FNCE10002 Principles of Finance

FACULTY OF BUSINESS AND ECONOMICS · THE UNIVERSITY OF MELBOURNE · EXAM REVISION SHEET · SEMESTER 2, 2026

Full guide + ask Sia about FNCE10002

SIDE 1/2 WHAT THE FINAL REWARDS · definitions → formula → decision rule → assumption check EXAM REVISION SHEET Final Examination · 60% · 120 minutes · in person

1 · Exam map

COURSE.JSON · BRIEF

15% | 25% | FINAL 60%

ASSESSMENT	WEIGHT / FORMAT
Four peer-reviewed tasks	15%; three highest of four count
Mid-semester Examination	25%; 60-minute in-person MCQ
Final Examination	60%; 120-minute in-person examination

Permitted materials: not confirmed for this offering in the course materials we hold — check the exam instructions on the LMS.

Source: Semester 2, 2026 course and assessment materials held; operational instructions remain authoritative.

2 · Universal finance method

ALL CHAPTERS

1 DATE cash flows → 2 MATCH rate / period → 3 VALUE show steps → 4 JUDGE limits

Guide-wide route: common date → matched units → calculation → conditional decision.

IF ASKED TO...	LEAD WITH...	FINISH WITH...
move one cash flow	PV / FV	valuation date
price promised cash flows	discount each flow	yield + risk assumptions
value equity	expected dividends	growth/return sensitivity
rank projects	incremental NPV	matched project risk
draw options	payoff first	premium → profit

EXAM CUE *A calculator output is not a method. Make variables, units, signs, denominator and comparison reconstructable.*

3 · Time value of money

CH 1

★ *Time value of money*: cash at different dates has different value because of opportunity cost and risk. *FV* compounds a present amount forward; *PV* discounts a future amount to its current equivalent.

SINGLE-SUM VALUE

$$PV = FV \div (1 + r)^n$$
$$FV = PV \times (1 + r)^n$$

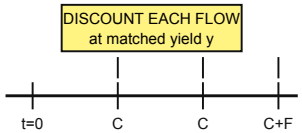
SYMBOL	MEANING	CHECK
PV / FV	value at stated date	currency + date
r	rate per period	decimal; same unit
n	number of periods	matches r and flows

Controlling limit: rate, period count and cash-flow frequency must use the same time unit. Predict direction: positive r makes PV below FV for a positive future receipt.

4 · Annuities, loans, bonds

CH 2

Annuity = finite sequence of equal cash flows at regular intervals. *Amortisation* allocates each payment between interest and principal. *Bond yield* is the rate equating promised cash flows with current price under stated assumptions.



Redrawn guide figure: coupons recur; face value arrives with the final coupon.

COUPON-BOND PRICE

$$P = \sum_{t=1}^{n} C \div (1 + y)^t + F \div (1 + y)^n$$

OBJECT	SETUP	WHAT CAN BREAK
Annuity	equal amount + regular interval	timing/frequency mismatch
Loan	payment = interest + principal	confusing balance with payment
Bond	coupon stream + face value	quoted yield convention

BOND DECISION LANGUAGE

- Write the actual dated cash flows before naming premium or discount.
- If coupon rate is below required yield, the worked guide case prices below face value.
- Price is conditional on promised cash flows and the yield; default and reinvestment risk remain.

EXAM CUE *Convert quoted yields and payment frequency consistently. Never discount a semiannual or monthly flow with an unconverted annual rate.*

5 · Debt checklist

CH 2 FAQ

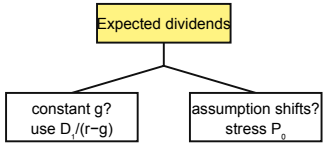
TRANSLATE	List every coupon and maturity principal on one timeline.
CALCULATE	Discount each flow using yield per matching period.
INTERPRET	Compare computed price with face value; state assumptions.
STRESS	Change yield or timing; ask whether the price label reverses.
LOAN SCHEDULE	Split each payment between interest and principal; track the remaining balance.
DIRECTION CHECK	Predict the result before arithmetic; test a limiting case or independent calculation.
BOUNDARY	Convert quoted yield and payment frequency consistently; default and reinvestment risk remain.

