



+3.5 Months

Certified Data Analyst

Data analytics, databases, data storytelling and visualization in practice

Guided E-Learning with Mentor and Bildungsgutschein

Certified Data Analyst



DESCRIPTION

What to Expect

As a participant in the Certified Data Analyst course, you can expect a transformative learning experience that equips you with a comprehensive skill set in data analysis. The program covers foundational concepts, hands-on application of industry-standard tools like MySQL and SQL, proficiency in data manipulation using Excel and Python, and the creation of impactful visualizations with Power BI. Through practical projects and a capstone project, you gain real-world experience and highlight in-demand data analysis skills. The course not only prepares you for roles such as Data Analyst or Junior Data Scientist but also fosters critical thinking, problem-solving, and effective communication.

What You Will Learn

The Certified Data Analyst course covers essential learning objectives to empower you in mastering data analysis. First, you will develop a solid foundation in data analysis concepts and the significance of data-driven decision-making. You will acquire proficiency in database management with MySQL and SQL. The course emphasizes Microsoft Excel data manipulation and visualization skills, from basic functions to advanced features.

The next step is statistics. Here, you will cultivate statistical knowledge, so you can interpret data and learn to make informed decisions. The programming portion of the course introduces Python, focusing on the Pandas library for data manipulation and exploration. Practical experience is gained through hands-on projects, honing data storytelling and visualization skills.

Solid skills in dashboarding and reporting belong in the repertoire of modern data analysts. That's why we've dedicated an entire section to Power BI for business analytics, with a special focus on the creation of visually appealing dashboards and reports. You will conclude the course with a capstone project that challenges you to integrate your newly acquired skills, solve real-world problems, and showcase your proficiency. Benefits of the course include: skill mastery, job readiness, and an industry-recognized certification.

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DESCRIPTION

Who Should Participate

Aspiring Data Analysts: Individuals with a keen interest in data analysis and a desire to build a career in the field.

- **Graduates and Students:** Recent graduates or current students seeking to enhance their academic qualifications with practical, industry-relevant skills.
- **Professionals Seeking Career Transition:** Professionals from diverse backgrounds looking to transition into data analytics for career growth and new opportunities.
- **Business and IT Professionals:** Business analysts, IT professionals, and decision-makers aiming to leverage data for more informed and strategic decision-making.
- **Entrepreneurs and Small Business Owners:** Individuals involved in entrepreneurship or small business ownership who wish to harness the power of data for business insights.
- **Anyone Interested in Data-Driven Insights:** Individuals curious about data analysis, regardless of their background, who want to understand and leverage data for personal or professional purposes.

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CURRICULUM

Module 1 - WELCOME TO THE WORLD OF DATA ANALYSIS AND DATA ANALYTICS

Introduction and welcome

Course Overview, Importance of Data Analysis..

Data analysis: Tools, data sources, project planning, and process steps

Data Analysis Tools, Data Sources, Project Planning, Process Steps & Data Exploration.

Practice: Deepen your knowledge of tools, data structures, analysis process steps, and project planning elements.

An exemplary data analysis project: Survey responses from StackOverflow

Exemplary Project, Survey Data Analysis, StackOverflow Dataset, Project Demonstration, Insights and Findings, Visualization Techniques, Interpretation of Results, Practical Application.

Practice: Familiarize yourself with fundamental EDA concepts, such as descriptive statistics and data visualization types and tools.

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Module 2 - DATABASES AND DATABASE MANAGEMENT SYSTEMS: MYSQL AND SQL

Introduction: The relational database model and SQL

Database Concepts, SQL Basics, Relational Database Overview, Structured Query Language.

Installation and first steps with MySQL Workbench

MySQL Workbench, Installation Procedure, Configuring MySQL Environment.

Getting started: Creating a database and tables

Database Creation, Table Design, Schema Definition

Practice: Create your first SQL database and insert tables into this database

Inserting, editing, and querying values

Data Insertion, Data Editing, Basic Queries

Practice: Manipulating data with SQL syntaxe

Additional options for using the WHERE clause

Conditional Filtering, WHERE Clause Functions

Practice: Creating specific requirements for the WHERE clause

Using foreign keys in the database

Foreign Key Concept, Referential Integrity

Practice: Understand and use foreign keys within a SQL database

Connecting queries for multiple tables

Multiple Table Relationships, JOIN Operations

Practice: Designing queries for multiple tables

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The JOIN command: Using data from multiple tables

JOIN Types, Data Integration

Practice: Working with the JOIN command

Counting entries, summing values, and other arithmetic operations

Aggregate Functions, Arithmetic Operations

Practice: Performing arithmetic operations with values

Grouping and sorting data

Data Grouping, Sorting Techniques

Practice: Creating grouped and sorted queries

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Module 3 - FROM ZERO TO HERO WITH MS EXCEL

Introduction: Data analysis with MS Excel

Excel Overview, Data Analysis Basics, Spreadsheet Application.

