

Assessment of General Chemistry I (KIM101 and KIM101E) Courses 2021/2022 Spring Semester

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 help 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 every Fall and Spring semesters with parallel sessions.

Each semester **an exam committee** is appointed to KIM 101 and KIM 101E courses from Department members who teach General Chemistry courses. The Committee assists with determining the exam content, writing new exam questions and editing exam questions to ensure that the exams are of the highest quality.

Each semester **a course coordinator** is also appointed to KIM 101 and KIM 101E courses. Course coordinator is responsible for planning and coordinating the delivery of the Course and for ensuring an appropriate assessment with the Head of the Department, who has the final responsibility. The coordinator is also responsible of organizing and grading the exam papers. At the beginning of each semester, a meeting for all KIM 101 and KIM 101E instructors is arranged by the course coordinator. Important points (related with the syllabus, the attendance to the courses, the use of legal website of the textbook (<http://cwx.prenhall.com/petrucci>), etc.) are considered and are given to the attention of the instructors. Discussions on these points help General Chemistry Course Instructors for useful and reasonable ideas for the next semester.

For student queries, the course instructors allocate a 2-hour "office- hour" period. This is announced in the lectures and is indicated on a weekly course schedule hung on instructor's office door.

All the students registered in the courses, 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 test 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.kimyahavuz.itu.edu.tr) in a very short time after the exams and students are able to check their optic exam-answer sheets from there, as well. Additionally, syllabuses, needed documents, exam locations and announcements for the courses are given through the same website. Instructors can access information about their students and course statistics through the site <https://otm.kimya.itu.edu.tr/o/>.

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** (fails without midterm or final exam). Additionally, students should have at least **30 out of 100** from the in-term assessments (midterm exam and homeworks) to take the final exam (otherwise, VF).

The grading scheme is as follows:

- Midterm, **40%**
- Final Exam, **40%**
- 2 Homeworks, **20%** (each contributing **10%**)

ITU has a large-scale, web-based electronic learning platform called “**Ninova**” (ninova.itu.edu.tr). It is an electronic learning and teaching resource making education quick and easy, providing many facilities to instructors and students like messaging; publishing announcements, assignments, events or notes; accessing courseware content and resources at any time and place. Students are provided by lecture notes, support materials and resources through uploaded documents on Ninova, in class files of the course they are registered.

This semester, a total of **1364 students (KIM 101 – 549 students and KIM 101E – 815 students)** from various departments took the course in **23** parallel sessions.

In Table 1, the average grades for midterm and final exams of KIM 101 and KIM 101E courses are given and compared. (KIM 101 and KIM 101E ; 2021/2022 Spring Semester.)

Table 1. 2021/2022 Spring– Averages of KIM 101 and KIM 101E Courses (points are over 100)

	Midterm	HW 1	HW2	Final exam	General Average
KIM 101	44.70	83.88	59.26	39.20	47.87
KIM 101E	50.30	85.43	60.28	39.50	50.49

Table 2 and Table 3, shows the averages of the grades for KIM 101 and KIM 101E courses for the previous semesters.

Table 2. Averages for **KIM 101** sessions (2014/15 Fall-2021/22 Spring)- (points are given over 100)

	Midterm		Final exam	General Averages
2014/2015 Fall*	55.8		48.6	51.48
2014/2015 Spring*	54.95		50.44	52.25
2015/2016 Fall*	60.00		42.76	49.66
2015/2016 Spring*	53.64		46.4	49.3
2016/2017 Fall*	44.76		39.84	41.81
2016/2017 Spring*	48.20		50.44	49.54
2017/2018 Fall*	61		49.8	54.28
	Midterm I	Midterm II		
2017/2018 Spring*	59.1	42.5	39.55	45.18
2018/2019 Fall*	63.2	52.55	46.65	52.26
2018/2019 Spring*	55.6	48.40	42.85	47.43
2019/2020 Fall*	63.20	53.10	50.00	54.08
2019/2020 Spring*	58.25		37.14	42.42
2020/2021 Fall*	60.84		45.61	42.58
2020/2021 SpringI*	63.89		48.97	59.78
2021/2022 Fall*	51.58		47.00	57.81
2021/2022 Spring*	44.70		39.20	47.87

(*multiple choice exam)

Table 3. Averages for **KIM 101E** sessions (2014/15 Fall-2021/22 Spring) - (points are given over 100)

	Midterm		Final exam	General Averages
2014/2015 Fall*	48.12		42	44.45
2014/2015 Spring*	55.4		49.24	51.7
2015/2016 Fall*	52.68		36.16	42.77
2015/2016 Spring*	53.28		44.6	48.07
2016/2017 Fall*	37.6		34.8	35.92
2016/2017 Spring*	48.56		47.16	47.72
2017/2018 Fall*	52.29		43.6	47.08
	Midterm I	Midterm II		
2017/2018 Spring*	59.9	41.65	41.15	45.96
2018/2019 Fall*	59.8	49.55	43.70	49.19
2018/2019 Spring*	57.25	47.25	44.35	48.30
2019/2020 Fall*	56.50	46.35	43.75	47,59
2019/2020 Spring*	61.80		38.57	44.38
2020/2021 Fall*	55.48		51.98	42.98
2020/2021 Spring*	66.48		52.92	62.80
2021/2022 Fall*	41.95		41.85	51.83
2021/2022 Spring*	50.30		39.50	50.49

*multiple choice exam

The number of KIM 101 (Turkish session) students who passed the course (including DC and DD) were **367** over **549** which is **66.85 %** of the total students. The number of failed students having FF and VF grades were **182**, which is **33.15 %** of the total students.