Remember: the promised coupon is not the required yield. The yield is the discount rate that reconciles price and the full cash-flow stream.

6 · Equity valuation

CH 3

Ordinary share = residual ownership claim with uncertain distributions and terminal value. The *dividend discount model* values equity as the PV of expected future dividends. *Market information* changes expectations and prices with varying speed and quality.



Redrawn guide figure: dividend inputs lead to a conditional value, not a certainty.

CONSTANT-GROWTH EQUITY

$$P_0 = D_1 \div (r - g) \quad \text{only when } r > g$$

INPUT	MEANING / DIRECTION	TRAP
D_1	next-period dividend; ↑ raises P_0	using current dividend
r	required return; ↑ lowers P_0	calling it realised return
g	sustainable growth; ↑ raises P_0	allowing g ≥ r
r−g	assumption gap	small gap makes value sensitive

Controlling limit: a small change in long-run growth or required return can dominate the estimate. Report the assumptions with the value; do not present a point estimate as unconditional.

MARKET-INFORMATION JUDGEMENT

Information matters through expected dividends, growth and required return. When a fact changes, identify which input moves, predict the direction of price, then recalculate only the affected lines.

EXAM CUE *"$P_0 = \$X$, conditional on D_1, sustainable g, required r and r > g." This closes both the arithmetic and the interpretation.*

7 · Valuation comparison

CH 1–3

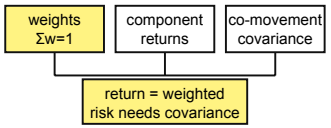
CLAIM	CASH FLOW	KEY UNCERTAINTY
Single sum	one dated FV	rate / horizon
Bond	coupons + face	yield, default, reinvestment
Ordinary share	expected dividends	growth + required return
Constant-growth share	expected D_1 and perpetual g	a narrow r−g gap amplifies sensitivity
Information shock	revise affected D_1, g or r	predict direction, then recalculate

Across all three, value at one date is the organising idea. Timing and risk belong in the setup, not as an afterthought.

8 · Risk, return, diversification

CH 4

Expected return = probability-weighted average of possible returns. *Variance* = expected squared deviation from the mean. *Covariance* = how two security returns move together. Diversification is therefore about co-movement, not merely the number of securities.



Redrawn guide figure: expected return is linear; risk also needs co-movement.

PORTFOLIO EXPECTED RETURN

$$E(R_p) = \sum_i w_i E(R_i), \text{ with } \sum_i w_i = 1$$

QUESTION	REQUIRED INFORMATION	SAFE CONCLUSION
Expected return?	weights + component expected returns	weighted average
Portfolio risk?	volatilities + covariance/correlation	not a weighted average
Diversification?	pattern of co-movement	depends on covariance

BOUNDARY CHECKS

- Weights should sum to one for the stated portfolio.
- Expected return should lie consistently with the weights and component returns in the guide's long-only example.
- Do not infer variance from expected return alone.
- Historical estimates may not represent future distributions or extreme dependence.

EXAM CUE *State the missing information. "10.4% expected return" does not answer a risk question without volatilities and co-movement.*

9 · Risk vocabulary

CH 4–5

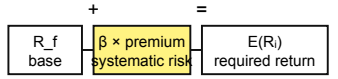
TOTAL UNCERTAINTY	Return distribution, not merely its mean.
DIVERSIFIABLE COMPONENT	Reduced through combining assets whose returns do not move identically.
SYSTEMATIC RISK	Market-related risk remaining after broad diversification.
BETA	Sensitivity to market-return movements under the fitted model.

Sequence: describe expected return → quantify co-movement → identify what diversification removes → price remaining systematic exposure with CAPM.

