Faculté des Sciences
Aix*Marseille Université

Faculté des Arts, Lettres, Langues et Sciences humaines
Aix*Marseille Université

MASTER
2024 | 2025

sciences-master-masco
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Saint-Charles (Marseille)

## TARGET AUDIENCE

Holders of a Licence 3, equivalent professional experience (VAE, VAP)
Holders of an M1 or M2 degree may be admitted on application.

## PREREQUISITE

In addition to your initial training, you should have an interest in the various aspects of cognitive science and be willing to increase your knowledge in computer science and statistics.

## IN SHORT

Length of studies : 2 years

Number of credits : 120 ECTS

International mobility

Link with research

Registration fees : 243€*

Intership & projet

Code RNCP : 34433

## HOW TO APPLY ?

- M1 - mon master : holders of a BAC+3 degree
- M2 - ecandidat : students (excluding the Études En France procedure).

For foreign students, please refer to the Faculty of Science website (different registration & fees).

**Tarif for initial training in 2023. Exemption for scholarship holders and students on sandwich courses.*

# MASTER
# SCIENCES COGNITIVES

Our program provides advanced theoretical knowledge on the organization of the human mind, and the skills to analyze and model it.

## OBJECTIVES

- prepare for academic careers in cognitive science research
- train cognitive engineers
- provide interdisciplinary academic knowledge on the functioning of the human mind
- allow students to understand and critically discuss the major theories and computational models in cognitive science
- provide the technical and methodological know-how needed to measure, analyze and model cognitive and neural functioning

## COMPETENCE AND KNOWLEDGE

At the end of their training, future professionals will have acquired solid skills enabling them to :

General skills and knowledge:
- design and develop a research approach in cognitive science
- integrate transdisciplinary fundamental knowledge
- mobilize fundamental knowledge from different disciplines in cognitive science
- implement a research approach in a professional context

Skills and knowledge specific to the Language, Communication, and the Brain (LCB) track:
- integrate theoretical knowledge and fundamental techniques from cognitive science to understand the functioning of language and human communication
- transfer the transdisciplinary knowledge acquired on language and human communication to develop and evaluate tools for human-human and human-machine communication and language learning

Skills and knowledge specific to the Typical and Atypical Cognitive Functioning (TACF) track:
- integrate theoretical knowledge and fundamental techniques from cognitive science to understand typical and atypical cognitive functions
- transfer the transdisciplinary knowledge acquired on typical and atypical cognitive functions to develop and evaluate technological tools in the fields of digital technology, health and education

## SPECIFICITIES OF EDUCATION

- fundamentally interdisciplinary training: specific core courses held by professors representing all the disciplines of cognitive science
- optional courses shared with disciplinary master programs
- professional immersion through internships (620 hours over 2 years)
- reliance on a high level research community, through internationally renowned researchers belonging to several local institutes (primarily the Institute of Language, Communication, and the Brain), and through access to state-of-the-art experimental platforms
- professional career development projects (cognitive engineering) and involvement of the socio-professional community at various levels of the Master's program
- an international opening (internships, several international scholarships funded each year)
- good opportunities for doctoral funding
- expanding network of alumni

## PATHS

The program holds 2 tracks (second year):

• language, communication, and the brain (LCB) track provides in-depth knowledge of the neural bases of language, communication, and dialogue, with highly interdisciplinary theoretical and methodological training in neurobiology of language, linguistics, psychology, neuroscience, computer science including automated language processing, and mathematics.
• typical and atypical cognitive functioning (TACF) track provides in-depth knowledge of the various mental functions (perception, attention, decision-making, memory, reasoning, executive functions) and their neural bases in their typical and atypical functioning. The methods used are from cognitive psychology, psychophysics, cognitive and computational neuroscience.
• other pathway : complementary computing skills (compétences complémentaire en informatique CCI)
The CCI pathway is common to all Master's programs (except computer science). It enables students who already hold an M2 degree to acquire a dual competence in computer science.
*Contact : sciences-master-cci@univ-amu.fr*

## EDUCATIONAL PROGRAMME

Master's courses are based on training in and through research. Bringing together researchers and professionals in the field, the Master's leads to both research careers and professional integration.

• master 1 (general year):
The first year is general, with 75% core courses and 25% of credits that can be chosen from other master programmes. A 120-hour internship and a personal research project are both mandatory.

• master 2 :
The second year offers partly distinct courses for the 2 tracks, a training in cognitive engineering, a scientific workshop, and a 500-hour internship that can be conducted either in an academic structure or in a company, in Aix-Marseille or in another French or foreign institute. Knowledge assessment is held during the semester and during final exams.

## CARRERS OPPORTUNITIES AND INTEGRATION

General: The master provides skills to develop carrers in academic research and higher education in France or abroad, or for industrial research and development. Various opportunities for a PhD funding (doctoral schools, institutes, specific AMU programmes, CIFRE).

LCB track: Students specialized in the language communication and the brain track can contribute to development of speech and communication technologies (e.g., personal voice assistants), design for language and communication aspects of user experience (e.g., UX designer), design of human-human and human-machine dialogue systems; big data applications in the field of language; design of methods and tools for language learning and education

TACF track: Students specialized in typical and atypical cognitive functioning can join information technology research and development, research management and engineering, industrial research and development, design of tools for clinical settings and education

Additional info https://www.ilcb.fr/education/master/

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*The use of the masculine gender has been adopted for ease of reading and has no discriminatory intent.*