



# Machine Learning & Causal Inference A Practical Approach using Python

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## Requirements:

- Undergraduate Statistics & Econometrics.
- Python-capable machine.
- Ideally, agent-based IDE for coding (e.g., Cursor, Claude Code).

## Recommended Readings:

- Intro to Causal Inference w/ examples in Python: *Causal Inference for The Brave and True*. Matheus Facure
- Causal Inference Theory: *Causal Inference: A Statistical Learning Approach*. Stefan Wager
- Machine Learning Theory: *The Elements of Statistical Learning*. Hastie, Tibshirani, Friedman
- Some resources on Prompt Engineering:
  - [Prompt Engineering Guide by Google](#)
  - [Context Engineering for AI Agents by Anthropic](#)

## Content:

### Lecture 1: 18-Feb. Basic Elements of Coding

1. Python. Virtual environments. Basic libraries. Data loading.
2. Basic programming logic: “for”, “while” loops. “if” conditions.
3. User-defined functions. Classes.
4. Scripts vs notebooks.

5. Version control: Github.
6. AI Agents. Prompts. Good practices.