Post Graduate Program in Data Analytics

In collaboration with IBM

PURDUE UNIVERSITY | Delivered by simplilearn

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About the Program

Accelerate your career with this acclaimed Post Graduate Program in Data Analytics, in collaboration with Purdue University and in collaboration with IBM. This program features the perfect mix of theory, case studies, and extensive hands-on practice. This program, in partnership with Purdue University, provides a comprehensive data analytics education, leveraging Purdue's academic excellence in data analytics and Simplilearn's partnership with IBM.

This Post Graduate Program is designed to give graduates in any discipline and experienced professionals from programming as well as non-programming background an extensive data analytics education. This training offers a blend of online self-paced videos, live virtual classes, hands-on projects, and labs. Students also have access to mentorship sessions that provide a high-engagement learning experience and real-world applications to help master essential data analytics skills. This program offers in-depth exposure to data visualization tools such as Excel, Power BI, and Tableau and the programming languages Python, R, and SQL to help prepare you for an exciting career in data analytics.

Key Features of the Program

Joint certificate from Purdue University and Simplilearn

Industry-recognized IBM certificates

Eligible for Purdue Alumni Association Membership

12+ hands-on projects on integrated labs

Capstone project in 3 domains

180+ hours of Blended Learning

International recognition by Purdue University

Masterclasses from Purdue faculty

Resume preparation and LinkedIn profile building

1:1 mock interview

Career accelerator webinars

About the Post Graduate Program in Data Analytics in collaboration with Purdue University

Purdue University, a top public research institution, offers higher education at its highest proven value. Committed to student success, Purdue is changing the student experience with a greater focus on faculty-student interaction and creative use of technology.

This Post Graduate Program in Data Analytics in partnership with Purdue University will open pathways for you in the data engineering field, which has its presence in all the industry sectors and verticals - including healthcare to manufacturing to ecommerce.

Upon completing this program, you will receive a joint Simplilearn and Purdue certificate of completion.

About Simplilearn

Simplilearn is a leader in digital skills training, focused on the emerging technologies that are transforming our world. Our unique Blended Learning approach drives learner engagement and is backed by the industry's highest course completion rates. Partnering with professionals and companies, we identify their unique needs and provide outcome-centric solutions to help them achieve their professional goals.

Program Eligibility Criteria and Application Process

Those wishing to enroll in the Post Graduate Program in Data Analytics in collaboration with Purdue University will be required to apply for admission.

Eligibility Criteria

For admission to this Post Graduate Program in Data Analytics, candidates should have:

- Should have bachelor's degree in any discipline with an average of 50% or higher marks
- With a non-programming background can also apply
- Having prior work experience is not mandatory

Application Process

The application process consists of three simple steps. An offer of admission will be made to the selected candidates and accepted by the candidates by paying the admission fee.

STEP 1
SUBMIT AN APPLICATION

Complete the application and include a brief statement of purpose to tell our admissions counselors why you're interested and qualified for this Post Graduate Program in Data Analytics.

STEP 2
APPLICATION REVIEW

After you submit your application, a panel of admissions counselors will review your application and statement of purpose to determine your qualifications and interest in the program.

