



Department of Chemistry
1040 Drillfield Drive
109 Davidson Hall
Blacksburg, Virginia 2406
(540)231-6629
Fax: (540) 231-3255
pamateis@vt.edu

May 15, 2020

Dear Academic Advisors,

I want to update you on the enrollment requirements for CHEM 1035 and some initiatives we have put in place to help students succeed in General Chemistry. There is a great deal of hopefully helpful information here.

1. Students with one of the following criteria can enroll in CHEM 1035:

- a Math SAT score of 590 or above; or
- a Math ACT score of 25 or above; or

This policy is based on published academic research and the chemistry department's own research on the relationship between math skills and general chemistry success. The Registrar will be applying these criteria when doing batch enrollment in June. Students who do not meet these requirements are not eligible for CHEM 1035 and will not be added to CHEM 1035 during the batch. While we have been using these criteria for a few years now, this year the criteria will be enforced by the Registrar's office.

Please understand and explain to your students that this prerequisite is not meant to be an arbitrary impediment to starting chemistry; we have noted a strong correlation between weak math skills and poor performance in CHEM 1035. In one cohort we studied, 50% of the roughly 200 students who were taking Math 1014 and Chem 1035 simultaneously dropped, withdrew, or earned an F in Chem 1035 and another 15% earned a grade of D+, D or D-. Another year, 60% of the 115 CHEM 1035 students with a Math SAT < 590 earned a D or F or withdrew. Last year our DWF rate was substantially lower since students not meeting the minimum math SAT or

ACT requirement did not enroll in CHEM 1035. The chemistry department offers CHEM 1035 in the Spring and CHEM 1036 in the Fall (and both courses are offered in the summer), so students who need two semesters of chemistry are not strongly impacted. Students needing to start organic chemistry in the Fall of their second year should plan on taking CHEM 1036 in the summer. However, please note that we now teach organic chemistry off-sequence as well (CHEM 2635 in the spring and CHEM 2536 in the fall). We strongly feel that completing MATH 1014 in the Fall semester and taking CHEM 1035 in the Spring semester is preferable to withdrawing from CHEM 1035 in the Fall semester and repeating it in the Spring semester!

2. Students who do not meet the criteria for enrollment in CHEM 1035 will have an opportunity to become “chemistry ready” by completing an on-line ALEKS Placement Assessment (not to be confused with the ALEKS assessment that math is using for students who are not MATH 1225 ready). I will send out the details of this process later, but if a student can earn a minimum score on the ALEKS Placement Assessment, the student can then enroll in CHEM 1035. There is no cost for the Placement Assessment.

3. The chemistry department will offer CHEM 1014, Chemistry Calculations, for students who do not meet the criteria for enrollment in CHEM 1035 and who do not become chemistry ready as a result of the placement assessment. CHEM 1014 focuses on skills such as solving word problems, using a calculator, and manipulating algebraic expressions with the end goal of preparing students for success in CHEM 1035 in a subsequent semester. We hope to be able to accommodate all students who wish to take advantage of this course and we encourage you to enroll students who are not eligible for CHEM 1035 in the fall semester.

4. Please inform your students who are enrolled in CHEM 1035 that they will be receiving information via e-mail from the Chemistry Department this summer about the VTChemPrep assignment; students will take an on-line General Chemistry Assessment Test, the results of which will be used to identify areas of weakness; the software program will then guide the student to problems that will help them fill in any gaps in knowledge of pre-requisite material (algebraic manipulations, measurement, units, and beginning chemistry principles). Students must complete the program with 100% mastery of the topics to earn 3% towards their CHEM

1035 grade. Students are strongly encouraged to start this assessment **several weeks before the semester begins** (the due date will be about 1.5 weeks after the start of the semester). Please encourage your students not to procrastinate in starting and completing this assignment. We have found that the majority of students who did not complete the ChemPrep assignment ultimately earned a D or F or withdrew from CHEM 1035. Students who are struggling and spending 40-60 hours on VTChemPrep are probably not ready to take CHEM 1035 and should consider delaying the class until Spring 2020.

