### Module 1: Foundations of Causal Inference

**Week 1-2: Introduction to Causal Thinking**

* **Main Textbook:**
  + Pearl, Judea. "Causality: Models, Reasoning and Inference." Chapters 1-2. (Provides a foundational understanding of causal concepts and the history of causality in statistics.)
* **Supplementary Reading:**
  + Morgan, S.L. and Winship, C. "Counterfactuals and Causal Inference." Chapters 1-2. (Great for understanding basics with a more sociological approach.)

**Week 3: Causal Models and Representation**

* **Main Textbook:**
  + Pearl, Judea. "Causality: Models, Reasoning and Inference." Chapter 3.
* **Supplementary Reading:**
  + Spirtes, Peter et al. "Causation, Prediction, and Search." Chapter 3. (Introduction to graphical models and their use in causal inference.)

**Week 4: Introduction to Causal Calculus**

* **Main Textbook:**
  + Pearl, Judea. "Causality: Models, Reasoning and Inference." Chapters 3-4.

### Module 2: Methods and Techniques in Causal Inference

**Week 5: Estimation Techniques**

* **Main Textbook:**
  + Pearl, Judea. "Causality: Models, Reasoning and Inference." Chapters 6-7. (Focus on identification, estimation of causal effects.)
* **Research Paper:**
  + Imbens, Guido W., and Jeffrey M. Wooldridge. "Recent Developments in the Econometrics of Program Evaluation." (This paper provides a thorough review of modern econometric methods.)

**Step 6-7: Advanced Topics in Causality**

* **Supplementary Materials:**
  + Hernán, Miguel A., and Robins, James M. "Causal Inference: What If." (Hands-on guide to advanced topics.)
  + Research articles from journals such as "Journal of Causal Inference."

### Module 3: Probabilistic and Statistical Methods

**Week 8: Observational Data**

* **Supplementary Textbook:**
  + Rosenbaum, Paul R. "Design of Observational Studies." Chapters specific to each method. (In-depth look at observational methods for causal inference.)

**Week 9: Machine Learning and Causal Inference**

* **Research Paper:**
  + Scholkopf, Bernhard et al., "On Causal and Anticausal Learning." (Great primer on blending causal inference with machine learning concepts.)

### Module 4: Practical Applications and Case Studies

**Step 10-11: Real-World Applications**

* **Case Studies:**
  + "Causal Inference in Statistics: A Primer" by Pearl, Glymour, and Jewell. (Case studies across various industries.)
  + Collection of peer-reviewed articles from application areas such as healthcare, economics, and social sciences.

**Week 12: Tools and Software for Causal Analysis**

* **Online Material:**
  + Tutorials on tools like R (DAGitty), Python (DoWhy, CausalML).
  + GitHub repositories and official documentation for practical exercises.

### Module 5: Capstone Project and Presentation

**Step 13-16: Project Development and Presentation**

* **Project Guide:**
  + Advice and frameworks from previously listed textbooks and papers.
  + Regular consultations with instructional staff to guide the development.

### Additional Resources

* **Online Courses:**
  + Coursera or edX courses on causal inference, data science.
* **Video Lectures:**
  + Recorded lectures from top universities available on platforms like YouTube or academic websites.

[Github urls]

1. <https://github.com/JackHCC/Awesome-Uplift-Model/tree/master/Example/The_Effect>

book: The effect

1. <https://github.com/JackHCC/Awesome-Uplift-Model/tree/master/Example/Causal_Inference>

book: causal inference the mixtape

1. <https://github.com/apoorvadudani/Forecasting-House-Prices-using-Multivariate-Causal-Regression>
2. <https://github.com/ritakurban/Econometrics>
3. https://github.com/bemoniri/CausalInferenceCourse