

## MSc Data Science in Business and Entrepreneurship (DSBE)

Information document regarding:

- 1. February intake**
- 2. Homologation Program (September)**
- 3. Homologation Program (February)**
- 4. February intake vs. specialization Data Engineering**

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## Elective courses / specializations

Each year of this two-year master's program is divided into two semesters. The program is divided into the following components:

- 10 compulsory courses (60 EC)
- 5 elective courses (30 EC)
- A master's thesis (30 EC)

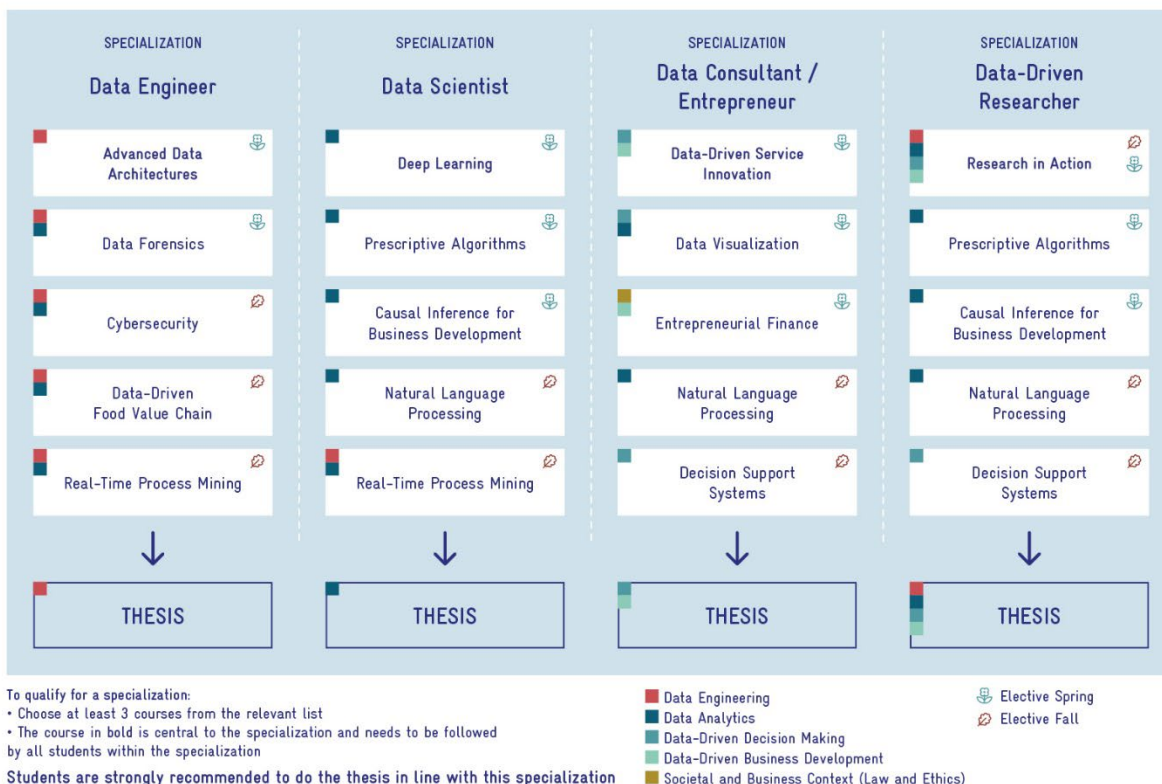
On top of the mandatory courses and master's thesis, students have to pass 5 elective courses worth 30 EC in total. Students are expected to choose one of the following specializations:

- Data Engineer
- Data Scientist
- Data Consultant/Entrepreneur
- Data-Driven Researcher

To qualify for a certain specialization a student should pass at least three courses from the relevant courses, including the core course (the course which is on the top of the list, marked in **bold**). Students are strongly recommended to write their thesis in line with the specialization.

### ELECTIVE SPACE

### Students choose 1 of the 4 specializations



## February intake

You can start the master's program DSBE in February and although it has advantages, it also has disadvantages. The curriculum order differs from the September start, and some spring semester electives might be unavailable for you to follow due to certain entry requirements.

