FACULTY AND PROGRAM LEADERS

Capital Markets Labs for Universities

Applied labs for finance and financial engineering, with selected CFA® Program Level I and Level II connections

Give students a repeatable way to make a financial decision, test an assumption, and defend the result. CapitalWave's four analyzers support original assignments in fixed income, derivatives, portfolios, and equity valuation. Faculty can adopt one lab in an existing course or sequence several across a degree.

Undergraduate finance and investments

Pair a baseline calculation with one changed input. Ask students to predict the direction of the result before opening the tool, then explain any discrepancy.

Graduate finance and investment management

Use two plausible scenarios or models. Require an investment recommendation supported by a sensitivity exhibit and a clear account of what could reverse it.

Financial engineering and quantitative finance

Have students reproduce the baseline in a spreadsheet or Python, reconcile conventions and rounding, then extend the model with stress scenarios or a model-risk check. The external implementation is a faculty assignment.

CFA Program study support

Pair selected curriculum topics with original labs. Use Level I-oriented exercises for interpretation and Level II-oriented cases for comparative analysis, model judgment and written justification.

Explore CapitalWave for universities

2027 CURRICULUM CONNECTIONS

Fixed income and derivatives

Original assignments tied to selected topic areas and designed for faculty-led use.

CapitalFIA | Fixed Income Analyzer

Level I · Fixed Income. Bond pricing and yield-based interest-rate sensitivity.
Price a fixed-rate bond at two yields, explain the inverse relationship, and compare the exact change with a duration estimate.

Level II · Fixed Income. Term structure and yield-curve risk.
Compare two maturities under a parallel move and a curve twist. Explain where a single duration measure loses information and support a risk recommendation.

Evidence to collect · Price and risk comparison, stated conventions, and a short explanation of which exposure drove the result.

CapitalODA | Options & Derivatives Analyzer

Level I · Derivatives. Instrument features, payoff and profit.
Calculate a long call's payoff and profit at several expiry prices. Explain how the premium changes the break-even point.

Level II · Derivatives. Contingent-claim valuation and option sensitivities.
Compare an unhedged and delta-hedged option position under changes in spot and volatility. Explain the role of gamma and vega in the remaining exposure.

Evidence to collect · Payoff comparison or sensitivity exhibit, hedge rationale, and an explanation of residual risk.

2027 CURRICULUM CONNECTIONS

Portfolios and equity valuation

Original assignments tied to selected topic areas and designed for faculty-led use.

CapitalPFA | Portfolio Analyzer

Level I · Portfolio Management. Portfolio risk, return and diversification.
Hold weights and individual volatilities constant while changing correlation. Interpret the effect on portfolio volatility.

Level II · Portfolio Management. Market risk and model assumptions.
Compare two allocations under baseline and stressed correlation. Defend the allocation and identify the limitations of this scenario as a market-risk measure.

Evidence to collect · Allocation and risk comparison, scenario assumptions, and a justified recommendation.

CapitalEQA | Equity Analyzer

Level I · Equity Investments. Discounted cash flow and growth models.
Value a fictional equity with a constant-growth dividend model and explain how required return and growth affect the estimate.

Level II · Equity Investments. Free cash flow valuation and model judgment.
Compare dividend and cash flow valuations, stress key assumptions, and defend a range supported by the chosen model and forecasts.

Evidence to collect · Input and sensitivity exhibit, valuation range, and explanation of the differences between models.

FACULTY-READY EXAMPLE

When yields rise, which bond loses more?

Learning objective

Explain the effect of maturity on rate sensitivity using a controlled comparison of otherwise identical fictional bonds.

Inputs and conventions

Use two option-free bonds with $1,000 face value, a 5% annual coupon, and three- and seven-year maturities. Assume annual compounding and valuation on a coupon date immediately after payment. Reprice each at yields of 5% and 6%.

Task 01

Predict the direction of each price change and which bond will be more sensitive. Calculate prices at 5% and 6%, showing the inputs and conventions.

Task 02

Submit one comparison table with baseline and stressed price, dollar and percentage changes, and a short explanation of the maturity effect.

Task 03

For an advanced extension, reproduce the cash flows in a spreadsheet or Python and reconcile any differences. Compare exact repricing with a first-order duration estimate, or apply a nonparallel curve scenario with instructor-supplied spot rates.

Instructor check

Both bonds price at $1,000 at 5%. At 6%, the three-year bond is approximately $973.27 and the seven-year bond is approximately $944.18. The longer bond loses more in this example.

ASSESSMENT AND MARKET INFRASTRUCTURE

Grade the reasoning

A suggested 100-point rubric for the fixed-income lab on page 4.

Inputs and conventions | 25%

Identifies cash flows, yields, coupon timing and the comparison held constant.

Calculations and evidence | 30%

Reports accurate, traceable prices and changes with consistent units and rounding.

Interpretation | 30%

Explains the sign and relative magnitude of the price changes using bond cash-flow timing.

Limits and judgment | 15%

Identifies what the parallel yield change omits or explains the limitations of the approximation used.

Teach what happens after the trade

CapitalBOS, the Back Office Simulator, extends a capital markets course into post-trade operations. Students can investigate a matched trade that fails to settle, identify the missing evidence or control, and explain the resolution. This is a separate applied learning pathway in market infrastructure and operational risk.

Explore the CapitalBOS settlement example

IMPLEMENTATION

Start with one course

Select one course and one outcome

Name a faculty lead and choose one decision learners should be able to explain. Set the expected submission and evaluation criteria before setup.

Confirm the delivery and access

Review the proposed activity against the selected release. Confirm cohort size, duration, instructor access, accessibility, support, data handling and any required integrations.

Run one cohort and review evidence

Collect learner work and instructor observations. Review the share of students who meet the rubric, the amount of setup time and the friction learners experienced. Agree success thresholds before the pilot.

Decide whether to expand

Compare results with the agreed criteria. Use the University Evaluation Pack to record gaps, owners and next steps, and agree licensing scope in writing before a wider rollout.

Plan a pilot | **University Evaluation Pack**

CFA Institute · 2027 CFA Program Level I topic outline

CFA Institute · 2027 CFA Program Level II topic outline

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