

GENERAL EDUCATION COMMITTEE

REPORT TO

THE ACADEMIC SENATE

GE-008-256

New GE course proposal:

Finance, Real Estate, Law 1231 – Quantitative Introduction to Personal Finance
New GE Area 2 (Mathematical Concepts and Quantitative Reasoning)

General Education Committee

Date: 3/11/2026

Executive Committee
Received and Forwarded

Date: 3/11/2026

Academic Senate

Date: 3/18/2026

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 personal 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 account
 - 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			

Program Outcomes	Evaluation Methods		
	Exams	Quizzes	Assignments
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.

Resources Consulted

FRL provided both an ECO and example syllabus for the course, uploaded to Curriculog.

On November 26, 2025, General Education Committee sent out a solicitation email to the following constituencies:

- Department chairs
- Deans and associate deans

We asked to provide input via online survey to ensure that new GE course proposals aligned with the existing GE policy, including learning outcomes and concerns surrounding expertise. Responses were collected through mid-December. GE Committee received **no responses** about this course.

On February 11, 2026, the committee held an in-meeting consultation with representatives from both the Math and Statistics and Finance, Real Estate, and Law (FRL) departments. Discussion centered on ensuring the course maintains a primary focus on mathematical and quantitative reasoning rather than procedural application, with Math faculty emphasizing the need for explicit instruction in mathematical thinking and mechanisms. While FRL proponents framed the course as essential algebraic decision-making using real-world financial data, the committee noted concerns regarding disciplinary expertise and the clarity of learning outcomes in the Expanded Course Outline (ECO). Furthermore, administrative feedback clarified that the course must either include mandated co-requisite support for Category 3 and 4 students or be restricted to Category 2 students to meet executive order requirements.

Discussion

GE Committee received this referral on November 13, 2025. This course is being evaluated to ensure compliance with CPP's General Education Policy (GE-001-245), passed by the Senate in 2024.

This course is applying for **GE Area 2 Mathematical Concepts and Quantitative Reasoning**. In addition to meeting the core subject matter requirements for this area, new courses must include the learning outcomes **Quantitative Reasoning** and at least one other GE SLO, along with meaningful assessment of those outcomes in both the ECO and the syllabus.

This course teaches quantitative personal finance by having students build budgets, analyze credit and loan amortization, model taxes, insurance decisions, project savings, investing, and retirement outcomes. Topics move from money and inequality to banking, consumer credit, asset markets, real estate, and ethical dimensions of financial decisionmaking. Assessment is heavily calculation-based through frequent in-class quizzes, two exams, and applied assignments that require spreadsheet-style analysis of real-world scenarios.

The course meets the Area 2 Mathematical Concepts and Quantitative Reasoning requirements. The course content is focused primarily on the core skill of quantitative reasoning through repeated use of financial mathematics, computational skills, and data-driven decision making in topics like budgeting, loan amortization, taxes, insurance risk, and investment growth. It is designed to have students explain and apply quantitative concepts to solve real-world problems, with frequent quizzes, exams, and applied assignments that require interpreting numerical results and justifying choices using quantitative reasoning.

The course claims the appropriate learning outcomes for Area 2. It claims Quantitative Literacy, Critical Thinking, and Information Literacy. There is an assessment plan tied to exams, quizzes, and assignments that are appropriate. As long as the department is prepared to provide artifacts for university-level assessment in the future, they are fine to include the single additional learning outcomes. The course could think about reliability in how those exams, quizzes, and assignments develop distinct rubrics or benchmarks in achieving those SLOs.

The syllabus should also include the copy of the text of the GE Meaning and Purpose Statement.

The committee concluded that while the course is potentially valuable, revisions are necessary to strengthen the central role of mathematical reasoning before a final vote on its advancement for the curriculum cycle.

Recommendation

On February 18, 2026, the GE Committee voted 2-6-1-1 (Conditional Accept – Revise and Resubmit – Reject – Abstain) to allow the department to **revise & resubmit** this proposal. Three members were absent.

Departments were given until March 9, 2026 to complete requested revisions to bring the proposal into compliance with relevant GE area requirements including adoption of specific GE learning outcomes and assessments.

The committee will discuss the proposal during the March 11, 2026 meeting and discuss if the proposal should be moved forward to vote in this curriculum cycle. A discussion and potential vote in the March 11 meeting is intended to allow sufficient time, if appropriate, for a first reading before the end of the academic year. The final recommendation will be transmitted to the Executive Committee upon conclusion of the vote.