Python Training – Essential Foundations for Data Science

Module 1 – Introduction to Python

- Overview of Python and its key applications in analytics and scientific computing
- Installing Python and choosing a development environment (IDLE, VS Code, or Jupyter)
- Getting started with the Python console and running your first scripts

Module 2 – Core Programming Concepts

- Understanding variables, data types, and type conversion
- Working with strings, numbers, and booleans
- Essential arithmetic and logical operations

Module 3 – Control Flow Essentials

- Writing conditional statements (if, elif, else)
- Using loops effectively (for, while)
- Mastering indentation and clean coding practices

Module 4 – Functions and Script Structure

- Defining and calling functions
- Passing arguments and returning values
- Organizing your code into clear, reusable blocks

Module 5 – Introduction to Object-Oriented Programming (Optional)

- Understanding objects and their role in Python
- Creating simple classes and instances

Module 6 – Working with Files

- Reading and writing text files
- Processing data line by line for real-world tasks

Module 7 – Practical Workshop

- Building a small end-to-end program combining variables, loops, and functions
- Personalized feedback and improvement tips

Python Training: Finance and Time Series

Introduction to Python Training: Finance and Time Series

Module 1: Introduction to Python for Finance

- Overview of Python as a programming tool for finance.
- Install and configure the Python environment with financial libraries.
- Manipulate financial data, data types, and basic operations.

Module 2: Financial Data Analysis with Pandas

- Introduction to the Pandas library for data analysis.
- Load financial data from various sources (CSV files, databases, etc.).
- Clean and preprocess data for in-depth analysis.
- Perform grouping, filtering, and statistical calculations on time series.

Module 3: Financial Data Visualization with Matplotlib and Seaborn

- Introduction to Matplotlib and Seaborn for data visualization.
- Create charts such as price curves, return histograms, and candlestick plots.
- Customize visualizations for effective presentation of financial data.

Module 4: Financial Time Series Analysis

- Understand key concepts in financial time series (volatility, trends, seasonality, etc.).
- Apply time series models such as Moving Average, Autoregression (AR), ARMA, and ARIMA.
- Evaluate and interpret model performance.

Module 5: Predicting Financial Prices with Machine Learning

- Introduction to basic machine learning and regression concepts.
- Use Machine Learning libraries such as Scikit-Learn to predict financial prices.
- Compare regression model performance to achieve accurate predictions.

Module 6: Practical Finance Applications with Python

- Apply acquired skills to solve real-world financial problems.
- Create investment strategies using financial time series analysis.
- Implement risk and portfolio analysis to support informed decision-making.

Python and Data Science Training – Complete Tour

Introduction to the Python and Data Science Course – Block 1

- Variable types (integer, float, boolean, etc.) and basic operators;
- Data structures (list, tuple, dictionary, etc.);
- Flow control (if-else, try-except-finally);
- Loops (for, while);
- Combining flow control and loops;
- Functions and methods (function(object) and object.method());
- Importing external modules to access additional functions and methods;
- Syntax principles and best practices.

Introduction to Python – Block 2

- Managing modules;
- Administering the operating system;
- Extracting data from the web (web scraping);
- Cleaning and transforming data using the regex module;
- Working with time using the datetime module.

Introduction to Data Science

- Jupyter Notebook, Spyder, and other tools;
- Introduction to NumPy;
- Introduction to Pandas – Series objects;
- Introduction to Pandas – DataFrame objects;
    - Extra: Introduction to Pandas – Instructions;
    - Extra: Tidy Data;
- Groupby operations and aggregations;
- Data collection from Web APIs and analysis;
- Data visualization;
    - Extra: Geospatial visualization.

Python Training – Data Science (Numpy Pandas Matplotlib)

tool

Install the Anaconda distribution

Python for scientific computing: Numpy

Introduction to Numpy
Create ndarray objects
Data selection
Add, edit, delete items
Use numpy functions
Enter exit

Manipulating data with Pandas

Series objects
DataFrames objects
Data selection
Aggregation functions
Merge, Join, Remodeling
Use lambda functions
Make a dynamic crossover (Pivot Table)
Manipulate excel data (csv) and json

Visualize data with Matplotlib

2D curve display
Point cloud display
Histogram display
Web API

Request to an API
Get the answer
Treat the answer
Application: API Twitter, analyze and visualize in time
->

Master Git: Manage Your Versions and Collaborate Effectively

Module 1: Introduction to Git

Objective: Understand the usefulness of Git in version control and project development.

