FINC2011 Corporate Finance I

UNIVERSITY OF SYDNEY · FINANCE · LEVEL 2

Full guide + ask Sia about FINC2011

SIDE 1/2 FINAL PRIORITIES · DEFINITIONS · FORMULAS · DECISION RULES · CHECKS

EXAM REVISION SHEET

Semester 2 2026 · v2 · 2026-10-25

0 · Exam Map

COURSE.JSON · BRIEF

5 | 20 | 25 | 50

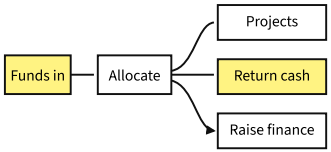
COMPONENT	WEIGHT
Early Feedback Quiz	5%
Mid Semester Exam	20%
Major Group Assignment	25%
Final Exam	**50%**

Permitted materials: not confirmed for this offering in the course materials we hold — check the exam instructions on the LMS. *Source: BRIEF.md; course.json*

The final is listed in the formal examination period: **two hours**, problem-solving and short-answer questions across the course. Prioritise set-up, calculation, direction check, interpretation.

1 · Finance Decisions

CH 1 · CLASSIFY + EXPLAIN



Decision flow: asset, claim, distribution.

DECISION	QUESTION	ANSWER CUE
Investment	Which real asset?	Future cash flows; value created
Financing	Which claim funds it?	Debt, equity, retained cash
Payout	Distribute or retain?	Cash to owners vs future use

Shareholder wealth is a residual-cash-flow objective, not a short-run price target. Link stakeholder facts through contracts, regulation, reputation or durable operating cash flow.

AGENCY DIAGNOSIS

```
decision right → private incentive → shareholder consequence → targeted control → control cost
```

Agency cost = monitoring cost + bonding cost + residual loss. Boards, disclosure, monitoring and incentive pay can align choices, but each may be costly or create a new short-term or manipulation incentive.

FINAL CUE → *Name what is acquired, which claim is created, or which cash is distributed before attaching the label.*

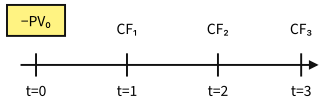
1b · Linked-Decision Script

CH 1 WORKED EXAMPLE

Case: a company buys a $14m automated warehouse, funds $9m with bonds and reduces its planned dividend to preserve cash.

2 · Time Value Core

CH 2 · CALCULATION



move all CFs to one date

Valuation timeline: date first, then move value.

SINGLE SUM

$FV_t = PV(1+r)^t$

$PV = FV_t/(1+r)^t$

PROJECT DECISION

$NPV = -cost_0 + \Sigma\ CF_t/(1+r)^t$

accept if NPV > 0 under the forecast and required-return assumptions

Cash flows at different dates cannot be added directly. Set **one focal date**, match r to each interval, count gaps rather than year labels, retain at least four decimals, then round the final answer.

CHANGE	PV DIRECTION	WHY
r rises	Falls	Heavier discount
Receipt later	Falls	More intervals
CF rises	Rises	More value at same date

EQUIVALENT-VALUE TEST

Two streams are equivalent only if they have equal value **on the same date at the same rate**. A different focal date should give the same decision after moving every cash flow consistently.

FINAL CUE → *Label the dollar amount and date: "present value today", "accumulated value at Year 4", or "NPV relative to cost".*

2b · Timing Controls

CH 2 · TRAP CHECK

PATTERN	FORMULA LOCATES VALUE
Ordinary annuity	One period before first payment
Annuity due	Ordinary value × (1+r)
Perpetuity	One period before next C
Irregular stream	Each CF separately, or genuine blocks

Never average an uneven stream. Value each genuine block at its natural date; only then move block values to the common comparison date.

2c · Valuation Answer Path

CH 2 STUDY METHOD

1. **Draw:** show t=0, every payment date and sign.
2. **Name:** single sum, finite level stream, perpetual stream, growing stream or irregular blocks.
3. **Locate:** write where the chosen formula places its answer.
4. **Move:** compound or discount that local value to the requested date.
5. **Interpret:** state currency, date and decision.

