



FAKULTÄT FÜR  
INFORMATIK

# The Data Science Master Degree *Data & Knowledge Engineering*

Studies Coordinator Prof. Myra Spiliopoulou

Institute for Technical and Business Information Systems

<http://www.kmd.ovgu.de/>


# DKE in the times of Data Science

What do you need to do Data Science?

1. Data
2. Methods
  - § Methods for processing data – efficiently
  - § Methods for learning from data
  - § Methods for describing complex objects
  - § Methods for visualizing complex objects and what we know on them
3. Business understanding
4. Understanding on how to match Data with Methods

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a social network  
a medical record  
a patient  
a disease  
a car  
a liver  
a pizza

# DKE in the times of Data Science

What Expertise do you need to become a Data Scientist?

1.

2. Methods

§ Methods for processing data – efficiently

Data Engineering

§ Methods for learning from data

Data Mining / Machine Learning

§ Methods for describing complex objects

Knowledge Engineering

§ Methods for visualizing complex objects and what we know on them

Visualization

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Hands-on using DKE in business applications

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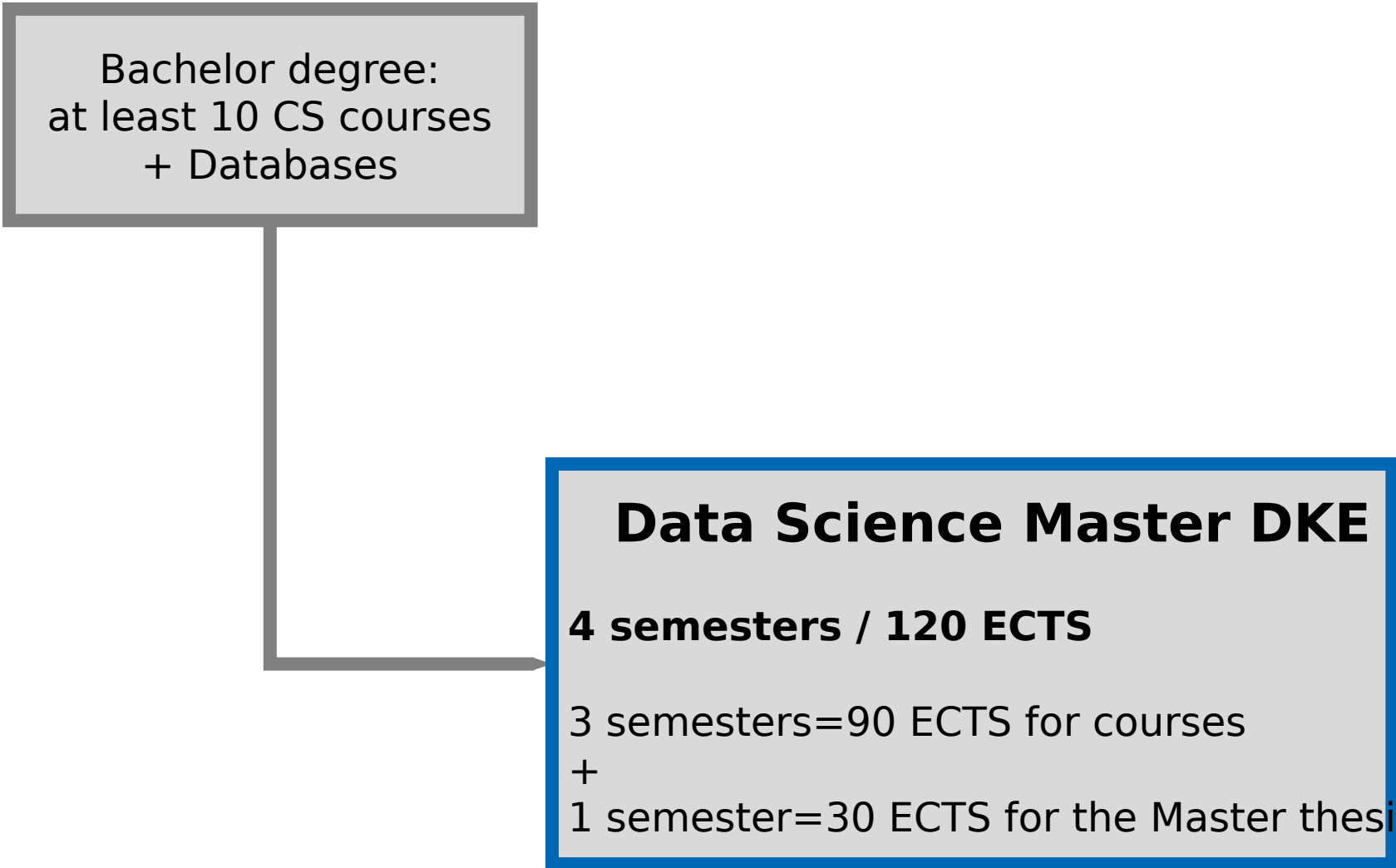
4.

