ACADEMIC SENATE
Executive Committee
REFERRAL FORM

CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA

Date:	11/12/2025
To:	General Education Committee
From:	Academic Senate Executive Committee
Subject:	Academic Senate Referral
Classification	**GE-008-256**
Title of Referral:	**FRL 1231 - Quantitative Introduction to Personal Finance (New GE Area 2)**
Background:	See attached referral request form. Additional background provided by the Executive Committee: New course proposed for GE Area 2.
Recommended resources:	See attached referral request form and supporting documentation. Additional resources recommended by the Executive Committee: None. For the Committee's Report on this referral, please list in separate sections, the resources recommended, and resources actually consulted. If a resource was not consulted, briefly state why.
Review and recommend:	Review and recommend as appropriate.
Date required for presenting committee report to the Executive Committee:	3/2/2026

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Keywords: FRL, 1231, Quantitative, Introduction, Personal, Finance, New, GE, Area, 2

Background:

Quantitative and analytical foundations of personal financial management. Develop quantitative skills for allocating financial resources and planning expenditures through calculations and data-driven decision-making. Core topics include constructing personal budgets using income and expense models, evaluating loan amortization schedules and credit repayment strategies, calculating insurance premiums and expected values of risk coverage, applying tax formulas to personal income scenarios, and projecting savings, investment growth, and retirement needs using compound interest and time-value-of-money techniques. Demonstration of quantitative literacy by applying mathematical tools to real-world financial challenges.

On successful completion of the course, students will be able to:

1. Apply core economic and financial principles using quantitative reasoning to analyze and improve presonal financial well-being;
2. Collect and analyze personal financial data to evaluate financial well-being and revise financial behaviors;
3. Judge and select different quantitative methods and technologies for financial decision making and critically evaluate their outputs; and
4. Evaluate and debate the structure, equity, and evolution of the financial system using data-driven analysis to assess its impacts on individuals and households.

I. Instructional Materials

Texts and reading: Instructor's decision. Examples include:

1. Dworsky, Lawrence N., Understanding the Mathematics of Personal Finance: An Introduction to Financial Literacy, Wiley, latest edition.
2. Gitman, Lawrence J., Michael D. Joehnk, and Randy Billingsley, Personal Financial: An Integrated Planning Approach, Pearson, latest edition.

Other recommended reading sources include: The Wall Street Journal, Bloomberg, Financial Times, and Morningstar.

II. Course Outline

Week Theme/Topics

1 Money as a Social Construct

- Definitions of money and wealth
- Uses for money and wealth
- Values associated with money and wealth
- Calculating growth rates & financial returns
- Income and wealth inequality

2 Thinking Like a Financial Economist

- Scarcity & tradeoffs
- Opportunity cost
- Fundamental finance calculations
    - Compounding

    - Discounting (asset valuation)
    - Expected return
    - Risk premium (spread)
- Risk-return tradeoff
- No-arbitrage principle

3 Debt vs. Equity

- Sources vs. uses of cash
- Debt vs. equity contracts
    - Legal rights
    - Principal-agent problem
    - Risks & expected returns
- Fundamental accounting calculations
    - Balance sheet
    - Debt-to-equity ratio
    - Loan-to-value ratio
    - Leverage ratio

4 Investment Fundamentals

- Diversification
- Efficient Market Hypothesis (EMH)
- Technical vs. fundamental analysis
- Fundamental value vs. momentum trading
- Detecting & protecting against “bubbles”

5 Budgeting & Saving

- Budget calculations
    - Recording & forecasting income
    - Recording & controlling expenditures
    - Long-term & short-term goals
- Behavioral finance

6 Banking

- Banking business model & calculations
    - Deposits, loans, & reserves
    - Maturity mismatch/transformation
    - Liquidity risk (bank runs)
    - Interest rate risk
    - Deposit insurance
    - Capital requirements
- Checking & savings accounts, MMAs, & CDs
- How to select the right bank(s)
- Banking fraud & predatory schemes
- Consumer financial protections/regulations

7 Consumer Credit

- Credit cards
- Credit scores & credit reports
- Credit calculations
    - Annual percentage rate (APR)
    - Finance charge
- Consumer credit regulations

8 Stocks & Bonds

- Opening an account & trading

    - Market microstructure
    - Securities brokerage firms
    - Types of orders
- Graphical analysis
    - Historical rates of return and risk
    - Comparing asset classes
- Asset pricing models & calculations
    - Systematic vs. unsystematic risk
    - Risk factors vs. anomalies

9 Mutual Funds, ETFs, REITs, & Hedge Funds

- Institutional ownership
- Comparing fund types
- Buying and selling fund shares
- Fund ownership cost calculations
- Active vs. passive management
- Historical fund performance
- Regulations

10 Real Estate

- Buying a home
    - Real estate brokerage
    - Real estate appraisal calculations
    - Mortgage lending market
    - Mortgage lending calculations
    - Inspections, negotiations, & credits
- Homebuying calculations
    - Renting versus owning
    - Mortgage payments
    - Loan amortization schedules
    - Property taxes
    - Cash to close

