



FIN 320: Investments

Term: Fall 2026

Credits: 3.0

Lecture Times & Location: Tuesday & Thursday 4:00–5:15 p.m., Tidewell Hall 130

Modality: In-Person

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Instructor Information

- **Instructor:** Dr. Nikhil Rao (Assistant Professor of Finance)
- **Email:** nrao@university.alkimi.ai
- **Office:** Tidewell Hall 314
- **Office Hours:**
 - Monday & Thursday: 9:00–10:30 a.m. (In person, Tidewell Hall 314)
 - Friday: 2:00–3:00 p.m. (Virtual via Zoom; link posted in Canvas)
 - Also available by appointment.

Course Description

Security markets and trading, risk and return, portfolio theory, the capital asset pricing and factor models, market efficiency, bond valuation and duration, and equity analysis. FIN 320 offers a rigorous, mathematically grounded examination of modern portfolio theory, capital market equilibrium, security valuation, and risk management. Students master the mechanics of security trading, quantify the trade-off between risk and expected return, and implement Markowitz mean-variance portfolio optimization. The course investigates the Capital Asset Pricing Model (CAPM), multifactor pricing models, the Efficient Market Hypothesis, fixed income duration and convexity, equity valuation methodologies, and option pricing foundations, bridging theoretical asset pricing with empirical portfolio management.

Prerequisites

FIN 301.

Measurable Student Learning Outcomes

Upon successful completion of FIN 320, students will be able to:

1. **Construct Optimal Risky Portfolios:** Apply Markowitz mean-variance portfolio theory to construct efficient frontiers, calculate covariance matrices, and determine optimal asset allocation combinations.
2. **Evaluate Asset Pricing Models:** Critically analyze the Capital Asset Pricing Model (CAPM), Arbitrage Pricing Theory (APT), and Fama-French multifactor models to assess expected security returns.
3. **Conduct Fixed Income Valuation and Immunization:** Value debt instruments, analyze the term structure of interest rates, and manage interest rate risk using Macaulay duration, modified duration, and convexity.

4. **Perform Fundamental Equity Analysis:** Value common equities using dividend discount models, discounted free cash flow to equity/firm models, and market multiples within a top-down macroeconomic framework.
5. **Measure Investment Performance and Derivatives:** Evaluate managed portfolio performance using risk-adjusted metrics (Sharpe, Treynor, Jensen's alpha) and analyze basic option strategies and binomial pricing.

Required Course Materials & Approximate Costs

1. **Zvi Bodie, Alex Kane, and Alan J. Marcus. *Investments*. 12th ed., McGraw Hill, 2021.** Approx. \$70 digital rental, \$150 print purchase.
2. **Texas Instruments BA II Plus or HP 10bII+ Financial Calculator.** Approx. \$35 (or use standard approved financial calculator from FIN 301).
3. **Total estimated cost:** \$70 to \$185.

Generative AI Policy (AI Level 2: AI Permitted with Disclosure for Specified Tasks)

In accordance with Alkimi University Academic Policies (Student Handbook §5.8), FIN 320 operates under **AI Level 2**.

- **What is permitted:** You may use generative AI tools to review quantitative finance formulas, verify Python or Excel spreadsheet syntax for portfolio variance, and brainstorm macroeconomic sector risk factors.
- **What is prohibited:** You may not use AI tools to solve examination or quiz questions, nor may you submit AI-generated equity valuation models, stock pitches, or portfolio management reports as your own work.
- **Disclosure:** Any project deliverable or homework assignment that incorporates AI assistance must include a specific disclosure note outlining the prompt used, the tool name, and how the results were validated.

Grading Components and Weights

- **Midterm Examination 1:** 20% (In class, Thursday, September 24)
- **Midterm Examination 2:** 20% (In class, Thursday, October 29)
- **Portfolio Management & Equity Analysis Project:** 20% (Due Friday, November 20 at 11:59 p.m.)
- **Quantitative Problem Sets:** 15% (Five Excel- and calculator-based investment problem sets submitted via Canvas on Fridays at 11:59 p.m.; lowest score dropped)
- **Market Tracking & Concept Quizzes:** 5% (Bi-weekly market analysis quizzes and trading mechanics checks completed in Canvas)
- **Comprehensive Final Examination:** 20% (Thursday, December 17, 2026, 3:30–5:30 p.m.)

Grading Scale (Alkimi University Standard)

- **A:** 93–100% | **A-:** 90–92%
- **B+:** 87–89% | **B:** 83–86% | **B-:** 80–82%
- **C+:** 77–79% | **C:** 73–76% | **C-:** 70–72%
- **D+:** 67–69% | **D:** 60–66% | **F:** Below 60%
- **Extra credit:** No extra credit assignments are available in FIN 320. Students are encouraged to devote their energy to the homework problem sets, portfolio project, and exam preparation.

