

100-level fall-semester chemistry courses

The Chemistry department offers two 100-level fall-semester courses. These courses are designed as the first half of our year-long introductory sequence. The Chemistry department strongly recommends enrolling in a chemistry course for all students interested in chemistry, biology or student who plan to participate in the pre-med sequence.

Fall-semester 100-level chemistry courses are designed as an introduction to quantum mechanics, providing a basis for understanding the structures of atoms, molecules and larger structures. A range of bonding models are discussed, as well as the spectroscopic and analytical techniques used to elucidate and understand bonding in chemical systems. These two courses, ChemH111A and ChemH113A, cover the same material, and typically have the same final exam. However, the structures of these courses differ, as described below. Please note that both ChemH111A and ChemH113A have a shared laboratory program in which all 100-level students perform experiments.

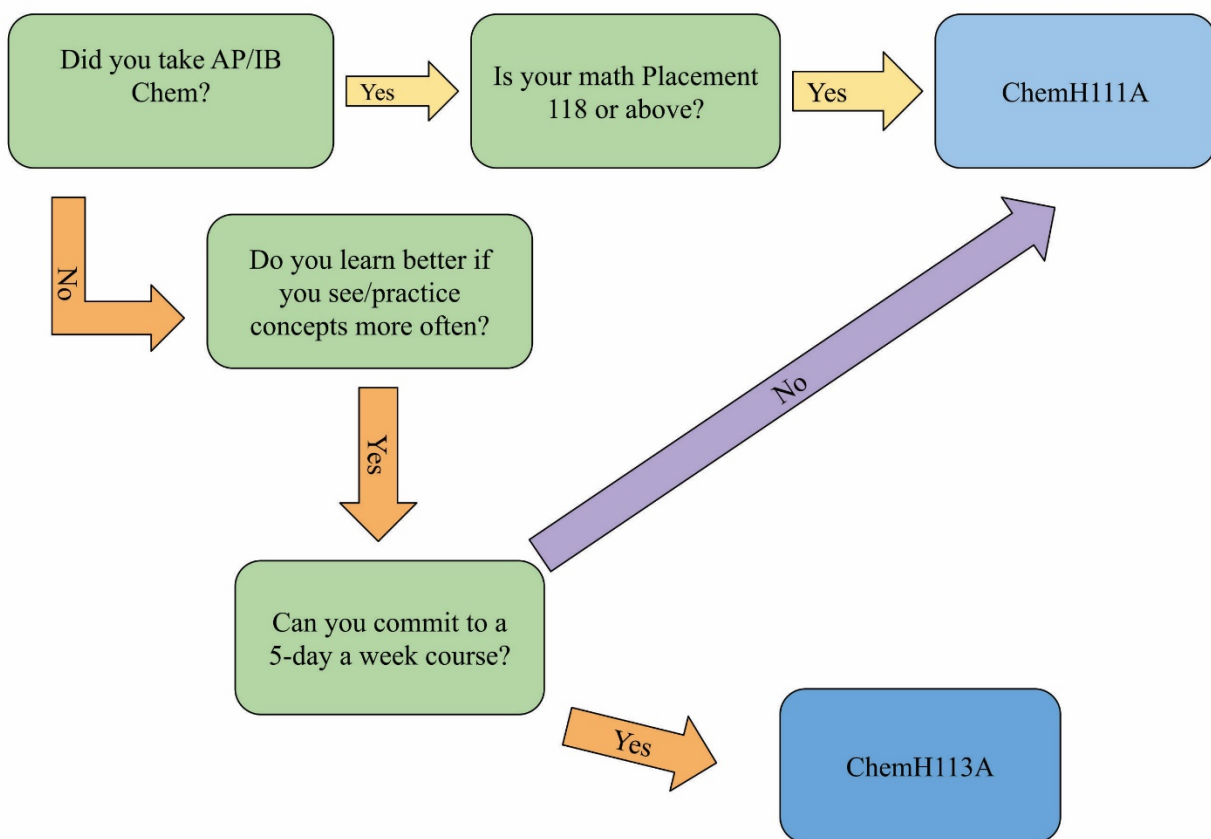
ChemH111A. This course is designed for students with standard high school preparation in chemistry (at least one or two high school chemistry courses) and math. This course meets three days per week, with an optional recitation hour. The expected enrollment in each section of ChemH111A is approximately 30 students.