10 · CAPM and asset pricing

CH 5

Systematic risk is market-related risk remaining after broad diversification. *Beta* measures an asset return's sensitivity to market-return movements under the fitted model. CAPM links required return to the risk-free return and beta-scaled market premium.



Redrawn guide figure: CAPM adds a beta-scaled market premium to the risk-free rate.

CAPITAL ASSET PRICING MODEL

$$E(R_i) = R_f + \beta_i [E(R_m) - R_f]$$

LINE	OPERATION	INTERPRETATION
1	$E(R_m) - R_f$	market premium
2	$\beta_i \times$ premium	compensation for exposure
3	$+ R_f$	model-required return

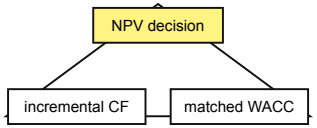
Labels matter: expected, required and realised return are different. A CAPM output is a model-based opportunity cost for stated systematic exposure, not a guaranteed forecast.

Limit: beta and the market premium are estimates, and CAPM omits other possible priced risks. When beta or the premium changes, predict the direction before calculating.

11 · Capital budgeting + WACC

CH 6

Incremental cash flow changes because the project is undertaken. *NPV* is PV of those project cash flows less the initial investment. *WACC* is the market-value weighted required return on debt and equity under stated tax and risk conditions.



Redrawn guide figure: NPV combines only incremental flows with a risk-matched rate.

NET PRESENT VALUE

$$NPV = -I_0 + \sum_{t=1}^{n} CF_t \div (1 + r)^t$$

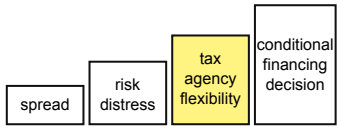
NPV	DECISION WITHIN ASSUMPTIONS	WHAT TO SAY
> 0	adds value at stated r	accept if risk/flows fit
= 0	boundary	inspect assumptions
< 0	does not meet stated r	reject within setup

EXAM CUE *Corporate WACC or financing weights may be inappropriate for a project with different risk. Near-zero NPV calls for sensitivity analysis, not false precision.*

12 · Leverage + payout

CH 7

Financial leverage uses fixed-claim financing and changes risk and return borne by equity holders. *Capital structure* is the debt/equity/other financing mix. *Payout policy* chooses dividends, repurchases and retention.



Redrawn guide figure: a positive spread is only the first step in a leverage judgement.

LEVERED EQUITY RETURN RELATION

$$R_E = R_A + (R_A - R_D)(D \div E)$$

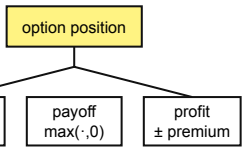
OBSERVATION	VALID INFERENCE	INVALID SHORTCUT
R_A > R_D in expectation	leverage can raise expected R_E	"value must rise"
more fixed claims	equity distribution is magnified	only the mean rises
higher EPS mechanically	recheck risk and financing effects	higher firm value proven

Carry default, taxes, agency effects and financial flexibility into the conclusion. Payout also trades current distribution against retained investment needs; the accounting label alone does not settle value.

13 · Options + basic hedging

CH 8

Call = right, not obligation, to buy at strike K by/at expiry. *Put* = right, not obligation, to sell. *Payoff* is contract value at exercise before premium or costs.



Redrawn from options-and-basic-risk-management--fig1: position → payoff → profit.

EXPIRY PAYOFFS

$$C_T = \max(S_T - K, 0)$$
$$P_T = \max(K - S_T, 0)$$

POSITION	PAYOFF STEP	PROFIT STEP
Long call	max(S_T−K,0)	subtract premium
Long put	max(K−S_T,0)	subtract premium

14 · Final answer audit

GUIDE STRATEGY

TRANSLATION	Dates, signs, units, observed vs derived values.
CALCULATION	Formula named; substitutions visible; magnitude plausible.
INTERPRETATION	Decision answers the question and names assumptions.
COUNTER-CASE	Identify the input or limit that could reverse it.

