

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, bkaash, 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, fatawah 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