

To meet this need, the University Diploma in Artificial Intelligence and Systems Immunology (DU AINSI) offers a course, delivered entirely in English, spread over 10 days in two modules combining theoretical lectures and practical workshops, totalling 70 hours.

Through an exploration of AI tools and their applications in immunology, the programme aims to provide an understanding of AI methods applied to computational immunology (epitope design, immunological diagnostics, immunotoxicology and personalised immunotherapy approaches) and to equip participants with proficiency in simple bioinformatics tools and the use of databases for omics analyses in computational immunology.

Learn how to use bioinformatics tools, omics databases and AI approaches dedicated to computational immunology. Develop a unique skill set at the intersection of biology, data science and innovation in healthcare.

Duration of the course: 70 hours, spread over two separate weeks

Capacity: 16 participants **Language:** English

COURSE BENEFITS +



International expertise at the intersection of AI and immunology

Discover how artificial intelligence is revolutionising modern immunology. This course provides you with the essential knowledge to understand and apply AI methods in research, diagnosis and the development of next-generation immunotherapies.



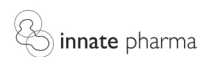
Development of skills needed for the future of medicine

Delivered entirely in English, the AINSI University Diploma is an intensive, career-focused course combining 70 hours of lectures and practical workshops spread across two intensive modules. The programme is designed to enable students to rapidly acquire skills that are directly applicable in the laboratory, in academic research or in industry.

PARTNERSHIP



French association of the industrial sector of biomedicines. Aiming to support, structure, federate and increase the visibility of the industrial sector of biological medicines.



TARGETED SKILLS

1. To detect immunological biomarkers and improve diagnosis, image analysis and flow cytometry through the application of AI
2. To model molecular interactions, personalise immunotherapy strategies and stratify patients (immunoncology and autoimmunity) through the use of integrated AI techniques
3. Predict and analyse the immunotoxic risks of drugs, vaccines and innovative therapies; identify transcriptomic signatures of immunotoxicity; and predict interactions between drugs and the immune system through the expert application of AI
4. Predict and select epitopes in vaccinology and immunotherapy, optimise immunogenicity and reduce immune evasion by pathogens and cells using AI principles
5. Master the analysis of large-scale immunological data to model the dynamics of the immune system and develop digital immune maps that predict the progression of inflammatory and infectious diseases

PROGRAMME

Module 1: **INTRODUCTION TO ARTIFICIAL INTELLIGENCE**

- General introduction to AI EFELIA
- AI biology and medicine
- AI in immunology

Module 2: **PREDICTIVE IMMUNOMICS**

- Big data analysis in immunology
- Identify transcriptomic signatures of immune cell behaviour
- Large scale single-cell data integration

Module 3: **AI-ENHANCED IMMUNODIAGNOSTICS**

- Machine learning algorithms to predict B- and T-cell repertoires
- Development of models for patient stratification

Module 4: **AI AND IMMUNOTOXICOLOGY**

- Developing AI model to predict immunosuppressor levels
- IA for drug screening in immunotherapy

Module 5: **PERSONALIZED IMMUNOTHERAPY**

- Computer-based and data-driven technologies for the next generation of precision in immunotherapies
- Model molecular interactions
- Personalize immunotherapy strategies

Module 6: **MACHINE LEARNING-BASED EPITOPE DESIGN**

- Integrated approaches to engineer Non-Immunogenic Therapeutic Proteins
- Machine Learning for Immunogenic Epitope Design

REGISTRATION

General fee: €6,000*

Reduced fee for researchers in the public sector: €1,400

Reduced fee for PhD students: €1,000

**Funding via the Professional Training Account (CPF) and OPCO schemes may be available*

If you have any questions regarding funding, please contact clara.esnault@mabdesign.fr Tel: +33 (0)4 78 02 39 93

Target audience : This program is designed for professionals from biotech, pharma, and medtech companies (scientific project managers ; clinicians ; design engineers ; research engineers ; CSOs, CEOs, etc.) as well as researchers, lecturers and researchers and PhD students

Prerequisites: A solid background in immunology, with a minimum of a Master's degree (or equivalent), and a good command of written and spoken scientific English are required. No prior expertise in AI is required.

Application: Applications must be submitted via the form provided on the webpage (CV required). Use the QR Code at the bottom of this page to connect.

COORDINATION



Claudine BLIN

Director, Laboratory of Molecular
Physiomedicine LP2M, CNRS-UniCA
Head of the 'Osteoimmunology,
Niche Cells and Inflammation' team



Philippe BLANCOU

Professor IPMC-INSERM
Head of the 'Immunity Regulation
by the Nervous System' team

SCIENTIFIC STEERING COMMITTEE

Claudine BLIN Researcher - Director of the Laboratory of Molecular Physiomedicine (LP2M, Nice, France)
Head of the team «Osteoimmunology, Niche Cells and Inflammation».

Philippe BLANCOU Teacher-researcher - Professor - Head of the team «Immunity Regulation by the Nervous System»
(IPMC-INSERM, Sophia-Antipolis, France)

Maxim ARTYOMOV Researcher - WUSTL (Saint Louis, USA) and LP2M (Nice, France)

Stoyan IVANOV Researcher - Head of the team «Myeloid cells and metabolism» (LP2M, Nice, France)

Antoine SICARD Researcher - Researcher - Head of the team «Innovative molecular and cellular therapies in
nephrology and transplantation» (LP2M, Nice, France)

Abdelilah WAKKACH Researcher - Co-head of the team «Osteoimmunology, niches cells and Inflammation» (LP2M,
Nice, France)



LOCATION
Nice, France.



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CONTACT

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More details:

