Graduate Module — Microeconomics of Procurement & Markets (GC 501)

The session-by-session teaching plan for GC 501. Follows the module contract in `modules/module-template.md`, extended to the 14-week graduate arc. Each session runs 75 minutes and assumes the weekly reading was done before class. The instructor is teaching economists-in-training, not tool-users: the canon is always at concept altitude (doctrine/08).

Audience: graduate students in the MS program. **Prerequisites:** program foundations (or the bridge). **Readings:** the doctrine and literacy folders, plus the course reader distributed weekly. **Case object:** Ravonics (case-study/ravonics.md) plus real, published-and-closed markets.

Session 1 — The market as an economic object

Learning objectives. By the end of this session, students can: (1) describe the federal market as a monopsony with published rules; (2) explain what the appropriation constraint does to demand; (3) identify the buyer's "utility function" as a statute rather than a preference.

Session plan (75 min). - Open (5 min): "The federal government is the largest buyer on Earth. What kind of buyer is it?" — collect guesses. - Teach (25 min): doctrine/01 + literacy/where-the-money-flows. One buyer, many sellers, published rules. Monopsony, the appropriation constraint, the buyer as a creature of statute. - Apply (25 min): in pairs, pick one agency market and answer: who buys, what do they buy, who competes, and what constrains the buyer's choices? - Discuss (15 min): "Where does the monopsony work for the buyer, and where does it create problems the rules have to solve?" - Close (5 min): assignment and preview of public economics.

Discussion prompts. 1. What would a rational federal buyer maximize — and who decides what "rational" means? 2. How does the public nature of the buyer change how firms should compete?

Homework / reading. Read doctrine/01. Deliverable: a one-page economic map of one agency market — buyer, goods, competitors, constraints.

Comprehension check. What is monopsony, and how does it describe the federal market? Why is the buyer's objective a statute, not a preference?

Session 2 — Why government buys: public goods and the demand side

Learning objectives. By the end of this session, students can: (1) explain public goods and externalities in the procurement context; (2) connect a mission to the goods it buys; (3) read a demand signal from an agency's published priorities.

Session plan (75 min). - Open (5 min): "Name something the government buys that a private customer would not buy at all." - Teach (25 min): the course reader on public economics. Public goods, externalities, and the missions that justify spending. - Apply (25 min): take one agency's published strategic plan/budget justification; extract the missions and translate them into categories of demand. - Discuss (15 min): "When the mission changes, how does the demand signal reach the market?" - Close (5 min): assignment.

Discussion prompts. 1. Which federal purchases are true public goods, and which are private goods the state happens to buy? 2. How should a firm read an agency's budget justification as a demand forecast?

Homework / reading. Read doctrine/01 and the course reader. Deliverable: a one-page memo on the public purpose your agency's spending serves and how it shapes what it buys.

Comprehension check. What is a public good, and is most federal contracting one? How does a mission translate into demand?

Session 3 — Markets vs. hierarchies: transaction costs

Learning objectives. By the end of this session, students can: (1) explain the transaction-cost logic of make vs. buy; (2) apply it to the firm's capability boundary; (3) explain why the government contracts rather than hires.

Session plan (75 min). - Open (5 min): "Why does the government hire some people and contract for others?" - Teach (25 min): the course reader on transaction-cost economics (Coase, Williamson). Markets, hierarchies, and the costs of using the market. - Apply (25 min): for the case firm (Ravonics), run a make/buy analysis: which capabilities stay in-house, which are bought, which are teamed — on transaction-cost grounds. - Discuss (15 min): "When does contracting out create a worse outcome than hiring — and what does the rulebook do about it?" - Close (5 min): assignment.

Discussion prompts. 1. What are the transaction costs of federal procurement, and who bears them? 2. When is a capability better kept inside the firm despite the cost?

Homework / reading. Read doctrine/03. Deliverable: a one-page make/buy/team analysis for the case firm.

