

Assessment of General Chemistry I (KIM101 and KIM101E) Courses 2020/2021 Summer Semester-**PANDEMIC PERIOD**

General Chemistry I (KIM 101 and KIM 101E) course is designed to emphasize problem solving skills and critical thinking to engineering students as they learn the principals of chemistry and helps them to focus into the world of science and engineering.

General Chemistry I courses are given in two languages; Turkish and English:

KIM 101 Genel Kimya I, course language Turkish (3 credits)

KIM 101E General Chemistry I, course language English (3 credits)

Chemistry Department opens these courses in Summer semesters with parallel sessions.

In summer semesters, midterm and final exam questions are prepared by the course instructors.

All the students registered in the course, regardless of their course language, take the same midterm and final exam on the same day and at the same time. Grade distributions are done separately for Turkish and English sessions (as KIM101 and KIM101E) and all students are considered in the same grade distribution based on their course language. Students take a *multiple choice exam* as midterm and final exam about their general knowledge in chemistry. Exam papers are standardized so that the grade entry may be done using an optic reader. This offers the advantage of speed and lessens errors. The grades are recorded and are posted on the website www.kimya.itu.edu.tr.

Before the Pandemic Period

Students must attend the session for which they are registered. A minimum of **70% attendance is required**. Periodic attendance checks are taken in class. A student who is absent for 5 lectures (over 14 lectures) gets VF.

The grading scheme is : **Midterm I 25%, Midterm II 25%, Final exam 50%**.

The Pandemic Period: "Distance Education"

Courses has been carried out through online platforms, namely, **ITU-Ninova** and **Zoom**.

Lectures were conducted in a synchronous way, which the instructors and students are found in an electronic environment (such as video conferencing, namely Zoom platform) simultaneously and the courses were handled interactively.

All the lectures were recorded and records were available for students on Ninova without time constraint during the term. Students were also provided by lecture notes, support materials and resources through uploaded documents on Ninova, in class files of the course they are registered.

An attendance requirement was not applied in the courses. Students should have 30 out of 100 from in-term assessments to take the final exam (otherwise VF grade is assigned). "Grading Scheme" was established for the current conditions as follows:

Midterm 50%, Final Exam 50%.

Midterm and Final exams were conducted *online* as “multiple-choice exams” by the use of ITU Ayva platform.

Students having power and internet outages or connection problems, or suffering from any health issues or Covid-19 disease were subjected to online make-up exams equivalent to the exams they missed.

All exam grades were recorded and were posted to the websites in use (www.kimya.itu.edu.tr or www.kimyahavuz.itu.edu.tr) in a very short time after the exams.

This semester, 294 students (KIM 101 – 109 students and KIM101E - 185 students) from various departments took the course in 14 parallel sections.

Table 1 shows the grade averages for General Chemistry I-KIM 101 and KIM 101E in 2020/2021 Summer Semester.

Table 1. 2020/2021 Summer KIM 101 and KIM101E grade averages (points are over 100)

	Midterm	Final Exam	General Average
KIM 101	57.94	50.26	54.10
KIM 101E	55.45	42.52	48.99

In **Table 2** and **3**, given below, 2020/2021 Summer Semester grade averages are compared with the previous summer semesters for KIM101 and KIM101E, respectively.

Table 2. Success rate for KIM 101 section (points are given over 100)

	Midterm (40%)		Final exam (60%)	General Average
2014/2015 Summer*	50.32		46.96	48.30
2015/2016 Summer*	61.00		46.44	52.26
2016/2017 Summer*	53.92		39.88	45.5
	Midterm I (25%)	Midterm II (25%)	Final Exam (50%)	General Average
2017/2018 Summer*	50.35	46.00	44.80	46.49
2018/2019 Summer*	61.40	45.90	41.15	47.4
			Final Exam (100%)	General Average
2019/2020 Summer*	-	-	38.06	38.06
	Midterm (50%)		Final Exam (50%)	General Average
2020/2021 Summer*	57.94		50.26	54.10

*multiple choice exams

Table 3. Success rate for KIM 101E section (points are given over 100)

	Midterm (40%)		Final exam (60%)	General Average
2014/2015 Summer*	48.88		43.76	45.81
2015/2016 Summer*	54.16		43.96	48.04
2016/2017 Summer*	51.20		39.36	44.10
	Midterm I (25%)	Midterm II (25%)	Final Exam (50%)	General Average
2017/2018 Summer*	47.15	39.60	45.30	44.34
2018/2019 Summer*	58.20	43.80	44.85	47.93
			Final Exam (100%)	General Average
2019/2020 Summer*	-	-	33.37	33.37
	Midterm (50%)		Final Exam (50%)	General Average
2020/2021 Summer*	55.45		42.52	48.99

*multiple choice exams

For Turkish sections KIM 101:

The number of students who passed the course (including DC and DD) were 85 over 109, which is **77.98%** of the total students.

