

## Assessment of General Chemistry I (KIM101 and KIM101E) Courses 2019/2020 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](http://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 and "Grading Scheme" was established for the current conditions as follows:

Only one multiple-choice exam, 100%.

Final exam was conducted *online* as “multiple-choice exam” by the use of licensed “WitWiser” platform (<https://witwiser.io>) that offers online assessment design and remote proctoring solutions. On the basis of “transparency, auditability and exam security measures”, to the extent of legislations, students were asked to open their cameras during the exam and exam durations were recorded and watched later on by research and teaching assistants (to ensure the fairness).

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](http://www.kimya.itu.edu.tr) or [www.kimyahavuz.itu.edu.tr](http://www.kimyahavuz.itu.edu.tr)) in a very short time after the exams.

This semester, 417 students (KIM 101 – 129 students and KIM101E - 288 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 2019/2020 Summer Semester.

**Table 1. 2018/2019 Summer KIM 101 and KIM101E grade averages** (points are over 100)

	Final Exam (100%)	General Average
<b>KIM 101</b>	38.06	38.06
<b>KIM 101E</b>	33.37	33.37

In **Table 2** and **3**, given below, 2019/2020 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
<b>2014/2015 Summer*</b>	50.32		46.96	48.30
<b>2015/2016 Summer*</b>	61.00		46.44	52.26
<b>2016/2017 Summer*</b>	53.92		39.88	45.5
	Midterm I (25%)	Midterm II (25%)	Final Exam (50%)	General Average
<b>2017/2018 Summer*</b>	50.35	46.00	44.80	46.49
<b>2018/2019 Summer*</b>	61.40	45.90	41.15	47.4
			Final Exam (100%)	General Average
<b>2019/2020 Summer*</b>	-	-	<b>38.06</b>	<b>38.06</b>

\*multiple choice exams

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

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

\*multiple choice exams

**For Turkish sections KIM 101:**

The number of students who passed the course (including DC and DD) were 115 over 129, which is **89.15%** of the total students.

Fail (FF) grades are 14 over 129, which is **10.85 %** of the total students. No VF grade was assigned.

**For English sections KIM 101E:**

The number of students who passed the course (including DC and DD) were 236 over 288, which is **81.94 %** of the total students.

Fail (FF) grades are 52 over 288, which is **18.06 %** of the total students. No VF grade was assigned.

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

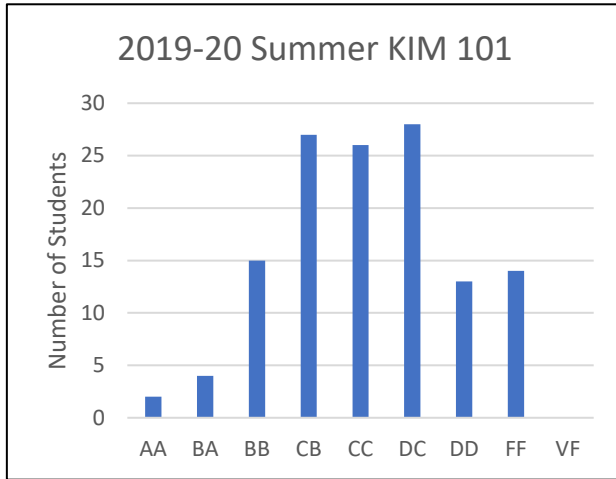
**Table 4:** Grade distributions and corresponding percentages for KIM 101 sections

Letter grade	Grade	Number of students (over 129 students)	Percentage %
AA	Excellent	2	1.55
BA	Good-excellent	4	3.10
BB	Good	15	11.63
CB	Good-satisfactory	27	20.93
CC	satisfactory	26	20.16
DC	Satisfactory-low pass	28	21.71
DD	Low pass	13	10.08
FF	Fail	14	10.85
VF	Fail without midterm	0	0

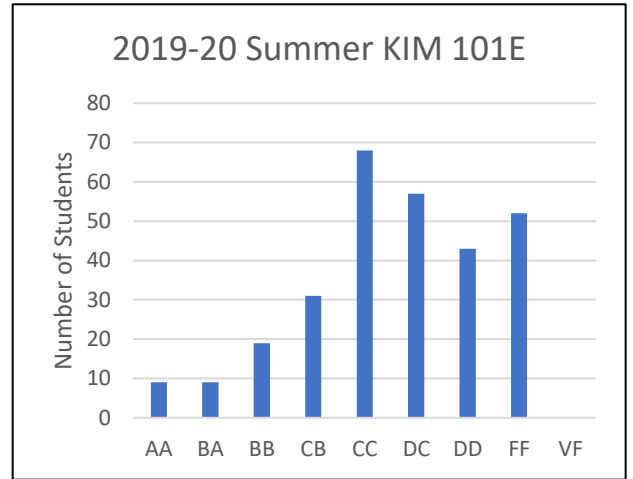
**Table 5:** Grade Distributions and corresponding percentages for KIM 101E sections

Letter grade	Grade	Number of students (over 288 students)	Percentage %
AA	Excellent	9	3.13
BA	Good-excellent	9	3.13
BB	Good	19	6.59
CB	Good-satisfactory	31	10.76
CC	satisfactory	68	23.61
DC	Satisfactory-low pass	57	19.79
DD	Low pass	43	14.93
FF	Fail	52	18.06
VF	Fail without midterm	0	0

