

Ad Dawah Ilallah Digital Campus (E-Maktab) - Database Schema

This document contains the database table list and core column definitions for the Ad Dawah Ilallah Digital Campus (E-Maktab).

Global convention: Unless explicitly stated otherwise, each table also includes the following audit columns:

- id BIGINT PRIMARY KEY (auto-increment)
- created_at TIMESTAMP
- updated_at TIMESTAMP
- created_by BIGINT NULL FK users.id
- updated_by BIGINT NULL FK users.id

users

Stores all system users (students, educators, coordinators, admins, directors).

```
institution_id BIGINT NULL FK institutions.id
full_name VARCHAR(150) NOT NULL
gender VARCHAR(10) NULL
date_of_birth DATE NULL
phone VARCHAR(25) NOT NULL UNIQUE
email VARCHAR(150) NULL UNIQUE
username VARCHAR(100) NULL UNIQUE
password_hash VARCHAR(255) NOT NULL
is_active BOOLEAN NOT NULL DEFAULT TRUE
profile_photo_url VARCHAR(255) NULL
address TEXT NULL
emergency_contact_name VARCHAR(150) NULL
emergency_contact_phone VARCHAR(25) NULL
notes TEXT NULL
```

roles

System roles for RBAC.

```
name VARCHAR(50) UNIQUE NOT NULL  
description TEXT NULL  
is_system BOOLEAN DEFAULT TRUE
```

permissions

Fine grained permissions grouped by module.

```
code VARCHAR(100) UNIQUE NOT NULL  
module VARCHAR(50) NOT NULL  
description TEXT NULL
```

role_permissions

Bridge: which role has which permission. Unique (role_id, permission_id).

```
role_id BIGINT NOT NULL FK roles.id  
permission_id BIGINT NOT NULL FK permissions.id
```

user_roles

Multi-role mapping per user. Unique (user_id, role_id).

```
user_id BIGINT NOT NULL FK users.id  
role_id BIGINT NOT NULL FK roles.id  
is_primary BOOLEAN DEFAULT FALSE  
valid_from DATE NULL  
valid_to DATE NULL
```

user_sessions

Optional: tracks active login sessions.

```
user_id BIGINT NOT NULL FK users.id  
session_token VARCHAR(255) UNIQUE NOT NULL  
expires_at TIMESTAMP NOT NULL
```

```
ip_address VARCHAR(45) NULL  
user_agent VARCHAR(255) NULL
```

institutions

Main institute, branches, affiliates.

```
name VARCHAR(150) NOT NULL  
code VARCHAR(50) UNIQUE NOT NULL  
type VARCHAR(50) NULL  
address TEXT NULL  
phone VARCHAR(25) NULL  
email VARCHAR(150) NULL  
website_url VARCHAR(255) NULL  
parent_institution_id BIGINT NULL FK institutions.id
```

departments

Optional departments inside an institution. Unique (institution_id, code).

```
institution_id BIGINT NOT NULL FK institutions.id  
name VARCHAR(100) NOT NULL  
code VARCHAR(50) NOT NULL
```

academic_terms

Terms or semesters for courses.

```
institution_id BIGINT NOT NULL FK institutions.id  
name VARCHAR(100) NOT NULL  
start_date DATE NOT NULL  
end_date DATE NOT NULL  
is_current BOOLEAN DEFAULT FALSE
```

courses

Logical courses (not specific batches).

```
institution_id BIGINT NOT NULL FK institutions.id  
code VARCHAR(50) NOT NULL
```

```
title VARCHAR(150) NOT NULL
description TEXT NULL
level VARCHAR(50) NULL
category VARCHAR(100) NULL
credit_hours DECIMAL(4,1) NULL
default_duration_weeks INT NULL
is_active BOOLEAN DEFAULT TRUE
```

course_offerings

Actual running course instances per term (sections/batches).

```
course_id BIGINT NOT NULL FK courses.id
term_id BIGINT NOT NULL FK academic_terms.id
section_code VARCHAR(50) NULL
mode VARCHAR(20) NOT NULL -- online, offline, hybrid
max_students INT NULL
start_date DATE NULL
end_date DATE NULL
zoom_link VARCHAR(255) NULL
youtube_link VARCHAR(255) NULL
classroom_link VARCHAR(255) NULL
coordinator_id BIGINT NULL FK users.id
primary_educator_id BIGINT NULL FK users.id
status VARCHAR(20) DEFAULT 'running'
```

course_instructors

Multi-instructor mapping per course offering. Unique (course_offering_id, user_id).

```
course_offering_id BIGINT NOT NULL FK course_offerings.id
user_id BIGINT NOT NULL FK users.id
role VARCHAR(50) NULL -- primary, assistant, guest
```

