Graduate Module — Competitive Strategy & Game Theory for Capture (GC 510)

The session-by-session teaching plan for GC 510. Follows the module contract in `modules/module-template.md`, extended to the 14-week graduate arc. Game theory is taught from zero but at graduate pace; the strategy canon is always at concept altitude (doctrine/08).

Audience: graduate students in the MS program. **Prerequisites:** GC 501 or concurrent. **Readings:** the doctrine and literacy folders, plus the course reader. **Case object:** Ravonics and real, published-and-closed competitive situations.

Session 1 — Strategy is a position, not a wish

Learning objectives. By the end of this session, students can: (1) define a win strategy as a set of claims; (2) distinguish a discriminator from a baseline feature; (3) draft a position statement for a pursuit.

Session plan (75 min). - Open (5 min): "You have one paragraph to tell a customer why you win. Write it." - Teach (25 min): doctrine/03 + doctrine/05 + the capture doctrine at concept altitude. Win strategy, discriminators, baselines. - Apply (25 min): write the position statement for a case pursuit; the room attacks the baselines dressed as discriminators. - Discuss (15 min): "What makes a claim a discriminator — and what makes it perishable?" - Close (5 min): assignment.

Discussion prompts. 1. Defend a discriminator you think a competitor could credibly copy. 2. When is a baseline the safer claim?

Homework / reading. Read doctrine/03 and doctrine/05. Deliverable: a one-page position statement for a case pursuit.

Comprehension check. What is a discriminator? What separates a position from a wish?

Session 2 — Game theory foundations

Learning objectives. By the end of this session, students can: (1) model a situation as a normal-form game; (2) find dominated strategies; (3) explain Nash equilibrium.

Session plan (75 min). - Open (5 min): "Two bidders, one price. What do you bid?" - Teach (25 min): the course reader on game theory. Players, strategies, payoffs; dominance; Nash equilibrium. - Apply (25 min): model a two-bidder price competition as a normal-form game; find the equilibrium. - Discuss (15 min): “Why do we predict equilibrium — and when does real behavior diverge from it?” - Close (5 min): assignment.

Discussion prompts. 1. In the pricing game, what is the dominant strategy, and why is it rarely played in practice? 2. What does equilibrium leave out of a real competitive situation?

Homework / reading. Read the course reader and doctrine/03. Deliverable: a worked normal-form game for a two-bidder competition.

Comprehension check. What is a Nash equilibrium? What is a dominated strategy?

Session 3 — Sequential games: commitment and credibility

Learning objectives. By the end of this session, students can: (1) solve a sequential game by backward induction; (2) distinguish commitment from cheap talk; (3) identify a real commitment move.

Session plan (75 min). - Open (5 min): “I promise I will not underbid. Do you believe me?” - Teach (25 min): the course reader on sequential games. Extensive form, backward induction, first-mover advantage, credibility. - Apply (25 min): analyze a real capture commitment (a key-person hire, a partnership announcement, an investment) for credibility. - Discuss (15 min): “What makes a move credible — and what is cheap talk?” - Close (5 min): assignment.

Discussion prompts. 1. When is an expensive commitment a signal, and when is it waste? 2. How does a firm make its strategy credible to a customer before the RFP?

Homework / reading. Read the course reader. Deliverable: a short paper on a real commitment move and its credibility.

Comprehension check. What is backward induction? What separates a commitment from cheap talk?

Session 4 — Competition among the few

Learning objectives. By the end of this session, students can: (1) reason about a small field of bidders; (2) predict competitive response; (3) identify the danger of overfitting to a rival.

Session plan (75 min). - Open (5 min): “You know your rival’s last ten bids. What do you do?” - Teach (25 min): the course reader on oligopoly + doctrine/05. Reaction functions, competitive response, the stability of small-field competition. - Apply (25 min): for a real segment, name the competitors and predict each one's reaction to an aggressive price play. - Discuss (15 min): "When does knowing your rival make you worse off?" - Close (5 min): assignment.

Discussion prompts. 1. What is the risk of a price war in a small field, and what prevents it? 2. How should you weight a rival's history against their rational response?

Homework / reading. Read doctrine/05. Deliverable: a memo predicting competitive response in a real segment.

Comprehension check. How does a small field change pricing behavior? What is overfitting to a rival?

Session 5 — Incumbency as a strategic asset

Learning objectives. By the end of this session, students can: (1) explain the economic sources of incumbency advantage; (2) profile an incumbent; (3) rate incumbency pressure from the facts.

