BISM1201 Transforming Business with Information Systems

UNIVERSITY OF QUEENSLAND · SEMESTER 2, 2026 · LEVEL 1

Full guide + ask Sia about BISM1201

SIDE 1/2 DEFINITIONS · METHODS · DECISION RULES · COMPARISONS

EXAM REVISION SHEET · final exam 40%

0 · Exam map

COURSE.JSON · BRIEF

Report 30% | Excel 30% | Final 40%

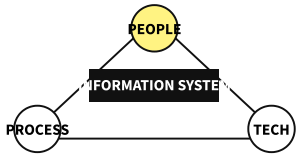
ASSESSMENT	WEIGHT	FORMAT
Information Systems Analysis Report	30%	Individual analysis report, due Week 6
Excel Workbook	30%	Workbook + tutorial participation/progress
Final Exam	40%	Identity verified; in person; end-of-semester period

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

The final rewards a retrievable chain: **define → apply to facts → show logic → control/consequence → evidence limit**. Do not substitute a technology label for analysis.

1 · Diagnose the whole system

C1 OVERVIEW · FAQ



A system aligns people, process, technology and data around a decision.

DATA	Recorded observations.
INFORMATION	Data organised with definition, timing and context for a purpose.
DECISION	A choice using evidence, criteria and accountable action.
BOUNDARY	People, activities, data and technologies included in the analysis.

DECISION-FIRST CHAIN

```
symptom → process cause →
information need → capability →
control → outcome measure
```

Information quality: accuracy, completeness, timeliness, consistency and relevant detail. Name the data owner: accountable for definition, quality, access and disputed values. Name an **exception control** for cases outside the normal path.

BOUNDARY AND QUALITY AUDIT

ELEMENT	QUESTION TO ANSWER
People	Who creates, corrects, approves and uses the record?
Process	What trigger, rules, hand-offs and exceptions transform the input?
Technology	What capability captures, stores, transfers or displays?

2 · Value → strategy → system

C2 OVERVIEW · FAQ

pressure → strategy → capability → process → measure

Every later claim must answer the evidence at the left.

VALUE TEST

```
capability → changed process →
measurable outcome
Test benefit,
implementation/operating cost, risk
and trade-offs; do not double-count
one effect.
```

PRESSURE	EVIDENCE SIGNAL	QUESTION
Rivalry	Strong competitors; rapid imitation	What defensible difference or cost position?
New entrants	Lower entry barriers	What scale, relationship or coordination raises resistance?
Substitutes	Need solved another way	Why choose this value proposition?
Buyer power	Easy comparison/switching; concentrated demand	How improve fit, trust or switching value?
Supplier power	Few alternatives; costly switching; asymmetry	How improve visibility or coordination?

RESPONSE	OPERATIONAL MEANING	FIT CHECK
Cost leadership	Lower sustainable cost structure	Not a one-off cut
Differentiation	Valued distinctiveness delivered consistently	Customer recognises value
Niche focus	Specific segment needs	Capability fits segment
Customer/supplier intimacy	Relationship knowledge + coordinated service	Trust/retention or partner coordination

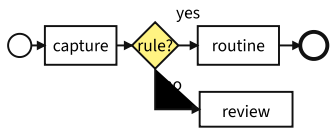
Coherence rule: evidence identifies the strongest pressure; strategy responds to it; capability changes the process; controls protect delivery; measures test the intended outcome. Include one plausible alternative and say what missing fact would reverse the choice.

VALUE-REALISATION LEDGER

WRITE	PURPOSE
Baseline	Current outcome before the change; prevents ungrounded improvement claims.

3 · Process before automation

C3–4 FAQ · WEX



Map trigger, tasks, gateway rule, owner, exception and outcome.