course_enrollments

Student registration in specific course offerings. Unique (course_offering_id, student_id).

```
course_offering_id BIGINT NOT NULL FK course_offerings.id  
student_id BIGINT NOT NULL FK users.id  
enrollment_date DATE NOT NULL  
status VARCHAR(20) NOT NULL -- pending, active, completed, dropped, failed  
enrollment_source VARCHAR(50) NULL -- self, admin, cc  
remarks TEXT NULL
```

class_routines

Weekly timetable for each course offering.

```
course_offering_id BIGINT NOT NULL FK course_offerings.id  
weekday SMALLINT NOT NULL -- 0=Sunday ... 6=Saturday  
start_time TIME NOT NULL  
end_time TIME NOT NULL  
class_type VARCHAR(50) NULL -- lecture, tutorial, qa  
location VARCHAR(150) NULL  
zoom_link VARCHAR(255) NULL  
youtube_link VARCHAR(255) NULL
```

class_sessions

Actual scheduled/held sessions used for attendance and recordings.

```
course_offering_id BIGINT NOT NULL FK course_offerings.id  
session_date DATE NOT NULL  
start_time TIME NULL  
end_time TIME NULL  
topic VARCHAR(255) NULL  
class_type VARCHAR(50) NULL  
recording_url VARCHAR(255) NULL  
notes TEXT NULL
```

attendance

Per student attendance per class session. Unique (class_session_id, student_id).

```
class_session_id BIGINT NOT NULL FK class_sessions.id  
student_id BIGINT NOT NULL FK users.id
```

```
status VARCHAR(20) NOT NULL -- present, absent, late, excused
check_in_time TIMESTAMP NULL
remarks TEXT NULL
```

assignments

Assignments, homework, CTs etc for a course offering.

```
course_offering_id BIGINT NOT NULL FK course_offerings.id
title VARCHAR(200) NOT NULL
description TEXT NULL
type VARCHAR(50) NOT NULL -- homework, ct, quiz, project
max_marks DECIMAL(5,2) NOT NULL
due_at TIMESTAMP NOT NULL
allow_late_submission BOOLEAN DEFAULT FALSE
late_penalty_percent DECIMAL(5,2) NULL
instruction_file_id BIGINT NULL FK file_uploads.id
```

assignment_submissions

Student submissions per assignment. Attachments via file_uploads with entity_type='assignment_submissions'. Unique (assignment_id, student_id).

```
assignment_id BIGINT NOT NULL FK assignments.id
student_id BIGINT NOT NULL FK users.id
submitted_at TIMESTAMP NOT NULL
text_answer TEXT NULL
marks_obtained DECIMAL(5,2) NULL
feedback TEXT NULL
graded_by BIGINT NULL FK users.id
graded_at TIMESTAMP NULL
```

assessments

CTs, midterms, finals and other graded assessments per course offering.

```
course_offering_id BIGINT NOT NULL FK course_offerings.id
title VARCHAR(150) NOT NULL
description TEXT NULL
```

```
type VARCHAR(50) NOT NULL -- ct, oral, midterm, final  
assessment_date DATE NOT NULL  
max_marks DECIMAL(5,2) NOT NULL  
weight_percent DECIMAL(5,2) NULL
```

assessment_results

Marks per student per assessment. Unique (assessment_id, student_id).

```
assessment_id BIGINT NOT NULL FK assessments.id  
student_id BIGINT NOT NULL FK users.id  
marks_obtained DECIMAL(5,2) NOT NULL  
remarks TEXT NULL  
graded_by BIGINT NULL FK users.id
```

course_results

Final course result per enrollment. Unique (enrollment_id).

```
enrollment_id BIGINT NOT NULL FK course_enrollments.id  
total_marks DECIMAL(6,2) NOT NULL  
grade VARCHAR(10) NOT NULL  
grade_point DECIMAL(3,2) NULL  
result_status VARCHAR(20) NOT NULL -- pass, fail, incomplete  
published_at TIMESTAMP NULL  
remarks TEXT NULL
```

learning_materials

Lecture notes, slides, PDFs, audio, video per course offering.

```
course_offering_id BIGINT NOT NULL FK course_offerings.id  
title VARCHAR(200) NOT NULL  
description TEXT NULL  
type VARCHAR(50) NOT NULL -- pdf, audio, video, link  
file_id BIGINT NULL FK file_uploads.id  
external_url VARCHAR(255) NULL  
is_public BOOLEAN DEFAULT FALSE  
sequence_order INT NULL
```

file_uploads

Central file store. Each file is linked to a specific entity via entity_type + entity_id.

```
owner_id BIGINT NULL FK users.id  
original_filename VARCHAR(255) NOT NULL  
storage_path VARCHAR(255) NOT NULL  
mime_type VARCHAR(100) NULL  
size_bytes BIGINT NULL  
uploaded_at TIMESTAMP NOT NULL  
used_for VARCHAR(50) NULL -- optional hint: assignment, submission, material,  
certificate, etc  
entity_type VARCHAR(50) NOT NULL -- e.g. 'assignments',  
'assignment_submissions', 'learning_materials', 'certificates'  
entity_id BIGINT NOT NULL -- PK of the referenced entity  
checksum VARCHAR(64) NULL
```

