1. What courses will I need to take for medical schools?

Medical schools require a strong background in science as well as a few courses in the humanities and social sciences. A general list is below. Veterinary and dental schools will require most of the same courses, so when choosing courses for this fall, follow premed advice. Later, you may modify or supplement the list of courses slightly.

- General (inorganic) chemistry
- Organic chemistry
- Biochemistry
- Math (calculus)
- Biology
- Physics
- Statistics
- Psychology and Sociology
- English

A table of specific courses can be found at the end of this document.

2. What courses should I enroll in this fall?

Most premed students begin with chemistry and math. You can choose math, or chemistry, or both, or NEITHER. The normal course load is four courses, so your options could be the following. If you have AP credit or diverse interests, you can choose to postpone math and/or chemistry and substitute other courses. Note that if you have AP credit in math, taking additional math at Duke is not needed to meet your premed requirements. This is explained in greater detail below.

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<tr>
<th>Option</th>
<th>Math</th>
<th>Chemistry</th>
<th>Other Courses</th>
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</thead>
<tbody>
<tr>
<td>Option 1</td>
<td>Math</td>
<td>-</td>
<td>Writing 101/seminar and 2 other courses</td>
</tr>
<tr>
<td>Option 2</td>
<td>-</td>
<td>Chemistry</td>
<td>Writing 101/seminar and 2 other courses</td>
</tr>
<tr>
<td>Option 3</td>
<td>Math</td>
<td>Chemistry</td>
<td>Writing 101/seminar and 1 other course</td>
</tr>
<tr>
<td>Option 4</td>
<td>-</td>
<td>-</td>
<td>Writing 101/seminar and 3 other courses</td>
</tr>
</tbody>
</table>

3. If I am not sure that I want to attend medical school, do I still need to get started on premed requirements in my first semester? What if I’m coming from a high school with weak science/math teaching?

The first answer is no; taking premed courses this fall is not required or necessary. The second answer is to be a little careful. Depending on the AP credits you enter with, you will need to take from 10 to 14 premed courses. Most Duke students (>75%) will take all 8 semesters and 3 summers to complete these classes. This allows them to try premed courses slowly and carefully, evaluate possible majors, and take advantage of all the opportunities at Duke. Applying at the end of the senior year and then taking a gap year to work, travel, mature, and be an adult is highly recommended.

We caution you that if you are coming from a high school background that was not particularly rigorous in math and science, you may find the required natural science premed classes, e.g., math, chemistry and biology, to be a very different level of difficulty than what you have been accustomed to in high school. We have seen some students struggle in their fall semester premed classes, because they were not fully prepared and had not developed rigorous study skills. In many cases, these students would likely have done much better if they had taken a semester to acclimate to college and had time to develop those study habits and organizational skills that these courses require.

Please consider this carefully. Our intent is not to discourage you from beginning on the prehealth path if you feel ready to take this challenge on. However, do not feel that you have to enroll in premed courses this fall, or worry that you will be behind. That is not the case and there may be value in taking your time.
4. Which math (calculus) course would I choose?

By math, we mean calculus. Duke doesn’t offer courses in algebra or pre-calculus. You need calculus 1 for medical schools. Here’s a table of calculus courses at Duke, to help you understand the course numbering.

Calculus 1:  
Math 21: AP credit  
Math 105L and 106L: spread over 2 semesters; for students with no experience, SATm 520-680  
Math 111L: for students with some calculus experience  
Math 121: by transfer from another university

Calculus 2:  
Math 22: AP credit  
Math 112L: in the fall, for students who took Math 111L at Duke  
Math 122L #: in the fall, for students who have Math 21 AP credit  
Math 122: by transfer from another university

Multivariable:  
Math 202: for econ majors  
Math 212: for all others

# Note that Math 122L is only taught in the fall and is for students who have Math 21 AP credit and who wish to go on to Calculus 2. In the spring, anyone who needs Calculus 2 will take Math 112L.