- Introduction to version control in the context of a static website project.
- Install and configure Git as well as Python, Pip, GitHub, GitLab, and MkDocs.
- Overview of Git and its ecosystem (GitHub, GitLab, Bitbucket, etc.).

Module 2: Working Alone with Git

Objective: Master the fundamentals of Git for an individual static website project using Python and Markdown.

- Basic commands: git init, git config.
- Track and record changes: git add, git status, git commit.
- Explore previous versions: git log, git diff.
- Manage versions: git tag.
- Publish online: git push.
- Discover MkDocs, some Python, and Markdown to run the site locally and host it online.
- Discover other concepts: branches (git branch, git checkout), a YAML file, a README.md, on GitHub and GitLab.
- Clone an online project: git clone.
- Work with command aliases.

Module 3: Working in a Team with Git

Objective: Learn how to use Git in a collaborative environment.

- Discover team types: owner and collaborator for a 2-person project, or equal collaborators.
- Manage teams and define permissions.
- Review commands and add updates to synchronize the local repository with the central repository: git fetch, git pull.
- Best practices for teamwork with Git.

Module 4: Pull Request (Merge Request)

Objective: Master the process of requesting code integration through a Pull Request.

- Introduction to Pull Requests, contributing to a project, and the code review / merge request process.
- Create and submit a Pull Request.
- Handle a conflict-free request: approve or reject the request.
- Update your repository: git fetch, git pull.
- Strategies for managing Pull Requests within a team.

Module 5: Managing Merge Conflicts

Objective: Learn how to handle and resolve version conflicts.

- Understand merge conflicts: causes and how to detect them.
- Handle a request with conflicts: proceed or reject the request.
- Resolve conflicts manually: git status, git mergetool.
- Use conflict resolution tools (VS Code, Meld, etc.).
- Best practices to avoid conflicts: use the stash git stash.
- Manage the stash: add, apply, drop, and more.

Module 6: Synchronization and Continuous Integration

Objective: Manage team integration workflows.

- Differentiate between origin and upstream repositories.
- Introduction to CI/CD concepts, continuous integration, and triangular workflows.
- Introduction to branches: git branch, git checkout -b.
- Introduction to HTTP and SSH remotes and managing SSH encryption keys.
- Discover backtracking, history, and other user-friendly tools.
- Explore the CI/CD pipeline, continuous integration, and continuous deployment.

AI: Evolution, Understanding, Application, and Programming

Module 1: Introduction to Artificial Intelligence

- Overview and Q&A session (1h30)
- Definition and evolution of AI:
  - Terminology and evolution
  - From early algorithms to neural networks
  - Deep Learning and Generative AI
  - Weak, General, and Superintelligent AI
  - Examples of applications across sectors
- Factors supporting AI:
  - Algorithmic and heuristic structures
  - Hardware aspects (CPU, GPU, TPU)
  - Languages (R, Python, C++, Rust, Mojo)
  - Software and frameworks
- Introduction to Machine Learning:
  - Main model categories
  - Supervised and unsupervised learning
  - Applications and use cases
- Introduction to Deep Learning:
  - Differences from Machine Learning
  - Concepts and models
  - Applications and use cases
- Natural Language Processing features
- Overview of Generative AI:
  - Language, image, and multimodal models
  - Market applications and products
  - Example: Google Gemini
- Issues and risks:
  - Ethics and bias
  - Privacy and environmental impact
  - Risk of dystopian outcomes

Module 2: AI Demonstration

- Overview and Q&A session (1h30)
- DevOps and AI pipelines:
  - Data preprocessing
  - Training and optimization
  - Deployment
- Machine Learning in practice:
  - Demo with Scikit-Learn
  - User-friendly approach with PyCaret
  - Note: Source code via Google Colab
- Deep Learning in practice:
  - Demo with Numpy
  - Using PyTorch
  - Note: Source code via Google Colab
- Generative AI:

    - Exploring large language and multimodal models
    - Fine-tuning and autonomous agents
    - Note: Hands-on in the next module with Google Gemini

Module 3: Using Google Gemini

- Hands-on experimentation with Google Colab (3h30)
- Using the chatbox:
    - Crafting simple prompts
    - Tips for Python and other technical prompts
- Using the Python API:
    - Designing advanced prompts
    - Code optimization and unit testing
- Using Gemini Studio:
    - Fine-tuning and Retrieval-Augmented Generation
    - Building an autonomous agent
    - Experimental projects with Python and more

Follow-up training with OpenAI

OpenAI Training for Developers

Corporate Training

If there is one field that is constantly evolving, it’s information technology. To stay on top of the latest trends, today’s companies must invest in staff training. And when companies seek IT training, they turn to Doussou Formation. Doussou Formation offers more than 101 training titles ready for you.