Fail (FF) grades are 12 over 109, which is **11.01 %** of the total students. VF grades are 12 over 109, which is **11.01 %** of the total students

For English sections KIM 101E:

The number of students who passed the course (including DC and DD) were 142 over 185, which is **76.76 %** of the total students.

Fail (FF) grades are 21 over 185, which is **11.35 %** of the total students. VF grades were 22 over 185, which is **11.89 %** of the total students

Table 4 and **Table 5** includes the percentages related with each grade for KIM 101 and KIM 101E sections:

Table 4: Grade distributions and corresponding percentages for KIM 101 sections

Letter grade	Grade	Number of students (over 109 students)	Percentage %
AA	Excellent	9	8.26
BA	Good-excellent	11	10.09
BB	Good	12	11.01
CB	Good-satisfactory	12	11.01
CC	satisfactory	14	12.84
DC	Satisfactory-low pass	15	13.76
DD	Low pass	12	11.01
FF	Fail	12	11.01
VF	Fail without midterm	12	11.01

Table 5: Grade Distributions and corresponding percentages for KIM 101E sections

Letter grade	Grade	Number of students (over 185 students)	Percentage %
AA	Excellent	8	4.32
BA	Good-excellent	15	8.11
BB	Good	18	9.73
CB	Good-satisfactory	23	12.43
CC	satisfactory	32	17.29
DC	Satisfactory-low pass	21	11.35
DD	Low pass	25	13.51
FF	Fail	21	11.35
VF	Fail without midterm	22	11.89

Figure 1 and **Figure 2** shows the grade distributions for KIM101 and KIM101E for 2020-2021 Summer Semester.

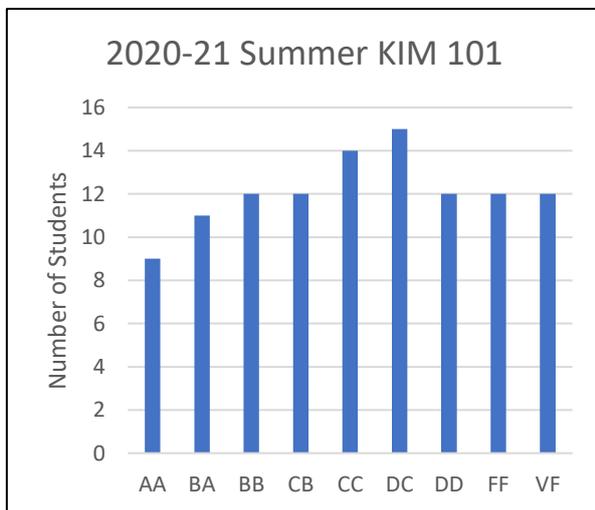


Figure 1. Grade distributions for KIM 101

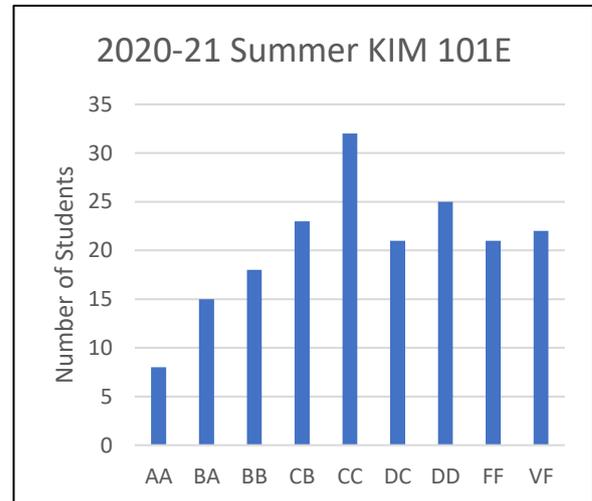


Figure 2. Grade distributions for KIM 101E

2020/2021 Summer student numbers and averages *related to each department* for KIM 101 and KIM 101E sessions are given in **Figure 3** and **4**, respectively.

