

Week 4: Proposal Critiquing

DATA 510: Data Science Capstone

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Week 4: how to critique an M1 project proposal using the official rubric and required sections. In-class activity: solo read of a practice Oregon wildfire-smoke proposal, group critique and report-out, Canvas participation roster. Prepares you for your own proposal due this week.

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1 Learning Objectives

1.1 Today's Objectives

1.2 What You Will Leave With

By the end of this session, you will be able to:

1. **Use** the M1 proposal rubric as a checklist when you read someone else’s plan (or your own draft).
2. **Separate** merit (what is strong and worth keeping) from shortcomings (what would block my approval or hurt you at M2 through M5).
3. **Critique** research questions, charter alignment, scope, feasibility, and DS3 readiness with evidence from the document.
4. **Participate** in a structured group report-out and submit your group’s roster on Canvas.

2 Part 1: Why We Critique Proposals

2.1 Proposal Critiquing

2.2 Your M1 Proposal Is the Term Roadmap

The **project proposal** is worth **9%** of your final grade. More importantly, it is the **default roadmap** for scope and priorities from week 4 through week 14.

I read it the way your peer Stakeholder POs read a **Studio Critique**: specific, evidence-based, tied to what you committed in `CHARTER.md`.

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If the proposal is vague, I send it back. If it overpromises, you will feel it at **M2-data-summary** when the data pipeline is still on fire.

2.3 What Tonight Is (and Is Not)

Tonight: practice critiquing a **sample** proposal I wrote for this activity. Not a classmate’s work. Realistic enough that the skills transfer to **your** M1 due this week.

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Not tonight: grading your actual proposal. Not a beauty contest. Not “tear it apart” theater.

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Goal: name **merit** and **shortcomings** the way a serious reviewer would, so you can fix your own draft before you upload the PDF.

2.4 The Spec You Are Practicing Against

Authoritative requirements:

- [Project Proposal \(M1\)](#)
- [DS3 framework](#)
- Your committed [CHARTER.md](#) in your repo

Ten required sections. Six rubric criteria. One coherent story.