- Our team consists of 15 experts in their respective fields.
- We prioritize small groups (maximum of five learners) to maximize personalization, retention, and hands-on practice.
- 97% of our clients are satisfied with our training programs.

Our trainers come to your company, which allows you to:

- Avoid productivity loss due to employee travel.
- Work directly with your equipment and software to maximize knowledge transfer.
- Incorporate your internal context and tailor the training to your realities.
- Share confidential information among colleagues without concern.
- Build even stronger team spirit.

– Companies such as TC Transcontinental, Vidéotron, Bell Media, Desjardins, and National Bank, to name a few, have placed their trust in us.

Steps for Corporate Training:

- Identification of training needs.
- Profiling of learners to better understand their expertise level on the topic.
- Development of a customized training plan.
- Integration of relevant examples from the company's industry.
- Development of training and support materials.
- Selection of the most suitable trainer based on objectives and industry.
- Training delivery.
- Participant evaluation of the session.
- Training feedback, and
- Personalized coaching as needed.

Our Information Technology (IT) Training Courses:

- Design Training (Photoshop, Illustrator, InDesign, InCopy);
- 3D Programming (Rhino 3D);
- Programming (Python, Java, C#, PHP);
- Website Creation (HTML, CSS, Angular, ReactJS, WordPress);
- Office 365: Outlook, Word, PowerPoint, Excel, Access, OneNote, OneDrive, Power BI, Flow, Forms, Stream, Teams, Yammer, SharePoint, Planner, Skype;
- Project Management;
- – and many more

Our Human Capital Training Courses:

- Training: Managing a Difficult Employee;
- Training: Conflict Management in the Workplace;
- Professional Efficiency: Managing Your Time and Priorities

Tell Us About Your Needs

Receive a service proposal with no obligation on your part

Can't find the training you're looking for? Doussou Formation can create a custom program. Stay up to date with our latest training courses by subscribing to our newsletter. You'll receive new course titles as soon as they're launched, along with an exclusive introductory discount. It pays to subscribe.

By email: info@doussou-formation.com

Training for engineers

As an engineer in Quebec, you are required to complete 30 hours of continuing education each year, in accordance with the requirements of the Ordre des Ingénieurs du Québec (OIQ). At Doussou Formation, we understand the challenges you face in keeping your skills up to date while meeting the demands of your profession. This is why we have designed training programs tailored to your professional needs and aligned with OIQ standards.

Training Designed for Engineers

We offer a complete range of technical and professional training programs to help you excel in your field while meeting your continuing education requirements.

1. Training on Specialized Software Tools

Software is at the heart of modern engineering. Our courses enable you to master essential tools to remain competitive:

AutoCAD: Learn how to create precise technical designs.

3D Studio Max, Rhino 3D, and Lumion: For 3D modeling and photorealistic rendering.

Blender and Unreal Engine: Ideal for prototyping and complex simulations.

Maya: Enhance your skills in design and simulation.

2. Project Management and Performance in Technical Environments

In an environment where projects are becoming increasingly complex, project management skills are essential:

- **MS Project and Planner:** Manage your projects efficiently.
- **Power BI and Advanced Excel:** Leverage your data for informed decision-making.

- **Leadership and Technical Communication:** Develop your influence as a manager or project leader.

3. Artificial Intelligence

- **Introduction to AI:** Understand the fundamental concepts of artificial intelligence, neural networks, machine learning, and modern models.
- **AI for Engineers:** Leverage your data for informed decision-making and learn how to integrate AI into your technical projects.
- **Generative AI and Automation:** Discover how to use tools such as ChatGPT, Copilot, and generative models to automate engineering tasks.
- **Programming and Applied AI:** Learn to develop Python scripts to train models, analyze data, and implement operational AI solutions.

Why Choose Doussou Formation?

- **Training Recognized by the OIQ:** All our courses comply with the requirements of the Ordre des Ingénieurs du Québec, allowing you to validate your hours with confidence.
- **Expert Trainers:** Our instructors are experienced professionals in their field, ensuring hands-on and valuable training.
- **Flexible Learning:** Choose online or in-person sessions according to your schedule and preferences.
- **Personalized Learning Paths:** We can tailor our training programs to your specific needs or those of your company.