FNCE10002 Principles of Finance · Self-test drills

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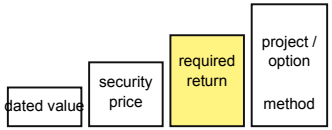
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SIDE 2/2 FIVE WORKED DRILLS · judgement cards · classic traps · exam-morning plan

SELF-TEST: COVER THE ANSWER

Inputs → formula → arithmetic → interpretation → counter-case

15 · Method chooser TOPIC MAPS



Redrawn from front--fig1: classify the unknown before choosing the formula.

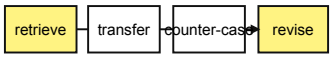
IF YOU SEE…	DO THIS	MUST SAY
one future payment	PV = FV/(1+r)^n	valuation date
coupons + face value	discount every flow	yield period matched
D_1, r and g	$D_1/(r-g)$	r>g; sensitivity
weights + expected returns	ΣwE(R)	risk needs covariance
R_f, E(R_m), β	CAPM	required, not guaranteed
project cash flows	incremental NPV	risk-matched rate
S_T, K, premium	payoff then profit	subtract premium

16 · "If X → Y" cards CH 1–8 FAQ

UNITS CONFLICT	Stop; convert rate, periods and cash-flow frequency.
CALCULATOR-ONLY ANSWER	Expose formula, substitution, units and decision.
POINT VALUE GIVEN	Stress the assumption most able to reverse it.
NEAR-ZERO NPV	Inspect cash-flow and rate assumptions.
HIGHER EPS	Do not infer higher firm value.
OPTION DIAGRAM	Mark K; draw payoff; then account for premium.

SELF-TEST *Cover the right column. Explain the mechanism aloud, not just the named formula.*

17 · Retrieval loop PRACTICE FIG 13



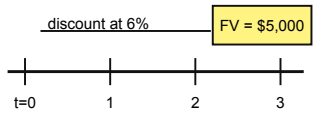
Redrawn guide figure: retrieve → transfer → counter-case → revise.

Record the first failed move: translation, calculation or interpretation. Repair that line before attempting another changed case.

TRANSLATION	Remap cash flows, symbols, dates and units.
CALCULATION	Rewrite the first divergent line; use a limiting case or independent check.
INTERPRETATION	Answer the decision asked and attach the controlling limitation.

18 · Drill 1 · single payment CH 1 WORKED

Q [3]. $5,000 is due in three years; annual discount rate = 6%. Find PV.



Guide timeline: one future receipt moves back three matching annual periods.

1. **Map:** FV = 5,000; r = 0.06 per year; n = 3; valuation date t=0.
2. **Formula:** PV = 5,000 ÷ $(1.06)^3$.
3. **Arithmetic:** PV = $4,198.10.
4. **Interpret:** current equivalent at year 0, assuming annual compounding and a constant 6% rate.

ANSWER PATH

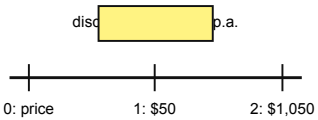
```
5,000 ÷ 1.191016 = 4,198.10
```

TRAP	REPAIR
multiply instead of discount	PV of positive FV must be lower when r>0
6 instead of 0.06	convert percentage to decimal
no date on answer	write "at year 0"

CHANGED CASE *If r rises with FV and n fixed, denominator rises and PV falls. Explain before recalculating.*

19 · Drill 2 · coupon bond CH 2 WORKED

Q [3]. Two-year bond: $50 annual coupon; $1,000 face paid at maturity; required yield 6% annually. Find price.



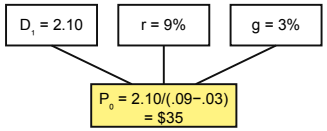
Guide bond drill: separate the first coupon from coupon plus face value at maturity.

1. Cash flows: $50 at t=1; $1,050 at t=2.
2. P = 50/1.06 + 1,050/$(1.06)^2$.
3. P = 47.17 + 934.50 = $981.67.
4. Coupon rate is below required yield, so price is below $1,000 face value under the assumptions.

