M.Sc. Human & System Intelligence for Management - Master's Degree



Introduction

A high-quality degree-seeking program organized by iaelyon School of Management
(in English - Opening in September 2025)

Objectives

Prepare students for new positions within the decision-making chain in the Big Data and artificial intelligence era, to answer the needs of organizations who wish to adopt a user-centric/Human-in-the-loop approach

All companies, regardless of their sector, need high-performance information systems that are reactive or even proactive. These intelligence systems enable to collect, process and convey all the information flows needed to carry out intra- and inter-organizational activities, and to make decisions by supporting the intuitions of decision-makers or alerting them to the uncertainties of their micro- and macro-environments.

The second year of Master's Human & System Intelligence for Management – HSIM is a track of the Master's in Information Systems Management.

Fully taught in English, the HSIM program prepare students to work in the design of interactive and adaptive systems to support decision-making for managers, by ensuring the interface between data and end-users.

All the courses will prepare students for positions within the decision-making chain in the Big Data and artificial intelligence era, where the decision-maker is at the core of the process. Students will be able to:

- take into account the specificities of data and human factors in the design of intelligent decision-making systems.
- master the processing of the data chain, from storage to visualization and user interaction.
- master user-centered design methods.

Duration

1 year

Places

- Lyon

Rhythm

- With blocked release periods

Contacts

Program Directors

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Program administration

Pre-experienced program :
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More specifically, the program meets the needs of companies who are seeking people who are able to:

- understand the needs in terms of business intelligence and decision support, and to translate these needs into technical specifications.
- master the design of the development methodology and the supervision /monitoring of development to meet business needs.
- understand, interconnect, and make collaborations between different information systems (workflows, data).
- have an expertise in data, actors, techniques and solutions to improve business efficiency, facilitate intra- and inter-organizational collaboration and reduce costs.

All the courses of the HSIM program are based on field studies carried out by the companies supporting this project, as well as research work

The program is registered at the RNCP (Répertoire Nationale de la Certification professionnelle) under the reference 35908, which guarantees its recognition by the state and social partners.

Specificities

Highlights of the program

- A program fully taught in English
- A small cohort of 24 students
- Possibility to attend the cooperative program from September 2024
- A diversity of students: the program welcomes students both from information systems and management.
- The Alumni association « Cross MSI » gathering graduates from the Master's in Information Systems Management

Admission

Prerequisite

Prerequisites training

This program is designed for candidates who studied management, or IT, in France or abroad (university, school of management, engineering school). Applicants must have graduated from a first year of Master's or have validated 240 credits ECTS in an equivalent degree. All applicants must have a strong knowledge on information systems.

Executive Education participants
Executive educations applications will go through a selection process and a validation of professional experience.

Submission

Conditions of submission

Accès en Master 2 pour les candidats externes et les étudiants de l'iaelyon souhaitant changer de mention

Disability

Pôle Handicap Étudiant

Application

Conditions of admission / Conditions of successful application

Selection is made on the basis of an application file:
Academic results + results to SIM Score IAE Message (TAGE MAGE or GMAT accepted only for international students) + results to TOEIC or TOEFL or IECTS English Test (if English is not the native language of the applicant) + professional project (CV and cover letter).

What's next ?

Business sector or job

Targeted jobs:

Chief data officer:
collect data within the company's information system, before classifying and mapping it to make it accessible to the right person, at the right time, for the right use. They identify external data (whether free or fee-paying) that is useful to the business. Their role now extends beyond Big Data, to ensure the reliability of all the information produced or used by the company, in the interests of overall consistency.

UX Manager:
User experience (UX) management consists in managing activities related to user experience design within an organization to improve its performance and generate good management practices. Typical UX management activities involve defining an organization's UX design language and strategy, and managing work processes around UX design. More specifically, students will learn about user experience in the decision-making process.

Business intelligence Manager:
This job is at the crossroads of marketing, IT and consulting. The role of business intelligence manager is to delve into all company data and select, sort and analyze them. From this analysis, they produce detailed reports to guide decision-making. Their aim is to provide solutions by implementing processes, or tools, that will be useful in the future and enable decision-making.

Data Protection Officer:
is responsible for the company's data protection and compliance systems. The data protection officer's role also covers the management of security, ethical questions, and responsible AI.

