Class Diagram – StudyBuddy LMS (Final Version)

Course
- id: Long
- title: String
- description: String
- className: String

- addModule(m: Module)
- addAssignment(a: Assignment)

User
- id: Long
- fullName: String
- email: String
- passwordHash: String
- role: UserRole

- login(email, password)
- logout()

Module
- id: Long
- title: String
- position: int

- addItem(item: ModuleItem)

Assignment
- id: Long
- title: String
- description: String
- dueDate: Date

- isBeforeDue(date: Date): boolean

Student
- className: String

- viewCourses()
- viewModules(course: Course)
- submitAssignment(a: Assignment, contentUrl: String)
- viewGrades()

Teacher
- createModule(course: Course, title: String)
- createAssignment(course: Course, title: String, dueDate: Date)
- gradeSubmission(submission: Submission, value: double, comment: String)
- viewCourseStudents(course: Course)

Admin
- createCourse(title: String, description: String)
- assignTeacher(course: Course, teacher: Teacher)
- assignClass(course: Course, className: String)

DashboardEvent
- id: Long
- eventType: String
- createdAt: Date
- courseId: Long
- relatedObjectId: Long

- formatForDisplay()

ModuleItem
- id: Long
- itemType: ItemType
- content: String   ' text or URL
- position: int

- render()

Submission
- id: Long
- contentUrl: String
- submittedAt: Date
- status: SubmissionStatus

- markLate()
- markRejected()

Grade
- id: Long
- value: double
- comment: String

- updateValue(value: double, comment: String)

Relationships / multiplicities:
- Course 1 — * Module
- Course 1 — * Assignment
- Course 1 — 0..* Student
- Course 1 — 1 Teacher
- Module 1 — * ModuleItem
- Assignment 1 — * Submission
- Student 1 — * Submission
- Submission 0..1 — 1 Grade
- User — Student, Teacher, Admin (generalization)
- User 1 — * DashboardEvent