FIND	EVIDENCE	REPAIR
Waiting	Queue between roles	Information/capacity at constraint
Rework	Reopened or corrected cases	Fix rule or source quality
Duplicate capture	Same fact re-entered	Capture once; reuse controlled record
Ambiguous gateway	Same case routed differently	Explicit test + owner
Bottleneck	Work accumulates; throughput constrained	Improve constraint, not merely upstream speed

PROCESS ANSWER

```
trigger → issue → cause → redesign →
exception/control → end-to-end
measure + balancing quality/risk
measure
```

Redesign moves: remove work only if it adds neither customer value nor necessary control; simplify/standardise an ambiguous rule; automate a stable justified step; predict the next queue; add training, role clarity and feedback. Adoption is part of the system.

4 · Integrate the shared core

C4 OVERVIEW

shared definitions + ownership

controlled cross-functional process

ERP · CRM · SCM capabilities

Value comes from aligned data and process layers, not the application label.

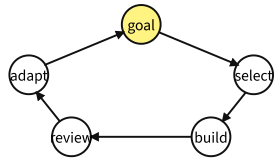
ERP	Internal resources/transactions: procurement, operations, inventory, finance.
CRM	Customer history/interactions: acquisition, sales, service, retention.
SCM	Demand, supply, inventory, partners and logistics across a value network.

Standardise where common definitions, control or coordination create value. **Preserve local variation** where regulation, customers or operating conditions differ; connect only the information other processes need.

5 · Choose the development method

C5 FAQ

CONDITION	PREDICTIVE EMPHASIS	ITERATIVE EMPHASIS
Requirements	Stable; baseline useful	Evolving/uncertain
Feedback	Formal stage validation	Frequent stakeholder evidence
Late change	Expensive; visible approval	Smaller increments lower learning cost
Risk/traceability	Formal approval/material controls	Expose uncertainty early
Best proof	Requirement traced to design, test, approval	Usable increment changes the backlog



Iteration is real only when a usable increment and review evidence change priority.

SCRUM ELEMENT	RULE
Product owner	Accountable for product value, goal and backlog ordering.
Developers	Own delivery of the increment.
Scrum Master	Supports effective framework use and improvement; does not choose product value.
Acceptance criteria	Item-specific conditions.
Definition of done	Shared quality standard across increments: review, tests, security, documentation, readiness.

Hybrid rule: baseline stable security, legal, identity, capacity or data requirements; iterate uncertain user workflow. Justify the combination by risk and learning, then include training, support, monitoring and operational ownership.

6 · Sustainable process evidence

C6 OVERVIEW

problem → build → evaluate → refine

Build–test–refine turns a plausible notation into evaluated evidence.

INDICATOR CONTRACT

```
resource + formula +
unit/denominator + process boundary
+ timing/period + source + owner +
target/action
```

7 · Excel: structure → logic → audit

C7 OVERVIEW · WEX

source one row → calc clear logic → report meaning

sample · totals · blanks · dupes

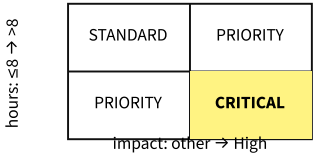
Keep source values separate; make every transformation inspectable.

QUESTION	FUNCTION/RULE	TRAP
Scale	SUM; COUNT/COUNTA	COUNT excludes text; define blanks
Centre	AVERAGE vs MEDIAN	Mean is pulled by extremes
Position	MIN, MAX, LARGE, SMALL, RANK	State which position answers the question
Choice	IF(test,true,false)	Order thresholds; final catch-all
All / any	AND / OR	Do not reverse policy words
Expected error	IFERROR	Do not hide every error as zero

REFERENCE RULE

```
A1 moves row and column · $A$1 locks
both · $A1 locks column · A$1 locks
row
Predict the copied formula at all
corners before trusting output.
```

TICKET-PRIORITY RULE



Write the four cases before the nested formula.

8 · Lookup and report chooser

C8 OVERVIEW · FAQ

display / decision

return value

match rule

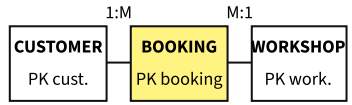
clean unique key

Reliable retrieval is built from the key upward.