Comprehension check. What is a transaction cost? Why does asset specificity push transactions into hierarchies?

Session 4 — Information and the rules: why a rulebook exists

Learning objectives. By the end of this session, students can: (1) explain adverse selection and moral hazard in procurement; (2) describe the FAR-like rules as information-forcing; (3) locate the disclosure requirements in a real solicitation.

Session plan (75 min). - Open (5 min): "What does the buyer not know that the seller knows?" - Teach (25 min): the course reader on the economics of information. Adverse selection (the bidder who knows their cost), moral hazard (the performer who knows their effort). - Apply (25 min): in teams, find three places in a real RFP where the rules force information to be disclosed (certifications, past performance, key personnel, cost data). - Discuss (15 min): "If the rules were a private contract, which clauses would the buyer insist on?" - Close (5 min): assignment.

Discussion prompts. 1. How does competition mitigate adverse selection — and when does it fail? 2. What is the moral-hazard problem after award, and which clause addresses it?

Homework / reading. Read doctrine/04 and literacy/how-to-read-an-rfp. Deliverable: a short paper locating three information-forcing mechanisms in a real RFP and their economic rationale.

Comprehension check. What are adverse selection and moral hazard? How does the FAR-like rulebook force information out?

Session 5 — Auctions I: the mechanics

Learning objectives. By the end of this session, students can: (1) distinguish open vs. sealed, first-price vs. second-price; (2) explain a reserve price; (3) map federal sealed bidding onto auction theory.

Session plan (75 min). - Open (5 min): "You are bidding against two rivals you cannot see. What do you bid?" - Teach (25 min): the course reader on auction theory. Auction forms, the Vickrey insight, reserve prices, the revenue-equivalence result. - Apply (25 min): model a sealed-bid competition with simple cost assumptions; find the equilibrium bid. - Discuss (15 min): "Why does the government prefer sealed bidding for many buys, and what does that do to bidder behavior?" - Close (5 min): assignment.

Discussion prompts. 1. In a sealed first-price auction, why do bidders shade their bids? 2. What does a reserve price do to entry and to bids?

Homework / reading. Read doctrine/02. Deliverable: a worked exercise modeling a sealed-bid competition and its equilibrium.

Comprehension check. What is bid shading, and why does it happen? What is the difference between first-price and second-price?

Session 6 — Auctions II: the winner's curse and best value

Learning objectives. By the end of this session, students can: (1) explain the winner's curse in common-value auctions; (2) explain why LPTA rewards the most optimistic cost estimate; (3) describe best-value procurement as a multi-attribute auction.

Session plan (75 min). - Open (5 min): "The winner of a price-only auction just discovered the true cost. What did they win?" - Teach (25 min): the course reader on the winner's curse and multi-attribute auctions. Common-value uncertainty, the curse, and why disciplined bidders shade toward realism. - Apply (25 min): analyze a real LPTA solicitation: where is the common-value uncertainty, and what discipline protects a bidder from the curse? - Discuss (15 min): "Why does best-value procurement exist if it is harder to run fairly?" - Close (5 min): assignment.

Discussion prompts. 1. How does a bidder estimate the winner's curse and bid against it? 2. In a best-value competition, what does the evaluator's preference weighting do to the price-quality trade-off?

Homework / reading. Read doctrine/05. Deliverable: a one-page winner's-curse analysis of a real LPTA solicitation.

Comprehension check. What is the winner's curse, and why is it strongest in LPTA? What is best-value procurement as an auction?

Session 7 — Market design: set-asides and the small-business universe

Learning objectives. By the end of this session, students can: (1) explain the small-business programs as statutory market design; (2) evaluate the efficiency and equity trade-offs of restricted pools; (3) argue both sides of a set-aside debate.