3 · Streams & Rates

CH 2-3 · FORMULA CHOICE

LEVEL STREAMS

$PVann = C[1-(1+r)^{-n}]/r$

$PVperp = C/r$

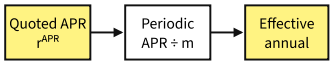
$PVgrowing\ perp = C_1/(r-g)$, with $r > g$

CASH-FLOW SHAPE	USE	CONTROL
One amount	Single sum	Count intervals
Equal, finite	Annuity	First-payment date
Equal, forever	Perpetuity	Use next payment
Constant growth	Growing perpetuity	r > g
Changing/uneven	Stages or separate PVs	Common date

A delayed annuity takes **two moves**: value the level stream one period before its first payment, then discount that local value to the required date. An annuity due receives every amount one period earlier, so its value is higher when r > 0.

4 · Convert Rates

CH 3 · RECURRING SET-UP



$EAR = (1 + APR/m)^m - 1$

Rate chain: APR → period → effective annual.

RATE CORE

$periodic\ rate = APR/m$

$EAR = (1+APR/m)^m - 1$

$continuous\ growth\ factor = e^{rt}$

GIVEN	NEEDED	MOVE
APR, m	period rate	divide by m
APR, m	EAR	compound m periods
EAR	monthly rate	$(1+EAR)^{1/12}-1$

APR annualises without the within-year interest-on-interest effect; EAR measures actual one-year growth. For m > 1 and positive rates, EAR normally exceeds the quoted APR. Compare products on a **common effective horizon**.

FINAL CUE → *Write the rate unit and cash-flow unit side by side. An annual rate with a monthly count changes the contract.*

4b · Rate & Uneven-Flow Audit

CH 3 DRILL

Quick conversion: 7.2% APR compounded quarterly gives r_q=7.2%/4=**1.8%** and EAR=1.018^4-1=**7.3967%**. It exceeds 7.30% effective annually on the common one-year basis.

5 · Loans

CH 3 · SOLVE + RECONCILE

LEVEL-PAYMENT LOAN

$Payment = PV \times r/[1-(1+r)^{-n}]$

$Interest_t = opening\ balance \times r$

$Principal_t = payment - interest_t$

$Closing = opening + interest - payment$

STEP	WRITE BEFORE CALCULATING
1	Advance date and amount
2	Periodic rate and payment count
3	First-payment timing / payment mode
4	Balance roll-forward

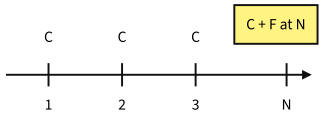
For a normal amortising loan, the outstanding balance falls. Interest on the smaller balance falls; therefore more of the same fixed payment reduces principal. A deferred payment or balloon amount needs a dated timeline rather than a stretched annuity formula.

Prospective balance: PV of payments still due immediately after the balance date. **Retrospective balance:** accumulated advance less accumulated payments. The two routes should agree apart from displayed rounding.

FINAL CUE → *Reconcile with unrounded internal amounts; do not change r or n merely to force displayed cents to agree.*

6 · Bond Valuation

CH 4 · PRICE + CLASSIFY



Bond anatomy: coupons + face at maturity.

BOND CORE

$Price = C[1-(1+y)^{-N}]/y + F/(1+y)^N$

C, y are per-period; N is payment periods.

COUPON RATE VS YIELD	PRICE
coupon > yield	premium: P > F
coupon = yield	par: P = F
coupon < yield	discount: P < F

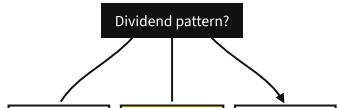
Semiannual audit: coupon = F × annual coupon rate ÷ 2; y = quoted APR yield ÷ 2; N = years × 2. A market-yield change alters the discount rate, *not* the contractual coupon.

Yield ↑ → price ↓. Holding features constant, longer maturity and lower coupons place more value in distant cash flows and make price more sensitive. The captured material supports this qualitative relation; do not introduce a formal duration calculation.

Credit spread = risky yield − comparable benchmark yield. Match maturity, currency, date and convention; interpret as extra required return, not a direct default probability.

7 · Equity Valuation

CH 5 · CHOOSE THE PATH



DDM chooser: the dividend path selects the model.