Basics of Excel tables

Table Structures, Data Formatting, Cell Functions.

Practice: Create your first fully blown Excel tables

Preparing, manipulating, and cleaning data

Data Preparation, Data Manipulation, Data Cleaning Techniques.

Practice: Sorting and filtering table records

PivotTables: Basics

PivotTable Introduction, PivotTable Creation, Basic Operations

Practice: Building an exemplary PivotTable from business context data.

More on PivotTables

Advanced PivotTable Features, Data Filtering, PivotTable Customization

Practice: Playing around with PivotTables

Creating and applying PivotTable formulas

PivotTable Formulas, Calculations in PivotTables, Formula Application

Practice: Creating and applying PivotTable formulas

Using PivotCharts

PivotChart Creation, Data Visualization, Chart Customization

Practice: Understanding, building, and using PivotCharts

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Module 4 - BASIC STATISTICS FOR DATA ANALYSIS

Introduction: Baseline statistics

Statistical Foundations, Central Tendency, Data Variability

Using Excel's database functions for statistical data analysis

Excel Database Functions, Statistical Analysis in Excel, Practical Applications

Practice: Learn to apply DCOUNT and DAVERAGE

More on Excel's statistical database functions

Advanced Database Functions, Complex Statistical Analyses, Function Optimization

Practice: The power of DSUM, DPRODUCT, DMIN, DMAX, and DSTEDV

Descriptive statistics

Data Summarization, Measures of Dispersion, Graphical Representation

Practice: Apply Excel's Data Analysis TOOLPAK Add-in

Mathematical statistics

Probability Distributions, Statistical Inference, Regression Analysis

Practice: Build scatter plots, construct t-tests, estimate linear regressions, and more

Numerical optimization

Optimization Techniques, Linear and Nonlinear Optimization, Practical Applications

Practice: Learn to love Excel's Solver

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Module 5 - DATA ANALYSIS WITH PYTHON: FROM ZERO TO PANDAS

Introduction: The wonderful world of Python, Pandas, Numpy, and Matplotlib

Python Basics, Data Analysis Tools, Introduction to Libraries.

Installation of Anaconda and Jupyter Notebooks

Anaconda Setup, Jupyter Notebooks Installation, Environment Configuration.

First steps with Python and Jupyter Notebooks

Python Syntax, Jupyter Notebook Essentials, Basic Operations

Practice: Use Python as a calculator

Variables and data types

Variable Creation, Data Types in Python, Working with Variables

Practice: Build your first Python variables in the context of business applications

Branching and loops

Conditional Statements, Loop Structures, Control Flow in Python

Practice: Develop advanced looping structures to automate workflow in the context of business applications

Functions and scope

Function Creation, Function Arguments, Scope and Lifetime

Practice: Write some great Python functions

Numerical computing with NumPy

Introduction to NumPy, Array Operations, NumPy Applications

Practice: Learn the power of NumPy arrays

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Data analysis with Pandas

Pandas Basics, Data Manipulation, Exploratory Data Analysis

Practice: Apply Pandas to solve short but smart business data applications

External data (API) and internal data (SQL)

Working with APIs, SQL Queries in Jupyter, Combining External and Internal Data

Practice: Learn to load external and internal data into Pandas DataFrames

Data visualization with Matplotlib

Matplotlib Basics, Plotting Techniques, Customizing Visualizations

Practice: Boost your visualization skills with Matplotlib

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Module 6 - EXPLORATORY DATA ANALYSIS, DATA STORYTELLING AND VISUALIZATION: 10 HANDS-ON USE CASES

Introduction

Overview, Importance of Exploratory Data Analysis, Introduction to Data Storytelling

