

Every programme, every cohort. **One public record.**

The curriculum leaves the filing cabinet: 643 approved programmes from K58–2016 to K68–2026, 4,881 subjects and 2,079 bilingual syllabi — readable without a login, versioned on every edit, and embeddable in any faculty site.

Read it live  
courses.neu.edu.vn



BROWSE

School → faculty → major → cohort, in Vietnamese or English, with no account.



COMPARE

Two cohorts of one programme side by side — what was added, dropped, re-credited.



GOVERN

Six roles, 74 permissions, and a version snapshot behind every field that changes.

643

Curricula published  
11 cohorts · K58–2016 → K68–2026

4,881

Subjects in the catalogue  
27,224 curriculum–subject rows

2,079

Syllabi (đề cương)  
98.7% carry an English edition

20,620

Course learning outcomes  
with 29,168 teaching-plan rows

26

Faculties and institutes  
47 majors across 3 schools

7,605

Version snapshots  
Every record baselined, 17 Aug 2026

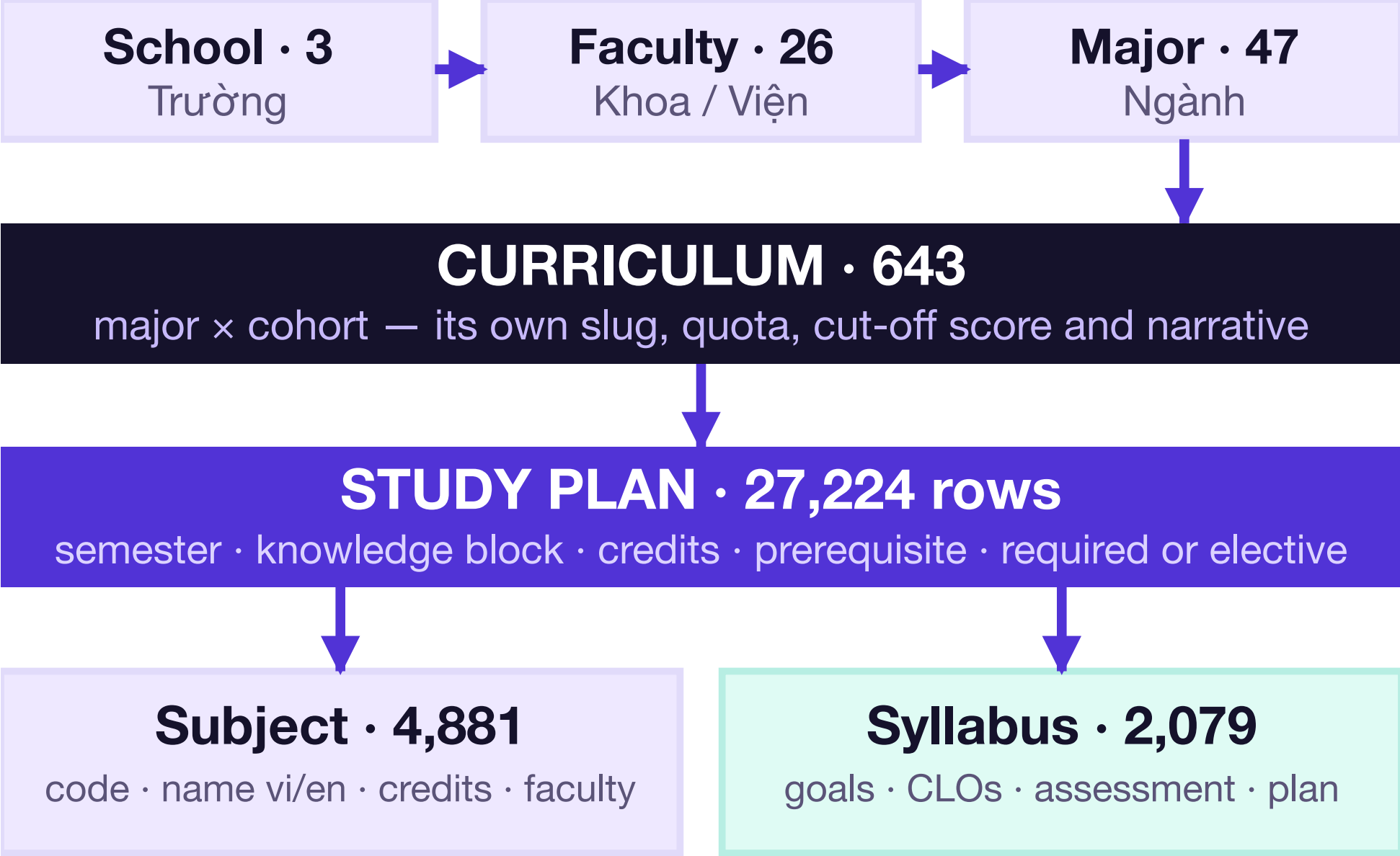
INTRODUCTION

## Approved once. Filed away forever.

A curriculum is signed as a decision, printed, scanned and archived. Students meet it as a PDF someone posted; a lecturer writing a syllabus cannot see which cohort it belongs to; and nobody can say what K68 changed from K67 without opening two documents side by side.