STEP 3
ADMISSION

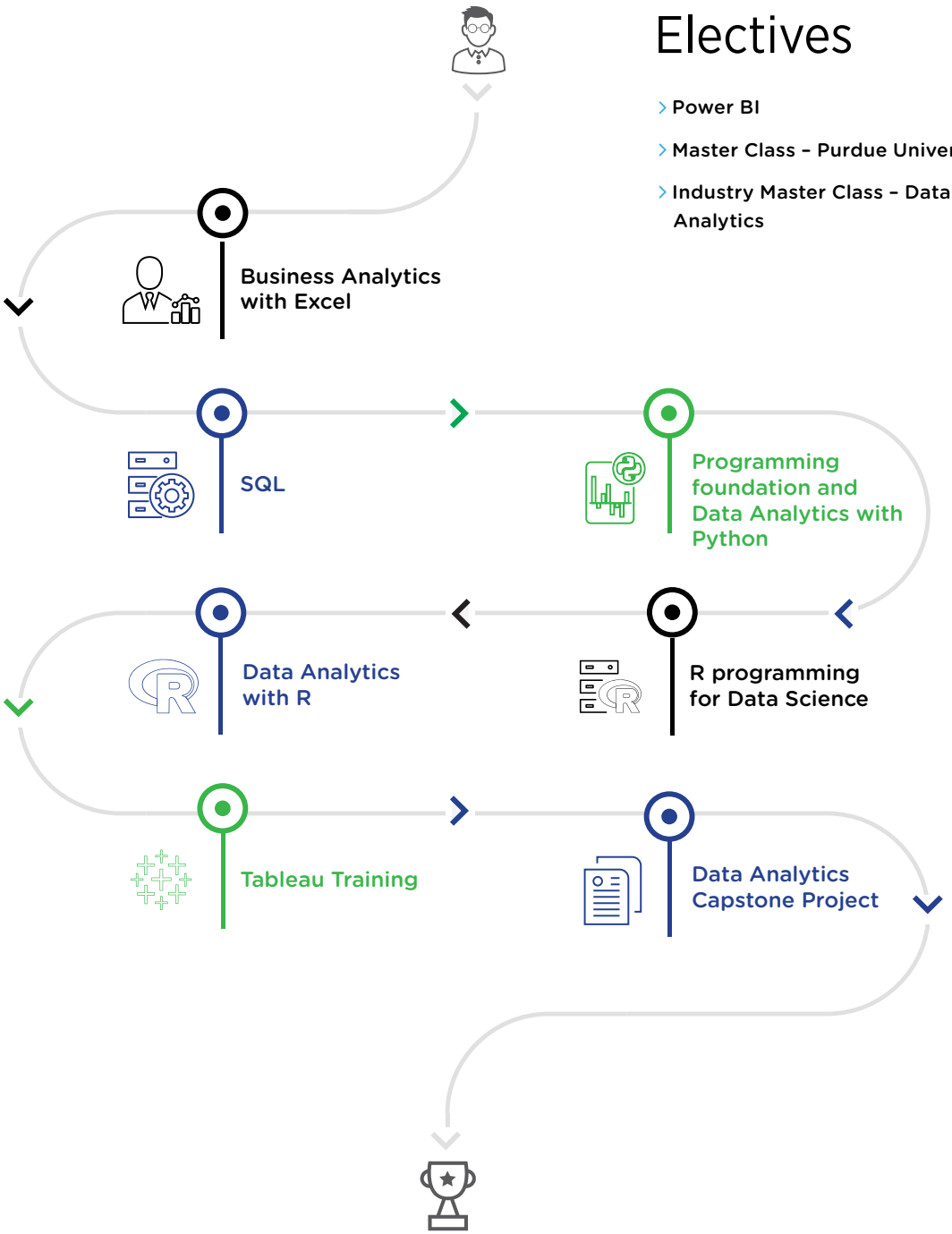
An offer of admission will be made to qualified candidates. You can accept this offer by paying the program fee.

Talk to an Admissions Counselor

We have a team of dedicated admissions counselors who are here to help guide you in the application process and related matters. They are available to:

- Address questions related to the application
- Assist with financial aid (if required)
- Help you better understand the program and answer your questions

Learning Path



Electives

- Power BI
- Master Class – Purdue University
- Industry Master Class – Data Analytics

Program Outcomes

Understand essential statistical concepts and SQL concepts

Write your first Python program by implementing concepts of variables, strings, functions, loops, and conditional statements

Understand the nuances of lists, sets, dictionaries, conditions and branching, objects and classes in Python

Work with data in Python, including the reading and writing of files and loading, working, and saving data with Pandas