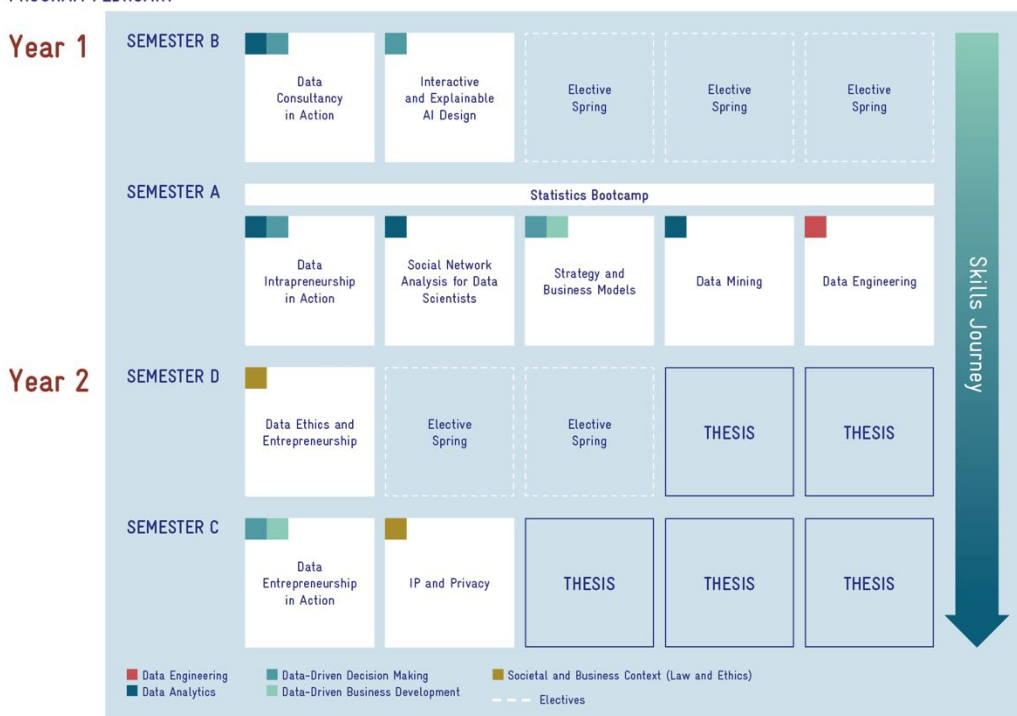
The program is divided in four semesters:

- Semester A (year 1, fall semester: August - January)
- Semester B (year 1, spring semester: February – July)
- Semester C (year 2, fall semester: August - January)
- Semester D (year 2, spring semester: February – July)

When you start in February, the following order is relevant for you:

- Semester B
- Semester A
- Semester D
- Semester C

### PROGRAM FEBRUARY



Every square in the visual above represents a course carrying a study load of 6 EC. While the master's thesis is depicted using 5 separate squares, it's important to understand that it's a single component of the examination program. It's worth noting that you can be flexible with how you distribute your thesis workload. For example, you could focus more on the thesis in the third semester (18 EC) and less in the fourth semester (12 EC), allowing you to fit in an elective during semester C.

## Your first semester - semester B

In **semester B**, the curriculum looks as follows:

- Data Consultancy in Action
- Interactive and Explainable AI Design
- Elective course spring
- Elective course spring
- Elective course spring

The following courses are offered as an elective course in the spring semester:

- Advanced Data Architectures (entry requirement: Data Engineering)
- Causal Inference for Business Development
- Data-Driven Service Innovation
- Data Forensics (entry requirement: Social Network Analysis for Data Scientists)
- Data Visualization
- Decision Support Systems
- Deep Learning (entry requirement: Data Mining)
- Entrepreneurial Finance
- Prescriptive Algorithms
- Research in Action

Please be aware that for some of the courses there is an entry requirement (i.e. a course from semester A) which means a student is not able to follow these courses in semester B.