Hands-on using DKE in business applications

## Master DKE

# Data Science Master DKE in the Faculty of Computer Science

Bachelor degree:  
at least 10 CS courses  
+ Databases



## Data Science Master DKE

**4 semesters / 120 ECTS**

3 semesters=90 ECTS for courses

+

1 semester=30 ECTS for the Master thesis

# Structure of the Master DKE

FOUR thematic areas:

1. Fundamentals of Data Science (12-18 ECTS)
2. Learning Methods and Models of Data Science (18-36 ECTS)
3. Data Processing for Data Science (18-30 ECTS)
4. Applied Data Science (18-24 ECTS)



## Information on all modules

Module catalogues, with the assignment of courses to each thematic area are under

<http://www.inf.ovgu.de/ordnungenma.html>

→ Move down the page to

Data & Knowledge Engineering

→ Under the entry **Modulhandbuch**  
you find all offered modules under

→ **Modulkatalog** (Übersicht über alle Module): **<current term>**

The modules offered in the current term are in the LSF.

DO NOT use LSF to map modules to thematic areas.

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→ **Modulkatalog** (Übersicht über alle Module): **<current term>**

This catalogue is updated once per semester, so make sure you choose the most recent one.

The modules offered in the current term are in the LSF.

DO NOT use LSF to map modules to thematic areas.

Choosing modules to

**PLAN YOUR STUDIES**

## How to choose modules?

YOU  
choose the courses you want to attend

# Make a plan NOW!

## Personalized Plan of Studies

1. Find modules
2. Assign each module you chose to one of the thematic areas
3. Write down your plan and cross-check that you have the right number of modules in each thematic area!
4. When you register for the exam of a course, pick your plan and make sure that you assign the course to the correct thematic area.
5. ...

# Write down the plan for your studies

## 1. Find modules

§ Go through the modules offered, according to the LSF

§ Read the module descriptions (web pages) and

§ Drop by at the first one or two meetings

§ Make sure you have the background needed to attend the course –  
ASK the teacher if you are not sure

## 2. Assign each module you chose to one of the thematic areas

## Write down the plan for your studies

1. Find modules
2. Assign each module you chose to one of the thematic areas
3. Write down your plan and cross-check that you have the right number of modules in each thematic area!
4. When you register for the exam of a course in HISQIS:  
Consult your plan of studies!  
§ Is the course's area, as is in your plan, also listed in HISQIS?

5.

YES: Click into the area you want.

Do not forget to click the area you want!  
Each course has a default area.  
If you click nothing, you get the default.

## Write down the plan for your studies

1. Find modules
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Consult your plan of studies!  
§ Is the course's area, as is in your plan, also listed in HISQIS?

5.

**YES: Click into the area you want.**

**NO: Cross-check into the latest version of the module hand book!**

- If HISQIS disagrees with the module hand book:  
go to the Examinations Office and ask for help



## Write down the plan for your studies

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**YES: Click into the area you want.**

**NO: Cross-check into the latest version of the module hand book!**

**If your plan disagrees with the module hand book, you must change your plan!**

## Write down the plan for your studies

1. Find modules
2. Assign each module you chose to one of the thematic areas
3. Write down your plan and cross-check that you have the right number of modules in each thematic area!
4. Register to the course exams according to your plan of studies.
5. After the exam, check in HISQIS:
- 6.

Is your course (and the ECTS) assigned in the area you wanted?

YES

NO: Pick the printout of your enrollment and ask for help.

## Write down the plan for your studies

1. Find modules
2. Assign each module you chose to one of the thematic areas
3. Write down your plan and cross-check that you have the right number of modules in each thematic area!
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NO: Pick the printout of your enrollment and ask for help.

## **Write down the plan for your studies**

1. Find modules
2. Assign each module you chose to one of the thematic areas
3. Write down your plan and cross-check that you have the right number of modules in each thematic area!
4. Register to the course exams according to your plan of studies.
5. After the exam, check in HISQIS whether the courses are assigned as you wanted them.
6. At each semester, UPDATE your plan of studies according to the most recent version of the module hand book.