METHOD · THE MODEL

## One record per programme, per cohort



Nothing is a document attachment. A programme is a row that owns its study plan, and every plan row points at a subject that owns its own syllabus — so one edit reaches every page that quotes it.

METHOD · LINEAGE

## A cohort inherits until it decides not to

|                                                   |     |
|---------------------------------------------------|-----|
| INHERITED — carries last year's plan unchanged    | 368 |
| ORIGINAL — reworked and re-approved               | 273 |
| NEW / PARTNERSHIP — first intake, joint programme | 2   |

Every curriculum records where it came from, so a page can show K68 and K67 of the same major without duplicating 50 study-plan rows into a second file.

DEPLOYMENT

## Three containers, one campus server

|                                                                |                                                              |
|----------------------------------------------------------------|--------------------------------------------------------------|
| 139 MB<br>Postgres 17 — the whole catalogue, versions included | 1<br>NEU server, deployed by a self-hosted CI runner on push |
|----------------------------------------------------------------|--------------------------------------------------------------|

Next.js 16 for the public site and the admin console, Express + Prisma over PostgreSQL for the API, MinIO for scans. On-premises at the university — no student or curriculum record leaves campus.

METHOD · THE PAGE

## The programme page is the document

| Applied Mathematics — EP30 |                                         | vi · en                          |
|----------------------------|-----------------------------------------|----------------------------------|
| K68 – 2026                 | Compare                                 | Download scan · Share · Bookmark |
| Admission code             | EP30                                    |                                  |
| Major                      | Applied Mathematics (7460112)           |                                  |
| Faculty                    | Faculty of Basic Sciences               |                                  |
| Language of instruction    | English                                 |                                  |
| Intake quota               | 50                                      |                                  |
| Study plan                 | 47 subjects · 8 semesters · 145 credits |                                  |

One canonical page per programme: the version switcher moves between cohorts, **Compare** diffs two of them, and the signed scan stays one click away for anyone who needs the paper original.

METHOD · THE MATRIX

## Eleven cohorts on one screen

| Major                      | K63<br>2021  | K64<br>2022  | K65<br>2023  | K66<br>2024  | K67<br>2025  | K68<br>2026 |
|----------------------------|--------------|--------------|--------------|--------------|--------------|-------------|
| Computer science · 7480101 | 60<br>27.00  | 60<br>26.70  | 60<br>26.51  | 60<br>26.66  | 50<br>26.27  | 50          |
| Management info. systems   | 120<br>27.50 | 120<br>27.50 | 120<br>27.11 | 120<br>27.27 | 100<br>27.50 | 100         |
| Investment economics       | 180<br>27.70 | 180<br>27.50 | 180<br>27.50 | 180<br>27.50 | 100<br>27.50 | 100         |
| Applied mathematics        | —            | —            | —            | —            | —            | 50          |

Quota above, admission cut-off below, one row per major and one column per cohort — the view an applicant actually wants, and the view a faculty needs before it proposes next year's intake. Exportable to Excel.

METHOD · BILINGUAL BY ROW

## Vietnamese and English are the same record

| TIẾNG VIỆT                                                                        | ENGLISH                                                                           |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>MỤC TIÊU</b><br>Trang bị kiến thức nền tảng về thuật toán và cấu trúc dữ liệu. | <b>OBJECTIVE</b><br>Build a working foundation in algorithms and data structures. |
| <b>CLO 2</b><br>Phân tích được độ phức tạp của một thuật toán cho trước.          | <b>CLO 2</b><br>Analyse the complexity of a given algorithm.                      |
| <b>ĐÁNH GIÁ</b><br>Chuyên cần 10% · Bài tập 30% · Thi cuối kỳ 60%                 | <b>ASSESSMENT</b><br>Attendance 10% · Assignments 30% · Final exam 60%            |

Every syllabus field is stored twice on the same row, not as a duplicate document. **2,053 of 2,079** syllabi and **4,842 of 4,881** subject names already carry the English side, so an international applicant reads the same record a lecturer edits.