EQUITY CORE

$Holding\ return = (D_1 + P_1 - P_0)/P_0$

$No\text{-}growth\ P_0 = D/r$

$Constant\text{-}growth\ P_0 = D_1/(r-g),\ r > g$

$One\ period:\ P_0 = (D_1+P_1)/(1+r)$

GIVEN	REQUIRED TIMING MOVE
Dividend just paid	Label D_0; grow once for D_1
Temporary high growth	Forecast each dividend explicitly
Stable growth starts with D_{n+1}	Place terminal value at n

Terminal value sits **one period before the first dividend it contains**. Discount explicit dividends and terminal value to today. If terminal value dominates estimated price, stress the required return and perpetual growth separately.

Required return can be written as dividend yield + expected capital-gain yield for the same holding period. A higher credible dividend forecast raises value; a higher required return lowers it; perpetual growth close to r makes the estimate highly sensitive.

7b · Markets & Growth

CH 5 · SHORT ANSWER

MARKET	CASH / CLAIM
Primary	New security; funds go to company
Secondary	Existing claim trades between investors; price discovery + liquidity

Retention supports growth only when reinvestment earns an adequate return. A market-price comparison remains conditional on operating cash generation, payout, growth horizon and risk assumptions.

FINAL CUE → *Write D_0, D_1 and the terminal-value date before substituting any dividend model.*

7c · Return & Value Checks

CH 5 DRILLS

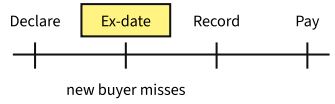
Holding-return check: buy at $28.40, receive $0.90 and sell at $31.10:

```
HPR = (0.90 + 31.10 - 28.40)/28.40 = 12.6761%
dividend yield = 0.90/28.40 ·
capital-gain yield = 2.70/28.40
```

MODEL	WHAT MUST REMAIN VISIBLE
No growth	Constant dividend forever; P=D/r
Constant growth	Next dividend D_1; credible g; r>g

8 · Dividend Policy

CH 6 · THREE LENSES



price ≈ −dividend, other things equal

Dividend sequence: the ex-date sets entitlement.

LENS	QUESTION TO ANSWER
Investment	Is payout genuine surplus or does it sacrifice a positive-NPV project?
Information	Regular, sustainable signal or temporary special distribution?
Tax	What tax rate and franking proportion are stated?

Under the idealised irrelevance baseline, payout alone does not create value when investment policy is fixed, markets are frictionless and investors can create homemade dividends. Real-world taxes, transaction costs, information and agency conflicts can matter.

Smoothing: managers respond to persistent expected profit and resist cutting a regular payout once investors treat it as sustainable. A dividend increase may signal confidence; moving cash itself is not automatic wealth creation.

IMPUTATION CORE

```
Franking credit = cash dividend × tax rate/(1-tax rate)
Grossed-up dividend = cash dividend + franking credit
```

Keep cash, the attached amount and grossed-up income in separate rows. Reverse-check a fully franked result by applying the stated company tax rate to grossed-up income.

9 · Risk & Diversification

CH 7 · CALCULATION + EXPLAIN



ρ near +1 | ρ near 0 | ρ near −1

Diversification: lower ρ gives more risk reduction.

RETURN + RISK CORE

$E(R) = \Sigma p_i R_i \cdot \sigma^2 = \Sigma p_i[R_i - E(R)]^2 \cdot \sigma = \sqrt{\sigma^2}$

$E(Rp) = wA\ E(RA) + wB\ E(RB)$

$\sigma p^2 = wA^2\sigma A^2 + wB^2\sigma B^2 + 2wAwB\rho AB\sigma A\sigma B$

INPUT CHANGES	EXPECTED RETURN	RISK
ρ only falls	Unchanged	Falls
weight changes	Changes linearly	Changes non-linearly
company-specific shock diversified	—	Reducible
broad market shock	—	Systematic; remains

Semester 2 formal examination period, from 16 November 2026 (the Exams Office publishes the exact date).
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FINC2011 Corporate Finance I · Self-Test Drills