3 Part 2: The Rubric as Your Lens

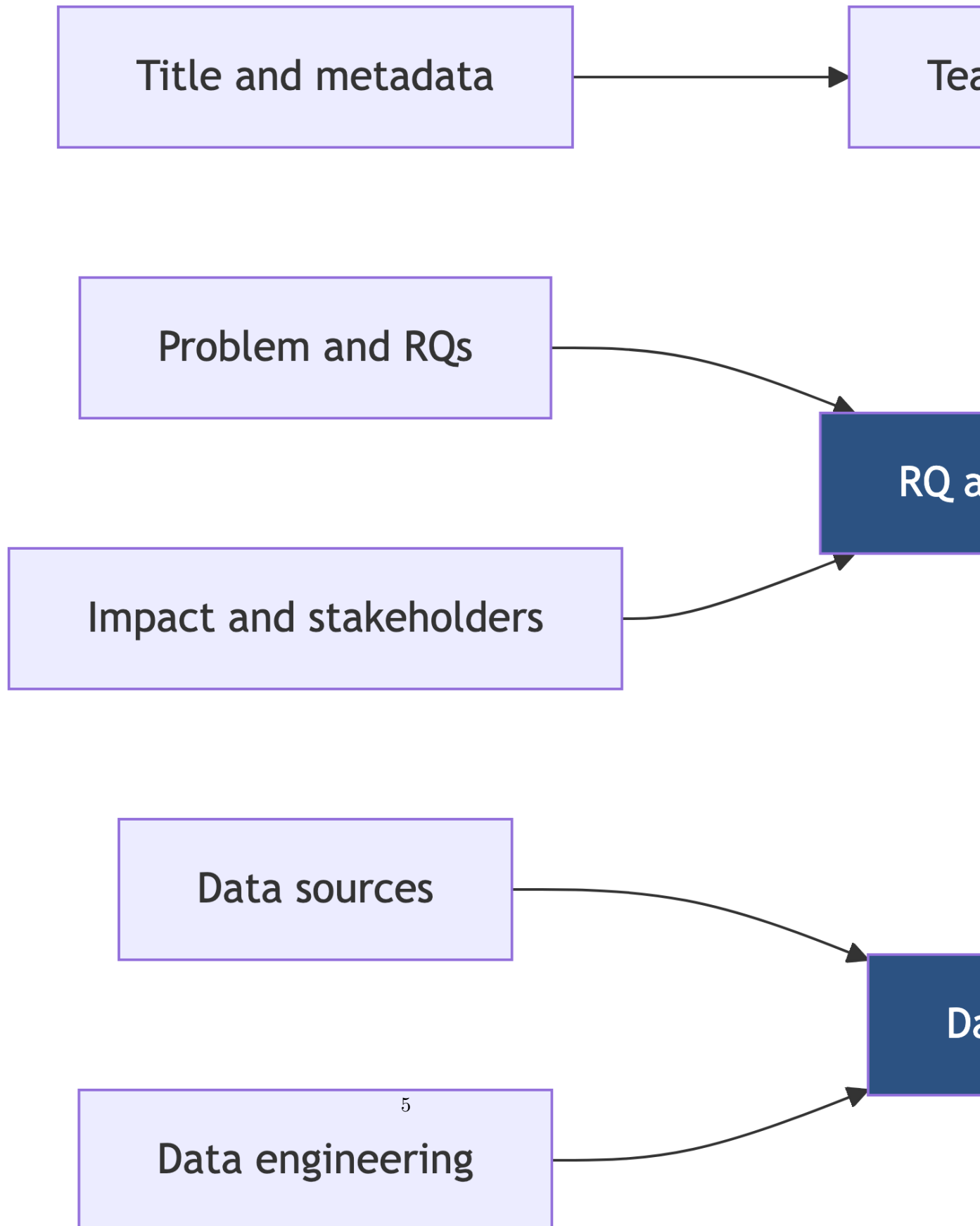
3.1 Rubric and Sections

3.2 Six Criteria, One Document

When I score your proposal out of 100, I use these buckets (see the assignment page for full wording):

Rubric criterion	Points	What I am really asking
Research question and impact	20	Testable question; consequential problem; charter consistency
Data plan and approval	20	Named sources; approval status; credible engineering plan
Methods and evaluation	20	Methods match the question; baselines; criteria of acceptance (COA) on product backlog items (PBIs)
Integration and ethics	15	Five pillars substantive; ethics tied to the setting
Timeline, feasibility, DS3	15	M2 through M5 realistic; repo, board, Discord live
Team scope (if applicable)	10	Team of 2 or 3 shows commensurate scope and labor split

3.3 Map Sections to Criteria



When you critique, you can walk the document **section by section** and ask which rubric row each section supports or undermines.

3.4 When I Score Data Plan and Approval

I look for:

- Every source named with a **URL** or API doc link.
- **Volume** and **refresh cadence** (rough estimates are fine if honest).
- **Instructor approval status**: requested, approved, or pending. At this stage, this mostly applies to the projects brought to Capstone from external sources or those ahead of schedule.
- A credible plan for `data/raw/`, `data/interim/`, `data/processed/` in the [DS3 template](#) layout.

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“We will find data later” is not a plan.

3.5 When I Score Methods and Evaluation

I look for:

- Methods that could **answer** the stated question (not just impress me).
- **Baselines** and **metrics** named before you build the fancy model.
- Major analytical steps mapped to PBIs with a **Create / Observe / Analyze** triple.

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Guidance examples:

- If the question is association at county level, say how you will handle confounding.
- If the question is forecast, say the horizon and how you will validate.

3.6 Charter Consistency (Non-Negotiable)

Your proposal should match the **Vision** and **Mission** in `CHARTER.md`. If it does not, update your charter to match the proposal.

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A charter that says one thing and a proposal that says another is a **trust problem**. Your peer POs will probably notice before I do.

3.7 Quick Quiz: Charter vs Proposal

A team's charter mission says they will build an **evacuation routing dashboard** for rural Oregon. The proposal body focuses on **pediatric asthma claims** and county-level smoke exposure. No "what changed" paragraph.

What is the best critique?