## Do's and Don'ts

- **DO:** choose introductory courses
- **DO:** prefer courses that give you background in Methods; this will give you the background you need for a larger choice of advanced courses from the next term
- **DO:** read carefully the background expected by each course -- it is really expected
- **DO:** approach faculty members
- **DO NOT choose:** too many courses
- **DO NOT choose yet:** scientific teamprojects -- wait until a higher semester

## Do's and Don'ts

- **DO NOT choose:** courses that are not in the Module Hand Book, even if they show up in LSF - ask the mentors and the studies coordinator first!
- **DO NOT choose before attending PPSW:** seminars - unless you have had a scientific seminar in your previous studies
- **DO NOT choose:** courses that expect background you do not have
- **DO NOT assume:** that you can acquire background knowledge you do not have in parallel to a course that requires this background knowledge
- **DO NOT use:** LSF to map courses to areas; use exclusively the Module Hand Book

# Frequently Asked Questions on the Choice of Modules

## Q1: Are all modules I can choose in LSF ?

Answer: NO

- Modules are being added each semester:  
If you look now, you do not necessarily see all modules of the next semester.
- Seminars and individual projects are not listed  
(see later Q)



## Q2: Can I enroll to any further module I find ?

Answer: NO

- Modules must fit thematically
- Some modules that fit thematically are not permitted, e.g. early bachelor modules

→ Get permission before enrolling

Never enroll to a module for which you have no prior approval !  
You risk that you cannot have the credits counted.

### Q3: Can I make an internship during my studies?

ANSWER:

- You can do an internship if you want,
- but it is **not part of your studies!**

IMPLICATIONS:

1. The company may ask for a verification that an internship is part of your studies.
2. If you need a visum to do the internship, the visa-issuing authority will ask for a verification that an internship is part of your studies.

You cannot get such a verification. Under no circumstances.

### Q3: Can I make an internship during my studies?

ANSWER:

- You can do an internship if you want,
- but it is **not part of your studies!**

We can certify that the specific internship is good for your further study, but IF AND ONLY IF:

- Ø The internship fits excellently into one area of your studies, and in this area you still must make ECTS.

### Q3: Can I make an internship during my studies?

ANSWER:

- You can do an internship if you want,
- but it is **not part of your studies!**

A specific internship may be good for your further study.

Example: You want to write your master thesis on the analysis of ecommerce data. you got an internship at a company to do data engineering on such data.

TODO 1: Find a supervisor for your master thesis.

TODO 2: Discuss with your supervisor whether this internship would be good for your master thesis.

If your supervisor thinks that the internship is important for your master thesis, s/he may decide to write for you a confirmation on that.

Do not apply for an internship, unless you are sure that it fits to the rest of your studies.

## **Q4a: Can I spend part of my studies at another University?**

ANSWER:

Yes, you can use either  
the Erasmus exchange programme or  
one of our bilateral exchange programmes.

BEWARE: Restrictions apply!

## **Q4b: How do I make sure that my ECTS from my semester abroad are taken over ?**

1. Prepare a learning agreement between OVGU and the target university BEFORE you leave.
  - § Choose the modules carefully.
  - § Map the modules to the thematic areas.
  - § Make sure that the Credit Points agree.
2. Get the learning agreement approved by your Studies Advisor and have it filed in the Examinations Office
3. Get the learning agreement approved by the target university
4. Report any changes to the learning agreement, as soon as you encounter them, and have the changes approved (see Step 2)


## Q5: What *kinds* of modules are there?

### Modules in Master DKE:

- § Eligible courses that fit to the thematic areas of Master DKE
- § 6 ECTS per course (5 or less ECTS possible)
- §

### Course Types offered in the FIN:

- § Vorlesung mit Übung
- § Scientific Seminar
- § Team Project
- § Individual Project
- § ...

- 
- Individual projects:
    - are not listed in LSF
    - are designed individually for each student

➔ Ask the Faculty members for individual projects they offer

## **Q6: How many team projects can I enroll to?**

ANSWER: At least one!

- no explicit limit
- must be declared as FIN Team Projects

and you must have still empty space under “Applied Data Science”



## **Q6: How many scientific seminars can I enroll to?**

**ANSWER:**

- no explicit limit
- must fit to thematic area (see issues 1-3)

# Getting Advice

## **You can get advice from:**

1. Studies Coordinator
2. Coordinator for International Students: Dr. Claudia Krull
3. Examinations Office
4. FARAFIN & Mentors for international students

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FARAFIN is the Students' Board of the Faculty of Computer Science (FIN).

They are students.

They are already familiar with the studies here.

They are volunteers who support other students in their studies.

They organize several events – from time management courses to get-together parties.

[www.inf-international.ovgu.de/Welcome/Mentoring+Program.html](http://www.inf-international.ovgu.de/Welcome/Mentoring+Program.html)

## Studies Coordinator



Prof. Myra Spiliopoulou

myra@ovgu.de

R135

<http://www.kmd.ovgu.de/>

Arrange meetings with  
[silke.reifgerste@ovgu.de](mailto:silke.reifgerste@ovgu.de)

## Studies Vice-Coordinator



Prof. Andreas Nürnberger

[andreas.nuernberger@ovgu.de](mailto:andreas.nuernberger@ovgu.de)

<http://www.findke.ovgu.de/>

Thanks!!