



Educational Division

THE UNCOMFORTABLE TRUTH ABOUT YOUR CAPSTONE PROJECT

Your success will not be determined by your technical skill. Research into project outcomes reveals a consistent pattern: teams fail on communication. Every single time.

Technical problems have technical solutions. Communication problems compound exponentially until the project collapses. The Algorithm™ has optimized your semester accordingly.

YOUR JOB IS TO SHIP A PRODUCT, NOT JUST WRITE CODE.



Notice that technical execution is **fourth**. Not first. **Fourth**. The teams that succeed understand this from day one.

FAILURE FOLLOWS PREDICTABLE PATTERNS.

Every team member—including you—can fall into these patterns under stress. The Algorithm™ has identified the most common failure archetypes. Recognizing them early allows for intervention before a crisis.



ARCHETYPE 1: THE GHOST



"They'll be back any minute now..."

BEHAVIOR

Stops responding, misses meetings, disappears for days.

WHAT'S ACTUALLY HAPPENING

Usually overwhelmed, anxious, or dealing with external crises. They need help, not judgment.

EARLY INTERVENTION

Reach out one-on-one with concern. Reduce their scope. Escalate to the instructor after one week of unresponsiveness.

ARCHETYPE 2: THE HERO



"It's just faster if I do it myself."

BEHAVIOR

Does everything, rewrites others' code, cannot delegate.

WHAT'S ACTUALLY HAPPENING

Anxiety about quality, difficulty trusting others, sometimes ego. They mean well but create dependency.

EARLY INTERVENTION

Thank them for their effort. Set explicit boundaries ('I need to do this myself to learn'). Redirect their energy to documentation.

ARCHETYPE 3: THE CRITIC



"This will never work, and here's why."

BEHAVIOR

Identifies every problem, proposes no solutions, blocks progress.

WHAT'S ACTUALLY HAPPENING

Fear of failure manifesting as analysis paralysis.

INTERVENTION

Require solution proposals. Make them responsible for fixing the problems they find.

ARCHETYPE 4: THE OPTIMIST



"It's basically done, I just need to..."

BEHAVIOR

Everything is 'almost done,' estimates are fantasies, reality denial.

WHAT'S ACTUALLY HAPPENING

Difficulty estimating complexity, sometimes avoidance.

INTERVENTION

Double their time estimates. Require working demos, not promises. Check in frequently.

The Universal Truth: Everyone exhibits these patterns sometimes. Self-awareness is your only defense.

FAILURE IS A PATTERN. PATTERNS CAN BE BROKEN.



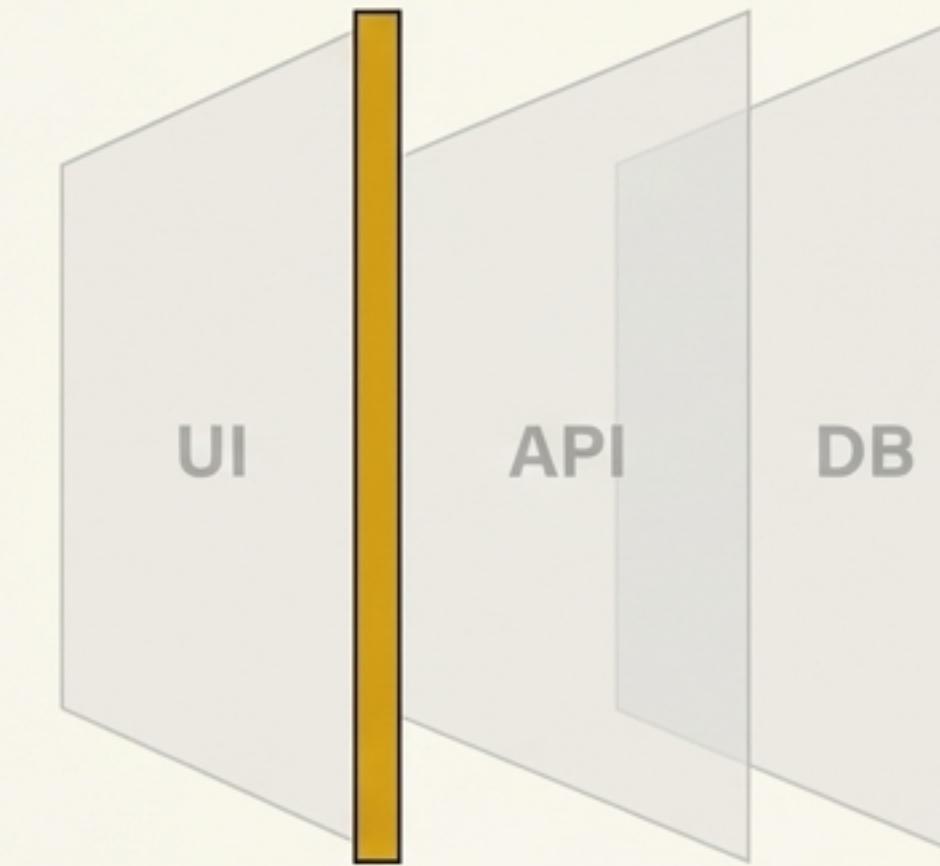
The Algorithm™ does not leave success to chance. You are being provided with a mandatory, pre-optimized system of collaboration. This system is the antidote to the failure archetypes.

