# ProTeach System
# Business Rules Specification

## 1. Operation Constraint Rules
1.1. Student must perform a test at most 1 time.
1.2. Career must have at least 1 course.
1.3. Test must be performed by 1 student.
1.4. Course must be teached by 1 teacher.
1.5. Each test must belong to only 1 course.
1.6. Each test must have at least 1 question.
1.7. Each test must have only 1 grade.
1.8. Each course must have at least 1 test.
1.9. Student can do a test only if he/she is enrolled in the test's course.
1.10. Teacher must define start time and end time (deadline) of a test.
1.11. Student can start a test only if deadline has not expired.
1.12. A test must be evaluated only after it is marked as "completed".

## 2. Inference Rules
2.1. A course must be considered passed if all of its test are passed with a sufficient grade.
2.2. A test must be considered passed if it is evaluated with a sufficient grade.
2.3. A grade must be considered sufficient if it is greater than 2.
2.4. A test must be considered complete when the student sends it to the system.

## 3. Computation rules
3.1. The final grade for a course must be computed as follow: (sum of grade for each test belonging to the course) / number of grade.
3.2. The test duration must be calculated as the difference between the time in which the test is marked as "completed" and the time in which the test is marked as "started".

## 4. Stimulus/Response Rules
4.1. When a student access the test, test is marked as "started".
4.2. When a student submits his/her answers for the test or when deadline expires, test is marked as "completed".
4.3. When a teacher submit the result of a test the system updates the statistic about test and course.

## 5. Structural assertion
5.1. Terms
    5.1.1. User.
    5.1.2. Administration personnel.

      5.1.3. Teacher.
      5.1.4. Course.
      5.1.5. Student.
      5.1.6. Test.
      5.1.7. Career.
      5.1.8. Grade.
      5.1.9. Question.
      5.1.10.   Open question.
      5.1.11.   Single/multiple choice question.
      5.1.12.   Answer.
  5.2.  Facts
      5.2.1. Administration personnel manage teachers. (Teachers are managed by Administration personnel.)
      5.2.2. Administration personnel create courses. (Courses are created by Administration personnel.)
      5.2.3. Teacher teach a course. (A course is teached by a teacher.)
      5.2.4. Teacher create a test. (A test is created by a teacher.)
      5.2.5. Teacher evaluate a test. (A test is evaluated by a teacher.)
      5.2.6. A course have test. (A test belong to a course.)
      5.2.7. Student attends a course. (Course is attended by a student.)
      5.2.8. Student perform a test. (A test is performed by student.)
      5.2.9. Test have a grade. (A grade belong to a test.)
      5.2.10.   Student manage his/her career. (A career is managed by a student.)
      5.2.11.   Career consist of course.
      5.2.12.   Final grade is an attribute of course.
      5.2.13.   Test consist of question.
      5.2.14.   A question must be an open question or a single/multiple choice question.
      5.2.15.   A single/multiple choice question consist of at least two answer.
      5.2.16.   "Correct" is an attribute of answer.