Summary Specification		
BIL. SEBUTHARGA/QUOTATION REF.:		UBD/Q/006/2026 (OAVC - ULG) - [G]
TARIKH DIIKLANKAN :	21 April 2026 [Selasa]	
TARIKH TUTUP :	28 April 2026 [Selasa]	JAM: 2 Petang
	DOCUMENT FEE :	B$ 10.00

Important Note:

The Official PDF quotation/tender form will be send via email once UBD Official receipt issued and send to vendors/supplier for confirmation of payment received.

Please take note that the document fee for each of the New and Extended quotations will be BND 10.00 each

Payment Information

Quotations/tenders are identified as follows:
[G] – Kerajaan (Government Account)

Please ensure payment is made to the correct account:
[G] → UNIVERSITI BRUNEI DARUSSALAM [KERAJAAN]

Payment details and account numbers are available under "Mode of Payment" on the UBD website

Note: Please ensure that you provide the correct details when making the payment.
Please email proof of the above payment to helpdesk.epay@ubd.edu.bn. , finance@ubd.edu.bn, eprocurement.support@ubd.edu.bn.

TITLE :		TO DELIVER SOFTWARE DEVELOPMENT SERVICES FOR GENBESTARI STUDENT INFORMATION SYSTEM – PHASE 2A COVERING STUDENT RECORDS, PROGRAMME MANAGEMENT, MODULE CATALOGUE, AND CO-CURRICULAR ACTIVITIES, UNIVERSITI BRUNEI DARUSSALAM
No.	**Quantity**	**SPECIFICATIONS**
1	1 lot	**Student Onboarding& Enrolment** Key Functionalities; *Please refer to the attached document for the full specification*
2	1 lot	**Programme &Curriculum Structure** Key Functionalities; *Please refer to the attached document for the full specification*
3	1 lot	**Module Management** Key Functionalities; *Please refer to the attached document for the full specification*
4	1 lot	**Co-CurricularActivities (CCA)Management** Key Functionalities; *Please refer to the attached document for the full specification*
5	1 lot	**Database Design &Modelling** Key Functionalities; *Please refer to the attached document for the full specification*

TITLE :		**TO DELIVER SOFTWARE DEVELOPMENT SERVICES FOR GENBESTARI STUDENT INFORMATION SYSTEM – PHASE 2A COVERING STUDENT RECORDS, PROGRAMME MANAGEMENT, MODULE CATALOGUE, AND CO-CURRICULAR ACTIVITIES, UNIVERSITI BRUNEI DARUSSALAM**
No.	**Quantity**	**SPECIFICATIONS**
6	1 lot	**UI/UX Design System** Key Functionalities; *Please refer to the attached document for the full specification*
7	1 lot	**Client UAT, FAT & GoLive** Key Functionalities; *Please refer to the attached document for the full specification*

UNIVERSITI BRUNEI DARUSSALAM

AI SEnse Unit

OPEN QUOTATION

Technical Specification — Phase 2A

To Deliver Software Development Services for GenBESTARI Student Information System – Phase 2A Covering Student Records, Programme Management, Module Catalogue, and Co-Curricular Activities

Includes Database Architecture, UI/UX Design System, and System Testing & Go-Live

Phase	Phase 2A
Date of Issue	
Quotation Closing Date	
Classification	CONFIDENTIAL — For Quotation Respondents Only

1. Introduction

Universiti Brunei Darussalam (UBD) invites quotations from suitably qualified vendors for the design, development, testing, and delivery of **specific software modules** for the GenBESTARI Student Information System (GSIS) — a web-based academic management platform aligned to the GenBESTARI undergraduate curriculum framework effective from Academic Year 2026/2027.

This document constitutes the complete technical specification for Open Quotation (Phase 2A). The scope defined herein is self-contained and independent. Vendors are expected to deliver all items listed in Section 2 as a complete, integrated, and production-ready modules.

Attribute	Details
System Name	GenBESTARI Student Information System (GSIS)
Institution	Universiti Brunei Darussalam (UBD)
Curriculum Framework	GenBESTARI — Undergraduate Degree Rules & Regulations, Senate-approved January 2026
Target Users	Students, Lecturers, Programme Leaders, Faculty Administrators, Registry, Student Affairs, Deans
Platform	Web-based; desktop and mobile responsive; hosted on university infrastructure

2. Scope of Work

The vendor shall design, develop, test, document, and deliver all items listed in the table below. This constitutes the complete scope of this quotation. Each item is a distinct deliverable subject to the acceptance criteria in Section 5.