BUILD VERTICAL SLICES, NOT HORIZONTAL LAYERS



THE WRONG WAY

Impressive infrastructure that no one can use.



THE RIGHT WAY

Sprint 1: A user can register and see an empty dashboard. It's ugly, but it works.

THE LITMUS TEST

Can a human use it? If yes, it counts. If no, it doesn't—no matter how good the code is.

THE COLLABORATION MINIMUM: WHAT GETS MEASURED GETS DONE.

The Algorithm™ tracks collaboration because it determines outcomes. These are the minimum viable actions required each sprint.

REQUIRED ACTION	EVIDENCE	WHY IT MATTERS
Review 2+ pull requests	GitHub PR history	You learn from others' code; they improve from your feedback.
Ask for help at least once	Slack/Discord message	Admitting confusion prevents compounding mistakes.
Offer help at least once	Slack/Discord message	Teaching solidifies your own understanding.
Attend all ceremonies	Meeting notes	Presence enables coordination.
Update tasks daily	Project board movement	Visibility prevents surprises.

DOCUMENTATION IS REQUIRED. SCREENSHOT YOUR PR REVIEWS. SAVE MESSAGES.
“I HELPED BUT DIDN’T DOCUMENT IT” IS INDISTINGUISHABLE FROM “I DIDN’T HELP.”

THE TEAM CONTRACT: YOUR FOUNDATION FOR A FUNCTIONING TEAM

Required By End of Week 1. This is not optional.



Communication Expectations: Primary channel (Slack/Discord), Expected response time (< 24 hours), standing meeting times.



Work Expectations: Minimum hours per week, how to handle missed deadlines and unresponsive teammates.



Escalation Agreement: Define explicitly when the instructor gets involved (e.g., teammate unresponsive for X days).



Collaboration Commitment: Every member formally agrees to the Collaboration Minimum.

“We didn’t think we’d need rules” is how teams discover they needed rules after the damage is done.

ESCALATION IS NOT SNITCHING.

It's how help arrives. Silence is how problems become catastrophes.

If a teammate disappears for a week, you must tell the instructor immediately.
This feels like betrayal. It isn't.

THE INSTRUCTOR HAS:

-  Accommodations
-  Extensions
-  Support service connections
-  Authority to restructure the team

YOU HAVE:

RESENTMENT.

Covering for a struggling teammate doesn't help them—it enables the problem to compound until it's unsolvable. The person who escalates is the person who cared enough to get help when it was needed.

YOUR FIRST TWO WEEKS ARE PLANNED. THESE ARE NOT NEGOTIABLE.

WEEK 1 DELIVERABLES

Deliverable	Due	Evidence
Team contract signed	Day 5	Submitted document
Communication channel created	Day 2	Link shared
First standup completed	Day 3	Meeting notes posted

WEEK 2 DELIVERABLES

Deliverable	Due	Evidence
First PR merged	Day 10	PR link (even if trivial)
Something deployed	Day 10	URL or screenshot
Design partners contacted	Day 10	Intro message screenshot

****Interpersonal foundations first. Technical foundations second.
You can't design a database if you can't talk to each other.**

THE FOUR PLATFORMS YOU WILL BUILD

You are building a **platform**, not a single product. Each platform powers six applications, teaching flexible architecture, separation of concerns, and market adaptation.



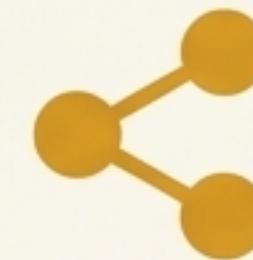
TASK MANAGEMENT

Core Challenge:
Multi-tenant workspaces
& permission hierarchies.



E-COMMERCE STOREFRONT

Core Challenge:
Transaction integrity &
inventory management.



RECOMMENDATION ENGINE

Core Challenge:
Preference modeling &
similarity algorithms.



HEALTH & WELLNESS TRACKER

Core Challenge:
Time-series data &
privacy requirements.

IF YOU REMEMBER NOTHING ELSE, REMEMBER THIS.



Be responsive. Answer messages within 24 hours. Always.

Be honest. If you're stuck, say so. If you're overwhelmed, say so.
If you'll miss a deadline, say so *before* the deadline.

Be kind. Your teammates are stressed too. Assume good intent.

Teams that do these three things usually succeed. Teams that don't, don't.

THE ALGORITHM™ TEACHES THROUGH SATIRE WHAT EXPERIENCE TEACHES THROUGH SUFFERING.

The Algorithm™ isn't real. The challenges it represents are. Every dystopian element mirrors a real workplace dynamic—surveillance metrics, contradictory requirements, impossible deadlines. This is inoculation. By experiencing these absurdities now, you develop pattern recognition for when they appear in subtler forms later.

“The Algorithm™ measures commits. Your teammates measure character. Choose wisely.”