DL 304 — Data Literacy & Analytics for Capture

The evidence course. You will learn to read the published record of the federal market the way a capture professional reads it — to sense opportunities, estimate win probability, and measure pipeline health — with nothing but public data, a spreadsheet, and the doctrine.

Course number: DL 304 · **Credit hours:** 3 · **Term:** 14 weeks, one 75-minute session per week (plus independent reading and assignments) · **Audience:** junior undergraduates · **Prerequisites:** DL 210; applied statistics (may be co-requisite) · **Tier:** upper-division elective (Year 3) · **Texts:** this repository — the doctrine, the literacy maps, and public data (USAspending.gov, SAM.gov, Grants.gov) · **Tools:** a spreadsheet (or paper and a calculator). No specific analytics product is taught or required. Stack-agnostic by design (doctrine/08).

Doctrine spine

`doctrine/01` (the market is published) and `doctrine/03` (sensing and learning) form the spine, supported by `doctrine/05` (scoring with evidence) and `doctrine/08` (the machine doctrine as the same concepts encoded in data). The course teaches data literacy at *concept* altitude: what the public record shows, how to turn it into a pipeline view, and how to estimate and argue pWin with evidence.

Where this course sits in the program

This is the **evidence** elective: the quantitative companion to the qualitative doctrine. It deepens the sensing stage of DL 210 and the scoring of DL 220, and it is the natural course for a student who wants the analytical edge in capture. It also demystifies the machine side of the wider doctrine — the AI layer that encodes these concepts is, underneath, this same discipline expressed in data and rules.

Ladder: DL 210 + applied statistics. Recommended pairing: DL 220. Feeds the capstone's score and value work.

Learning outcomes

By the end of this course, a student can:

- Explain why the federal market's data is public, and name where the authoritative records live (USAspending, FPDS, SAM.gov, Grants.gov).
- Read a published award record and extract what it reveals: who won, for how much, for what, and who competed.
- Build an opportunity-sensing pipeline from public sources: forecasts, expiring contracts, and the agency's own plans.
- Turn the pipeline into a funnel view: stages, conversion, and where the leverage lives.

- Estimate pWin with evidence: factor scores grounded in data, not vibes.
- Build a scoring model in a spreadsheet and stress-test it.
- Measure pipeline health: the metrics a leader watches weekly.
- Use public competitive data (incumbents, partners, the field) to inform a pursuit decision.
- Explain the machine doctrine: an AI layer that encodes the doctrine is this discipline expressed in rules and data — and tell a concept from a tool.
- Reason about the ethics of public data: what it can and cannot show, and how to use it honestly.

How the course works

The course is a 14-week data project on a real market segment (Ravonics's lanes by default). Each week adds a layer: the sources, the award records, the pipeline, the score, the metrics, the memo. The midterm is a data profile of a market segment; the final is an analytics memo that informs a real pursuit decision.

Weekly schedule

Week	Theme	In-session (75 min)	Reading (doctrine / literacy)	Assignment due next week
1	The published market	The federal market is the most published market there is. What the record exists to do.	doctrine/01	One-page "what the public record makes possible"
2	Where the data lives	USAspending, FPDS, SAM.gov, Grants.gov, agency forecasts. What each one is the authority for.	literacy/where-the-money-flows.md	A source map: five data sources, what each is for, one real URL each

Week	Theme	In-session (75 min)	Reading (doctrine / literacy)	Assignment due next week
3	Reading an award record	Who won, how much, for what, who competed. The award as the raw material of the next cycle.	literacy/where-the-money-flows.md	Read and annotate three real award records in your market segment
4	Opportunity sensing with data	Forecasts, expiring contracts, sources sought. Seeing the market before the solicitation drops.	doctrine/03	A one-page sensing pipeline for Ravonics's lanes: sources, cadence, signals
5	The pipeline as a funnel	Stages, conversion, and where the leverage lives. The funnel as the business view.	doctrine/03	Build a funnel view of a segment: opportunities by stage, conversion estimates
6	Estimating pWin with evidence	Factor scores grounded in data: past performance, incumbency, competition, fit.	doctrine/05	A data-grounded pWin estimate for one real opportunity, factor by factor

Week	Theme	In-session (75 min)	Reading (doctrine / literacy)	Assignment due next week
7	**Midterm**	In class: present a data profile of a market segment — the money, the players, the patterns.	(review week)	Midterm submission
8	Scoring models in a spreadsheet	Build the pWin × value model, stress-test it, and see where the assumptions bite.	doctrine/05	A spreadsheet scoring model for three real opportunities
9	Pipeline health metrics	What a leader watches weekly: pipeline value, conversion, aging, and the gates that protect it.	doctrine/04	A one-page pipeline-health dashboard (metrics + the gates that drive them)
10	Value and budget analytics	Grounding the value estimate and the budget axis in the record.	doctrine/06	A value-and-cost data brief for one opportunity
11	Competitive analysis from public records	Incumbents, partners, the field — read from awards and forecasts.	doctrine/03	A competitive landscape data brief for one opportunity

Week	Theme	In-session (75 min)	Reading (doctrine / literacy)	Assignment due next week
12	The machine doctrine	An AI layer encodes the same concepts. What the data and rules are trying to hold constant.	doctrine/08	A one-page explainer: "what the machine is encoding, and how I would check it"
13	Ethics of public data	What the record shows and hides. Using it honestly; not over-reading it.	doctrine/04	A one-page ethics brief on a data interpretation
14	**Final: analytics memo**	Present an analytics memo informing a real pursuit decision — data, model, recommendation.	(review week)	Final submission

Assessment summary

- **Weekly assignments** — 30% (each a concrete artifact: a map, a profile, a model).
- **Midterm** — 25% (market-segment data profile, presented).
- **Final analytics memo** — 30%.
- **Participation and peer review** — 15%.

Rubric per `course/assessments-and-rubric.md`, with the additional standard that **every number carries a source**. An un-sourced figure is treated the way the market treats it: as noise.

The midterm

In class, present a data profile of a market segment: the money (what is spent, on what), the players (who wins, who teams), and the patterns (what the record

reveals about how the segment moves). The panel's job: *"Where is that number from? What does it not show?"* A profile that over-reads its data loses to one that states its limits.

The final

An analytics memo informing a real pursuit decision: the segment profile, a data-grounded pWin, a scoring model, a pipeline view, and a recommendation — each number sourced, each assumption stated. Presented and defended.

Policies worth stating plainly

- **The doctrine is the course.** Every assignment tests the concept, never a tool. If an assignment ever seems to require knowledge of a specific product or system, that is a bug in the assignment — flag it.
- **Every number carries a source.** The published record is the authority; an un-sourced figure is an unsupported claim.
- **Real data, safe exercises.** We use real public data. You never submit anything live in this course.
- **Academic integrity.** Do not fabricate data or overstate what a record shows. The discipline of the source is the discipline of the market.

The course in one sentence

By Week 14 you will be able to read the federal market's published record like a map — sense the opportunities, estimate the probabilities, measure the pipeline — and you will have learned that the machine side of this discipline is not magic: it is these same concepts, encoded in data and rules.