- AI
- [Details]

- Python and Data Science
- [Details]

- Unreal Engine
- [Details]

- Git
- [Details]

- ReactJS
- [Details]

- Blender
- [Details]

- Mastering SQL Queries
- [Details]

- Java
- [Details]

The field of technological engineering is one that evolves the fastest. Constantly needing to update your skills to keep up with ever-changing software and methods, Doussou Formation designed tailored training programs specifically for engineers. We offer a wide range of interesting and relevant courses. Our team of instructors consists of experts in their field, and our approach promotes hands-on learning and small groups, encouraging interactions that foster meaningful and lasting learning experiences.

By completing your training with Doussou Formation, you will put your knowledge into practice, benefit from privileged access to your trainer, and receive personalized follow-up to ensure we consistently provide the best training.

For the required 30 hours of continuing education required by the Ordre des ingénieurs, we are here to support you. Let us give you the tools to stay up to date with technological and methodological advances. At Doussou, you will certainly find a course that meets your needs. Here are a few examples below.

Our Technology Courses

- JavaScript Training

- C# – C Sharp Training
- MVC ASP.Net Training
- React.JS – Continuing Education
- VUE.JS Training
- 3D Programming (Rhino 3D)
- 3D Max Training
- HTML5 and CSS3 Training
- Java Training
- PHP Courses
- Laravel Framework Courses
- Python and R Language Training
- Cybersecurity Courses
- XML Training

Our Methodology and Office Productivity Courses

- VBA Courses
- Excel Training
- Training: Mastering Macros and Introduction to Programming
- GIT Training: Writing Technical Documentation
- Zoom Training
- Microsoft Teams Training
- Nuance eCopy Training
- Acrobat Pro Training
- PowerPoint Training
- Publisher Training

By email: info@doussou-formation.com

About

Founded in 2016

97% satisfaction

Doussou Formation – Canadian provider of market-ready IT training

Founded in 2016, **Doussou Formation** quickly established itself as a leader in training for
information technology, office productivity, human capital, project management, and graphic design, in Quebec and across Canada.

Our approach & quality commitment

- **Certifications and recognition:** over 97% satisfaction based on client evaluations.
- **Practice-based pedagogy:** 100% hands-on training, in small groups, with course materials, personalized follow-up, and certification at the end of the program.
- **Experienced trainers:** seasoned professionals, rigorously selected and assigned according to your needs.

Geographic reach & accessibility

Our training sessions are offered in person in **Montreal**, **Quebec City**, and **Gatineau/Ottawa**,
as well as in **virtual classrooms** accessible anywhere in Canada.

We serve **businesses**, **public organizations**, **NPOs**, and **individuals**
with a standardized “market-available” offering, compliant with procurement requirements (no custom development).

Montreal
Quebec City
Gatineau / Ottawa
Online (Canada)

Training domains & topics

More than **100 ready-to-start courses** — organized by major **topics** to quickly meet your needs.

Productivity & Office Tools
Data & Analytics
Development & DevOps
Collaboration & M365
Design, Graphics & Multimedia
Leadership & Human Capital
Project Management
Digital Marketing & SEO
Emerging Technologies & AI

Productivity & Office Tools

- **Spreadsheets & automation** — Excel (pivot tables, Power Pivot), Google Sheets
- **Documents & layout** — Advanced Word, templates, mail merge
- **Communication** — Outlook, email best practices

Data & Analytics

- **BI & visualization** — Power BI (Modeling, DAX), Tableau
- **Databases** — SQL (queries, optimization)
- **Data science** — Python for analysis

Collaboration & M365

- **Teams & team productivity** — meetings, channels, best practices
- **SharePoint & OneDrive** — structures, permissions, governance
- **Copilot & applied AI** — responsible use and quick wins

Design, Graphics & Multimedia

- **Adobe Suite** — Photoshop, InDesign, Illustrator
- **UX/UI & prototyping** — Figma, mockups and components
- **Animation & content** — basics of 2D/3D, visual storytelling

Leadership & Human Capital

- **Management** — leadership, two-way feedback
- **Effectiveness** — time & priority management
- **Work climate** — managing difficult employees

Project Management

- **Methods & tools** — planning, monitoring, risk management
- **Microsoft Project** — calendars, resources, reports
- **Agile/Hybrid** — practical team practices

Digital Marketing & SEO

- **SEO** — technical, content, linking, monitoring
- **Acquisition** — Google Ads, social media
- **Content** — editorial guidelines, conversion pages

Emerging Technologies & AI

- **Generative AI** — ChatGPT, Copilot, best practices
- **Systems & dev** — Linux, JavaScript, React, DevOps
- **Automation** — scripts, integrations, workflows

*Indicative lists: each topic is available at **beginner**, **intermediate**, and **advanced** levels, in person or in virtual classrooms.*

Our clients & references

- **Governments:** federal, provincial, municipal.
- **Public institutions:** CNESST, SAAQ, BAnQ…

- **Education & NPOs:** universities, colleges, community organizations.
- **Private sectors:** Hydro-Québec, Vidéotron, Bell, Desjardins…
- **International presence:** France, DRC, Guadeloupe, Mali.