The number of KIM 101E (English session) students who passed the course (including DC and DD) were **571** over **815** which is **70.06 %** of the total students. Fail (FF) and (VF) grades were **224** over **815**, which is **27.48 %** of the total students.

Figure 1 and **Figure 2** shows the number of students for each grade for KIM101 and KIM101E for 2021-2022 Spring Semester.

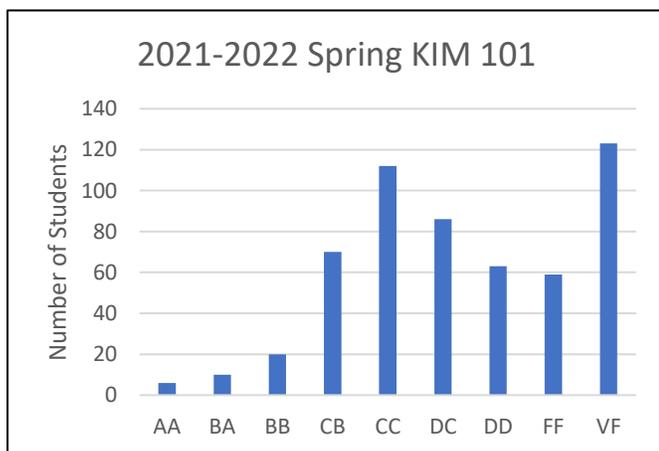


Fig.1 Student number-grade graph for KIM101

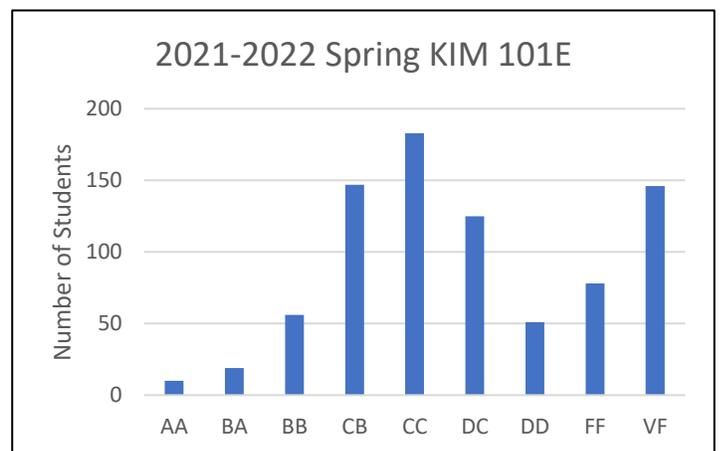


Fig.2 Student number-grade graph for KIM101E

Table 4 and Table 5 includes the grade distributions, the number of students and percentages for each grade for KIM 101 and KIM 101E sessions for 2021-2022 Spring Semester.

Table 4. Grade distributions, number of students and percentages for each grade for **KIM 101** sessions

Letter grade	Grade	Number of students	Percentage (%)
AA	Excellent	6	1.10
BA	Good-excellent	10	1.82
BB	Good	20	3.64
CB	Good-satisfactory	70	12.75
CC	Satisfactory	112	20.40
DC	Satisfactory-low pass	86	15.66
DD	Low pass	63	11.47
FF	Fail	59	10.75
VF	Fail without midterm	123	22.40

Table 5. Grade distributions, number of students and percentages for each grade for **KIM 101E** sessions

Letter grade	Grade	Number of students	Percentage (%)
AA	Excellent	10	1.23
BA	Good-excellent	19	2.33
BB	Good	56	6.87
CB	Good-satisfactory	147	18.04
CC	satisfactory	183	22.45
DC	Satisfactory-low pass	125	15.34
DD	Low pass	51	6.26
FF	Fail	78	9.57
VF	Fail without midterm	146	17.91

In **Figure 3 and 4**, 2021/2022 Spring student numbers and averages related to each department for KIM 101 and KIM 101E sessions are given, respectively.

