# Capstone Project Guidelines Economics for Data-Driven Decision Making

**Course context.** Gateway course bridging economics and data science. The capstone assesses your ability to connect economic logic to data and communicate results clearly.

## 1. Overview

You will work in the teams created at the outset of the course to study an economic phenomenon where decisions, incentives, and information shape the data we observe. Your project must use economic reasoning to frame a question and an empirical component (descriptive analysis, simulation, or evidence review) to address it.

### Learning Goals

- Frame decisions using agents, choices, constraints, incentives, information, and interaction.
- Link theory to the data-generating process (DGP) and make credible counterfactual statements.

## 2. Scope & Exemplars

Choose a topic where data both reflects and informs decisions. Examples include:

- Education choices and guidance (e.g., VET/college program choice, dropout risk, returns).
- Consumer demand and pricing (e.g., subscriptions, two part tariffs, surge pricing).
- Labor markets (e.g., job search frictions, platform gig work, gender gaps).
- Market power and competition (e.g., bundling, mergers, platform fees).
- Asymmetric information (e.g., insurance, credit scoring, reputation systems).
- Externalities and public goods (e.g., congestion, pollution, open data, privacy).
- Policy dashboards and feedback loops (e.g., policing, recidivism, healthcare triage).

Datasets may be public (official statistics, surveys, platform data), synthetic, or curated from multiple sources. You may also simulate data consistent with your model to illustrate mechanisms.

## 3. Required Outputs

**A. Written Report (10–12 pages excluding references/appendix).**

1. Title & executive summary (≤ 200 words).
2. Introduction & motivation: the decision problem and why it matters.
3. Theory framework: agents, choices/constraints, incentives, information, strategic interaction; testable predictions.
4. Data & methods: sources, measurement, identification or simulation design; limitations.
5. Results: descriptive facts, figures/tables, or simulated evidence linked to your predictions.
6. Implications & counterfactuals: what changes under alternative rules/information?
7. Conclusion: key takeaways, risks, and next steps.
8. References (consistent citation style).

**B. Presentation (10 minutes + 10 minutes Q&A).**

9. Audience: mixed background. Prioritize clarity over technical detail.
10. Structure: problem framework data/method 2–3 key results implications.
11. Graphics: readable axes, units, and labels; avoid dense tables; one message per figure.
12. Team roles: everyone speaks; coordinate transitions.

## 4. Milestones & Suggested Timeline

| Milestone | What to submit | Due date (set in class) |
|---|---|---|
| Team formation & topic sketch | 1 page: question, setting, teams, preliminary data; risks. | Friday October 24 |
| Proposal | 2–3 pages: framework, testable predictions, data plan, expected outputs. | November 15 |
| Dry run slides | Draft 6–8 slides for feedback; focus on story and visuals. | Last TA session and December 1 |
| Final submission | Report | December 15 |

## 5. Evaluation & Grading

Capstone counts for 60% of the course grade. The rubric below guides assessment:

| Dimension | What we look for | Weight |
|---|---|---|
| Problem framing & relevance | Clear economic question tied to decisions/incentives/information | 30% |

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|---|---|---|
| | ; well motivated. | |
| Theory data integration | Testable predictions; DGP awareness; counterfactuals linked to mechanism. | 20% |
| Empirical component | Correctness; transparency; appropriate methods (descriptive, simulation, or evidence synthesis, or just accurate description of empirical strategy). | 20% |
| Interpretation & limits | | 10% |
| Communication | Readable figures/tables; concise writing; coherent presentation. | 10% |
| Originality | Creative angle, insightfulness, or novel synthesis of evidence. | 10% |

## 6. Team Roles & Collaboration Norms

Define roles early (project lead, theory lead, data lead, code lead, QA/replication, presenter). Rotate if helpful. Adopt brief weekly check ins and keep a one page project log (decisions, to dos, blockers).

We value the development of social and personal skills (Pentabilities). Behaviors such as taking initiative, cooperating effectively, staying focused, managing emotions under deadlines, and integrating others' ideas will be considered in the teamwork assessment.

## 7. Formatting & Submission

- Report: 10–12 pages, 11pt font, 1.15 spacing, 2.5 cm margins; include a short abstract.
- Figures/tables must be legible and referenced in the text; appendices allowed.
- File names: TeamX_Report.pdf, TeamX_Slides.pdf
- Submission: upload to the course platform by the deadline (one submission per team).

## 8. Q&A & Support

Use office hours and TA sessions for feedback on scope, framing, and feasibility and to get continuous feedback.