For fall, you could enroll in:

- NO math at all … if you have AP credit (Math 21) and don’t need more math for a major  
- NO math at all … if you aren’t sure about prehealth and want to postpone making a decision  
- Math 105L (followed by Math 106L in the spring) … if you have no calculus experience and SATm 520-680  
- Math 111L … if you’ve had some calculus experience  
- Math 122L … if you have AP credit (Math 21) and need calculus 2 for a major or interest  
- Math 202 or 212 … if you have AP credit (Math 21, 22) and need multivariable

Be sure to read the math website, as there is detailed information on courses and placement:  
http://www.math.duke.edu/first_year/

If you have questions about math placement, read the link below about how the math department would like you to contact them, and then if needed, email with the Supervisor of First Year Instruction in Math (sfi@math.duke.edu). Be sure to answer their questions fully if you email.  
math.duke.edu/first_year/PlacementAdvice.html

5. Do I need to take more than Calculus 1?

It depends on your interests, choice of major, and how you will fulfill curriculum requirements. If you enjoy math and this is something you are skilled at, then we encourage you to go to higher levels of calculus.

These majors require calculus 2:  
Chemistry  
Computer Science  
Earth and Ocean Science (BS, but not the AB degree)  
Environmental Science (BS, but not the AB degree)  
Neuroscience (BS, but not the AB degree)

These majors require calculus 2 and multivariable calculus:  
Economics  
Physics  
Statistics  
sometimes Chemistry
Duke's curriculum requires you to complete two courses coded QS (quantitative studies).

QS course #1: must be a QS course in the math, statistics or computer science department
QS course #2: can be any QS course (this will usually be physics 141L or 142L)

You will fulfill the QS requirement if you enroll in a math course (Math 105L, 111L, 122L or higher) and a physics course (Physics 141L or 142L). However, if you have AP credit for math and will not be taking any further math courses at Duke, you can fulfill the QS requirement by taking statistics and physics, for example Sta 101 or 102 and Physics 141L or 142L. Note that Sta 102 will count for the biology major, but Sta 101 will not. AP credits do not count for curriculum requirements.

If you'd like information on major requirements, there are two ways to look up information:
- Departmental websites; links to these are at [trinity.duke.edu/undergraduate/majors-minors](http://trinity.duke.edu/undergraduate/majors-minors)
- Undergraduate Bulletin; departments are listed alphabetically [registrar.duke.edu/university-bulletins/current-publications](http://registrar.duke.edu/university-bulletins/current-publications)

### 6. What chemistry course would I choose for the fall?

It depends on your background. Medical schools require courses in inorganic chemistry, organic chemistry, and biochemistry. So depending on whether you have AP credit, you may take 3 or as many as 5 or 6 chemistry courses. You should plan to follow one of these sequences:

| sequence 1: | 99D | 101DL | - | 201DL | 202L | 210DL | Bch 301 |
| sequence 2: | - | 101DL | - | 201DL | 202L | 210DL | Bch 301 |
| sequence 3: | Chem 20 AP | - | - | 110DL | 201DL | 202L | - | Bch 301 |
| sequence 4: | Chem 21 AP | - | - | - | 201DL | 202L | - | Bch 301 |

Chem 99D is an introduction to chemistry and problem solving; it is for students with limited background in chemistry. 99D is ONLY TAUGHT IN THE FALL. You would go on to Chem 101DL in the spring.

Chem 101DL and 210DL are the two semesters of inorganic chemistry.

Chem 110DL is honors chemistry and involves applications of inorganic chemistry; this course is recommended for students who have a 4 on the AP chemistry exam (Chem 20 credit). Chem 110DL replaces Chem 101DL and 210DL.

Chem 201DL and 202L are the two semesters of organic chemistry. There is a first-year only section of Chem 201DL offered in the fall (Chem 201DL.002).

Bch 301 is biochemistry.