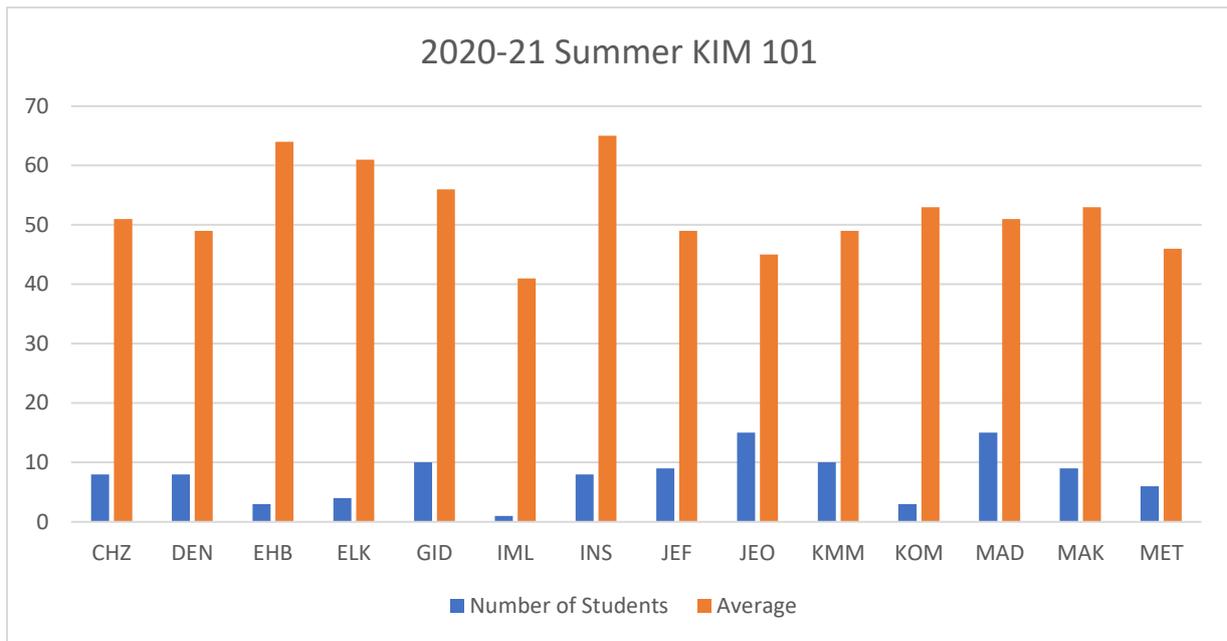


Figure 3. 2020/2021 Summer Semester Averages by Departments for KIM 101 sections.

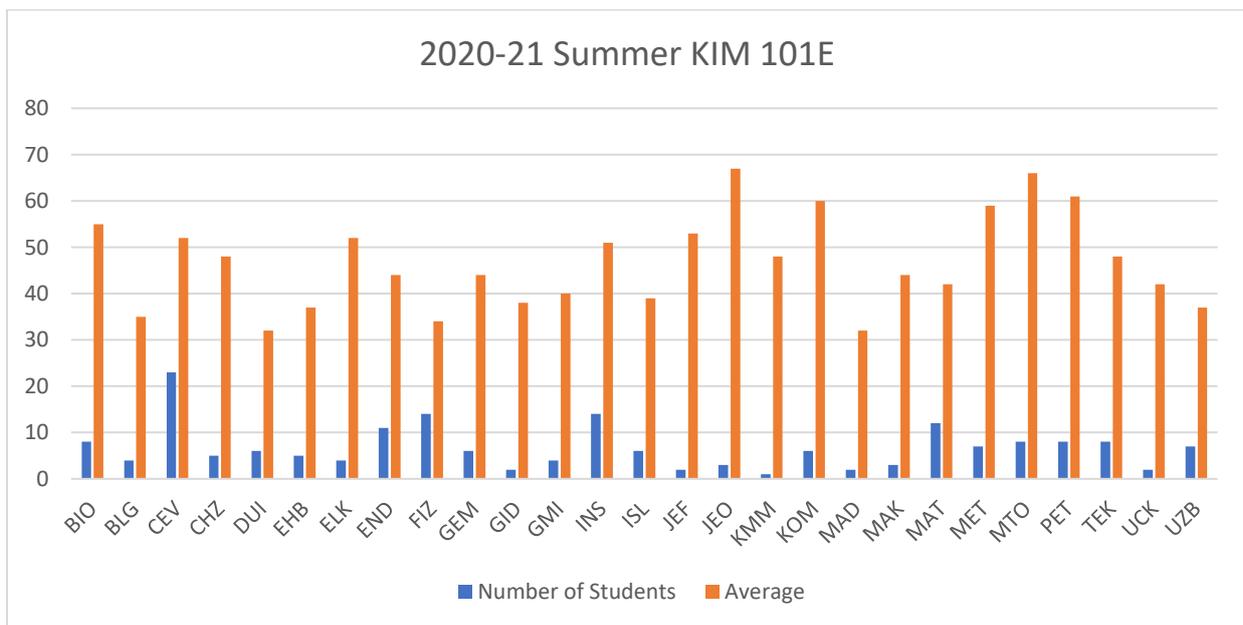


Figure 4. 2020/2021 Summer Semester Averages by Departments for KIM 101E sections.

Undergraduate program codes can be reached from the website: <https://www.sis.itu.edu.tr/EN/about-sis/undergraduate-program-codes.php>

The highest averages are from EHB (Electronics and Communication Engineering) and INS (Civil Engineering) for KIM101 and are from JEO (Geological Engineering) and MTO (Meteorological Engineering) for KIM101E.

There are also an access related with the course statistics (Outcomes, histograms, syllabus, etc.) through the website <https://otm.kimya.itu.edu.tr/o/>.

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