



# DIGITAL BUSINESS

**2 MASTER DEGREES IN 3-YEARS**

2022-2023 by HEC Liège - Management School  
& The Faculty of Applied Sciences



## Digital Business

# Master in Business Engineering and Master in Computer Science or in Computer Science & Engineering

Effectively developing digital literacy and skills to adapt to the ever evolving world of technology.

### STRENGTHS OF THIS UNIQUE PROGRAM

- ▶ Offering full-fledged education in business and computer science
- ▶ Leading to two Master's degrees at the end of 3 years of exciting and intensive learning experience
- ▶ Optimizing the chances of stimulating employment after graduation
- ▶ Praised as a breakthrough by all our corporate partners

### HARNESSING THE DIGITAL WORLD

Information technology has long been an essential support for business management. Nowadays, IT has become no less than central to the task as many activities are highly dependent on efficient information systems. These must be able to manage relations with customers or suppliers, support internal processes, deal with production planning, inventory, distribution and more.

Beyond offering support systems, digital technologies afford new economic opportunities and managerial challenges: designing new products, offering new services, building new revenue models, addressing new ethical questions, etc.

Not forgetting that many of the fastest growing new businesses are purely digital, i.e. offering exclusively dematerialized products and/or online services, such as matchmaking platforms, mobile apps, cloud facilities, storage and processing power, etc.

### PROGRAM

It is a unique offering providing full fledged training in both Business and Computer science engineering in a 3 year intensive exciting program. The market will acknowledge you as an expert in each of these fields, and even more importantly, will prize this rare dual competency in digital business.

It is to be noted that transdisciplinary activities, included in the curriculum from the first year of the Master's program, ensure students' immersion in their bi-disciplinary environment.

### TRANSDISCIPLINARITY

Far beyond juxtaposing skills, the transdisciplinary Master's degree means to foster new profiles bathed in a dual culture from the first year of the Master's degree.

Students are trained in cutting-edge subjects in a transversal way, which enables them to apprehend problems from an innovative angle.

### APPLICATION

This program is designed for students following a course of study in Business Engineering with a specialization in Digital Business, Civil Computer Engineering or Computer Science with a management focus.

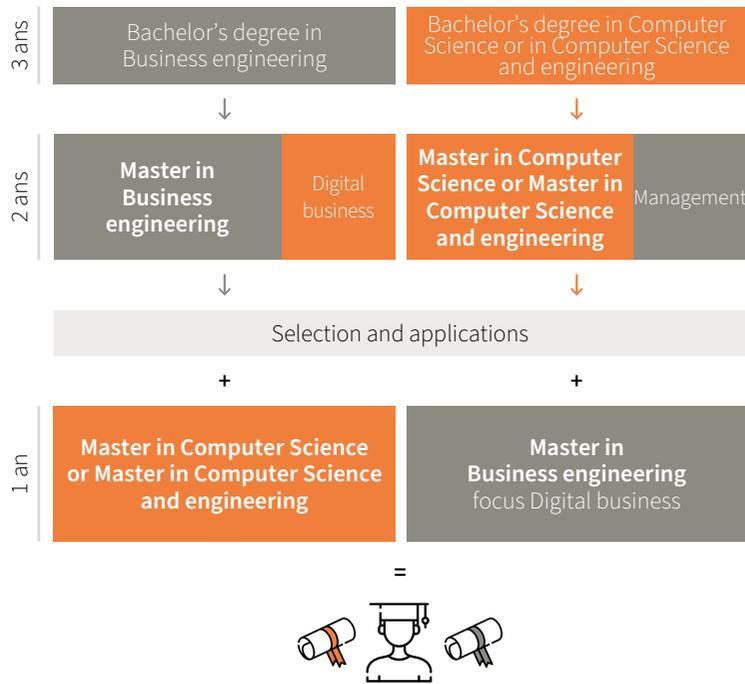
After a selection process, graduates of these programs can continue their studies in the other master's program in order to obtain a second degree in a single year.

Applications are submitted during the last year of the master's degree in the original program via an online form. The student's program is established according to the courses previously taken and passed. The program grid in this brochure corresponds to the situation of students who have followed the standard course as shown in the diagram.

## STUDENT'S CAREER PATH

The Digital Business program is aimed at students holding a Bachelor's degree in Business Engineering or in IT Civil Engineering or Computer Science. They pursue their study program with the 120-credit Master's degree in their initial discipline, supplemented by 30 credits for the other discipline.

Thanks to the valorization of the credits already acquired, these students obtain a second 120-credit Master's degree in the other discipline after just one year of study.