CHECK	QUESTION
Completeness	Did maturity include both coupon and principal?
Frequency	Do yield and coupon periods match?
Language	Did price come before "discount to par"?
Limits	Did you retain default and reinvestment risk?

20 · Drill 3 · constant growth CH 3 WORKED

Q [4]. Expected dividend next year D_1 = $2.10; perpetual growth g = 3%; required return r = 9%. Estimate value.



Guide valuation funnel: D_1 enters the numerator; r−g is the assumption gap.

1. **Timing:** confirm the stated dividend is next-period D_1.
2. **Validity:** 9% > 3%, so r > g.
3. **Compute:** 2.10 ÷ (0.09−0.03) = 2.10 ÷ 0.06 = $35.
4. **Qualify:** conditional on perpetual 3% growth and 9% required return.

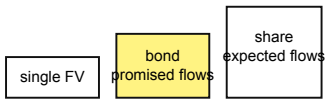
CHANGE	IMMEDIATE DIRECTION	WHY
D_1 ↑	P_0 ↑	larger numerator
r ↑	P_0 ↓	wider denominator
g ↑, still <r	P_0 ↑	narrower denominator
g ≥ r	model invalid here	required condition fails

CLASSIC TRAP *Do not use a current dividend as D_1 unless it is first moved to the next period under the stated growth assumption.*

21 · Equity judgement cards CH 3 FAQ

PRICE MOVES	Name the channel: expected dividends, growth or required return.
ESTIMATE LOOKS HUGE	Inspect the width of r−g; small gaps amplify sensitivity.
MARKET INFORMATION ARRIVES	Revise the affected input, predict direction, then recompute.
ONE VALUE REPORTED	Add its assumptions and the input most able to reverse it.

22 · Fast valuation contrasts CH 1–3

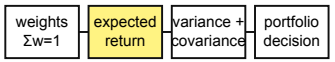


Redrawn from front--fig1: all use PV, but the cash-flow claim differs.

For any valuation, circle the date of the answer, underline the rate per period, and box the cash flows that are assumptions rather than observed amounts.

23 · Drill 4 · portfolio return CH 4 WORKED

Q [3]. Portfolio: 60% in an asset with E(R)=8%; 40% in one with E(R)=14%. Find E(R_p); explain why risk needs more information.



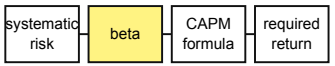
Redrawn from risk-return-and-diversification--fig1: return then co-movement.

1. Check weights: 0.60 + 0.40 = 1.
2. Contributions: 0.60×8% = 4.8%; 0.40×14% = 5.6%.
3. E(R_p) = 4.8% + 5.6% = 10.4%.
4. Risk cannot be inferred: it also requires volatilities and covariance or correlation.

STATEMENT	VERDICT
"Return is the weighted average."	Yes, for expected return here.
"Risk is the weighted average."	No; co-movement is missing.
"More securities always settles risk."	No; dependence matters.
"Historical covariance is certain."	No; future/extreme dependence may differ.

24 · CAPM rapid check CH 5 WORKED

Given: R_f=3%, E(R_m)=9%, β=1.2. Market premium = 6%; beta-scaled premium = 7.2%; CAPM required return = 10.2%.

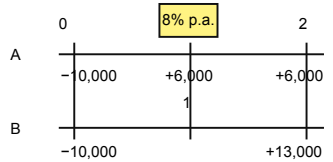


Redrawn from capm-and-asset-pricing--fig1: systematic risk → beta → CAPM.

IF B RISES	Required return rises when the market premium is positive.
IF B=0	The formula returns R_f.
AFTER CALCULATION	Say "model-based opportunity cost", not guaranteed realised return.
STRESS TEST	Beta and market premium are estimates; CAPM may omit other priced risks.
LABEL DISCIPLINE	Keep expected, required and realised return as three different claims.
MARKET PREMIUM	Compute E(R_m)−R_f first; scale that premium by β before adding R_f.
RISK SCOPE	β is fitted sensitivity to market-return movements; it is not total uncertainty.
INTERPRET	Report opportunity cost, not a guaranteed forecast.