**Figure 1** and **Figure 2** shows the grade distributions for KIM101 and KIM101E for 2019-2020 Summer Semester.

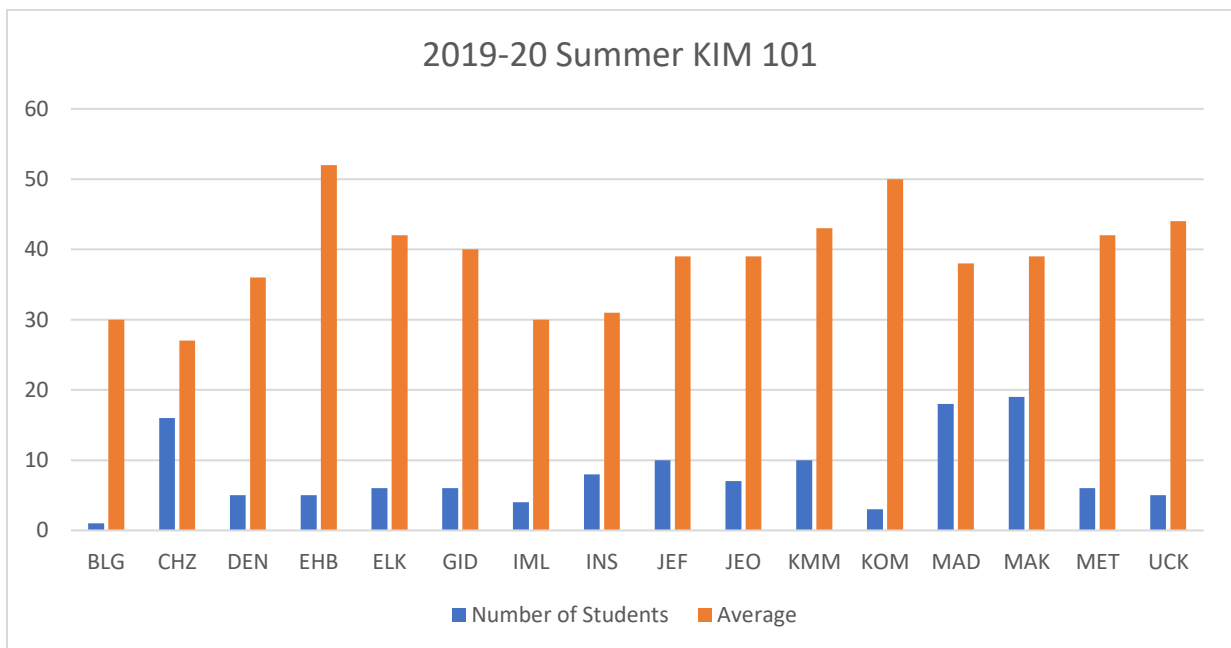


**Figure 1.** Grade distributions for KIM 101

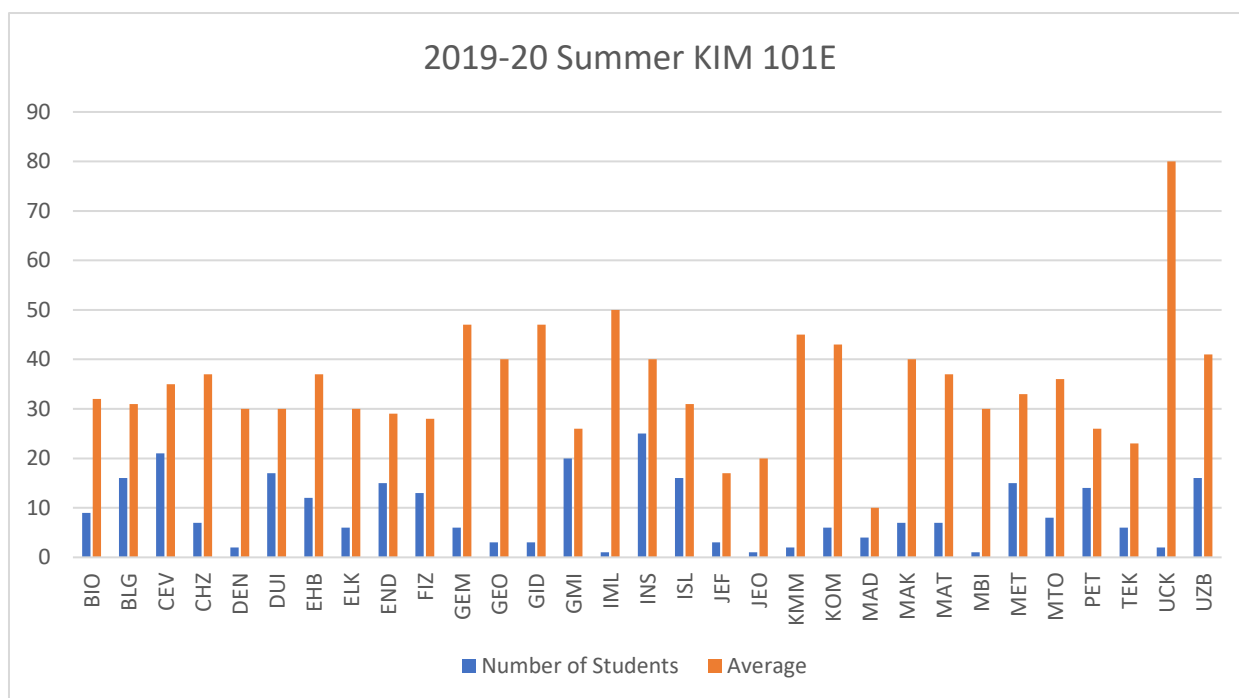


**Figure 2.** Grade distributions for KIM 101E

2019/2020 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.** 2019/2020 Summer Semester Averages by Departments for KIM 101 sections.



**Figure 4.** 2019/2020 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 (Electrical Engineering) and KOM (Control and Automation Engineering) for KIM101 and are from UCK (Aeronautical Engineering), IML (Manufacturing Engineering ), GEM (Naval Architecture & Marine Engineering) and GID (Food 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/>.