Session plan (75 min). - Open (5 min): "Is a set-aside an advantage or a correction?" - Teach (25 min): doctrine/01 + the SBA size-standards in plain language. The small-business universe as a design; restricted pools as deliberate

policy. - Apply (25 min): the policy debate. Split the room: one side defends set-asides as the equity instrument, the other attacks them as distortion. Use the case firm (a HUBZone firm) as the concrete object. - Discuss (15 min): "How would you measure whether a small-business program works?" - Close (5 min): assignment.

Discussion prompts. 1. What is the economic cost of a restricted pool, and who pays it? 2. When does a set-aside fail its intended beneficiaries?

Homework / reading. Read doctrine/01 and literacy/glossary (small-business section). Deliverable: a one-page policy brief evaluating one small-business program as market design.

Comprehension check. What problem do set-asides solve, and what do they cost? How is eligibility an equity instrument?

Session 8 — Cost economics of the firm

Learning objectives. By the end of this session, students can: (1) distinguish fixed vs. variable cost; (2) explain economies of scale and scope; (3) build the fully-burdened cost floor as a supply curve for a pursuit.

Session plan (75 min). - Open (5 min): "What is a firm's supply curve for one pursuit?" - Teach (25 min): the course reader on cost curves + doctrine/05. Fixed vs. variable, scale, scope, and the burden chain beneath the price. - Apply (25 min): build a simple cost-structure model for the case firm: direct labor, burden layers, cost floor per labor category. - Discuss (15 min): "Where does the cost floor sit, and what happens to a firm that prices below it?" - Close (5 min): assignment.

Discussion prompts. 1. Which of a firm's costs are truly fixed, and how does that change pricing flexibility? 2. How do economies of scope across pursuits change the cost floor of each?

Homework / reading. Read doctrine/05. Deliverable: a cost-structure model for a case firm with the cost floor per category shown.

Comprehension check. What is the fully-burdened cost floor? Why is pricing below it a business risk, not a gift?

Session 9 — Midterm

Learning objectives. By the end of this session, students demonstrate: (1) application of the first eight weeks to a real market; (2) economic explanation, not recitation; (3) honest use of public data.

Session plan (75 min). - Open (5 min): exam logistics. - Exam (65 min): a real (published, closed) market is distributed. Students explain its behavior (monopsony, public goods, information), model an auction within it, and state the cost-floor economics of competing in it. - Close (5 min): what to review for the second half.

Discussion prompts. n/a (examination).

Homework / reading. Review weeks 1–8. Deliverable: midterm submission.

Comprehension check. n/a.

Session 10 — Contract economics: risk and incentive

Learning objectives. By the end of this session, students can: (1) explain contract type as a risk-allocation device; (2) identify who bears cost risk and performance risk in each type; (3) explain the margin-floor concept per contract type.

Session plan (75 min). - Open (5 min): "Same work, two contracts. Which is the better business for the firm?" - Teach (25 min): the course reader on contract design + doctrine/05. FFP, T&M, FFP-LoE, CPFF, CPAF, CPIF as risk-incentive bundles; the margin-floor discipline at concept altitude. - Apply (25 min): build the risk-incentive matrix for three contract types. - Discuss (15 min): "Why does a firm ever bid cost-plus if FFP pays better when you win?" - Close (5 min): assignment.

Discussion prompts. 1. Who bears the cost-overrun risk in each type, and what does that do to the firm's incentive to control cost? 2. Why does the margin floor differ by contract type?

Homework / reading. Read doctrine/05. Deliverable: the risk-incentive matrix for three contract types.

Comprehension check. How does contract type allocate risk? Why is the FFP floor higher than the CPFF fee?

Session 11 — Industrial organization of federal contracting

Learning objectives. By the end of this session, students can: (1) measure concentration in a market segment; (2) explain incumbent advantage economically; (3) identify entry barriers.