LOOKUP CHECK *Exact match: validate key type, spaces and uniqueness; show an explicit missing result. Approximate match: sort thresholds, draw each interval and test below, at and above every boundary. Clear the spill range; keep one maintained formula.*

9 · ERD rules you can test

C9 OVERVIEW · FAQ



M:N → two 1:M links

Booking stores the association and its facts: status or attendance.

ENTITY	Distinct concept with multiple identifiable instances and facts to store.
PK	Uniquely identifies each record; cannot be missing.
FK	References a related PK; makes the relationship operational.
CARDINALITY	How many related instances are allowed.
MODALITY	Whether participation is optional or mandatory.

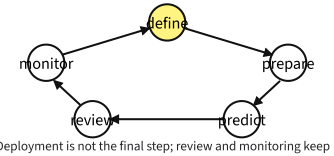
Normalise repeated facts into stable homes, preserving links through keys. Test for: *update anomaly* (same fact changed in many places), *insertion anomaly* (cannot store one fact without another), *deletion anomaly* (removing a row destroys a needed fact).

Relationship event questions: can the parent exist first; can the child move; may several links exist now or over time; and would deletion remove evidence that must be retained? These tests reveal modality, cardinality and history needs.

EXAM CUE *State each relationship in both directions before drawing marks. Populate sample records; attempt invalid FK, duplicate link and deletion of needed history.*

10 · BI + responsible AI

C10 OVERVIEW



Deployment is not the final step; review and monitoring keep accountability live.

METRIC CONTRACT

```
definition + formula + unit + period +
source + refresh + owner +
comparison/threshold + intended action
```

Process mining reconstructs actual paths from event logs. Verify case identifier, activity meaning and timestamp completeness before claiming delay, variants or rework. Difference from the designed process is evidence to investigate, not automatic failure.

RESPONSIBLE USE	OPERATING CONTROL
Decision + boundary	State supported choice; document data limits

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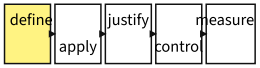
SIDE 2/2 WORKED MINI-EXAMPLES · JUDGEMENT CARDS · CLASSIC TRAPS

EXAM REVISION SHEET · self-test side

A · Method chooser

ALL CHAPTER FAQS

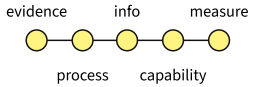
IF THE PROMPT SHOWS...	DO THIS
Symptom + proposed software	Delay the product; diagnose decision, process cause and information need.
Competitive pressure	Name strongest force from evidence; choose strategy; trace enabling capability.
Queues/rework/hand-offs	Map trigger to outcome; locate constraint; keep an exception path.
Shared data across functions	Choose authoritative records, consequences, migration and interface controls.
Stable vs uncertain needs	Compare predictive/iterative fit; justify any hybrid by risk and learning.
Excel policy	Truth/decision table → formula → boundary cases → interpretation.
Identifiers vs bands	Exact match for keys; approximate only for sorted intervals.
Repeated facts / M:N	Normalise; add linking entity; state both relationship directions.
Dashboard/model score	Define metric/decision; test errors; human review, monitoring, challenge route.



Use one sentence per link; later links must repair the earlier diagnosis.

Worked 1 · Conflicting availability

COURSE WEX · 6 CHECKS

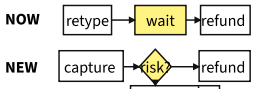


A defensible recommendation keeps all five links consistent.

Worked 2 · Redesign returns

C3 WEX · 5 CHECKS

Prompt. An invented retailer retypes return details and waits for finance approval in a spreadsheet.



Automate routine cases; route only defined exceptions to an accountable reviewer.