Course Schedule (Fall 2026)

Week	Dates	Topics & Readings	Assignments & Deadlines
Week 1	Aug 27	The Investment Environment and Asset Classes: Financial assets vs. real assets, money market vs. capital market	<i>First day of classes: Wed Aug 26.</i>

Week	Dates	Topics & Readings	Assignments & Deadlines
		instruments, market indices, and primary vs. secondary markets. <i>Reading: Bodie et al., Ch. 1–2</i>	
Week 2	Sep 1, 3	Security Trading Mechanics and Margin Transactions: Broker-dealer operations, market orders, limit orders, margin trading requirements, short sales, and electronic communication networks (ECNs). <i>Reading: Bodie et al., Ch. 3</i>	<i>Wed Sep 2: Add/section change deadline.</i>
Week 3	Sep 8, 10	Risk, Return, and Historical Market Record: Holding period returns, arithmetic vs. geometric averages, standard deviation, excess returns, and historical capital market performance. <i>Reading: Bodie et al., Ch. 5</i>	<i>Mon Sep 7: Labor Day (no classes). Wed Sep 9: Census date (last day to drop without a W).</i>
Week 4	Sep 15, 17	Risk Aversion and Capital Allocation: Utility theory, certainty equivalents, risk aversion, capital allocation between a risk-free asset and a single risky portfolio, and capital allocation lines (CAL). <i>Reading: Bodie et al., Ch. 6</i>	—
Week 5	Sep 22, 24	Optimal Risky Portfolios and Midterm Exam 1: Diversification principles, covariance and correlation, Markowitz portfolio selection, and efficient frontier; Midterm Examination 1 in class. <i>Reading: Bodie et al., Ch. 7</i>	Midterm Examination 1 (in class).
Week 6	Sep 29, Oct 1	The Capital Asset Pricing Model (CAPM): Assumptions of the CAPM, capital market line (CML), security market line (SML), beta estimation, and single-index model estimation. <i>Reading: Bodie et al., Ch. 8–9</i>	—
Week 7	Oct 6, 8	Arbitrage Pricing Theory and Multifactor Models: Arbitrage pricing theory, factor portfolios, Fama-French three-factor and five-factor models, and empirical testing of asset pricing anomalies. <i>Reading: Bodie et al., Ch. 10–11</i>	—
Week 8	Oct 15	The Efficient Market Hypothesis (Fall Break Week): Forms of market efficiency (weak, semi-strong, strong), event studies, and empirical evidence on market anomalies (Fall Break week). <i>Reading: Bodie et al., Ch. 12</i>	<i>Oct 12–Oct 13: Fall break (no classes).</i>
Week 9	Oct 20, 22	Behavioral Finance and Technical Analysis: Behavioral biases (overconfidence, anchoring, framing, loss aversion), limits to arbitrage, and technical analysis indicators. <i>Reading: Bodie et al., Ch. 13</i>	—
Week 10	Oct 27, 29	Bond Prices, Yields, and Midterm Exam 2: Bond characteristics, pricing default-free and corporate bonds, yield to maturity, yield curves, and expectations hypothesis; Midterm Exam 2 in class. <i>Reading: Bodie et al., Ch. 14–15</i>	Midterm Examination 2 (in class).
Week 11	Nov 3, 5	Managing Fixed Income Portfolios and Duration: Interest rate sensitivity, Macaulay duration, modified duration, convexity, and balance sheet immunization strategies. <i>Reading: Bodie et al., Ch. 16</i>	<i>Fri Nov 6: Last day to withdraw (W) or elect Pass/No Pass.</i>
Week 12	Nov 10, 12	Macroeconomic and Industry Analysis: Top-down macroeconomic forecasting, business cycle indicators, industry life cycles, and competitive forces in equity analysis. <i>Reading: Bodie et al., Ch. 17</i>	—
Week 13	Nov 17, 19	Equity Valuation Models and Multiples: Dividend discount models, constant growth DDM, multi-stage models, free cash flow models, P/E multiples; Portfolio Project due Friday. <i>Reading: Bodie et al., Ch. 18</i>	Portfolio Management & Equity Analysis Project due Fri Nov 20 at 11:59 p.m.
Week 14	Nov 24	Options Markets and Basic Strategies (Thanksgiving Week): Option contract mechanics, call and put payoffs, protective puts, covered calls, straddles, and spreads (Thanksgiving week). <i>Reading: Bodie et al., Ch. 20</i>	<i>Nov 25–Nov 27: Thanksgiving break (no classes).</i>
Week 15	Dec 1, 3	Option Valuation and Volatility Models: Put-call parity, binomial option pricing models, and the Black-Scholes-Merton	—

