MANNHEIM DATA SCIENCE CERTIFICATE: R-PROGRAMMING

This certificate is designed to prepare you for positions that use scientific methods, processes, and systems to extract knowledge and insights from data. The focus of this certificate is on both the conceptual steps needed in preparing different types of data for analysis as well as the practical skills to do so. You will apply learned skills, such as managing (messy) data, developing proper data workflows, as well as enhancing collaboration and producibility.

KEY FACTS

STRUCTURE
Asynchronous learning through video lectures combined with weekly 1-hour live online meetings

CERTIFICATE DURATION
3 courses
4-8 weeks per course

TIME COMMITMENT
Part-Time (12 hours/week)

LANGUAGE
English

APPLICATION REQUIREMENTS
· An academic degree
· Fluency in English

CREDITS
Certificate of Completion

PARTICIPANTS
Limited to 20

CERTIFICATE DESCRIPTION

Data is omnipresent in the contemporary world coming in different shapes and sizes: from survey data to found data. In order to make use of such data through analysis it is necessary first to import and clean the data. Completing this certificate, you will learn both the conceptual steps needed in preparing data for analysis as well as the practical skills to do so. In a second step, you will delve deep into the new data environment characterized by large data, fast pace of production, and collaborative work. You will learn about the main types of data workflow and how tools such as GitHub can enhance collaboration and insure reproducibility. In addition, you will learn how to create reproducible documents in Rmarkdown and Jupyter Notebooks, how to work with distributed data using Spark, and how to develop dashboards using R Shiny.
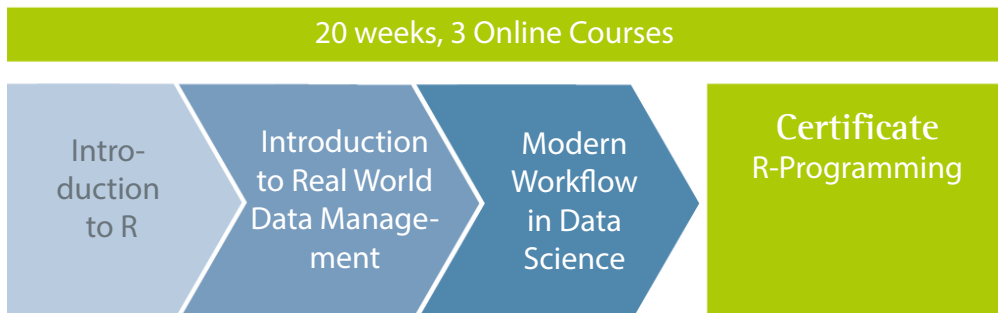
KEY BENEFITS

· Excellence: Theoretically based and practice-oriented learning from a faculty from world's top ranked universities, statistical agencies and businesses
· Flexibility: Join courses online from anywhere in the world, at your own pace.

· Online learning: Asynchronous learning experience (pre-recorded lectures, readings) and synchronous learning experience (virtual classroom, weekly live discussions led by the instructor)
· Participant profile: Participants benefit from a diverse group of international peers coming from various industries and with different occupational profile

MANNHEIM
BUSINESS SCHOOL

BY COMPLETION OF THE CERTIFICATE YOU WILL…

- understand the stages involved in preparing data for analysis
- understand the concept of tidy data
- understand the basics of using R
- know how to write their own functions and loop over them
- know how to import and export data
- know how to clean data in R
- know how to merge data
- know how to manipulate textual data
- know how to manipulate date/time data
- know how to use tables and graphs to explore data
- understand the main types of data workflow

- understand the principles of reproducible workflows
- know how to use Github to support reproducible flows
- understand the basics of reproducible documents
- learn how to use Rmarkdown and Jupyter Notebooks
- learn about the main types of storage for online data (e.g., SQL, JSON)
- learn how to access distributed clusters using Spark
- learn how to manage computing clusters
- learn the principles of building a dashboard
- learn how to build a dashboard using R Shiny

COURSES

20 weeks, 3 Online Courses

Intro-duction to R	Introduction to Real World Data Manage-ment	Modern Workflow in Data Science	Certificate R-Programming

SAMPLE SCHEDULE

21	Introduction to R for Social Scientists	Introduction to Real World Data Management	Modern Workflow in Data Science
Mandatory weekly online meeting	This is a self-paced course without mandatory online meetings.	Mondays 9 PM CEST June 1 – July 27, 2021	Tuesdays 9 PM CEST September 21 - November 16, 2021
Final Exam	-	August 10, 2021	November 30, 2021

CASE STUDIES & EXAMS

There will be a mixture of weekly online quizzes and assignments. Additionally, the courses each conclude with a final exam.

To see all courses in the upcoming term click here.