Session plan (75 min). - Open (5 min): "Who wins most of the work in your segment — and why?" - Teach (25 min): the course reader on industrial organization + doctrine/07. Concentration, entry barriers (registrations, certifications, clearances, past performance), incumbency. - Apply (25 min): analyze a

real market segment from public award data: concentration, the incumbent, the entry barriers. - Discuss (15 min): “Is a high win rate evidence of superiority, or of a barrier?” - Close (5 min): assignment.

Discussion prompts. 1. Which entry barriers are real economic barriers, and which are paperwork? 2. How does incumbency pressure behave as a signal of displacement difficulty?

Homework / reading. Read doctrine/07. Deliverable: a market-structure memo for a real segment with concentration and barriers identified.

Comprehension check. What are the economic sources of incumbent advantage? Which entry barriers matter most?

Session 12 — Pricing behavior: floors, ceilings, and the competitive band

Learning objectives. By the end of this session, students can: (1) name the three pricing anchors; (2) explain how strategy weights them; (3) compute a target price with margin at target.

Session plan (75 min). - Open (5 min): “What three numbers do you need before you can price a pursuit?” - Teach (25 min): doctrine/05 + the pricing canon at concept altitude. Competitor band, customer affordability ceiling, cost-plus floor; strategy weightings; the margin at target. - Apply (25 min): set a price-to-win for a case pursuit: the band, the ceiling, the floor, the target, the margin. - Discuss (15 min): “When the floor and the ceiling overlap nowhere, what is the rational move?” - Close (5 min): assignment.

Discussion prompts. 1. Which anchor dominates in an LPTA, and which in a best-value trade-off? 2. Why is a price below the floor worse than a loss?

Homework / reading. Read doctrine/05. Deliverable: the pricing exercise for a case pursuit with all three anchors shown.

Comprehension check. What are the three anchors of a price-to-win? What is the margin at target, and why does the floor bind?

Session 13 — The pursuit as a portfolio of real options

Learning objectives. By the end of this session, students can: (1) model a pipeline as a portfolio; (2) treat capacity as the scarce resource; (3) apply threshold discipline as an exercise price.

Session plan (75 min). - Open (5 min): “If you had one capture team and ten opportunities, what is the economically correct choice?” - Teach (25 min): doctrine/03 + doctrine/05. The pipeline as a funnel; pursuits as options; capacity

as the budget; the threshold as the exercise price. - Apply (25 min): allocate a fixed capture-capacity budget across a set of scored opportunities; defend the allocation. - Discuss (15 min): "When is it rational to pursue a below-threshold bet?" - Close (5 min): assignment.

Discussion prompts. 1. How does the portfolio view change a firm's appetite for risk in one pursuit? 2. What is the option value of a pursuit — and when is it destroyed?

Homework / reading. Read doctrine/03 and doctrine/05. Deliverable: a portfolio memo allocating a capacity budget across scored opportunities.

Comprehension check. Why is capacity the scarce resource in pursuit? How does threshold discipline behave like an exercise price?

Session 14 — Synthesis: the economics of a pursuit organization

Learning objectives. By the end of this session, students can: (1) integrate the course into one economic frame; (2) defend a synthesis paper; (3) connect the economics to the rest of the degree.

Session plan (75 min). - Open (5 min): "A pursuit organization, as an economic entity, buys information, holds options, prices risk, and converts capacity into margin. Defend or attack." - Teach (15 min): course synthesis — the economic entity view. - Apply (35 min): panel defense of the synthesis papers; the panel probes the economics. - Discuss (15 min): "Which of these economic ideas will you actually use — and where does the discipline's folklore still beat the theory?" - Close (5 min): bridge to GC 510 and the capstone.

Discussion prompts. 1. Where does the economics of procurement meet its limit, and what fills the gap? 2. What would you measure in your own organization after this course?

Homework / reading. Course synthesis. Deliverable: final synthesis paper, "The economics of [your] pursuit organization," 2,500 words.

Comprehension check. How are the market side and the firm side one economic story? What is the one idea you will carry forward?