library_books

Library catalog with optional digital/audio versions.

```
institution_id BIGINT NOT NULL FK institutions.id  
code VARCHAR(50) NOT NULL  
title VARCHAR(255) NOT NULL  
author VARCHAR(255) NULL  
isbn VARCHAR(20) NULL  
publisher VARCHAR(150) NULL  
year_published INT NULL  
category VARCHAR(100) NULL  
is_digital BOOLEAN DEFAULT FALSE  
digital_file_id BIGINT NULL FK file_uploads.id  
audio_file_id BIGINT NULL FK file_uploads.id  
total_copies INT DEFAULT 1  
available_copies INT DEFAULT 1
```

library_loans

Borrowed book records.

```
book_id BIGINT NOT NULL FK library_books.id  
borrower_id BIGINT NOT NULL FK users.id  
issue_date DATE NOT NULL  
due_date DATE NOT NULL  
return_date DATE NULL  
status VARCHAR(20) NOT NULL -- issued, returned, overdue, lost  
fine_amount DECIMAL(8,2) DEFAULT 0
```

finance_accounts

Chart of accounts for internal finance.

```
name VARCHAR(150) NOT NULL  
code VARCHAR(50) UNIQUE NOT NULL  
type VARCHAR(50) NOT NULL -- asset, liability, income, expense, equity  
description TEXT NULL  
parent_account_id BIGINT NULL FK finance_accounts.id
```

invoices

Bills for students or other payers.

```
invoice_no VARCHAR(50) UNIQUE NOT NULL  
user_id BIGINT NOT NULL FK users.id  
related_enrollment_id BIGINT NULL FK course_enrollments.id  
issue_date DATE NOT NULL  
due_date DATE NULL  
status VARCHAR(20) NOT NULL -- draft, issued, paid, partial, cancelled  
total_amount DECIMAL(12,2) NOT NULL  
balance_amount DECIMAL(12,2) NOT NULL  
currency VARCHAR(10) DEFAULT 'BDT'  
notes TEXT NULL
```

invoice_items

Line items per invoice.

```
invoice_id BIGINT NOT NULL FK invoices.id  
description VARCHAR(255) NOT NULL
```

```
quantity DECIMAL(10,2) DEFAULT 1
unit_price DECIMAL(12,2) NOT NULL
amount DECIMAL(12,2) NOT NULL
account_id BIGINT NULL FK finance_accounts.id
```

payments

Payments towards invoices or standalone (for example donation flows).

```
invoice_id BIGINT NULL FK invoices.id
payer_id BIGINT NULL FK users.id
amount DECIMAL(12,2) NOT NULL
payment_date DATE NOT NULL
payment_method VARCHAR(30) NOT NULL -- cash, bank, bkash, card
transaction_reference VARCHAR(100) NULL
status VARCHAR(20) NOT NULL -- pending, successful, failed, refunded
received_by BIGINT NULL FK users.id
```

donations

Donation records including anonymous/external donors.

```
donor_user_id BIGINT NULL FK users.id
donor_name VARCHAR(150) NULL
donor_phone VARCHAR(30) NULL
donor_email VARCHAR(150) NULL
amount DECIMAL(12,2) NOT NULL
donation_date DATE NOT NULL
purpose VARCHAR(100) NULL -- general, zakat, karje_hasanah etc
payment_method VARCHAR(30) NOT NULL
transaction_reference VARCHAR(100) NULL
receipt_no VARCHAR(50) UNIQUE NOT NULL
finance_account_id BIGINT NULL FK finance_accounts.id
notes TEXT NULL
```

karje_hasanah_loans

Interest-free loan master records.

```
borrower_id BIGINT NOT NULL FK users.id  
principal_amount DECIMAL(12,2) NOT NULL  
approved_date DATE NOT NULL  
disbursement_date DATE NULL  
description TEXT NULL  
status VARCHAR(20) NOT NULL -- pending, active, completed, defaulted, cancelled  
repayment_start_date DATE NULL  
installment_amount DECIMAL(12,2) NULL  
total_repaid DECIMAL(12,2) DEFAULT 0  
finance_account_id BIGINT NULL FK finance_accounts.id
```

karje_hasanah_repayments

Repayment entries pointing to loans and optionally to payment records.

```
loan_id BIGINT NOT NULL FK karje_hasanah_loans.id  
payment_id BIGINT NULL FK payments.id  
amount DECIMAL(12,2) NOT NULL  
payment_date DATE NOT NULL  
remarks TEXT NULL
```