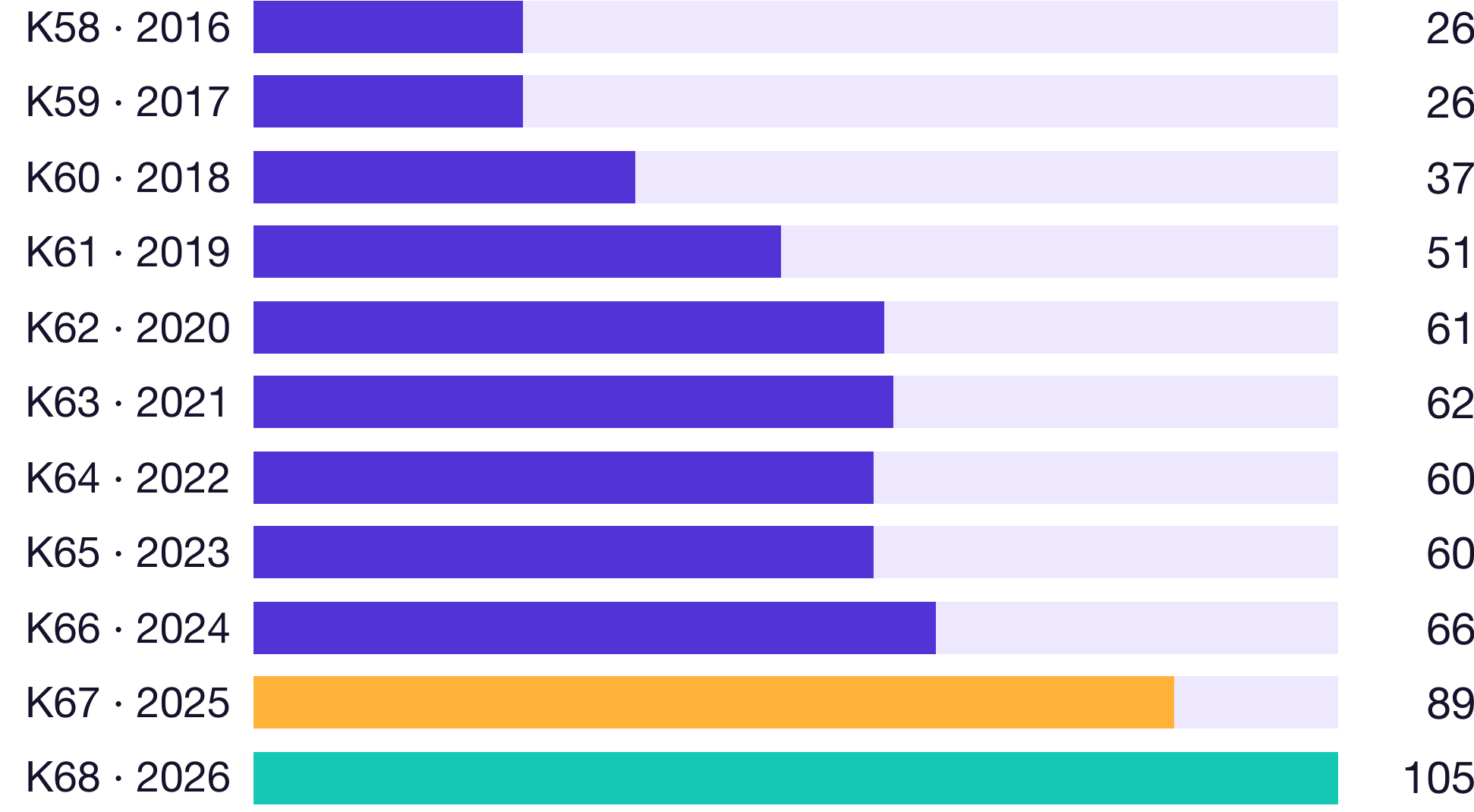
METHOD · REUSE

## Any faculty site can host the same record

Two embed routes — **/embed/major** and **/embed/syllabus** — serve the live programme and syllabus pages, chrome removed, to an allow-listed set of university domains. A faculty website stops maintaining its own copy of the curriculum and starts quoting the one that was approved.

RESULTS · COVERAGE

## The archive grew backwards, then forwards



Curricula per cohort. The last two years are not only newer records — the catalogue itself widened, from 26 programmes in the first digitised cohort to **105** for the 2026 intake.

RESULTS · GOVERNANCE

## Who may touch what, and who did

|                                              |     |
|----------------------------------------------|-----|
| Roles — from viewer to super-admin           | 6   |
| Permissions attached to those roles          | 74  |
| Scoped grants — one subject, one editor      | 118 |
| Staff accounts on the admin console          | 15  |
| Audited actions · 13 people, 28 May → 30 Aug | 707 |

A lecturer is granted the one syllabus they own, not the catalogue. Every write is logged with actor, path, status, duration and the state it replaced.

RESULTS · VERSIONING

## A hand edit is never silently overwritten

|                                                                           |                                                                                  |
|---------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| 7,605<br>Version snapshots — 4,881 subjects, 2,079 syllabi, 643 curricula | 22,994<br>Field-ownership rows: who last wrote this field, a human or a bulk job |
|---------------------------------------------------------------------------|----------------------------------------------------------------------------------|

Content is stored as hashed blobs (16,113 of them), so re-running an importer over 4,881 subjects writes a new version only where the text actually changed. A batch script that would overwrite a field a person edited by hand has to say **--force** to do it.

CONCLUSIONS

- The curriculum becomes public infrastructure: 643 approved programmes, addressable by URL, in two languages, with no login.
- Cohort lineage is data, not folder names — so comparing K67 and K68 is a page, not an afternoon.
- Governance is per-record: 74 permissions and 118 scoped grants let a faculty edit its own syllabi safely.
- Versioning makes bulk automation survivable — the machine may fill gaps, but it defers to the person who typed.