Perform data analytics using popular Python libraries

Learn how to interpret data in Python using multi-dimensional arrays in NumPy, manipulate DataFrames in pandas, use SciPy library of mathematical routines, and execute machine learning using Scikit-Learn

Gain insights on several data visualization libraries in Python; including Matplotlib, Seaborn, and Folium

Gain an in-depth understanding of the basics of R, learning how to write your own R scripts

Master R programming and understand how various statements are executed in R

Program Outcomes

Understand and use linear and non-linear regression models and classification techniques for data analysis

Grasp the concepts of Tableau Desktop 10, become proficient with Tableau statistics and build interactive dashboards

Become an expert on visualization techniques such as heat map, treemap, waterfall, Pareto, Gantt chart, and market basket analysis

Get introduced to the latest Microsoft analytics and visualization tools (Power BI)

Understand the basics of AI concepts, machine learning workflows, and AI business applications

Who Should Enroll in this Program?

This program caters to graduates in any discipline and working professionals from programming as well as non-programming backgrounds. Candidates with no prior experience can also apply for this program. The diversity of our students adds richness to class discussions and interactions.

A career as a data analyst requires a foundation in statistics and mathematics. Aspiring professionals of any educational background with an analytical frame of mind are best suited to pursue this Post Graduate Program in Data Analytics, including:

- IT professionals
- Banking and finance professionals
- Marketing managers
- Supply chain network managers
- Students in UG/ PG programs

Business Analytics with Excel

Make the business analytics strong with the basics of statistics fundamentals, and techniques as the first step in the Data Analytics post graduate program

Key Learning Objectives

- Understand the meaning of business analytics and its importance in the industry
- Grasp the fundamentals of Excel analytics functions and conditional formatting
- Learn how to analyze with complex datasets using pivot tables and slicers
- Apply statistical tools and concepts such as moving average, hypothesis testing, ANOVA, and regression to data sets using Excel Represent your findings using charts and dashboards

Course curriculum

Module 1:

- Lesson 1- Introduction to Business Analytics
- Lesson 2- Conditional Formatting and Important Functions
- Lesson 3- Analyzing Data with Pivot Tables
- Lesson 4- Dashboarding
- Lesson 5- Business Analytics with Excel
- Lesson 6- Data Analysis Using Statistics
- Lesson 7- Power BI

Module 2:

- Lesson 9 - Introduction to Programming
- Lesson 10 - Programming Environment Setup
- Lesson 11- OOPs Concepts
- Lesson 12- Programming Fundamentals of Python
- Lesson 13- File Handling, Exception Handling, and Package Handling

SQL

This course gives you the information you need to successfully start working with SQL databases and make use of the database in your applications. Learn the concepts of fundamental SQL statements, conditional statements, commands, joins, sub queries, and various functions to manage your SQL database for scalable growth.

Key Learning Objectives

- Understand databases and relationships
- Use common query tools and work with SQL commands
- Understand transactions, creating tables, and views
- Comprehend and execute stored procedures

Course curriculum

- Lesson 1- Fundamental SQL Statements
- Lesson 2-Restore and Back-up
- Lesson 3-Selection Commands: Filtering
- Lesson 4-Selection Commands: Ordering
- Lesson 5-Alias
- Lesson 6-Aggregate Commands
- Lesson 7-Group By Commands
- Lesson 8-Conditional Statement
- Lesson 9-Joins
- Lesson 10-Subqueries
- Lesson 11-Views and Index
- Lesson 12-String Functions
- Lesson 13-Mathematical Functions
- Lesson 14-Date and Time Functions
- Lesson 15-Pattern (String) Matching
- Lesson 16-User Access Control Functions

Programming foundation and Data Analytics with Python

With this Programming foundation and Data Analytics course, you will learn programming fundamentals, how to analyze data in Python, perform simple statistical analyses, create meaningful data visualizations, predict future trends from data, and more.