ChemH113A. This course is designed for students with less exposure to chemistry and/or math in high school, or for students for whom daily meetings is an important component of learning. This course meets five days per week, and attendance at each class meeting is required. The expected enrollment in ChemH113A is 15 to 20 students.

Choosing between ChemH111A and ChemH113A. As both courses cover the same material, either course will enable a student to continue chemistry, other science programs or the premed track. In past years, the Chemistry department used a placement exam to determine which course was best for each student. There will be no placement exam this year, as we want to give students more agency over the selection of their courses. Additionally, the Chemistry department and the Chemistry Student Group (CSG) have committed to making Chemistry at Haverford more accessible and equitable at the introductory level. Over the years, the introductory curriculum has been revisited regularly in order to center the student experience and learning in our curriculum. The guidance provided below is designed to help students find the course that suits their background and learning style best. This guidance takes several forms, including some diagnostic questions, student testimonials, longer course descriptions and expectations, and course timing options. Please note that students will have the ability to switch between ChemH111A and ChemH113A, assuming enrollment caps are not exceeded, in the first four weeks of the fall semester. Please note that the enrollment cap for ChemH113A was chosen to foster a small cohesive learning environment. If preregistration totals exceed the enrollment cap, the Chemistry department will more actively guide course selections.

Questions to help guide your decision:

1. Did you take AP or IB Chemistry in high school? If **yes**, ChemH111A is the correct course for you.
2. Is your Mathematics placement 118 or above? If **yes**, ChemH111A is the correct course for you.
3. Can you commit to coming to class 5 days per week? If **no**, ChemH111A is the correct course for you.
4. Do you learn better in a smaller environment with daily meetings? If **yes**, ChemH113A might be the correct course for you.



Class times:

ChemH111A Section 1: MWF 8:30 – 9:25 AM

ChemH111A Section 2: MWF 9:30 – 10:25 AM

ChemH111A Section 3: MWF 9:30 – 10:25 AM

ChemH111A Section 4: MWF 11:30 AM – 12:25 PM

ChemH113A Section 1: MTWThF 9:00 – 9:55 AM

Course descriptions:

ChemH111A (all sections). This course is the most common entry point to chemistry, biology and the premed track at Haverford. The class meetings for this course will focus on problem solving, with very limited lecturing. This course will have a weekly cadence that includes asynchronous videos, in class discussions and problem solving, formative assessments, and both quizzes and problem sets. Recitations will be used as an addition problem solving opportunity.

ChemH113A. This is an introductory course that covers the same content as ChemH111A, but meets every weekday. Every day will include different activities. Classroom community is important in this course and each student will need to be an active learner. You and your fellow classmates will get to know each other, support each other, and accompany each other as we go through the course content; because of this, **daily attendance is required for this course.** The advantage to meeting every day is that we can move through the content at our own pace, as we have more time. We can also do more practice together in class before you try on your own outside of class. More time in class also means we (students and instructor) can work together to move things around based on the needs of our class, but still reach the end of the content we need to cover. This course will use a specifications-based grading mechanism.

Student Testimonials

ChemH113A student. I took 113 in my freshmen fall because my pre-major advisor suggested it. In high school, I took chemistry in my sophomore year, and I did fine. I think I was still worried about it though because I still didn't know a lot of chemistry, which is why I decided to take 113. I probably didn't go to CQC (Chemistry Question Center) as much as I should've. I usually asked the professor for help, but I didn't really talk to the people in my class. At first, the 9 AM class every day wasn't so bad, but then when Fridays became optional, I started skipping. I continued with 114 though. I liked going every day, but I still got burnt out by the end. I think 113 was really helpful in the way that it pushed me to reinforce the foundational concepts that I was worried about. Once I started skipping though, I got used to it, and it felt overwhelming to be behind. I think it's important to think about the balance and think about whether you feel like you need to go every day because it's a huge commitment.