- A. Strong pivot; charters are disposable.
- B. The topic is still Oregon, so alignment does not matter.
- C. Blocking issue: charter and proposal disagree; needs reconciliation or explicit change log.
- D. Only the Owner Product Lead should care.

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C. Peer POs and I need one north star. Fix the charter, fix the proposal, or document the pivot with reasons.

4 Part 3: How to Critique Like a Peer PO

4.1 Critique Norms

4.2 Merits First

Start with what is **strong enough to keep**:

- Quote or point to the section.
- Tie it to the rubric ("this stakeholder paragraph supports **impact**").
- Be specific: "Section 4 names EPA AQS with daily refresh" beats "good data section."

Merit-first critique is how you earn trust before you deliver hard news.

4.3 Shortcomings That Matter

Then name what would make **me** (or an **employer**) pause or send the proposal back:

- **Blocking**: wrong data approval story, charter mismatch, methods that cannot answer the question, team of 3 with solo scope.
- **Revision**: vague ethics, thin five pillars (data engineering, analytics/ML, visualization and communication, ethics and responsible use, and statistics/research design), timeline that skips M2 work.
- **Polish**: typos, formatting. Mention it last.

4.4 Report-Out Buckets (Your Group Agenda)

When I put you in groups, organize your discussion around:

1. **Overall** merits and shortcomings
2. **Research questions** (focus, testability, feasibility this term)
3. **Charter fit** (vision, mission, success criteria vs proposal body)
4. **Scope and five pillars** (integrated capstone vs silo pitch)
5. **Feasibility and timeline** (M2 through M5 honest?)

One spokesperson per group will report out for **2 to 3 minutes** using these buckets.

5 Part 4: Tonight's Activity

5.1 In-Class Activity

5.2 Step 1: Solo Read (About 12 to 15 Minutes)

Open the practice proposal PDF:

Sample proposal (PDF)

Read it like you are my grader and a peer PO. Jot merits and shortcomings; use the rubric and the five buckets above.

This document is **practice only**. I wrote it for tonight. It is not anyone's real capstone.

5.3 Step 2: Group Critique (About 20 to 25 Minutes)

I will assign groups. Compare notes. Agree on:

- One **strongest merit** (with evidence).
- One **most serious shortcoming** (blocking vs revision).
- Anything you would want fixed before **your** proposal goes to Canvas this week.

5.4 Step 3: Report-Out

Each group: one spokesperson, **2 to 3 minutes**, hit the buckets you care about most. I may ask follow-ups.

Listen to other groups. If they name something you missed, that is the point.

5.5 Step 4: Canvas Roster

One person per group submits on Canvas (text box only):

- Submitter name
- Every teammate's name (participation credit)

See the Canvas assignment page.

6 Part 5: Wrap-Up

6.1 Before You Finish Your Own Proposal

6.2 Your M1 Checklist (Abbreviated)

Before you submit **your** PDF:

- ☐ All ten sections present with clear headings.
- ☐ CHARTER.md and proposal agree (or you explain the delta).
- ☐ Every data source named; approval status honest; #blockers if pending.
- ☐ Methods, metrics, and COA triples on major PBIs.
- ☐ Five pillars addressed with more than one sentence each.
- ☐ M2, M3, M4, M5 marked on the timeline.
- ☐ Repo, Projects board, Discord category real and linked.

Full checklist lives on the [project proposal page](#).

Model exemplar (optional): Compare your draft to the [model M1 proposal \(PDF\)](#). Same Oregon topic, written to the Excellent band. Tonight's practice PDF is intentionally weaker.

6.3 Before You Leave

- ☐ Canvas assignment for activity submitted by **one** person in your group.
- ☐ You can name **one** merit and **one** shortcoming from the sample without looking.

Your real M1 proposal is due by the end of **week 4** per the Canvas assignment. Questions on scope or data approval: #blockers on Discord or email me.

7 References

7.1 References

1. Cordova, L. P. DATA 510 Project Proposal (M1 milestone). <https://willamette.instructure.com/courses/10056/assignments/124616>
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3. Liu, J. C., et al. (2016). Wildfire-specific fine particulate matter and risk of hospital admissions in urban and rural counties. *Epidemiology*, 27(3), 350-357.
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