5. We have asked the registrar to create an overflow CRN for students who do not receive a seat in CHEM 1035 during the batch, either due to class conflicts or a lack of seats. Thus advisors will know which students did not receive an actual seat in CHEM 1035 and can work on moving those students into seats as they become available, after the AP drop and throughout the summer.


6. Please note that students whose current majors do not require General Chemistry for graduation may not enroll in CHEM 1035/1045 at this time. These students can place their names on the wait list found here:

https://viriniatech.qualtrics.com/jfe/form/SV_3r4Xiw8BK1A4hDL

We will remove as many students as we can from the waitlist, beginning about August 10.

7. Finally, any student who has a strong background in chemistry and a Math SAT of 700 or better should consider taking General Chemistry for Majors, CHEM 1055, instead of CHEM 1035. Let me know if you want a student enrolled in CHEM 1055; the capacity in this class for students in other majors is limited.

The next page contains a concise summary of this letter. Feel free to contact me (pamateis@vt.edu) if you have any questions; we look forward to working with you to increase the success rate of our students.

Sincerely,

Dr. Patricia G. Amateis
Associate Professor of Chemistry

Undergraduate Program Director
Director of General Chemistry

CHEM 1035
June 2020

**SCIENCE/GE STUDENTS WITH MINIMUM MATH SAT SCORES OF 590 OR
MINIMUM MATH ACT SCORES OF 25:**

- Most incoming freshmen in this category were enrolled in CHEM 1035 during the batch.
- There are two overflow CRNs
 - CRN 82423 for GE majors
 - CRN 82424 for other science majors

Students in these two CRNs were not enrolled in CHEM 1035 during the batch for some reason such as schedule conflicts. Advisors may start moving them into available CHEM 1035 seats now.

- Students enrolled in CHEM 1035 will receive emails in early July about the ChemPrep assignment that should be completed this summer. The email that will be sent to students is available to advisors and we ask that advisors encourage their students at Orientation to start on this assignment as soon as possible.

(NOTE: In Fall 2019, average CHEM 1035 letter grade for students who completed ChemPrep: B-; average CHEM 1035 letter grade for students who did not complete ChemPrep: D+)

**SCIENCE/GE STUDENTS WITH MATH SAT SCORES BELOW 590 OR MATH ACT
SCORES BELOW 25:**

- Students in this category were not enrolled in CHEM 1035 during the batch and may not enroll in CHEM 1035 later unless they become chemistry ready.
- Students can become chemistry ready by successfully completing an on-line ALEKS Placement Assessment (which is different from the ALEKS assessment that is being used by math for MATH 1225 readiness). There is no cost for this assessment and it is available now. Information about this placement assessment can be found here: <https://chem.vt.edu/academics/undergraduate/readiness.html>
- We will send this information to the students and encourage them to attempt to place into CHEM 1035 prior to their orientation session. Students should attempt the placement assessment as soon as possible.
- We will notify students and advisors when students become chemistry ready and are eligible to enroll in CHEM 1035.
- Students who do not become chemistry ready should enroll in CHEM 1014, Chemistry Calculations, for the Fall 2020 semester. This class will prepare them to enroll in CHEM

1035 in the Spring 2021 semester.

STUDENTS WHOSE CURRENT MAJORS DO NOT REQUIRE CHEM 1035 FOR GRADUATION:

- Students in this category cannot currently enroll in CHEM 1035
- Students in this category who would like to enroll in CHEM 1035 (for a major change, etc) can place their name on the CHEM 1035 wait list found here:
https://virginiatech.qualtrics.com/jfe/form/SV_3r4Xiw8BK1A4hDL
- Students will be notified if we can take them off the wait list and place them into CHEM 1035. They will have to meet the minimum math score requirement or complete the placement assessment. We will not begin to take students from the wait list until August 3.