Key Learning Objectives

- Gain knowledge in the basics of programming, Python fundamentals, Jypter and Python environment setups, and OOPs concepts
- Have a fair understanding of different programming languages, algorithms, and pseudo codes
- Import data sets
- Clean and prepare data for analysis
- Manipulate Pandas Data Frame
- Summarize data
- Build data pipelines
- Build machine learning models using scikit-learn

Course curriculum

- Lesson 1 Introduction to Programming
- Lesson 2 Programming Environment Setup
- Lesson 3 OOPs Concepts
- Lesson 4 Programming Fundamentals of Python
- Lesson 5 File Handling, Exception Handling, and Package Handling
- Lesson 6 Course Introduction
- Lesson 7 Data Analytics Overview
- Lesson 8 Statistical Computing
- Lesson 9 Mathematical Computing Using NumPy
- Lesson 10 Data Manipulation with Pandas
- Lesson 11 Data visualization with Python
- Lesson 12 Intro to ModelBuilding

R Programming for Data Science

Gain insight into the R Programming language with this introductory course. An essential programming language for data analysis, R Programming is a fundamental key to becoming a successful data science professional. In this course, you will learn how to write R code, learn about R's data structures, and create your own functions. After completion of this course, you will be fully prepared to begin your first data analysis.

Key Learning Objectives

- Learn about math, variables, strings, vectors, factors, and vector operations
- Gain fundamental knowledge of arrays and matrices, lists, and data frames
- Get insight into conditions and loops, functions in R, objects, classes, and debugging
- Learn how to accurately read text, CSV, and Excel files and how to write and save data objects in R to a file
- Understand and work on strings and dates in R

Course curriculum

- Lesson 1 - R Basics
- Lesson 2 - Data Structures in R
- Lesson 3 - R Programming Fundamentals
- Lesson 4 - Working with Data in R
- Lesson 5 - Stings and Dates in R

Data Analytics with R

The next step to becoming a Data Analyst is learning R—the most in demand open source technology. R is a powerful Data Science and analytics language, which has a steep learning curve and a very vibrant community. This is why it is quickly becoming the technology of choice for organizations who are adopting the power of analytics for competitive advantage.

Key Learning Objectives

- Gain a foundational understanding of business analytics Install R, R-studio and workspace setup, and learn about the various R packages
- Master R programming and understand how various statements are executed in R
- Gain an in-depth understanding of data structure used in R and learn how to import/export data in R Define, understand, and use the various apply functions and DPLYR functions Understand and use the various graphics in R for data visualization
- Gain a basic understanding of various statistical concepts
- Understand and use hypothesis testing method to drive business decisions
- Understand and use linear and non-linear regression models, and classification techniques for data analysis
- Learn and use the various association rules and Apriori algorithm
- Learn and use clustering methods including K-Means, DBSCAN, and hierarchical clustering
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Course curriculum

- Lesson 01 - Introduction to Business Analytics
- Lesson 02 - Introduction to R Programming
- Lesson 03 - Data Structures
- Lesson 04 - Data Visualization
- Lesson 05 - Statistics for Data Science I
- Lesson 06 - Statistics for Data Science II
- Lesson 07 - Regression Analysis
- Lesson 08 - Classification
- Lesson 09 - Clustering
- Lesson 10 - Association

Tableau Training

This Tableau course helps you understand how to build visualizations, organize data, and design charts and dashboards to empower more meaningful business decisions. You'll be exposed to the concepts of Data Visualization, different combo charts, and stories, working with filters, parameters, and sets, and building interactive dashboards.