## Your second semester - semester A

In **semester A** you follow all mandatory courses. The curriculum of semester A then looks like this:

- Data Intrapreneurship in Action
- Data Mining
- Social Network Analysis for Data Scientists
- Strategy and Business Models
- Data Engineering

## Your third semester - semester D

In **semester D**, you follow one mandatory course, two elective courses and starts with your thesis. The curriculum of semester D then looks like this:

- Data Ethics and Entrepreneurship
- Elective course spring
- Elective course spring
- Thesis (12/30 EC)

## Your fourth semester - semester C

In **semester C**, you follow two mandatory courses and continues with your thesis. The curriculum of semester C then looks like this:

- Data Entrepreneurship in Action
- Intellectual Property and Privacy
- Thesis (18/30 EC)

In case you allocate your study load differently than what is presented in the infographic, You can follow the following courses as an elective course in the fall semester:

- Data-Driven Food Value Chain
- Cybersecurity (entry requirement: Data Engineering)
- Natural Language Processing
- (Real-Time) Process Mining
- Research in Action

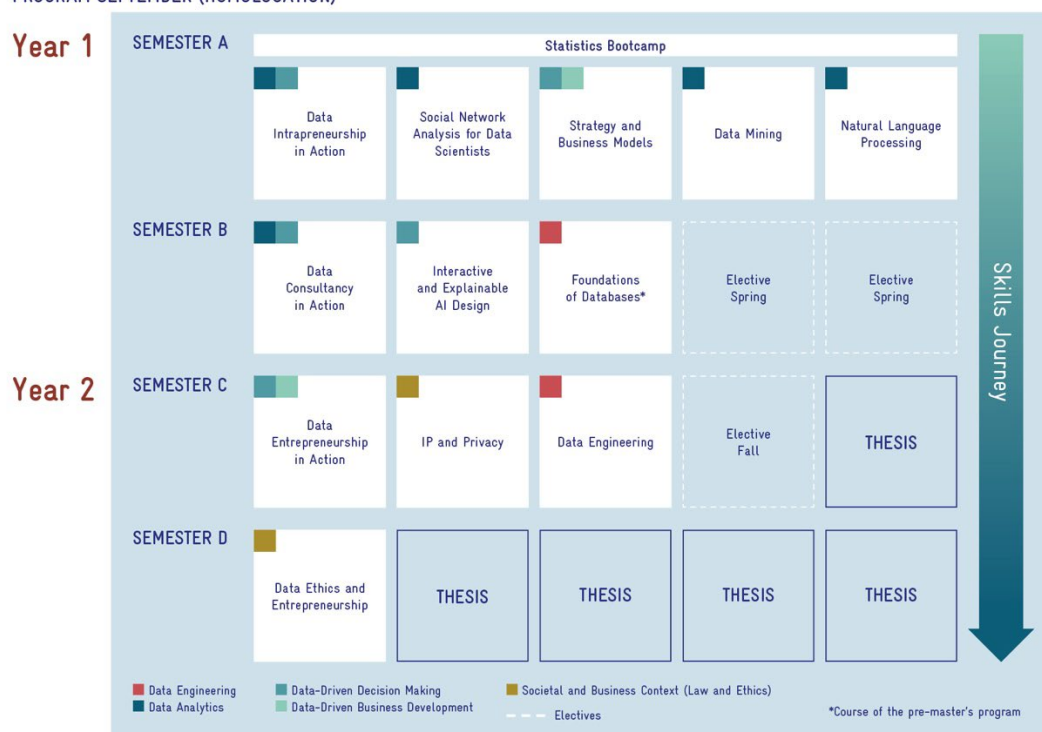
## Homologation program (September intake)

While not the best scenario, if you have a deficiency in databases, you can begin the DSBE master's program in September as an Homologation Program student (HP student). Keep in mind, this solution has its downsides. Your deficiency in databases would prevent you from taking a mandatory course in the first year (Data Engineering) because it assumes prior knowledge. Additionally, due to specific entry requirements, you will not be eligible for certain elective courses during your second semester.

The program is divided in four semesters:

- Semester A (year 1, fall semester: August - January)
- Semester B (year 1, spring semester: February – July)
- Semester C (year 2, fall semester: August - January)
- Semester D (year 2, spring semester: February – July)

### PROGRAM SEPTEMBER (HOMOLOGATION)



Every square in the visual above represents a course carrying a study load of 6 EC. While the master's thesis is depicted using 5 separate squares, it's important to understand that it's a single component of the examination program. It's worth noting that you can be flexible with how you distribute your thesis workload. For example, you could focus more on the thesis in the third semester (18 EC) and less in the fourth semester (12 EC), allowing you to fit in an elective during semester D.