Session plan (75 min). - Open (5 min): "Why do incumbents keep winning — even when they are not better?" - Teach (25 min): doctrine/07 + the incumbency canon at concept altitude. Relationships, knowledge, switching cost, past performance; pressure bands from low to entrenched. - Apply (25 min): profile the holder of a real (closed) contract; rate its pressure band. - Discuss (15 min): "Which source of incumbency advantage is most defensible — and which is most attackable?" - Close (5 min): assignment.

Discussion prompts. 1. When is an incumbent weak despite a long tenure? 2. What does the recompete-churn signal tell you about displacement difficulty?

Homework / reading. Read doctrine/07. Deliverable: an incumbent profile for a real holder with a pressure-band rating.

Comprehension check. What are the sources of incumbency advantage? What is an incumbency-pressure band?

Session 6 — Displacement plays

Learning objectives. By the end of this session, students can: (1) name the canonical displacement plays; (2) choose a play from the facts; (3) state the evidence that would change the choice.

Session plan (75 min). - Open (5 min): "The incumbent has held this contract for nine years. What is your play?" - Teach (25 min): the displacement canon at concept altitude + doctrine/04. Take the recompete, ghost the entrenched, team around the holder, pivot to white space, walk. - Apply (25 min): for a real recompete situation, choose the play and defend it against the facts. - Discuss (15 min): "When is walking the winning move?" - Close (5 min): assignment.

Discussion prompts. 1. What facts drive the choice between ghosting and teaming-around? 2. When is a recompete "takeable" on price alone?

Homework / reading. Read the displacement canon and doctrine/04. Deliverable: a displacement decision memo with the facts and the evidence that would change the call.

Comprehension check. What are the five canonical displacement plays? What is the band-routing logic?

Session 7 — Ghosting and positioning

Learning objectives. By the end of this session, students can: (1) define a ghost theme; (2) distinguish ghosting from disparagement; (3) draft a ghost-theme set with a public-record basis.

Session plan (75 min). - Open (5 min): "How do you attack an incumbent without attacking them?" - Teach (25 min): doctrine/02 + doctrine/05 + the ghosting discipline at concept altitude. Ghost themes as evaluation-relevant discriminators; the citation requirement. - Apply (25 min): draft three ghost themes for a case pursuit, each tied to a customer requirement and a public-record basis. - Discuss (15 min): "Where is the line between a ghost theme and a cheap shot?" - Close (5 min): assignment.

Discussion prompts. 1. What makes a ghost theme credible to an evaluator? 2. Why must a ghost theme cite the customer's own requirement rather than the incumbent's failure?

Homework / reading. Read doctrine/02 and doctrine/05. Deliverable: a ghost-theme set for a case pursuit with citations.

Comprehension check. What is a ghost theme? Why is ghosting framed against the customer's requirement, not the incumbent?

Session 8 — Coalition games: teaming as strategy

Learning objectives. By the end of this session, students can: (1) explain teaming as coalition formation; (2) choose a teaming posture from the facts; (3) defend a partner selection.

Session plan (75 min). - Open (5 min): "When is your competitor your teammate?" - Teach (25 min): the teaming canon at concept altitude + doctrine/07. Postures (prime solo, prime with subs, sub, JV, mentor-protege), gap analysis, partner rubric. - Apply (25 min): run the gap analysis for a case pursuit and recommend a posture with a partner defense. - Discuss (15 min): "What does a coalition cost the coalition's members?" - Close (5 min): assignment.

Discussion prompts. 1. When does teaming destroy more value than it creates? 2. Which partner-rubric dimension is a knockout for you — and why?

Homework / reading. Read the teaming canon and doctrine/07. Deliverable: a teaming memo with gap analysis and partner defense.

Comprehension check. What are the teaming postures? What drives the posture decision?

Session 9 — Midterm

Learning objectives. By the end of this session, students demonstrate: (1) analysis of a real competitive situation end-to-end; (2) strategic reasoning, not recitation; (3) ethical boundary discipline.

Session plan (75 min). - Open (5 min): exam logistics. - Exam (65 min): a real, published competitive situation is distributed. Students model the game, name the players, choose a position, and pick a play. - 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 — Price as a signal

Learning objectives. By the end of this session, students can: (1) name the pricing postures; (2) explain what each signals; (3) recommend a posture for a pursuit.