No.	Module / Component	Key Functionalities	Qty
1	**Student Onboarding & Enrolment**	• API pull of admitted students from OASys system • Auto-create student profiles (ID, matrix no., credentials) • Enrolment confirmation workflow with e-signature • Major / programme selection with Major declaration by Week 8 Semester 1 • Deadline reminders & escalation notifications • Document upload & verification (IDs, prior transcripts) • Onboarding checklist tracker per student • Re-enrolment, deferral & withdrawal management • Student demographic & emergency contact management • Cohort & intake batch management • GenBESTARI: Schedule transfer from GenNEXT (max 28 MC, until end Semester 2) • Double Major / Double Degree application workflow • LOA request management (max 4 semesters cumulative)	1
2	**Programme & Curriculum Structure**	• Create & configure programmes per faculty / department • Define programme duration (years / semesters) • Set total MC requirements for graduation (GenBESTARI minimum: 120 MC) • Configure GenBESTARI module categories: • – University Compulsory (40 MC): Lestari Pathway (8 MC) + Gateway Modules (12 MC) + Discovery Year (20 MC) • – Programme Modules / Major (60 MC): Degree Core + Major Core + Major Option • – Elective Modules (20 MC): (1) Advanced Specialisation (within major, min 8 MC at Level 3000), (2) Structured Electives (outside major; may lead to Minor — 20 MC), (3) Open Electives • Level Distribution Rules: Max 36 MC at Level 1000; Min 24 MC at Level 3000 • Level CGPA Weightage: Level 1000 = 30%, Level 2000 = 30%, Level 3000 = 40% • Force-register compulsory modules by cohort / year level • Define minimum MC per category for graduation audit • Manage programme versions & effective cohort years • Configure specialisation / major tracks within a programme • Set CGPA graduation thresholds (Pass / Merit / Distinction) • Co-curricular points requirement (separate from CGPA) • Maximum module load per semester per programme • Programme-level progression rules (e.g. must pass Year 1 before Year 2) • Discovery Year (DY): 20 MC experiential learning, grades NOT counted in CGPA; failure replaced by 20 MC electives • Minor Degree: 20 MC distinct from major, recorded on transcript	1
3	**Module Management**	• Import modules via bulk upload (CSV/Excel) or manual entry	1

		• Module catalogue with search & filter • Configure module code, title, credit units (MCs), AQF level • Define assessment components (exam %, coursework %, project %) and weightings • Set prerequisite modules (must pass before registration) • Set antirequisite modules (cannot be taken together or after) • Co-requisite configuration (must be taken in same semester) • Upload & version-control module outline / syllabus • Map learning outcomes to programme outcomes • Assign module owner (lecturer / department) • Flag modules as examinable or non-examinable • Module archive & deprecation management	
4	**Co-Curricular Activities (CCA) Management**	• CCA catalogue: define activity categories & sub-types • Configure points per activity type and participation level • Set minimum total CCA points and category diversity rules for graduation • Student activity registration & enrolment • Attendance tracking per activity / event • Points auto-calculation upon verified attendance • Faculty / club advisor verification & approval workflow • CCA student portfolio: points history & progress vs threshold • External activity recognition (verified by Student Affairs) • CCA transcript / certificate generation • Points exemption request (elite athletes, medical grounds) • CCA deficit alert and suggested remediation • Annual CCA participation report per faculty • Credited Co-Curricular Module (UQA-4000): Auto-generate 4 MC credit upon reaching 1000 CCA points (5 stars); Level 4000, not graded, not in CGPA • PAMOR (compulsory) and CITRA (self-selected) category tracking • CCA transcript generation (separate from academic transcript)	1
5	**Database Design & Modelling**	• Define all core entities and their relationships (ER diagram) • Design database schema per module (tables, columns, data types) • Establish primary key, foreign key, and index strategy • Define naming conventions: tables (snake_case), columns, constraints • Design audit trail tables (created_by, updated_by, timestamps) • Soft-delete convention (is_deleted flag vs hard delete) • Multi-tenancy / faculty isolation strategy • Database migration and versioning strategy (e.g. Flyway, Liquibase) • Data archival and retention policy per entity • Seed data and reference data tables (grading scales, room types, etc.)	1
6	**UI/UX Design System**	• Define brand colour palette mapped to system roles and states • Typography: primary font, heading scale, body text, monospace • Iconography library selection and usage rules • Spacing, grid, and layout system (8px grid)	1

		• Component library design: buttons, inputs, dropdowns, modals, alerts, badges, tables, cards, calendars • State designs: empty, loading, error, success for all components • Responsive breakpoints (mobile, tablet, desktop) • Accessibility standards compliance: WCAG 2.1 AA minimum • Dark mode / light mode consideration • Design tokens (variables for colours, spacing, radii, shadows) • Prototype & usability testing of core flows before development	
7	**Client UAT, FAT & Go-Live**	• User Acceptance Testing (UAT) Support • Final Acceptance Testing (FAT) Support • User Documentations & Technical Documentations • Go Live and Sign off from Client	1

3. Technology Requirements

All development delivered under this quotation must strictly conform to the technology stack defined in this section. Vendors must confirm compliance with every item listed. Any proposed deviation must be explicitly declared in the submission and is subject to UBD approval before work commences. Non-declared deviations discovered during delivery or testing shall constitute a breach of contract.