To get access to the master in Computer Science & Engineering, the business engineers must add to their cursus :

|                                      |   |
|--------------------------------------|---|
| Analyse mathématique 1               | 4 |
| Mécanique rationnelle                | 4 |
| Introduction aux signaux et systèmes | 5 |

| MASTER IN <b>BUSINESS ENGINEERING</b><br>Focus Digital Business |   |
|---|---|
| Business Analytics  | 5 |
| Information Technology Management                               | 5 |
| Preparation for Master Thesis and Internship                    | 1 |
| One level 4 language course or basic level 1                    | 3 |
| <b>Erasmus or 28 credits HEC</b>                                |   |
| Change Management   | 5 |
| Corporate Finance   | 5 |
| Entrepreneurship & Innovation                                   | 3 |
| International Business Engineering Seminar                      | 5 |
| International Marketing Seminar                                 | 5 |
| Models & Methods in Applied Statistics                          | 5 |
| <b>Choose one of the following courses :</b>                    |   |
| Elementary Language course 1                                    | 3 |
| Environmental Management  | 3 |
| International Strategy  | 3 |
| Projets technologiques innovants                                | 4 |
| Software Development & Project Management                       | 4 |
| Data Management   | 5 |
| <b>Focus</b>  |   |
| Advanced Topics in Digital Business                             | 5 |
| Structures des données et algorithmes                           | 5 |
| Object-oriented programming                                     | 5 |

|   |    |
|---|----|
| Ateliers de compétences                           | 5  |
| Master Thesis Methodology                         | 2  |
| Internship and Master Thesis                      | 28 |
| Business Ethics & Corporate Social Responsibility | 4  |
| One level 5 language course or basic level 2      | 3  |
| <b>Choose one of the following courses :</b>      |    |
| Elementary Language course 2                      | 3  |
| International Performance Management              | 3  |
| Introduction à l'entrepreneuriat familial         | 3  |
| Seminar on Sustainability & Smart Territories     | 3  |
| eBusiness and eCommerce                           | 5  |
| Project Management                                | 3  |
| <b>Focus</b>                                      |    |
| Computation Structures                            | 5  |
| Database for Management                           | 5  |
| Introduction to Artificial Intelligence           | 5  |

| MASTER IN <b>COMPUTER SCIENCE OR<br/>MASTER IN COMPUTER SCIENCE AND ENGINEERING</b><br>Focus Management |    |
|---|----|
| Introduction to Computer Networking   | 5  |
| Operating Systems   | 5  |
| Introduction to Machine Learning  | 5  |
| Introduction to the Theory of Computation   | 5  |
| Software Project Engineering and Management   | 10 |
| End of Studies Project  | 10 |
| The courses of the focus «Computer Systems security» or «Intelligent Systems»                           | 30 |

| MASTER IN <b>COMPUTER SCIENCE OR<br/>MASTER IN COMPUTER SCIENCE AND ENGINEERING</b><br>Focus Management |    |
|---|----|
| Compilers   | 5  |
| Introduction to machine Learning  | 5  |
| Introduction to the Theory of Computation   | 5  |
| Information and Coding Theory   | 5  |
| Software Project Engineering and Management   | 10 |
| Principles of Management  | 5  |
| Operating Systems (only for engineering)  | 5  |
| Choose credits of elective courses inside or outside the focus to complete the program of the block     |    |
| <b>Focus</b>  |    |
| Analyse des états financiers et Financement de l'entreprise   | 5  |
| Comptabilité générale ou Technologies industrielles   | 5  |
| Supply Chain Management   | 5  |

|   |    |
|---|----|
| Master Thesis   | 24 |
| Choose credits of elective courses inside or outside the focus to complete the program of the block |    |
| <b>Focus</b>  |    |
| Business Simulation   | 2  |
| Gestion stratégique des ressources humaines   | 5  |
| Gestion juridique générale de l'entreprise  | 5  |
| Dutch, German or Spanish  | 3  |

| MASTER IN <b>BUSINESS ENGINEERING</b><br>Focus Digital Business                                    |    |
|--|----|
| Business Analytics   | 5  |
| Change Management  | 5  |
| Corporate Finance  | 5  |
| Foreign language   | 3  |
| Information Technology Management  | 5  |
| Portfolio of Skills (SAP, SAS, ...)  | 5  |
| International Marketing Seminar  | 5  |
| Digital Business Capstone Project  | 5  |
| The courses of the focus «Supply Chain Management & Business Analytics» or «Financial Engineering» | 30 |



## CONTACTS

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Avec le soutien de :