1. Map store/postal triggers through validation, approval, refund and closure.
2. Locate duplicate capture and the finance hand-off queue.
3. Capture order/reason once; route only material exceptions for approval.
4. Assign owners for damaged, missing and high-value exceptions.
5. Pilot; measure refund cycle time, error, rework and exception volume.

ANSWER

```
Remove repeated entry; automate the routine path; preserve review for defined exceptions; judge success by end-to-end time plus quality.
```

Classic traps · one-line repairs

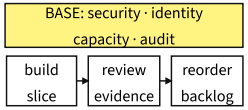
C1–10

TECHNOLOGY-FIRST	Write decision and information gap first.
FORCE = STRATEGY	Diagnose pressure, then choose response.
ONE DATABASE = ONE TRUTH	Add definitions, owner, access, reconciliation.
SPRINT = AGILE	Require usable increment + evidence-driven reprioritisation.
METRIC WITHOUT CONTRACT	Add unit, boundary, period, source, owner and action.
M:N LEFT UNRESOLVED	Add linking entity and FKs.
MODEL MAKES DECISION	Separate output, accountable review and contestability.
FASTER INTAKE	Check end-to-end time plus error, rework and exception volume.
NORMAL PATH ONLY	Draw rejected, incomplete and escalated cases; assign an owner and decision record.

Worked 3 · Volunteer booking

C5 WEX · 5 CHECKS

Prompt. An invented charity knows the core capacity rule but is uncertain about shift swaps. Choose and apply a development approach.



Stable controls can be fixed while uncertain workflow is iterated.

1. Fix stable security, identity, capacity and audit requirements.
2. Build a small authenticated view-and-book increment with acceptance criteria.
3. Review with coordinators; observe uncertainty around swap approval.
4. Move the risky approval flow ahead of optional reminders.
5. Test controls, train users and define support before expanding the pilot.

ANSWER

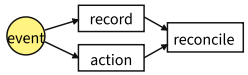
```
Hybrid iterative approach: protect stable controls; use working increments to learn uncertain workflow; let feedback change backlog priority; produce rollout evidence.
```

TRAP *A short calendar period is not evidence of iteration. Ask what became usable, what was learned and what decision changed.*

Enterprise integration cards

C4 FAQ · WEX

IF YOU SEE...	WRITE...
Shared stock/customer history	Common identifiers + authoritative record + downstream consequences.
Different store appointment rules	Preserve justified local scheduling; connect booking outcomes.
Legacy cutover	Profile, cleanse, map, test, reconcile; define fallback authority.



Walk one event, correction and duplicate through every dependent record.

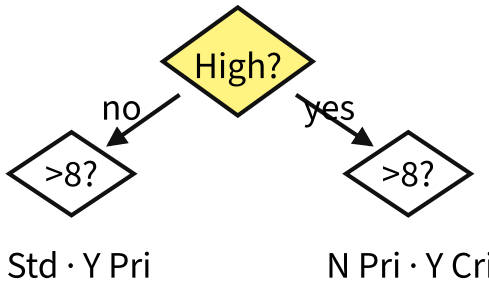
METHOD-FIT STRESS TEST

Worked 4 · Ticket priority

C7 WEX · 5 CHECKS

Rule. Critical when impact is High *and* hours open exceed 8; Priority when either condition holds; otherwise Standard.

IMPACT HIGH?	HOURS >8?	EXPECTED
No	No	Standard
Yes	No	Priority
No	Yes	Priority
Yes	Yes	Critical



AND defines Critical; OR captures the remaining Priority cases.

```
=IF(AND(B2="High",C2>8),"Critical",IF(OR(B2="High",C2>8),"Priority","Standard"))
```

1. Write all four cases.
2. Use AND for Critical.
3. Use OR for remaining Priority.
4. Test both/each/neither.
5. Test exactly 8: it is not “exceeds 8”.

Numeric check · centre

C7 BODY DRILL

Weekly resolution times: 3, 4, 4, 5, 24 hours.



