

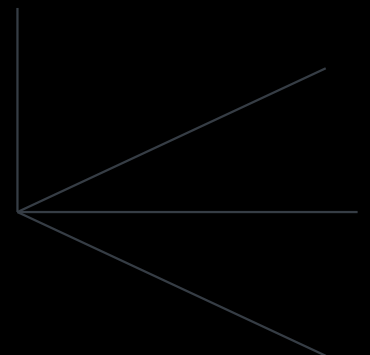


P&L Calculation Methodology

How the Financial Model Works

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This document explains the complete computation pipeline used by the Program Financial Estimation tool. It covers how student enrollment is projected, how retention and graduation are modeled, and how revenue and costs are calculated to produce the P&L forecast.



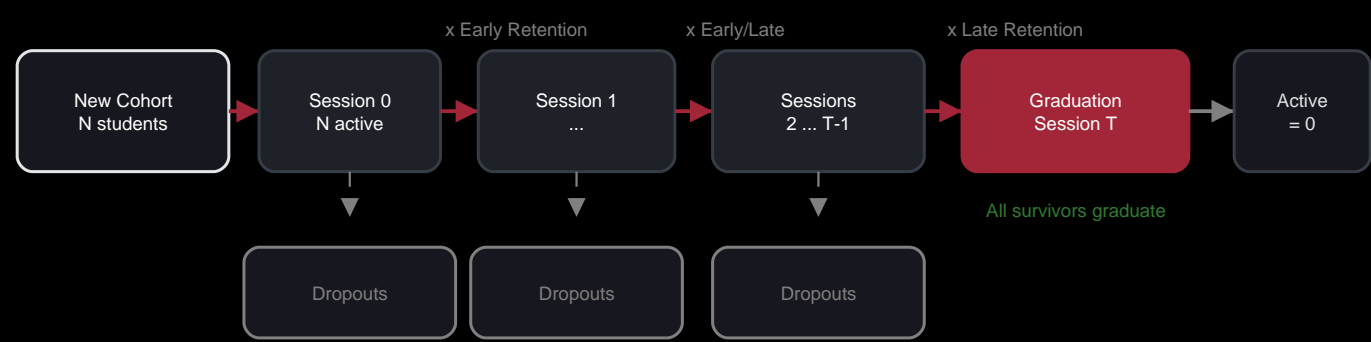
1. Computation Pipeline

The engine processes inputs through five sequential stages. Each stage feeds into the next.



2. Student Lifecycle — Single Cohort

Each cohort starts with N students. Every session, retention is applied (students drop out). At the calculated graduation session, all surviving students graduate and active count drops to zero.



Key Formulas

Program Duration	$\text{Sessions to Graduate} = \text{ceil}(\text{Total Courses} \times \text{Credits/Course} / \text{Credits per Session})$
Sessions per Year	8-week: Semesters $\times 2$ 16-week: Semesters $\times 1$ (Semesters = 3 with summer, 2 without)
Graduation Curve	Cumulative curve is 0 for all sessions, then jumps to 1.0 at the graduation session (cliff)
Active Students	$\text{active}[t] = (\text{active}[t-1] - \text{graduates}) \times \text{retention_rate}$
Retention Rate	Early rate for sessions 1 .. (threshold - 1), Late rate for sessions threshold onward
Graduates	At cliff session: $\text{graduates} = \min(\text{expected_grads}, \text{active students remaining})$
Total Active	$\text{Total Active}[t] = \text{Sum of active}[\text{internal_session}]$ across all overlapping cohorts at calendar session t
New Students	$\text{New Students}[t] = \text{Intake of the cohort that starts at calendar session } t$

Worked Example (Default Inputs)

10 courses \times 3 credits/course = 30 total credits
30 credits / 3 credits per session = 10 sessions to graduate
8-week format with summer: 3 semesters \times 2 sessions = 6 sessions/year

Cohort of 25 students, 85% early retention (sessions 1-3), 90% late retention (sessions 4+):

Session 0: 25.00 !' Session 1: 21.25 !' Session 2: 18.06 !' Session 3: 15.35
Session 4: 13.82 !' Session 5: 12.44 !' ... !' Session 9: 8.16 !' GRADUATE

Result: 8 out of 25 students (33%) survive retention and graduate at session 10.

3. Revenue & Cost Formulas

REVENUE

Revenue per Session	$\text{Total Active} \times \text{Programs} \times \text{Tuition/Credit} \times \text{Credits/Session} \times (1 + \text{Tuition Inflation})^{\text{year}}$
Total Active	Sum of all overlapping cohort active counts at that calendar session
Tuition Inflation	Compounds annually — $(1 + \text{rate})$ raised to the power of the fiscal year index
Annual Revenue	Sum of all session revenues within the fiscal year

COSTS (6 Line Items)

Faculty	$\text{ceil}(\text{Active Students} / \text{Max per Section}) \times \text{Cost per Section}$
Teaching Assistants	$\text{Active Students} \times (\text{Hourly Rate} \times \text{Hours/Week} \times \text{Weeks}) / \text{TA:Student Ratio}$
Course Development	$(\text{Courses to Develop} \times \text{Dev Cost} + \text{Courses to Revise} \times \text{Dev Cost} \times \text{Revision \%}) / \text{Amort Terms}$
Variable Overhead	$\text{Active Students} \times \text{Overhead per Student}$
Fixed Overhead	$\text{Overhead per Semester} / \text{Sessions per Semester}$ (split for 8-week format)
Student Acquisition	$\text{New Students} \times \text{CAC per Student}$ (charged once at enrollment, before retention)
Cost Inflation	Each line item above $\times (1 + \text{Cost Inflation \%})^{\text{year}}$ — compounds annually
Total Cost/Session	$\text{Faculty} + \text{TA} + \text{Course Dev} + \text{Variable OH} + \text{Fixed OH} + \text{CAC}$ (all inflated)

P&L AGGREGATION

Revenue per FY	Sum of all session revenues within the fiscal year
Cost per FY	Sum of all session costs within the fiscal year
Net P&L	$\text{Revenue per FY} - \text{Cost per FY}$
Cumulative P&L	Running total of Net P&L across all fiscal years
Net Margin %	$(\text{Net P\&L} / \text{Revenue}) \times 100$
Break-Even Year	First fiscal year where cumulative P&L ≥ 0