Session plan (75 min). - Open (5 min): "Your price is a message. Who reads it?" - Teach (25 min): doctrine/05 + the pricing-strategy canon at concept altitude. Premium, parity, aggressive, price-disciplined; the signals each sends to the customer and to rivals. - Apply (25 min): recommend a pricing posture for a case pursuit and predict the competitor reaction. - Discuss (15 min): "When does a premium price signal strength, and when does it signal overconfidence?" - Close (5 min): assignment.

Discussion prompts. 1. What does an aggressive price signal about your firm's cost position? 2. When is parity the strongest signal?

Homework / reading. Read doctrine/05. Deliverable: a pricing-posture memo for a case pursuit with the predicted reaction.

Comprehension check. What are the pricing postures? What does each signal?

Session 11 — Pre-RFP shaping

Learning objectives. By the end of this session, students can: (1) explain pre-RFP shaping as a legitimate strategic move; (2) design an engagement campaign; (3) state the boundary of legitimate shaping.

Session plan (75 min). - Open (5 min): "The RFP is a year away. What do you do this year?" - Teach (25 min): doctrine/02 + the capture doctrine at concept altitude. Sources sought, RFIs, industry days, capability briefings; shaping the requirement; the boundary. - Apply (25 min): design a pre-RFP shaping campaign for a forecast opportunity; state the boundary explicitly. - Discuss (15 min): "Where does shaping become steering — and who draws the line?" - Close (5 min): assignment.

Discussion prompts. 1. What is the difference between informing the requirement and biasing it? 2. How does a small firm shape without a big BD bench?

Homework / reading. Read doctrine/02. Deliverable: an engagement plan for a forecast opportunity with the boundary stated.

Comprehension check. What is pre-RFP shaping? Where is the ethical line?

Session 12 — Repeated games: reputation and the long term

Learning objectives. By the end of this session, students can: (1) explain the federal market as a repeated game; (2) model reputation as a strategic asset; (3) connect past performance to future strategy.

Session plan (75 min). - Open (5 min): "Why does a firm with a bad delivery record lose even when it bids lower?" - Teach (25 min): the course reader on repeated games + doctrine/07. Repetition, reputation, the folk theorem, the value of a credible record. - Apply (25 min): model how a firm's delivery record changes the optimal strategy of its next pursuit. - Discuss (15 min): "What breaks cooperation in a repeated game — and what repairs it?" - Close (5 min): assignment.

Discussion prompts. 1. How does the prospect of future work discipline a firm's behavior on today's contract? 2. What is a firm's reputation worth, and how is it priced?

Homework / reading. Read doctrine/07. Deliverable: a reflection paper on the repeated-game structure and the small firm.

Comprehension check. Why is the federal market a repeated game? How does reputation compound?

Session 13 — Portfolio strategy as game theory

Learning objectives. By the end of this session, students can: (1) treat bid/no-bid as a portfolio decision; (2) apply threshold discipline strategically; (3) defend a portfolio allocation.

Session plan (75 min). - Open (5 min): "Which of your ten opportunities would you drop to win the one that matters?" - Teach (25 min): doctrine/03 + doctrine/05 + the bid/no-bid canon at concept altitude. Capacity, thresholds, the strategic value of no. - Apply (25 min): the portfolio game — allocate a fixed capture budget across a scored opportunity set with a competitive dimension. - Discuss (15 min): "When is a no-bid the strongest strategic move in your portfolio?" - Close (5 min): assignment.

Discussion prompts. 1. How does one pursuit's competitive difficulty change the value of the others? 2. What is the strategic value of an honest no?

Homework / reading. Read doctrine/03 and doctrine/05. Deliverable: a portfolio allocation memo with strategic reasoning.

Comprehension check. Why is bid/no-bid a portfolio game? What is the strategic value of saying no?

Session 14 — Synthesis: the strategist's desk

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

Session plan (75 min). - Open (5 min): "The strategist reads games, builds positions, forms coalitions, sets prices, and governs the portfolio. Defend or attack." - Teach (15 min): course synthesis. - Apply (35 min): panel defense of the final strategy papers; the panel plays the customer and the incumbent. - Discuss (15 min): "Where does game theory meet its limit in this discipline — and what fills the gap?" - Close (5 min): bridge to GE electives and the capstone.

Discussion prompts. 1. Which strategic tool will you actually use in your own work? 2. What would you tell a junior capture professional about the strategic mindset?

Homework / reading. Course synthesis. Deliverable: final strategy paper, “The competitive strategy of [your] pursuit,” 2,500 words.

Comprehension check. How do the game, the position, and the portfolio form one strategy? What is the one idea you will carry forward?