The 24-hour case pulls the arithmetic mean upward.

```
SUM = 40 · AVERAGE = 40 ÷ 5 = 8 · MEDIAN = 4
```

Decision: report median 4 hours for a typical case; retain the 24-hour case for tail-risk/process diagnosis. Function choice follows the business question.

Formula-review traps

C7 STUDY

PLAUSIBLE OUTPUT	Still inspect copied references at first/last row and all corners.
“AT LEAST”	Use inclusive ≥; test below/at/above.
EVERY ERROR → 0	Zero may be valid; return a defined message only for expected errors.
CLEAN REPORT	Reconcile totals, blanks, duplicates, manual sample and formula consistency.

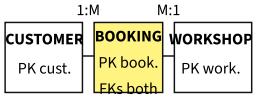
REVIEW EXCHANGE

```
reviewer receives the business rule + expected outputs, not a formula
explanation → locate inputs → predict two outputs → inspect copied references → reproduce one result manually
```

Worked 5 · Workshop bookings

C9 WEX · 6 CHECKS

Rule. Customers attend many workshops; workshops host many customers. Create an implementable design.



The linking entity makes the many-to-many rule operational.

1. Identify Customer and Workshop with their own PKs.
2. State M:N in both directions.
3. Create Booking between them.
4. Place customer_id and workshop_id as FKs in Booking.
5. Store status/attendance in Booking.
6. Add referential and duplicate-booking controls.

ANSWER

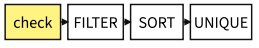
```
Booking resolves M:N, houses relationship facts and preserves valid links to Customer and Workshop.
```

SELF-CHECK *Can you create a valid parent, reject an invalid child reference, prevent an impermissible duplicate and retain needed history after deletion?*

Lookup + report judgement

C8 FAQ · WEX

IF YOU SEE...	DO THIS
Employee/product code	Exact match; validate type, spaces and uniqueness; explicit missing result.
Threshold band	Approximate match; sort thresholds; draw intervals; test boundaries.
Active cases + readiness <3	FILTER on both conditions.
Review-date priority	SORT filtered result by review date.

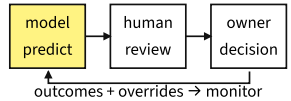


One maintained rule; clear spill range; source validation and human interpretation remain.

DATABASE EVENT AUDIT

AI / BI judgement cards

C10 FAQ · WEX



A score focuses attention; it does not transfer responsibility.

IF YOU SEE...	DO THIS
Delay prediction	Define use as prioritising review, not automatic denial/closure.
False positive	Name unnecessary review/action and who corrects it.
False negative	Name missed risk and resulting harm; compare materiality.
Human review	Supervisor checks evidence and records override.
After deployment	Monitor performance, drift, data quality and relevant group differences.
Affected person disputes	Provide correction/appeal route; preserve decision record.

Dashboard: work backwards from the manager’s action. Define target, comparison, unit, period, refresh and source; add a balancing measure. Choose status/trend/ranking/composition/relationship display only after defining the question.

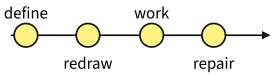
Process mining: incomplete case IDs, event meanings or timestamps can distort apparent flow. Compare discovered and designed paths, then investigate—not every variation is non-compliance.

Causal trap: correlation or prediction does not establish that changing the input will change the outcome.

PRINCIPLE	CONCRETE CONTROL
Privacy	Minimise collection; restrict access.
Fairness	Compare errors/performance across relevant groups.
Transparency	Explain the model’s role and limits.
Security	Control data and decision access.
Contestability	Log decisions/overrides; enable review and correction.

Exam-morning plan

COURSE STRATEGY



Retrieve definitions → redraw rules → solve covered answers → review errors by cause.

Check your exam instructions on the LMS for what you may bring; use this sheet to revise and self-test.

AskSia
EXAM REVISION SHEET

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UQ Semester 2 examination period, 7–21 November 2026 (check your personal exam timetable).