Week	Dates	Topics & Readings	Assignments & Deadlines
		option pricing formula with implied volatility. <i>Reading: Bodie et al., Ch. 21</i>	
Week 16	Dec 8	Portfolio Performance Evaluation and Course Synthesis: Sharpe ratio, Treynor measure, Jensen's alpha, tracking error, style analysis, performance attribution, and final exam synthesis. <i>Reading: Bodie et al., Ch. 24 and Review</i>	<i>Wed Dec 9: Last day of classes. Thu Dec 10: Reading Day.</i>
Finals	Dec 17	Comprehensive Final Examination: Thursday, December 17, 2026, 3:30–5:30 p.m., Tidewell Hall 130.	Scheduled during the university final examination period in Tidewell Hall 130.

Course Policies

Attendance Policy

Classroom attendance in Tidewell Hall 130 is critical for understanding dynamic market simulations, mathematical proofs, and portfolio optimization models. If an unavoidable absence arises, inform Dr. Rao in advance and coordinate with a peer to obtain class notes and spreadsheet templates. Students who miss the first two class meetings without notifying the instructor may be dropped. Students may miss class for religious observance without penalty if they notify the instructor in writing within the first two weeks of the semester (by Wednesday, September 9, 2026). Absences for university-sponsored activities (athletics, performances, conferences) are excused with a letter from the sponsoring office at least one week in advance.

Late Work Policy

Quantitative problem sets and the Portfolio Management Project will receive a 10% penalty for each calendar day they are late and will not be accepted after 72 hours. Online Canvas quizzes expire at the designated deadline and cannot be reopened.

Final Exam Policy

The final examination (Thursday, December 17, 2026, 3:30–5:30 p.m.) is scheduled by the University Registrar and can't be moved without the Dean's written approval (Faculty Handbook §5.5). A student with three or more final exams on the same calendar day may reschedule one of them. Requests go to the instructor of the middle exam by the last day of classes. For this term, send the request by Wednesday, December 9, 2026 (Student Handbook §6.4).

Academic Integrity

Alkimi University is an academic community devoted to rigorous scholarship, open intellectual inquiry, and uncompromising ethical conduct. All students are subject to the regulations of the Alkimi University Academic Integrity Policy. Academic dishonesty—including plagiarism, cheating on examinations, unauthorized collaboration, fabrication of empirical data, and unauthorized submission of academic work generated by artificial intelligence—undermines the integrity of the university and carries severe disciplinary sanctions. Sanctions range from a failing grade on an assignment or exam to an administrative course failure recorded as an 'XF' on the official transcript, academic suspension, or expulsion. Suspected violations are formally investigated and resolved through the Office of Academic Integrity in accordance with Faculty Handbook §6. For detailed information, consult the Office of Academic Integrity, Lovell Hall 315, (555) 555-0163, integrity@university.alkimi.ai.

Accessibility Services

Alkimi University is committed to providing equitable educational access and reasonable accommodations for all students with documented disabilities, including physical, sensory, psychological, learning, and chronic health conditions. Students requesting academic accommodations must formally register with the

Office of Accessibility Services, Harlan Hall 204, (555) 555-0155, access@university.alkimi.ai. Once approved, students will receive an official Faculty Accommodation Letter detailing approved accommodations. Students should present this letter to the instructor as early in the semester as possible, and at least one week prior to any exam or assignment requiring accommodation. Accommodations cannot be applied retroactively.

Student Wellness and Mental Health

Your physical health, psychological well-being, and mental health are essential to your academic success. If you experience heightened stress, anxiety, depressive symptoms, personal trauma, or academic burnout, free, confidential counseling and medical care are available through the Hollis Health & Counseling Center, located in the Hollis Center. Routine appointments are available Monday–Friday 8:00 a.m.–6:00 p.m. and Saturday 10:00 a.m.–2:00 p.m. during the semester by calling (555) 555-0190 or emailing health@university.alkimi.ai. Urgent, 24/7 crisis psychological counseling is accessible immediately at (555) 555-0199.

Campus Student Support Services

- **Academic Advising Center:** Lovell Hall 101 | (555) 555-0158 | advising@university.alkimi.ai
- **Writing Center:** Whitcombe Library 3rd Floor | Free consultations on papers, reports, and research projects at any stage.
- **Whitcombe Library:** Whitcombe Library, Main Floor | (555) 555-0170 | askalibrarian@university.alkimi.ai
- **Hollis Health & Counseling Center:** Hollis Center | (555) 555-0190 | 24/7 Counseling Line: (555) 555-0199 | health@university.alkimi.ai
- **Financial Markets & Bloomberg Lab:** Tidewell Hall | Access to financial terminals, equity data feeds, and peer coaching for financial modeling.