11 Income Taxes

- History of the U.S. income tax code
- Income tax calculations
    - Marginal vs. average tax rates
    - Progressive, regressive, & flat tax systems
    - Taxable income
    - Tax credits & deductions

12 Retirement & Estate Planning

- Retirement calculations
    - Forecasting retirement needs
    - Forecasting investment portfolio scenarios (Monte Carlo)
    - Annuities
- Social Security
- Employer-sponsored retirement plans
    - Defined-contribution plans
    - Defined-benefit plans
- Personally established retirement accounts
    - Traditional IRAs
    - Roth IRAs

13 Insurance Principles

- Welfare gains and risk sharing
  - Consumption smoothing vs. moral hazard
  - Adverse selection & discrimination
  - Market for lemons
- Insurance calculations
  - Expected utility
  - Certainty equivalent
  - "Actuarially fair" costs
- Social vs. private insurance

14 Insurance: Health Care

- Employer-sponsored health insurance
- Medicare & Medicaid
- Nongroup insurance market & the ACA
- Health insurance calculations
  - Premiums
  - Deductibles
  - Co-payments & co-insurance
- Effects of insurance on health

15 Social Responsibility

- Philosophical conceptions of financial morality
- Ethical considerations in business
- Effective altruism

VI. Evaluation of Outcomes

1. Exams 30%
2. Quizzes 40%
3. Assignments 30%

The course will have a minimum of one midterm exam and one final. The exams' main objectives are to achieve mastery of financial calculations, demonstrate quantitative reasoning, and apply problem-solving skills to real-world personal finance decisions.

A series of assignments will be used to give the students hands-on practice with real-world financial decisions. By working through applied scenarios—such as budgeting, credit management, insurance choices, tax planning, and investment strategies—students will use quantitative methods to analyze options, compare outcomes, and make informed decisions for their own financial futures.

These assignments will require the student to locate and access current information from reputable online databases and financial resources, critically evaluate the credibility and relevance of these sources, and demonstrate proficiency in the effective use of information technology to support sound financial decision-making.

Aligned to GE outcomes, and PLOs"

Program Outcomes	**Evaluation Methods**		
	Exams	*Quizzes*	*Assignments*
LG#1 Effective Communication			
• Oral communication			**X**
• Written communication	**X**	**X**	**X**
LG#2 Critical Thinking			

• Identify key financial and legal issues	X	X	X
• Demonstrate ability to find, read, and evaluate information sources	X	X	X
• Use technology to gather and analyze data	X		X
• Solve unstructured problems using appropriate quantitative / qualitative skills	X	X	X
• Acknowledge and consider each other's opinion when participating in group discussion	X		
LG #3 Use of technology in areas of finance, real estate and law			
• Using computer software to perform quantitative valuation in areas of finance, real estate and investment.	X		X
LG #4 Globalization and Diversity			
• Measure impact of foreign inflation and interest rates on exchange rate	X	X	X
LG #5 Ethical and legal aspects of the business environment			
• Demonstrate the ability to recognize key aspects of ethical issues	X	X	X
• Demonstrate the ability to distinguish between legal and ethical issues	X	X	X
• Demonstrate an understanding of ethical responsibilities in both academic and business environment	X	X	X

Critical Thinking (CT): Students will engage in the logical process of inquiry to analyze information from multiple perspectives to develop reasoned arguments.

The course will challenge students to apply financial principles to complex, real-world situations where multiple solutions are possible. Students analyze trade-offs in budgeting, credit management, insurance, taxation, and investment strategies, weighing short- and long-term implications from diverse perspectives. Assignments require students to interpret quantitative results, evaluate the credibility of financial information, and consider competing viewpoints before selecting a course of action. In doing

so, they practice developing reasoned, evidence-based arguments that reflect both logical inquiry and awareness of alternative perspectives.

Quantitative Literacy (QL): Students will use quantitative information to draw inferences and communicate informed arguments.

The course will require students to analyze financial information using mathematical models and numerical data, then apply those results to support decision-making. Students use quantitative methods such as loan amortization schedules, tax calculations, compound interest projections, and probability-based risk assessments to evaluate real-world financial scenarios. By interpreting these results, drawing logical inferences about costs, benefits, and trade-offs, and justifying their conclusions, students practice communicating informed, evidence-based arguments.
Information Literacy (IL): Students will responsibly identify, locate, and critically evaluate the array of information sources and voices necessary to engage in sound inquiry.

The course teaches students how to identify, locate, and critically evaluate financial information from diverse and credible sources. Students engage with materials such as government tax publications, consumer credit reports, insurance disclosures, investment prospectuses, and housing market data, learning to distinguish between reliable, unbiased sources and those influenced by marketing or incomplete information. They practice comparing multiple perspectives and apply this critical evaluation to make informed financial decisions.

The course aims to engender a level of financial and quantitative literacy by engaging students in applied financial mathematics and computational problem-solving. The class material emphasizes computational fluency, spreadsheet modeling, and scenario analysis, requiring students to interpret numerical results and justify decisions with mathematical evidence. Through topics such as budgeting, loan amortization, insurance analysis, taxation, investments, and retirement planning, students develop the habits necessary for quantitative reasoning and lifelong financial well-being.