UNIVERSITY OF SYDNEY · FIVE WORKED PATHS · JUDGEMENT CARDS · TRAPS

Full guide + ask Sia about FINC2011

SIDE 2/2 WORKED DRILLS · ANSWER PATHS · IF X → DO Y · CLASSIC TRAPS · EXAM-MORNING PLAN

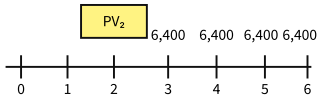
EXAM REVISION SHEET

Recomputed from source inputs · v2 · 2026-10-25

10 · Drill 1: Delayed Annuity

CH 2 WORKED EXAMPLE

Given: $6,400 at each Year 3–6 end; effective annual r = 7.5%. Find PV_0.



PV_2 at t=2 → discount twice

Delayed annuity: local value sits at Year 2.

STEP	WORKING
1 Pattern	Four ordinary-annuity payments; local value at t=2
2 Local PV	$PV_2 = 6{,}400[1-1.075^{-4}]/0.075 =$ **$21,435.69**
3 Move date	$PV_0 = 21{,}435.69/1.075^2 =$ **$18,549.00**
4 Check	Below undiscounted $25,600; sensible at positive r

CORRECTION CHECK → *These outputs are recomputed from the guide's stated inputs; keep full precision between the two stages.*

10b · If You See...

TVM JUDGEMENT

IF THE WORDING SAYS	DO THIS
"first payment in Year k"	Put ordinary-annuity value at k−1
"beginning of each period"	Annuity due: ordinary value ×(1+r)
"forever, growing g"	Use next C/(r−g); verify r>g
"equivalent repayments"	Choose one focal date for both streams

Trap: the annuity formula is not automatically a t=0 answer. State its local date before moving it.

10c · TVM Recall Matrix

CH 2 FAST TEST

PROMPT	WRITE FROM MEMORY	DIRECTION CHECK
One future amount	$PV=FV/(1+r)^t$	PV<FV for r>0
Equal finite stream	$C[1-(1+r)^{-n}]/r$	Local value before first C
Equal stream forever	C/r	C is the next payment
Growing forever	$C_1/(r-g)$	r must exceed g
Project	$-cost_0+\Sigma PV(CF)$	Positive NPV creates value

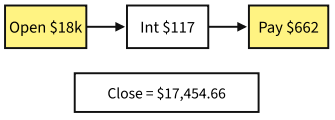
VERBAL SELF-TEST

What date does the formula answer? · What is one period? · Is the first amount at the beginning or end? · Is the stream finite? · Which cash flow is "next"?

11 · Drill 2: Monthly Loan

CH 3 WORKED EXAMPLE

Given: advance $18,000; 30 monthly payments; 7.8% APR compounded monthly. Find payment and Month-1 split.



Loan split: payment = interest + principal.

STEP	WORKING
1 Units	r = 0.078/12 = **0.0065**; n = 30
2 Payment	$18{,}000(0.0065)/[1-1.0065^{-30}] =$ **$662.34**
3 Interest	18,000 × 0.0065 = **$117.00**
4 Principal	662.34 − 117.00 = **$545.34**
5 Balance	18,000 − 545.34 = **$17,454.66**

CORRECTION CHECK → *The source inputs recompute to $662.34, not $662.47; the roll-forward independently verifies the corrected result.*

11b · Rate/Loan Traps

ANSWER AUDIT

TRAP	REPAIR
APR treated as annual growth	Convert to period rate or EAR
EAR simply divided by 12	Use $(1+EAR)^{1/12}-1$
Months paired with annual r	Make rate and payment period identical
Payment holiday forced into level annuity	Draw dated rows and value blocks
Fees hidden in rate	Put each fee at its actual date

For a product comparison, convert to a common effective horizon; then explain which quote is cheaper or more rewarding.