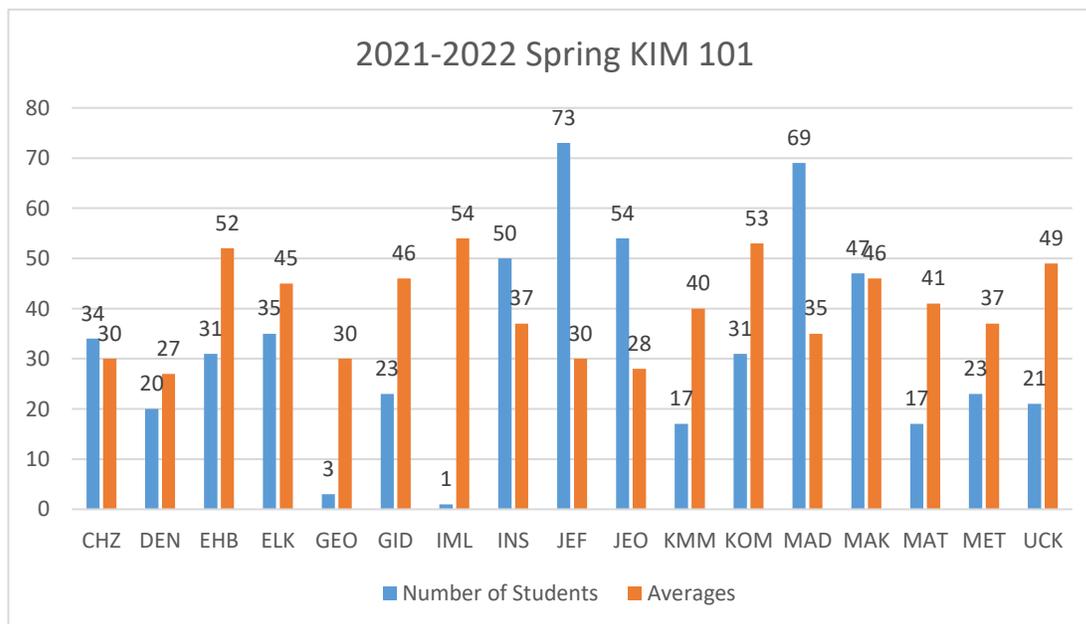


Figure 3. 2021/2022 Spring Averages by Departments for KIM 101 sessions

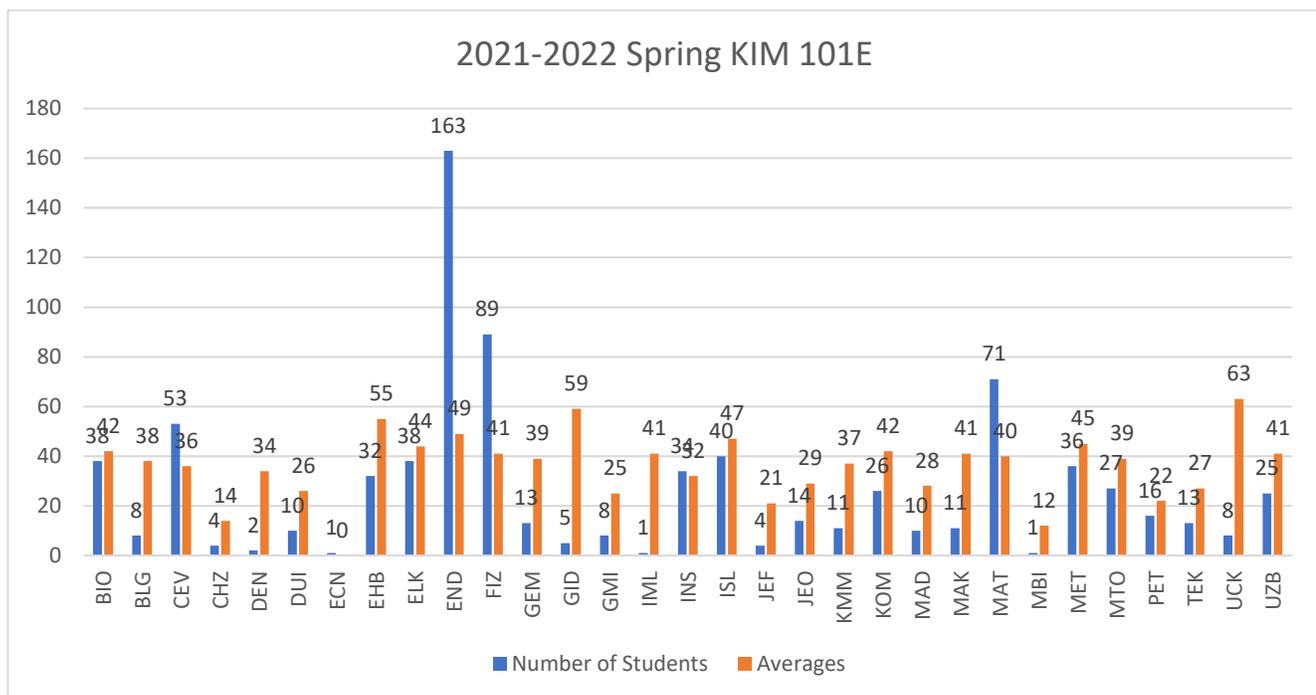


Figure 4. 2021/2022 Spring Averages by Departments for KIM 101E sessions

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 IML (Manufacturing Engineering) for KIM101 and are from UCK (Aeronautical Engineering) and GID (Food Engineering) for KIM101E.

Additional paperwork can be checked from **“2021/2022 Spring Semester Folder”** in the ABET office located in Chemistry Department. Outcomes, histograms, syllabus and all other related documents of the courses can also be found in the same folder.