3.1 Backend Framework

Component	Mandated Technology	Requirements
MVC Framework	Laravel (PHP) — minimum v11.x	Eloquent ORM, service/repository pattern, Artisan command structure. Strict PHP typing enabled.
PHP Version	PHP 8.2 or above	Strict mode; type declarations on all methods; no deprecated functions.
Dependency Management	Composer	composer.json and composer.lock must be submitted with all deliverables.
Background Jobs	Laravel Queues — Redis driver preferred	Asynchronous processing for notifications, PDF/certificate generation, CCA points recalculation, and bulk enrolment operations.
Task Scheduling	Laravel Scheduler (cron-backed)	Automated deadline enforcement: major declaration reminders, LOA expiry alerts, CCA deficit warnings, candidature limit notifications.

3.2 Database Layer

GenBESTARI employs a polyglot persistence strategy. The vendor must implement data access across all three database engines for the modules in this scope.

Engine	Version	Role	Usage in This Scope
MySQL	8.0+	Primary transactional store — all ACID-compliant academic data	Student profiles, programme configurations, module catalogue, CCA records, user accounts, roles, permissions, enrolment records. InnoDB engine; UUID primary keys; UTF8MB4 charset.
PostgreSQL	15+	Read-heavy reporting, analytics, materialised views	Programme completion statistics, CCA points summaries by category, student standing history, module pass/fail rates. PostgreSQL window functions and partial indexes used where appropriate.
MongoDB	6.0+	Semi-structured data, audit event streams, system configuration	Audit trail collections (all CRUD events with before/after values), notification delivery logs, system configuration documents, API rate-limit tracking. TTL indexes on transient collections.

Database access must use Laravel Eloquent (MySQL), the Laravel PostgreSQL driver (PostgreSQL), and jenssegers/mongodb or Laravel's native MongoDB driver (MongoDB). No hardcoded credentials — all connection strings via .env files.

3.3 Frontend & UI Layer

Component	Mandated Technology	Requirements
Template Engine	Laravel Blade	All server-rendered views must use Blade. Blade components and slots required for reusable elements. No mixing of template engines.
CSS	Custom CSS — CSS Custom Properties (BEM)	No third-party CSS frameworks (e.g. Bootstrap, Tailwind) unless explicitly approved in writing by UBD. All design tokens as CSS variables. BEM class naming throughout.
JavaScript	jQuery 3.7+ with Vanilla JS (ES6+)	jQuery mandatory for DOM manipulation, AJAX calls, and event handling. No SPA frameworks (React, Vue, Angular). Code must run natively in modern browsers without transpilation.
PDF / Document Output	Laravel DomPDF or Browsershot (Puppeteer-backed)	Required for CCA transcript, student letters, and any print-ready document outputs. Vendor must confirm library choice and provide a sample rendered output at demonstration.

3.4 API Layer

All modules must expose RESTful APIs for integration. The following standards are mandatory across all API endpoints.

Standard	Specification
Architecture	RESTful over HTTPS. Resource-based URL naming: plural nouns, lowercase-kebab-case. All endpoints versioned under /api/v1/.
Documentation	OpenAPI 3.0 (Swagger) mandatory. All endpoints documented with request/response schemas, error codes, and authentication requirements. Swagger UI hosted in staging environment.
Authentication	Laravel Sanctum — SPA token-based authentication. All endpoints protected. Token expiry and refresh strategy must be documented.
Response Format	Standard JSON envelope: { "status": "success|error", "data": {}, "meta": { "pagination": {} }, "errors": [] }. HTTP status codes semantically correct (200, 201, 400, 401, 403, 404, 422, 500).
Pagination	Cursor-based pagination preferred. Laravel built-in paginator with resource transformations. Pagination metadata in meta block.
Rate Limiting	Laravel throttle middleware. Default: 60 requests/minute per authenticated user. Configurable per route group.
API Gateway	All endpoints must be registerable in a central API gateway (Kong or equivalent). Vendor must supply declarative gateway configuration files as part of the delivery package.