Key Learning Objectives

- Become an expert on visualization techniques such as heat map, treemap, waterfall, Pareto
- Understand metadata and its usage
- Work with Filter, Parameters, and Sets
- Master special field types and Tableau-generated fields and the process of creating and using parameters
- Learn how to build charts, interactive dashboards, story interfaces, and how to share your work
- Master the concepts of data blending, create data extracts and organize and format data
- Master arithmetic, logical, table, and LOD calculations

Course curriculum

- Lesson 01 - Getting Started with Tableau
- Lesson 02 - Core Tableau in Topics
- Lesson 03 - Creating Charts in Tableau
- Lesson 04 - Working with Metadata
- Lesson 05 - Filters in Tableau
- Lesson 06 - Applying Analytics to the worksheet
- Lesson 07 - Dashboard in Tableau
- Lesson 08 - Modifications to Data Connections
- Lesson 09 - Introduction to Level of Details in Tableau (LODS)

Data Analytics Capstone

This data analytics capstone project will give you an opportunity to implement the skills you learned throughout this program. Through dedicated mentoring sessions, you'll learn how to solve a real-world, industry-aligned data science problem, from data processing and model building to reporting your business results and insights. This project is the final step in the learning path and will enable you to showcase your expertise in data analytics to future employers.

This capstone project will bring you through the methodologies of data pre-processing, exploratory data analysis, and data storytelling by creating dashboards to drive business decisions. You can choose to work on projects that cover the most relevant domains (consumer services, BFSI, and healthcare) to make your practice more relevant.

Elective Courses

Power BI

Microsoft Power BI is a suite of tools used to analyze your data and extract business insights by building interactive dashboards. This Power BI training course will help you get the most out of Power BI, enabling you to solve business problems and improve operations. This Power BI training course will help you master the development of dashboards from published reports, discover greater insight from your data with Quick Insights, and learn practical recipes for the various tasks that you can do with Microsoft Power BI—from gathering your data to analyzing it. This course also contains some handy recipes for troubleshooting various issues in Power BI.

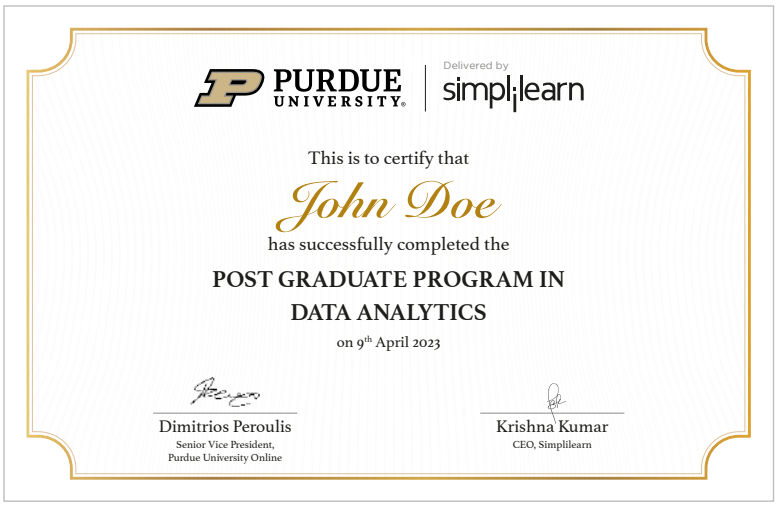
Master Class – Purdue University

Attend an online interactive masterclass and get insights about advancements in the Data Analytics domain.

Industry Master Class – Data Science

Attend this online interactive industry master class to gain insights about Data Analytics Domain.

Certificates



Upon completion of this Post Graduate Program in Data Analytics, you will receive a program completion certificate from Purdue University and Simplilearn. You will also receive IBM certificates for all IBM courses along with certificates from Simplilearn for the courses completed in the learning path. These certificates will testify your skills as an expert in data analytics.

Program Endorsers

Patrick J Wolfe

Frederick L. Hovde Dean of the College of Science

Patrick J. Wolfe, an award-winning researcher in the mathematical foundations of data science, is the Frederick L. Hovde Dean of Science at Purdue University and named the 2018 Distinguished Lecturer in Data Science by the IEEE. He provides expert advice on applications of data science.

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