Introduction To Data Science:
grow your data skills stack

Studium Generale, HWR Berlin, WS 2020/21

Data science is about how to get data to work for us, to give us its hidden treasures. Data science has been called "[the sexiest job of the 21st century](#)". Even if you don't want to become a professional data scientist, it's helpful to master the basic concepts if you want to succeed in today's highly data-driven business environment. This first of two planned courses focuses on: data science basics, visualization and productivity tools. The course is for everyone who is interested in becoming more data literate and growing their skill stack.

What will you learn?

- Organise data visually in a way that is clear and informative
- Find and use data sets from the real world (e.g. COVID-19 data)
- Easily and quickly format data into graphs
- Understand and present statistical information
- Understand how modern productivity tools can help you
- Complete a sample data analysis project in small steps

What do you need to know?

No prior knowledge required. Both the necessary programming and statistical concepts are introduced in the course using examples and simple mini-projects. Previous programming experience is useful but not important. Curiosity is essential. You will gain data literacy skills by doing this course.

What are the technical requirements?

- Internet connection to participate in classes and run software over a network
- Computer running Windows 10/8/7 or MacOS 10.13+ or Linux (e.g. Ubuntu 16+).

What will we do?

- Learn key fundamental concepts through interactive lectures
- Work through basic examples and demo applications together
- Solve small data analysis problems
- Practice data science using a wide range of simple exercises
- Explore interesting data science projects

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What can you read? (Free resources)

1. fasteR: Fast Lane to Learning R, by Norman Matloff, 2020.

2. Introduction to Data Science - Data Analysis and Prediction Algorithms with R, by Rafael A. Irizarry (CRC Press, 2020).

3. YaRrr! The Pirate's Guide to R, by Nathaniel D. Phillips, 2018.

4. Data Science in a Box, by Mine Cetinkaya-Rundel, 2020.

Who will teach this course?

- Lecturer: Prof. Dr. Marcus Birkenkrahe

- Brief bio: Professor of business informatics at HWR Berlin since 2007. PhD in theoretical physics (1994). Executive at Accenture and Royal Dutch Shell (1995-2002). Executive Coach, lecturer and consultant (2003-2006). Favorite hobby: gaming (PS4). Favorite authors: Henry James, Fjodor Dostoyevsky, Theodor Fontane. Favorite films: Pride & Prejudice, Key Largo, LOTR, Oblivion. Favorite series: Person of Interest, Rick & Morty, IT Crowd. Favorite Games: Sekiro, Fallout 4, No Man's Sky, AC Odyssey. Favorite software: Emacs, Org-mode, GNU/Linux, R.

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When will the course be?

- Every Wednesday from 19:00-21:00 hrs starting 14-Oct-2020 until 10-Feb-2021

- 16 meetings altogether. No classes on: December 23 & December 30, 2020.

Where will the course take place?

Moodle (asynchronous), Big Blue Button (synchronous). Live sessions will be recorded.

How many credits can I earn?

1 ECTS credit for active participation (> 80% of available challenges) + 1.5 ECTS credits for completing the final project with a passing grade (> 50%) = 2.5 ECTS credits max

What's next?

This basic course is offered in the winter term only. A follow-up course is planned for summer 2021: "Introduction to machine learning". This course will focus on: data wrangling, prediction algorithms and even more productivity tools.