ChemH113A student. I was not comfortable at all with Chemistry prior to taking it at Haverford. I was super nervous and debating if I should even take it at all, but my sister, who took it here, ended up convincing me. Peer tutoring was really helpful. I couldn't really talk to the people taking 111 because they weren't doing the same things, weren't working at the same pace, and sometimes used different terms. I felt really welcomed in 113, and it felt like the professor's goal was to make the students feel better about chemistry. 9 AM every day was really difficult, but it was necessary to go to class every day. I ended up switching to 112 in the Spring, but I wished I took 114 because that transition from a small class to a big lecture was so difficult. It was easier for me to fall behind in a big class, and it was harder to catch up, especially because I was in season. I would recommend 113 to other students, especially if they're feeling uncertain about chemistry.

ChemH111A student. I took 111 because I felt pretty comfortable with Chemistry. I took two years of Chem in high school, so the first semester felt like a coast. I ended up spending time outside of class to learn content that I didn't understand in class. I would recommend the course to other people if they feel self-sufficient. I like to learn content on my own, and I didn't mind not being as engaged since I don't really like in-class learning. It really depends on the type of learner that you are though.

ChemH111A student. I was pretty confident in Chemistry, and I came to Haverford knowing that I wanted to major in Chem. I took Honors Chem and AP Chem in high school, and I did pretty well on the AP exam. I didn't really pay attention in class because the content was already familiar to me. I think 111 prepared me as well as it did for other people like I always felt pretty on par. I didn't really use CQC in my first semester, I mainly did problem sets with other friends in the class. My section of 111 was structured in the way that we had a combination of lecture and doing problems with one another, and the class was small enough that you could ask questions.

ChemH111A student. I took IB Chem in high school, so I was very comfortable with Chemistry. I came in with the foundations of 111, so it felt like a review. I was in a small class, but I didn't feel comfortable talking. I was glad that the class didn't put too much stress on me because I was balancing a job and adapting to a new country. I wish I read the syllabus more carefully, I was always stressed out about exams, but they weren't weighted as much as I thought they'd be. Engagement, quizzes, and problem sets were huge parts of the grade too, and I wish I knew that instead of stressing myself out every time exam season came around.

ChemH113A student. I took a year of Chemistry in high school, and it felt somewhere between feeling prepared and unprepared for Chem at Haverford. I ended up taking 113 and 114, and I felt really unprepared math-wise. Maybe it was about of the Zoom classes, but it was still really hard. I didn't use CQC, and I tried to study with friends in 111/112. It was difficult though because the classes were paced differently. For other commitments, because of COVID, we didn't have our regular season, but if we did, I felt like the burnout would've been much worse because I was also working a job at the time. Overall, I felt like I wasn't given a solid understanding of just how intense five days a week would be. I would only recommend this class to people who need the reinforcement of the foundations.

ChemH113A student. I took Honors Chem in high school, but it was not great. I think the furthest we learned was orbitals. It was an awful experience, and I never intended on pursuing a Chemistry major. I had to take Gen Chem though because of my pre-health requirements, and I was placed into 113. I think this class gave me the foundations that I would've ideally gotten in high school, and I think because I was still fresh out of high school, the 9 AM felt almost normal since I was used to a routine. I went to my professor and CQC for help, which was really useful. Even though I wasn't comfortable with Chemistry when I came to Haverford, my professor was really encouraging and welcoming. Going to class every day did eventually get hard as the semester got harder. I took 114 for a couple of days in my second semester because I knew I needed the reinforcement, but I ended up switching to 112 because going every day got too difficult. I wish I stayed in 114 though because it probably would've been better for my learning. For future students, I think it's really important to assess the kind of learner you are because while the class content will be the same, it's good to know if you're the type of student that needs to see the content more often to understand it. It's also good to think ahead and assess if you can commit to the 5-day a week because if you start skipping in the middle of the semester or tune out, it can be really hard to play catch up.