

Week 2–3 — Measure Definitions

Student Performance & Engagement Analytics (OULAD) — Star Schema Measures

Measure	Business definition	DAX (Power BI)
Avg Score (Weighted)	Average weighted score (0–100) per student-course.	Avg Score = AVERAGE('fact_student_course'[weighted_avg_score])
Average GPA (4.0)	Simple GPA conversion from Avg Score.	Average GPA = DIVIDE([Avg Score], 25)
Pass Rate (%)	Share of student-course records with pass_flag = TRUE.	Pass Rate % = DIVIDE(CALCULATE(COUNTROWS('fact_student_course'), 'fact_student_course'[pass_flag] = TRUE()), COUNTROWS('fact_student_course'))
Failure Rate (%)	Share of student-course records that did not pass.	Failure Rate % = 1 - [Pass Rate %]
Engagement Score (Avg)	Average engagement_score (clicks + activity intensity).	Avg Engagement = AVERAGE('fact_student_course'[engagement_score])
At-Risk Student (%)	Share of student-course records flagged at_risk_flag = TRUE.	At-Risk % = DIVIDE(CALCULATE(COUNTROWS('fact_student_course'), 'fact_student_course'[at_risk_flag] = TRUE()), COUNTROWS('fact_student_course'))
Attendance Rate (%) — Proxy	Proxy attendance based on LMS active days vs course length.	Attendance % (Proxy) = DIVIDE(AVERAGE('fact_student_course'[active_days]), AVERAGE('dim_courses'[module_presentation_length]))
MoM Δ Avg Score	Month-over-month change in Avg Score using dim_time[month_index_approx].	MoM Δ Avg Score = VAR CurrM = MAX('dim_time'[month_index_approx]) VAR PrevM = CurrM - 1 VAR PrevVal = CALCULATE([Avg Score], FILTER(ALL('dim_time'), 'dim_time'[month_index_approx] = PrevM)) RETURN [Avg Score] - PrevVal
YoY Δ Avg Score	Year-over-year change using year extracted from dim_courses[presentation] (e.g., 2014J).	YoY Δ Avg Score = VAR CurrY = MAX(VALUE(LEFT('dim_courses'[presentation], 4))) VAR PrevY = CurrY - 1 VAR PrevVal = CALCULATE([Avg Score], FILTER(ALL('dim_courses'), VALUE(LEFT('dim_courses'[presentation], 4)) = PrevY)) RETURN [Avg Score] - PrevVal