11c · Loan Balance Decoder

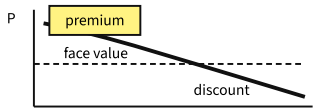
CH 3 SELF-TEST

BALANCE REQUESTED	METHOD	COUNT CAREFULLY
Immediately after payment k	PV of payments k+1…n	n−k payments remain
Immediately before payment k	After-payment balance + payment due	Distinguish accrued interest
After several payments	Original advance accumulated less accumulated payments	Same focal date
Payment holiday	Let balance grow over no-payment dates	No invented instalments
Balloon repayment	Separate final lump sum from level instalments	Discount both pieces

12 · Drill 3: Coupon Bond

COURSE WORKED EXAMPLE

Given: F=$1,000; 5% annual coupon paid semiannually; 3 years; yield 6% APR compounded semiannually.



yield ↑ → price ↓

Bond check: coupon below yield → discount.

STEP	WORKING
1 Predict	coupon 5% < yield 6% → **discount**
2 Units	C = 1,000×0.05/2 = $25; y=0.06/2=3%; N=3×2=6
3 Coupons	$25[1-1.03^{-6}]/0.03 =$ **$135.43**
4 Face	$1{,}000/1.03^6 =$ **$837.48**
5 Price	135.43+837.48 = **$972.91** < F ✓

Contract audit: coupon rate creates promised cash; face value fixes maturity repayment; market yield discounts; maturity fixes the period count. Never update the coupon merely because yield changed.

12b · Bond Judgement Cards

CH 4 FAQ

IF YOU SEE X	DO Y
yield rises	same fixed CFs → price falls
longer maturity	expect more price sensitivity
lower coupon	more value distant → more sensitivity
credit spread	match convention, then subtract benchmark yield
between coupons	sketch neighbouring dates; identify accrued interest treatment

Pull-to-par check: if yield and credit quality stay fixed, a premium or discount converges towards face value as maturity approaches.

FINAL CUE → *End with price classification, yield direction and the assumption held constant.*

12c · Bond Self-Test Grid

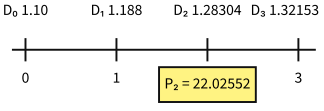
CH 4 FAST RECALL

ASK YOURSELF	REQUIRED RESPONSE
What generates C?	Face value × contractual coupon rate ÷ payments/year
What generates y?	Comparable market yield expressed per payment period
What generates N?	Years remaining × payments/year
What changes after a yield shock?	Discounting and price; promised C and F stay fixed
What does spread mean?	Extra required return for credit and related uncertainty

13 · Drill 4: Two-Stage Share

CH 5 WORKED EXAMPLE

Given: D_0=$1.10; growth 8% for two years, then 3% forever; required return 9%.



Two-stage DDM: P_2 captures D_3 onward.

STEP	WORKING
1 Forecast	D_1=1.10×1.08=**1.188**; D_2=1.188×1.08=**1.28304**
2 Continue	D_3=1.28304×1.03=**1.3215312**
3 Terminal	$P_2=D_3/(0.09-0.03)=$**$22.02552**
4 Discount	$P_0=D_1/1.09+(D_2+P_2)/1.09^2=$**$20.71**
5 State	Estimate depends on growth horizon and r=9%, g=3%

Timing test: D_0 is already paid. P_2 sits at Year 2 because it values the continuing stream beginning with D_3. Discounting P_2 from Year 3 would add an erroneous period.

13b · Equity Traps

MODEL AUDIT

TRAP	REPAIR
D_0 used as Gordon numerator	Grow once to D_1
Terminal value dated too late	Place one period before first captured D
g ≥ r	Constant-growth form is not valid
Realised return called expected return	Label information set and period
Secondary trade called new capital	Cash ordinarily passes between investors

FINAL CUE → *Recompute after one controlled change in r or g; state which assumption drives the estimate.*

13c · DDM Recall & Market Logic

CH 5 FAST TEST

PATH	CASH FLOWS VALUED	DATE OF VALUE
$P_0=D/r$	Constant D from Year 1 forever	One period before D_1
$P_0=D_1/(r-g)$	Growth begins with D_1	Today
$P_n=D_{n+1}/(r-g)$	Continuing stream from D_{n+1}	Year n
$P_0=(D_1+P_1)/(1+r)$	One dividend + resale price	Discount one full period

REQUIRED-RETURN IDENTITY

$r = D_1/P_0 + (P_1-P_0)/P_0$

dividend yield + expected capital-gain yield

14 · Drill 5: Two-Asset Portfolio

CH 7 WORKED EXAMPLE

Given: A: w=.45, E(R)=11%, σ=16%; B: w=.55, E(R)=7%, σ=9%; ρ=.30.

