




A Short Course in Chemometrics

Python tools to standardize and
accelerate data analysis.

[https://github.com/mahynski/chemom
etrics short course](https://github.com/mahynski/chemometrics_short_course)

Welcome

 The goal of this short course is to introduce and explain elementary chemometric analysis methods relevant for our work at NIST. We will also touch on more advanced ML approaches. The course will cover the use of python-based tools that can accelerate your workflow and improve reproducibility.


We will assume **no prior knowledge or familiarity** with any of these methods, tools, or mathematical background. We will review only as much mathematics as is necessary to ground an understanding of the methods discussed since a deep understanding is not necessary for application, which is the focus of this course.

Why Are We Here?

 What we hope to achieve:

1. Give you a new set of tools to help you do your job better
2. Create a coherent and more consistent approach to chemometric analysis across NIST by introducing you to a standard library for these tasks
3. Improve reproducibility and transparency

What Should I Get Out of This?

 In the end you will be able to go to a library of standardized example notebooks, select the one you need, enter your data, then run it from start to finish.

This course will also teach you to modify and expand things as needed.

Instructors

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Feel free to reach out with

 Questions

 Comments

 Concerns

 Want to collaborate

Course Layout

All course material can be found at

<https://github.com/mahynski/chemometric-carpentry>.

Much of it is based on the  Python package PyChemAuth available at <https://github.com/mahynski/pychemauth>

The syllabus ([README](#)) on the course GitHub site has links to all the notebooks and materials so you can use it to navigate.

In The Future

? You can ask questions, provide feedback, and find community support on the [GitHub Discussions](#) page for this course.

✖ If you find a mistake please submit a [Bug Report](#).

✎ If you would us to cover new area(s) or have an idea to improve this course, please submit a [Feature Request](#)!

💡 Is you have requests or ideas specific to [PyChemAuth](#) you can find similar options on its [Issues page](#).

👤 Please consider contributing to PyChemAuth examples!

Getting Started

You will need:

1. A Google account (personal or NIST).
2. An open mind!

All code is free and open source. It is run in the cloud on [Google Colab](#) so you do not need to install anything, and you can access it anywhere, anytime as long as you have an internet connection.

Let's get [started](#).