Digital Personal Curator:
is in charge of monitoring but also recommending the best apps, devices, software and tools to make employees more efficient. This job is ranked

among the 20 potential jobs of the future by the American agency Sparks & Honey and among the job opportunities that could emerge thanks to the developments in digital technology and artificial intelligence by the Institut du Futur.

All of these positions are rapidly expanding since companies need to better master the great amount of data they collect, to translate them to help managers make decisions, and to help users master all the data and tools available according to their needs. Meeting these needs requires skills in strategic business management, data science methods and tools, and AI-based interactive systems design. The transformation of the job market has been initiated with the digital area and it still undergoing as the digital field is constantly evolving: "Human Resources professionals are looking for candidates with skills in data visualization, user experience [...] and this will be even more true in the future."

Program

The second year of Master's Human & System Intelligence for Management – HSIM is a track of the Master's in Information Systems Management.

- Courses are taught by faculty from iaelyon and expert practitioners
- Courses are taught over three days from the beginning of September to the end of February, allowing executive participants to keep working
- A mandatory 6-month internship in a company or a research environment fosters the employability of students (to be completed from March)
- Possibility to join the cooperative program from September (internship or apprenticeship): Wednesdays, Thursday and Fridays at iaelyon- Mondays and Tuesdays: working in a company
- Master thesis at the end of the year to assess the academic rigor (master thesis to be defended in September)

CONTENT OF THE MASTER 2 PROGRAM (324h for initial training and 424h for sandwich courses)

SEMESTER 3

Introduction to Decision-making, Strategy and Management
Who makes decisions? What are the challenges and obstacles? These are just some of the questions and issues that need to be addressed if the data processing chain is to be aligned with corporate processes and strategy.
This module is taught by professionals from the socio-economic world.

Big Data Storage and Management
Today's increasingly massive data is the gold of business and the essence of decision-making. This course aims to provide students with a basic understanding of storage technologies and company data management, covering key concepts of new trends in the storage industry and cloud computing. The second part of the course aims at studying the main aspects of distributed data management and analysis for Business Intelligence, considering the use of heterogeneous data management systems and environments (Datalakes, Datalakehouses, etc.).

Introduction to AI, Machine Learning & Knowledge Extraction
Knowledge is the essence of decision-making. The aim of this module is to understand the fields of machine learning and knowledge extraction for decision support and business intelligence, and to develop the ability to use these techniques properly for the automated analysis of a great amount of of data.

Designing Interfaces for Decision Support
The effectiveness of a decision support system depends on the quality of user interactions for data visualization and manipulation. This module provides students with the tools and methods to design decision-support interfaces that are as easy, effective and intuitive as possible for managers. In particular, it will provide a user-centered approach to the design and evaluation of decision systems, and the design principles and examples that produce efficient user interactions.

Adaptive Interactive Systems
In this course students will learn about the issues and methods involved in designing self-adaptive interactive decision-making systems, i.e. systems adapted to users and their context of use. Methods will cover a range of representations and algorithms for modeling users and the environment to enable adaptation. The course will also cover current issues in adaptive systems, such as ambient intelligence, and the distribution of interactions over multi-surface spaces (screen

walls, interactive tables...).

SEMESTER 4

06260274 - International seminar

Research in Smart Environments for Management: Interactions, Data and Services
Smart environments have the potential to enable users to seamlessly engage and interact with their immediate environment. This was made possible by the introduction of intelligent technologies, coupled with service-oriented solutions. Recent advances have opened up a new era for data mining, processing and analysis, and facilitating the vision of intelligent environments. This module provides students with knowledge in research methods and techniques covering the challenges of big data, as well as human-computer interaction and user experience issues.

Understanding users for optimal decision-making
This module provides the fundamentals of statistical analysis of data, guided by theories from cognitive psychology and human factors, in order to identify user behavior from raw data. Students will learn how to supplement the vast quantities of logs generally exploited by data specialists, with qualitative data. Students will develop a solid grounding in mathematics and statistics for A/B testing, data analysis and other evaluation methods.

User-Centered Data Visualization
In order to implement good quality data visualization solutions, it is essential to know the intrinsic principles of data representation theories and the best output representations. This is an introductory course on the design and evaluation of interactive visualizations for data analysis. The course will conver human visual perception, visualization design, interaction techniques and evaluation methods.