finance_transactions

Optional general ledger style transactions per account.

```
account_id BIGINT NOT NULL FK finance_accounts.id  
transaction_date DATE NOT NULL  
description TEXT NULL  
debit_amount DECIMAL(12,2) DEFAULT 0  
credit_amount DECIMAL(12,2) DEFAULT 0  
reference_type VARCHAR(50) NULL -- invoice, payment, donation, karje_loan, etc  
reference_id BIGINT NULL
```

consultation_types

Types of consultation: ruqyah, personal, family, addiction, fataawah etc.

```
code VARCHAR(50) UNIQUE NOT NULL  
name VARCHAR(100) NOT NULL
```

```
description TEXT NULL  
default_duration_minutes INT NULL
```

appointments

Bookings for consultations (online/offline).

```
consultation_type_id BIGINT NOT NULL FK consultation_types.id  
requester_id BIGINT NULL FK users.id  
guest_name VARCHAR(150) NULL  
guest_phone VARCHAR(30) NULL  
guest_email VARCHAR(150) NULL  
counselor_id BIGINT NULL FK users.id  
institution_id BIGINT NULL FK institutions.id  
appointment_date DATE NOT NULL  
start_time TIME NOT NULL  
end_time TIME NULL  
mode VARCHAR(20) NOT NULL -- online, offline  
location_or_link VARCHAR(255) NULL  
status VARCHAR(20) NOT NULL -- pending, confirmed, completed, cancelled,  
no_show  
notes TEXT NULL  
outcome_summary TEXT NULL
```

notices

System notices and announcements (general, course-specific, personal).

```
title VARCHAR(200) NOT NULL  
body TEXT NOT NULL  
sender_id BIGINT NULL FK users.id  
notice_type VARCHAR(50) NOT NULL -- general, personal, course, system  
audience_scope VARCHAR(50) NOT NULL -- all_users, role, course, user, institution  
target_role_id BIGINT NULL FK roles.id  
target_course_offering_id BIGINT NULL FK course_offerings.id  
target_user_id BIGINT NULL FK users.id  
institution_id BIGINT NULL FK institutions.id  
is_important BOOLEAN DEFAULT FALSE
```

```
publish_at TIMESTAMP NOT NULL  
expire_at TIMESTAMP NULL
```

notice_recipients

Tracks which user has read which notice. Unique (notice_id, user_id).

```
notice_id BIGINT NOT NULL FK notices.id  
user_id BIGINT NOT NULL FK users.id  
is_read BOOLEAN DEFAULT FALSE  
read_at TIMESTAMP NULL
```

comments

Generic comment system for different entities (assignments, materials, notices, etc.).

```
author_id BIGINT NOT NULL FK users.id  
parent_comment_id BIGINT NULL FK comments.id  
entity_type VARCHAR(50) NOT NULL -- assignment, material, notice, course, etc  
entity_id BIGINT NOT NULL  
content TEXT NOT NULL
```

certificates

Issued course certificates (downloadable PDFs).

```
certificate_no VARCHAR(50) UNIQUE NOT NULL  
student_id BIGINT NOT NULL FK users.id  
course_offering_id BIGINT NOT NULL FK course_offerings.id  
enrollment_id BIGINT NOT NULL FK course_enrollments.id  
issue_date DATE NOT NULL  
grade VARCHAR(10) NULL  
remarks TEXT NULL  
template_id BIGINT NULL FK certificate_templates.id  
file_id BIGINT NULL FK file_uploads.id  
is_revoked BOOLEAN DEFAULT FALSE  
revoked_at TIMESTAMP NULL  
revoked_reason TEXT NULL
```

certificate_templates

Base templates for certificate generation.

```
name VARCHAR(100) NOT NULL
description TEXT NULL
file_id BIGINT NOT NULL FK file_uploads.id
is_active BOOLEAN DEFAULT TRUE
```

programs

Optional higher-level programs grouping multiple courses.

```
institution_id BIGINT NOT NULL FK institutions.id
code VARCHAR(50) NOT NULL
name VARCHAR(150) NOT NULL
description TEXT NULL
duration_months INT NULL
is_active BOOLEAN DEFAULT TRUE
```

program_courses

Courses that belong to a program. Unique (program_id, course_id).

```
program_id BIGINT NOT NULL FK programs.id
course_id BIGINT NOT NULL FK courses.id
is_mandatory BOOLEAN DEFAULT TRUE
sequence_order INT NULL
```

program_enrollments

Student enrollment at the program level. Unique (program_id, student_id).

```
program_id BIGINT NOT NULL FK programs.id
student_id BIGINT NOT NULL FK users.id
enrollment_date DATE NOT NULL
status VARCHAR(20) NOT NULL -- active, completed, dropped
```