Why choose Doussou Formation?

Strength	Description
Pan-Canadian reach	In-person in Quebec + virtual across Canada.
Standardized offering	Clear, ready-to-use catalog.
Small groups & support	Better learning through personalized guidance.
Bilingual accessibility	Materials and training in French and English.
Transparent pricing	Public rates, discounts under conditions (FO1).
Proven credibility	Expert trainers, recognized clients.

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They trust us

Many companies, institutions, and organizations place their trust in us and continue to attend our training.
Here are some examples:

Sector	Organizations
Financial services, real estate and insurance	Desjardins, National Bank of Canada, Intact, Olympus, Global Pay
Leisure, culture and hospitality	Caraïbes Nordiques, Tangente Danse, PPS Danse, Théâtre de la Dame de Cœur, Le Carrousel, Productions Roméo et Fils, Tidan
Federal government agencies	Government of Canada, RCMP, Department of Fisheries and Oceans, National Defence
Provincial government agencies	Ministry of Families, Ministry of the Environment, MSSS (Ministry of Health and Social Services), CNESST, Québec Research Fund, SAAQ, Public Curator, BAnQ (National Library and Archives of Québec), Tourisme Québec, UPAC
Municipalities	City of Montréal, Municipality of Sayabec
Education services	Laval University, Université de Montréal, Cégep de Trois-Rivières, Royal Military College Saint-Jean, University of Ottawa, CPE de la Courtepointe

Sector	Organizations
Technology & communications	Captel, Blue Solutions, Progi, PMG Technologies, Hydro-Québec, Vidéotron, Bell Canada, TC Transcontinental, GRICS
Non-profit organizations	Résidence Le Monarque, Réseau-Femmes Ontario, Sphère Québec, Alzheimer Outaouais, Valoris, Culture Laval, Québec Logistics Innovation Institute
Social & public services	Urgences-Santé, IDDPNQL, CSS des Patriotes (School Service Centre), SIS Immigration, RDÉE Canada, Société Économique de l'Ontario
Associations & professional orders	Ordre de la Physiothérapie du Québec, Professions Québec, CPA Québec, Public Service Alliance, Association des cadres des CPE
Construction & manufacturing	ENERGI Fenestration, APL Construction, Canatal, MSP, Veolia, Acti Solutions, Photon, Les Bois de Plancher PG, KID Toy
Transport & logistics	Groupe Morneau, Communauto, STO Outaouais (Public Transit Service)
Agriculture & food	F. Ménard
Retail & e-commerce	Jackfield, Safran
Cosmetics & wellness	Institut de Beauté Manon Simard
International	RATP (France), IMIE (France), Davidson Paris, Koala Web (Guadeloupe), Malitel (Mali), AAC/RDC (Congo)

R Language Course: RStudio, Reporting

Introduction to the R language

Introduction
What is R?
Discover the analytical aspect
The business intelligence side of R / RStudio
The areas of use of R

Discover RStudio

Getting started with the RStudio environment

Install RStudio
Configure RStudio
Use the console
Install a package
Use of aids
Discover the Markdown

The basics of the R language

The variables
The functions
Calculations
Evaluate flow conditions and controls
curls
Create custom features
Calculate the execution time
Data structure: matrix
Data structure: ts
Data structure: Date and time
Data structure: factor
Work environments

Manipulate data structures

The vectors
The lists
Matrices
DataFrames

Draw a parallel between R and a spreadsheet

Adapt in R / RStudio spreadsheet operations.
Adapt the spreadsheet functions to R / RStudio.
Import and export data (spreadsheet versus R / RStudio)
Exploit the best of both software.

Handling data with R

Importing data
Exporting data
Selection and grouping of data

Case Study: Consolidate the Basics of R Language and RStudio Software

Using tidyverse for more efficiency
Tidyverse modules: dplyr, ggplot2, tibble, readr, tidyr, purrr
Data preparation
Import (and export) datasets.
Understanding the data (Explore and visualize)
Process missing values
Process outliers.
Model: select, filter, sort, modify, add, delete.
Manipulate categorical data.
Manipulate time series.
Produce PDF, HTML, etc. reports

View data with R

Realization of graphs with R software
Customize graphs with R software
Draw maps with R software

Other Related Courses

Python Training for Data Science