Use Case 1 - StackOverflow

Developer Survey, Programming Trends, StackOverflow Data Analysis

Practice: EDA with StackOverflow survey response data

Use Case 2 - COVID-19

Pandemic Analysis, Spread Patterns, Impact Assessment

Practice: EDA with COVID-19 country-level data

Use Case 3 - Heart failure

Medical Data Analysis, Predictive Modeling, Patient Outcomes

Practice: EDA with heart failure data

Use Case 4 - FIFA 21

Sports Data Exploration, Player Performance, Team Analysis

Practice: EDA with FIFA 21 data of soccer players and leagues

Use Case 5 - Cardiac patients

Healthcare Analytics, Patient Health Insights, Treatment Effectiveness

Practice: EDA with healthcare and patients' data

Use Case 6 - Netflix movies and TV shows

Entertainment Industry Analysis, Viewer Preferences, Content Trends

Practice: EDA with Netflix movies and TV shows data

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Use Case 7 - Formula 1

Motorsports Analytics, Driver Performance, Race Strategies

Practice: EDA with Formula 1 drivers' data

Use Case 8 - National happiness

Social Analysis, Factors Influencing Happiness, Global Comparison

Practice: EDA with data about variation in country-level happiness of people

Use Case 9 - Videogames sales

Gaming Industry Insights, Sales Patterns, Genre Preferences

Practice: EDA of videogames sales across various countries

Use Case 10 - Pokemon with stats

Gaming Data Exploration, Pokemon Characteristics, Player Interactions

Practice: EDA with Pokemon characteristics data

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MODULE 7 - DASHBOARDING AND REPORTING WITH POWER BI

Introduction: Power BI

Power BI Overview, Business Intelligence Tools, Data Visualization

Getting started with Power BI Desktop

Power BI Desktop Interface, Data Import, Connecting to Data Sources

Practice: Prepare your data for Power BI

Creating data sources in Power BI

Building Data Models, Query Editor, Data Transformation

Practice: Build your first data model in Power BI

Creating visualizations

Visualization Types, Customizing Visuals, Formatting Options

Practice: Learn to customize your visuals

Aggregations, calculations, and parameters

Aggregation Functions, Calculated Fields, Parameterization

Practice: Learn to customize your visuals

Calculations with DAX expressions

Introduction to DAX, DAX Functions, Advanced DAX Concepts

Practice: Learn to write your own DAX expressions

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Interactive dashboards

Building Dashboards, Dashboard Interactivity

Practice: Build your first interactive dashboard

Sharing reports with Power BI Onlines

Power BI Online Platform, Sharing and Collaboration, Access Control and Permissions

Practice: Learn to share your dashboard with colleagues

MODULE 8 – CAPSTONE PROJECT

Apply acquired skills and knowledge to solve a real-world problem.

Synthesize insights from diverse areas of the course into a comprehensive project.

Showcase proficiency as a certified data analyst through the capstone project.

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NUMBERS & FACTS

Language: English

Max. Participants: 8

Time: 3,5+ months

Scope: 450 Hours / 600 lessons

Expense: 10-40h per week

Price: € 7.248,00

Cancellation: Cancellation free of charge up to 14 days before start.

Satisfaction Guarantee: up to 14 days after the start without risk.

CERTIFICATE

For completing the seminar participants receive the certificate „*Certified Data Analyst*“ by the XDi – Experience Design Institut.

INCLUDED SERVICES

- International recognized certificate
- Practice with mentor
- Own project with portfolio
- Personalized mentoring
- 10 hours of video material
- High-quality training documents in digital form
- Numerous templates for daily work
- Loads of best practices and online resources
- Community for exchange and discussions with other participants
- Links, literature and tool-tips

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MENTOR



Prof. Dr. Thomas Mählmann

Data Scientist and Python Coach, Professor of ABWL, Finance and Banking

Thomas teaches at the Faculty of Economics at the KU Eichstätt-Ingolstadt. In addition to research and teaching, Thomas is successfully active in consulting and professional development. He has over 20 years of experience as a data scientist, both in research and in the project business. Today, he implements all projects in research and for external clients in Python and the corresponding Python libraries. As a mentor and trainer, Thomas stands for lively, interactive teaching that is characterized by variety between content transfer and independent work.

MENTOR



Stefan Schmitt

Diplom-Designer (design major), XDi founder, experience designer, consultant, XD trainer & systematic management coach

Stefan Schmitt is experienced designer, consultant, trainer and speaker with more than 15 years experience in analyzing, planning, developing and designing websites, web portals, e-commerce solutions, marketing tools, software, mobile apps and social media applications.

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YOUR BENEFITS

- First-class instructors with a strong practical knowledge and extensive experience in the international context.
- Didactically prepared and creatively implemented learning content.
- Practically applied and solid theoretical knowledge
- Use the latest results of brain-research.
- Integrated coaching and mental training methods.
- Umfangreiche Seminarunterlagen mit vielen weiteren Tipps, Tricks & Links.
- Personal, informal handling.
- Recognized as educational leave.

OUR ADDED VALUE

The XDi works with new and interactive education programs based on current findings in brain research. Our credo is „learning by doing“ – our participants learn the application of relevant methods and techniques using practicals exercises in small groups.

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CERTIFICATIONS



REVIEWS



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FEEDBACK

„I am glad I decided to take the Certified Data Analyst course. The course has provided a tremendous amount of up-to-date knowledge, and has far exceeded my personal expectations. The course is without question challenging, but quickly rewards with a steep and presentable learning curve. I felt optimally supported by XDi at all times “

- Denis Sarcevic

„A demanding, intensive seminar. The training leadership could not be better - all participants are integrated and come out of the seminar with a big method box.

- Daniel Pott

REFERENCES

More references and feedback on www.xd-i.com/en/institute/references/

otto group



Handelsblatt



DAIMLER

BOSS
HUGO BOSS

Douglas

CHECK24

adidas
GROUP

Allianz

MEMBERSHIPS



INTERACTION DESIGN
FOUNDATION

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