Note: No changes were made to Normalized Logical Schema Version 4

**Student**(ID, FName\*, MName, LName\*, SchoolIssuedID\*, Email, Major\*, Year\*)

**Course**(Number, Title\*)

**Season**(SeasonOrder, Name\*, Code\*)

**Term**(Year, Season, StartDate\*, EndDate\*)

Season references Season.Order

**Instructor**(ID, FName\*, MName, LName\*, Department\*,Email)

**Section\_Instructor**(ID, Section)

ID references Instructor.ID

Section references Section.ID

Note: This is inconsistent with the ERD and physical schemas provided to us, but we are trying to only modify that which is directly related to our current project scope.

**Section**(ID,CRN,Year,Season, Course\*, SectionNumber\*, Schedule\*, Location, StartDate\*, EndDate\*, MidtermDate\*, Instructor1\*, Instructor2, Instructor3)

Year references Term.Year

Season references Term.Season

Course references Course.Number

StartDate references Term.StartDate

EndDate references Term.EndDate

Instructor1 references Instructor.ID

Instructor2 references Instructor.ID

Instructor3 references Instructor.ID

**Grade**(Letter, GPA\*)

**Grade\_Tier**(Section,LetterGrade, LowPercentage\*, HighPercentage\*)

Section references Section.ID

Letter references Grade.Letter

**Attendance\_Status**(Status, Description\*)

Note: We added this to the logical and conceptual schemas after noticing it was present in the physical schema. It is outside the scope of our project.

**Attendance\_Record**(Student, Section, Date, Status\*)

Student references Student.ID

Section references Enrollee.Section

Status references Attendance\_Status.Status

**Assessment\_Kind**(Section,Name, Description, Weightage\*)

Section references Section.ID

**Assessment\_Item**(Section, Kind, AssessmentNumber, Description, BasePointsPossible\*, AssignedDate\*, DueDate\*, RevealDate, Curve)

Section references Section.ID

Kind references Assessment\_Kind.Name

**Enrollee**(Student, Section**,** MidtermGradeComputed, MidtermGradeAwarded, FinalGradeComputed, FinalGradeAwarded)

Student references Student.ID

Section references Section.ID

MidtermGradeComputed references Section\_Grade\_Tier.LetterGrade

MidtermGradeAwarded references Section\_Grade\_Tier.LetterGrade

FinalGradeComputed references Section\_Grade\_Tier.LetterGrade

FinalGradeAwarded references Section\_Grade\_Tier.LetterGrade

Note: We have commented out MidtermGradeComputed, MidtermGradeAwarded, FinalGradeComputed, FinalGradeAwarded in the physical schema for now because we are going to be using the midterm weighted aggregate and final weighted aggregate to compute the midterm and final grades, so storing the data would be trivial.

**Submission**(Student ,Section, Kind, AssessmentNumber, BasePointsEarned\*, ExtraCreditEarned, Penalty, [CurvedGradeLetter]\*, [CurvedGradePercent]\*, SubmissionDate\*, Notes)

Student references Enrollee.ID

Section references Enrollee.Section

Kind references Assessment\_Item.Kind

AssessmentNumber references Assessment\_Item.AssessmentNumber

*NOTE: We are only describing in detail the tables that we have modified from the current Gradebook documentations that are in the scope of our project. All other tables were modified, so that the Gradebook conceptual, logical, and physical schemas are consistent.*

Entities:

Grade: The Grade table represents the Grade entity. Each row has a unique Letter, which is the table’s primary key, and a GPA value. This table is consistent across each instance of Gradebook, and should only be changed by a SuperUser, as it is used to determine the GPA of each student.

Grade\_Tier: The Grade\_Tier table represents a relationship between the Grade table and the Section table. Its Primary Key consists of LetterGrade, which references the Letter attribute from the Grade table, and Section, which references the CRN attribute of the Section table. The other two attributes are LowPercentage and HighPercentage, which will bookend the range of scores that qualify for a specific letter grade. No percentage range (the range of values between LowPercentage and HighPercentage) should overlap.

Assessment\_Kind: The Assessment\_Kind table represents the Assessment\_Kind entity. The table’s primary key consists of Section, which references the CRN attribute of the Section table and Name (E.G. Exam, Homework, Project). As well, each assessment kind has an optional Description, which can be used to provide a brief overview, and a Weightage, which is used to calculate the student’s final grade for the course.

Assessment\_Item: The Assessment\_Item table represents the Assessment\_Item entity. The table’s primary key is made up of Section (which references the CRN attribute in Section), and Kind (which references the Name attribute of the Assessment\_Kind table) and AssessmentNumber. The table also has the following attributes: Description, which can optionally contain a brief description of the assessment item; BasePointsPossible, which details the maximum number of base points a student’s submission can earn; AssignedDate, which details the date at which the students received the assessment item; DueDate, which details the date at which the assessment item is due; RevealDate, which was intended to hide pop quizzes, details the date at which the students should be able to see the assessment item and defaults to AssignedDate; and Curve, which contains the potential curve value that the assessment item uses to compute the final curved grade, and defaults to 1.00 (no curve).

Submission: The Submission table represents the relationship between the Enrollee table and the Assessment Item table. The table’s primary key is a composite of Student, which references the ID attribute in Enrollee; Section, which references the CRN attribute of the Section table; Kind, which references the kind attribute of the Assessment\_Item table; and AssessmentNumber, which references the AssessmentNumber of the Assessment\_Item table. The table also has the following attributes: Description, which can optionally contain a brief description of the base assessment item; BasePointsEarned, which contains the base points that the submission earned and cannot be greater than the BasePointsPossible detailed in the base Assessment\_Item; ExtraCreditEarned, which contains any extra credit the student’s submission earned; Penalty, which contains any points to subtract due to lateness or some other penalty; CurvedGrade, which is a derived attribute that takes into account the base assessment item’s Curve attribute and computes a final percentage grade; SubmissionDate, which is the date that the item was submitted; and Notes, which is an optional attribute which allows instructors to make specific comments regarding a student’s submission.