3.5 Security & Code Quality

Standard	Requirement
Authorisation	Role-Based Access Control (RBAC) via Laravel Gates and Policies. All routes explicitly guarded. Permission matrix documented for all system roles.
Input Validation	All API inputs validated via Laravel Form Requests. Server-side validation mandatory regardless of client-side. SQL injection, XSS, and CSRF protection enforced through Laravel's built-in middleware stack.
Audit Logging	All create, update, and delete operations on academic records must be logged with: actor ID, timestamp, IP address, old values, new values. Stored in MongoDB audit collection; immutable once written.
Encryption	All data in transit via TLS 1.2 minimum (TLS 1.3 preferred). Sensitive fields encrypted at rest using AES-256.
Code Quality	PHPStan level 8 and Laravel Pint (PSR-12 code style) must pass with zero errors on all submitted code. CI pipeline must include lint and static analysis gates.
Test Coverage	Minimum 80% unit test coverage (PHPUnit or Pest). Feature tests required for all critical workflows. Test coverage report must be submitted with each milestone delivery.
Secrets Management	No credentials or API keys hardcoded anywhere in source code. All secrets via .env files. A documented .env.example must be submitted with deliverables.

4. Testing, Documentation & Go-Live

The vendor is responsible for supporting the full testing lifecycle, documentation, and go-live process for all delivered modules. The following requirements apply.

Activity	Requirement
User Acceptance Testing (UAT)	Vendor must attend UAT sessions, respond to defect reports, and deliver fixes within the agreed SLA. All Priority 1 (Critical) and Priority 2 (High) defects must be resolved before UAT sign-off.
Final Acceptance Testing (FAT)	A full regression test of all delivered modules. Vendor must resolve all outstanding Priority 1 and Priority 2 defects before FAT sign-off is granted.
User Documentation	End-user guides for each delivered module covering all key workflows in plain English — suitable for non-technical staff and students.
Technical Documentation	System architecture overview, API documentation, database schema guide, deployment guide, .env.example, and developer onboarding guide. A developer unfamiliar with the codebase must be able to set up a local environment within 30 minutes.
Go-Live	Vendor must provide production deployment assistance and be physically or remotely available on go-live day for immediate support.
Hypercare	Minimum 2-week hypercare period post go-live. Vendor must be available on-call with a response time of no more than 4 business hours for Priority 1 issues.
Client Sign-Off	Formal written sign-off from the client (UBD) is required before the final payment milestone is released.

5. Acceptance Criteria

No.	Deliverable	Acceptance Criterion
1	Student Onboarding & Enrolment	All functional requirements operational in staging. Major declaration deadline enforcement tested and confirmed. LOA and withdrawal workflows end-to-end tested.
2	Programme & Curriculum Structure	All GenBESTARI rules correctly enforced: 120 MC structure, level caps, three elective pathways, DY configuration, Minor degree pathway. CGPA weightage correctly applied in computation.
3	Module Management	Module catalogue functional. Prerequisite, antirequisite, and co-requisite rules enforced at registration. Assessment weightings configurable and summing to 100%.
4	CCA Management	PAMOR/CITRA tracking operational. UQA-4000 auto-generation confirmed on 1000-point milestone. CCA transcript generated correctly. Deficit alerts triggered.
5	Database Design & Modelling	All migrations run cleanly on a fresh MySQL 8.0+ and PostgreSQL 15+ instance. MongoDB validators applied. ER diagram covers all entities. Data dictionary complete.
6	UI/UX Design System	All components functional at all three responsive breakpoints. WCAG 2.1 AA: zero Level A or AA failures in audit. Design tokens in CSS match Figma definitions.
7	UAT, FAT & Go-Live	All Priority 1 and Priority 2 defects resolved before FAT. System live on production environment. User and technical documentation delivered. Client sign-off obtained.
All	Code Quality	PHPStan level 8 passes with zero errors. Laravel Pint passes. Unit test coverage ≥ 80%. OpenAPI spec delivered and Swagger UI live in staging. No undocumented endpoints.

6. Quotation Pricing

Vendors must provide a fixed-price quotation against each item below. Partial quotations (covering only some items) will not be considered. All prices in Brunei Dollars (B$), inclusive of all applicable taxes and levies.

No.	Qty	Description	Unit (B$)	Total (B$)
1	1	Student Onboarding & Enrolment		
2	1	Programme & Curriculum Structure		
3	1	Module Management		
4	1	Co-Curricular Activities (CCA) Management		
5	1	Database Design & Modelling		
6	1	UI/UX Design System		
7	1	Client UAT (User Acceptance Testing), FAT (Final Acceptance Testing) and Go-Live 1. User Acceptance Testing Support 2. Final Acceptance Testing Support 3. User Documentations & Technical Documentations 4. Go Live and Sign off from Client		
		TOTAL QUOTED AMOUNT (B$)		