25 · Drill 5 · compare projects COURSE WORKED

Q [5]. Both projects cost $10,000 now. A pays $6,000 at years 1 and 2. B pays $13,000 at year 2. At 8% annually, compare NPVs and state the boundary.



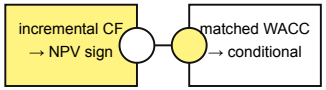
Guide project comparison: same t=0 cost; timing differs, so discount each dated flow.

1. **A:** −10,000 + 6,000/1.08 + 6,000/$(1.08)^2$ = $699.59.
2. **B:** −10,000 + 13,000/$(1.08)^2$ = $1,145.40.
3. **Rank:** B has the higher NPV at the same 8% opportunity cost.
4. **Boundary:** recommendation assumes equal risk and scale; changed timing risk or discount rate may alter it.

PROJECT QUESTION	REQUIRED MOVE
Cash flow relevant?	Include only if it changes because the project proceeds.
Different dates?	Move all flows to the same valuation date.
Mutually exclusive?	Compare NPVs on the same scale and assumptions.
Close to zero?	Stress cash-flow and rate estimates.
Different project risk?	Do not apply an unmatched corporate WACC mechanically.

ACCURACY CHECK *The displayed NPVs are recomputed directly from the supplied cash flows and 8% rate.*

26 · NPV sign + sensitivity CH 6 FAQ



Redrawn from capital-budgeting-and-wacc--fig2: NPV and matched WACC interact.

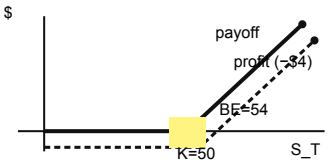
*"Accept" and "reject" remain conditional on incremental cash-flow estimates, project risk and the matched discount rate.

27 · Leverage judgement CH 7 WORKED

WRONG	9%−5%=4%, therefore leverage certainly adds value.
RIGHT	The spread is favourable in expectation; value depends on the full risk and financing effects.
PAYOUT TRAP	Higher EPS after a financing change does not prove higher firm value.

28 · Options self-test CH 8 WORKED

Guide case: call strike K=$50, premium=$4, expiry share price S_T=$62.



Guide call figure: profit is the payoff line shifted down by the $4 premium.

COMPUTE IN THIS ORDER

```
Payoff = max(62-50,0) = $12
Profit = 12-4 = $8 per share
Break-even = 50+4 = $54
```

AT EXPIRY	LONG CALL	LONG PUT
S_T below K	payoff 0	payoff K−S_T
S_T equal K	payoff 0	payoff 0
S_T above K	payoff S_T−K	payoff 0
Profit	long payoff minus premium/costs	

DRAW WITHOUT MEMORISING

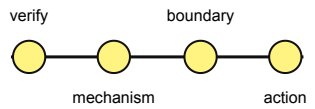
1. Mark strike K on the horizontal S_T axis.
2. Evaluate the max expression on each side of K.
3. Join the two regions at the kink.
4. For a short position, reverse the long payoff.
5. For profit, account for premium; label break-even separately.

HEDGE LIMIT *A hedge can introduce premium, basis and exercise-style effects. "Protected" is not the same as costless or risk-free.*

29 · Classic traps wall ALL LIMITS

TRAP	CORRECTION
Mix annual rate with monthly/half-year flows	convert to one period convention first
Use calculator output as reasoning	show formula, substitution and meaning
Treat yield as coupon	yield discounts the entire promised stream
Let g approach/exceed r silently	test r>g and denominator sensitivity
Average risk by weights	include covariance/correlation information
Call CAPM return guaranteed	label it model-required return

30 · Exam-morning plan PRACTICE FIG 14



Redrawn guide figure: verify → mechanism → boundary → action.