Return: ΣwR | Variance (3) | Vol. = √var

$0.45^2\cdot0.16^2 + 0.55^2\cdot0.09^2$

$+ 2\cdot0.45\cdot0.55\cdot0.30\cdot0.16\cdot0.09$

$\sigma_p = \sqrt{0.00977265} = 9.89\%$

Portfolio: linear return; risk adds a cross-term.

STEP	WORKING
1 Weights	0.45+0.55 = **1**
2 Return	.45(.11)+.55(.07)=**.088 = 8.8%**
3 Variance	$.45^2(.16^2)+.55^2(.09^2)+2(.45)(.55)(.30)(.16)(.09)=$**.00977265**
4 Volatility	$\sqrt{.00977265}=$**.09886 = 9.89%**
5 Explain	ρ<1 creates a diversification benefit

CORRECTION CHECK → *The guide inputs recompute to variance 0.00977265 and volatility 9.89%; correlation changes risk, not the 8.8% expected return.*

14b · Return/Risk Traps

PORTFOLIO AUDIT

TRAP	VISIBLE SYMPTOM
Percentages entered as whole numbers	Variance implausibly huge
Weights not summing to 1	Not the stated full portfolio
Missing factor 2	Cross-term understated
Square root taken too early	Terms in inconsistent units
ρ inserted into expected return	Return changes when only ρ changes

Boundary test: at ρ=+1, a long-only portfolio's volatility equals the weighted average of the asset volatilities. Use it to catch a broken cross-term.

14c · Averages & Risk Types

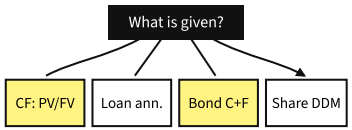
CH 7 FAST RECALL

Two-period check: returns +20%, −10% give arithmetic mean=(20%−10%)/2=**5%**; cumulative wealth=1.20×0.90−1=**8%**; geometric mean=$\sqrt{1.08}-1$=**3.923%**.

QUESTION	USE	INTERPRETATION
One future period	Arithmetic mean / expected return	Centre of possible outcomes
Compound growth over time	Geometric mean	Links beginning to ending wealth
Total stand-alone uncertainty	Standard deviation	All dispersion
Joint movement	Covariance / correlation	Source of diversification effect
Broad market exposure	Systematic risk	Not removed by broad holdings

15 · Method Chooser

ALL CAPTURED TOPICS



Method chooser: classify the object before the formula.

IF YOU SEE X	DO Y BEFORE ARITHMETIC
Dated future amounts	Choose valuation date; count intervals
APR / m	Convert to the cash-flow period
Fixed loan payment	PV annuity; state first payment
Bond	C, y, N, F; predict premium/par/discount
Dividend model	Mark D_0/D_1 and first continuing dividend
Payout proposal	Trace source of cash; preserve positive-NPV investment
Portfolio	Σw=1; separate E(R) from variance

16 · Exam-Morning Plan

BRIEF · STUDY STRATEGY

1 Draw dates → 2 Match units → 3 Write formula → 4 Keep precision → 5 Check explain

set-up → number → direction → meaning

Answer path: draw → calculate → check → explain.

1. Recite the method from the cash-flow shape, not from a memorised answer.
2. Write periodic inputs beside each other; carry at least four decimals.
3. Predict direction first: PV vs r, bond vs par, price vs yield, risk vs ρ.
4. Finish with dollars/date, classification, assumption and consequence.
5. Use remaining time to audit dates, rate units, signs, weights and terminal-value placement.

LAST RECALL LINE

`timeline → common date · APR → period · bond → C+y+N+F · share → D₁+terminal date · portfolio → weights+cross-term`

Coverage limit: the captured guide grounds these seven topic areas; it does not establish that they exhaust everything assessed. Check current LMS instructions and revise any additional taught material.

16b · Final Answer Templates

ALL METHODS

QUESTION TYPE	LAST SENTENCE
Valuation	"The cash flows are worth $X at [date], at r=[periodic rate]."

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