## Your first semester - semester A

In **semester A** you follow all mandatory courses, except Data Engineering. Instead, you follow the course Natural Language Processing (as a course in the elective space). The curriculum of semester A then looks as follows:

- Data Intrapreneurship in Action
- Data Mining
- Social Network Analysis for Data Scientists
- Strategy and Business Models
- Natural Language Processing (as an elective course fall)

## Your first semester - semester B

In **semester B**, you need to clear the deficiency by following the course Foundations of Databases (part of the pre-master's program). This course will be part of the examination program (i.e. the obtained 6 EC count for the 120 EC a student needs to obtain). The curriculum of semester B then looks like this:

- Data Consultancy in Action
- Interactive and Explainable AI Design
- Foundations of Databases
- Elective course spring
- Elective course spring

The follow courses are offered as an elective course in the spring semester:

- Advanced Data Architectures (entry requirement: Data Engineering)
- Causal Inference for Business Development
- Data-Driven Service Innovation
- Data Forensics (entry requirement: Social Network Analysis for Data Scientists)
- Data Visualization
- Decision Support Systems
- Deep Learning (entry requirement: Data Mining)
- Entrepreneurial Finance
- Prescriptive Algorithms
- Research in Action

Please note that for some of the courses there is an entry requirement (i.e. a course from semester A) which means, if you are a HP student, you are not able to follow these courses in semester B.



## Your third semester - semester C

In **semester C**, next to the two mandatory courses, your thesis and one elective courses, you need to follow Data Engineering as this course was moved to year 2. The curriculum of semester C then looks as follows:

- Data Entrepreneurship in Action
- Data Engineering
- Intellectual Property and Privacy
- Elective course fall<sup>1</sup>
- Thesis (6/30 EC)

The follow courses are offered as an elective course in the fall semester:

- Data-Driven Food Value Chain
- Cybersecurity (entry requirement: Data Engineering)
- ~~○ Natural Language Processing<sup>2</sup>~~
- (Real-Time) Process Mining
- Research in Action

## Your fourth semester - semester D

In **semester D**, you follow one mandatory course and continues with your thesis. The curriculum of semester D then looks as follows:

- Data Ethics and Entrepreneurship
- Thesis (24/30 EC)

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<sup>1</sup> Alternatively, a student can choose to put more focus on the thesis in semester C (resulting in 12/30 EC study load for the thesis) and move the elective course to semester D

<sup>2</sup> Because this course is part of the curriculum in semester A for HP students, the course is struck through

## Homologation program (February intake)

If you have a deficiency in databases, you can also begin the master's program DSBE in February as an Homologation Program student (HP student). Specifically, this means you follow a course of our pre-master's program (Foundations of Databases) as an elective course within your examination program.

Additionally, the curriculum order differs from the September start, and some spring semester electives might be unavailable for you to follow due to certain entry requirements.

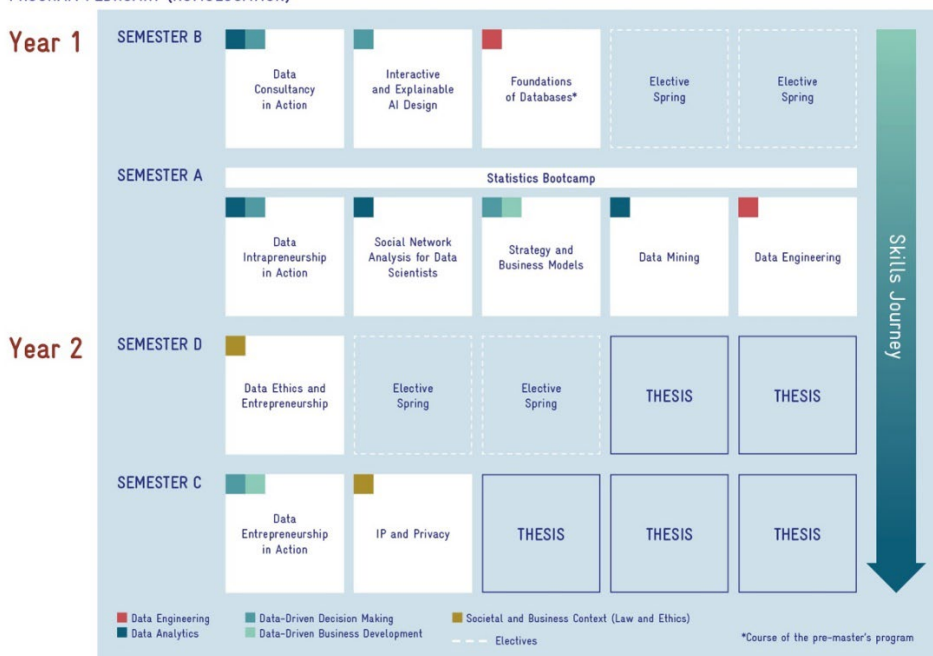
The program is divided in four semesters:

- Semester A (year 1, fall semester: August - January)
- Semester B (year 1, spring semester: February – July)
- Semester C (year 2, fall semester: August - January)
- Semester D (year 2, spring semester: February – July)

If you start in February, the following order is relevant:

- Semester B
- Semester A
- Semester D
- Semester C

PROGRAM FEBRUARY (HOMOLOGATION)



Every square in the visual above represents a course carrying a study load of 6 EC. While the master's thesis is depicted using 5 separate squares, it's important to understand that it's a single component of the examination program. It's worth noting that you can be flexible with how you distribute your thesis workload. For example, you could focus more on the thesis in the third semester (18 EC) and less in the fourth semester (12 EC), allowing you to fit in an elective during semester C.

## Your first semester - semester B

In **semester B**, you need to clear the deficiency by following the course Foundations of Databases (part of the pre-master's program). This course will be part of the examination program (i.e. the obtained 6 EC count for the 120 EC a student needs to obtain). The curriculum of semester B then looks as follows:

- Data Consultancy in Action
- Interactive and Explainable AI Design
- Foundations of Databases
- Elective course spring
- Elective course spring

The follow courses are offered as an elective course in the spring semester:

- Advanced Data Architectures (entry requirement: Data Engineering)
- Causal Inference for Business Development
- Data-Driven Service Innovation
- Data Forensics (entry requirement: Social Network Analysis for Data Scientists)
- Data Visualization
- Decision Support Systems
- Deep Learning (entry requirement: Data Mining)
- Entrepreneurial Finance
- Prescriptive Algorithms
- Research in Action

Please note that for some of the courses there is an entry requirement (i.e. a course from semester A) which means, as a HP student, you will not be able to follow these courses in semester B.

## Your second semester - semester A

In **semester A**, you follow all mandatory courses. The curriculum of semester A then looks as follows:

- Data Intrapreneurship in Action
- Data Mining
- Social Network Analysis for Data Scientists
- Strategy and Business Models
- Data Engineering (entry requirement: Foundations of Databases)

## Your third semester - semester D

In **semester D**, you follow one mandatory course, two elective courses and starts with your thesis. The curriculum of semester D then looks as follows:

- Data Ethics and Entrepreneurship
- Elective course spring<sup>3</sup>
- Elective course spring<sup>3</sup>
- Thesis (12/30 EC)

## Your fourth semester - semester C

In **semester C**, you follow two mandatory courses and continues (and finishes) the thesis. The curriculum of semester C then looks as follows:

- Data Entrepreneurship in Action
- Intellectual Property and Privacy
- Thesis (18/30 EC)

In case you allocate your study load differently, the following courses are offered as an elective course in the fall semester:

- Data-Driven Food Value Chain
- Cybersecurity (entry requirement: Data Engineering)
- Natural Language Processing
- (Real-Time) Process Mining
- Research in Action

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<sup>3</sup> Alternatively, a student can choose to put more focus on the thesis in semester D (resulting in 18/30 EC study load for the thesis) and move the elective course to semester C

## February intake vs. specialization Data Engineering

When a student starts per February it is very hard to follow the Data Engineering specialization because (1) three courses are offered in fall semester and (2) the two courses offered in spring semester have entry requirements. In theory, a student could follow it following this route:

### Semester B:

- Data Consultancy in Action
- Interactive and Explainable AI Design
- Data Ethics and Entrepreneurship (=mandatory course of semester D instead of an elective course spring)
- Elective course spring
- Elective course spring

### Semester A:

- Data Intrapreneurship in Action
- Data Mining
- Social Network Analysis for Data Scientists
- Strategy and Business Models
- Data Engineering

### Semester D:

- Advanced Data Architectures
- Data Forensics
- Thesis (18/30 EC)

### Semester C:

- Data Entrepreneurship in Action
- Intellectual Property and Privacy
- A third elective course fall from the Data Engineering specialization:
  - Cybersecurity;
  - Data-Driven Food Value Chain; or
  - (Real-Time) Process Mining
- Thesis (12/30 EC)