So your choices for a fall chemistry course are these:

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Description</th>
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<tbody>
<tr>
<td>Chem 99D</td>
<td>less than 1 year of high school chemistry, SATm below 650</td>
</tr>
<tr>
<td>Chem 101DL</td>
<td>some background, no AP credit</td>
</tr>
<tr>
<td>Chem 110DL</td>
<td>Chem 20 credit (4 on AP exam)</td>
</tr>
<tr>
<td>Chem 201DL.002</td>
<td>Chem 21 credit (5 on AP exam)</td>
</tr>
</tbody>
</table>

OR no chemistry at all, postpone it to a later semester

*** For more details and specific placement advice, be sure to read the chemistry website: [chem.duke.edu/undergraduate/placement-guidelines](http://chem.duke.edu/undergraduate/placement-guidelines)

*** If you have questions about chemistry placement, contact a Director of Undergraduate Studies in Chemistry [chem.duke.edu/undergraduate/dus-group](http://chem.duke.edu/undergraduate/dus-group)
There are some helpful things to know when enrolling in a chemistry course:

* Medical schools will list inorganic or general chemistry as a requirement. But Duke's Chem 101DL class has a course title of "Core Concepts in Chemistry". Chem 210DL has a title of "Modern Approaches to Chemical Principles", and Chem 110DL is titled Honors Chemistry. Don't worry about the titles, these courses teach inorganic chemistry.

* When you enroll in Chem 101DL, 110DL, or 201DL, you need to enroll twice. Once in the lecture/discussion group and then again the lab. The labs are listed on ACES as Chem 101L9, 110L9, and 201L9. So if you decide to take general chemistry 101DL, you would enroll in Chem 101DL AND Chem 101L9. Don't forget the lab!

* The sequencing of chemistry courses is a little unusual, as you begin with a semester of inorganic chemistry, followed by two semesters of organic chemistry, and then the second semester of inorganic chemistry. This is why the second semester of inorganic chemistry has a course number of 210DL. Biochemistry can be taken once organic chemistry is finished.

* If you are worried about going into honors chemistry (Chem 110DL) or organic chemistry (Chem 201DL.002) as a freshman, consider that these are first-year student courses. Chem 110DL will be taken by other freshmen with AP credit like you, and the organic chemistry section you enroll in (lecture section 002) is only for first-year students.

7. Are there other prehealth courses I could take instead of math and chemistry?

Yes. You could consider biology if you are coming in with AP credit in chemistry and/or math, don't need to take calculus here and/or decide to put off chemistry to the spring. Or if you aren't sure of your interest in medicine and want to see what other courses are like first, then delay math and/or chemistry and take other courses. Medical schools also want applicants to be well-rounded, so you could consider courses in the humanities or social sciences.

**Biology:** Biology 201L and 202L are required for medical schools and you can enroll if you have a strong background in inorganic chemistry and biology AND if there are seats available. (Currently there are about 20 seats in each class as of May). Biology 201L has AP Chem 20 as an enforced prerequisite in the fall. Biology 202L does not have a chemistry requirement and may be taken before Biology 201L, but the biology department recommends having a strong background in biology (e.g. AP credit). Just be careful if you enroll. Most first-year students will begin biology next spring or in the fall of their sophomore year and that is fine. Note that biology courses at the 100 level are open to you, but these are designed for non-majors and will not fulfill premed or biology major requirements. Nevertheless, they may be interesting. The biology department has a very useful guide for first-year students:

[biology.duke.edu/undergraduate/first-year-guide](biology.duke.edu/undergraduate/first-year-guide)

**Statistics:** This is not generally recommended for most freshmen, unless you are interested in this as a major. There are many statistics courses at Duke and students enrolled are mostly sophomores and juniors. It's best to wait until you decide on a major and then take a statistics course that goes with your major. However, if you are doing research or other work which involves statistics, or if this is a potential major - then statistics may be appropriate. Questions on placement or advice should go to the Director of Undergraduate Studies in Statistics (dus@stat.duke.edu)

**Physics:** This is not generally recommended for freshmen. Physics 141L and 142L are mostly taken by juniors who will have more experience in science courses. However, if this is a potential major or you have an exceptional background or interest, talk with the Director of Undergraduate Studies ([phy.duke.edu/director-and-associate-director-undergraduate-studies](phy.duke.edu/director-and-associate-director-undergraduate-studies)) in physics. Prospective physics or biophysics majors usually enroll in Physics 161L (instead of 141L) this fall. If you are a Pratt student, you should follow Pratt requirements for physics.

**Humanities, social sciences:** Medical schools appreciate and often expect some background in the humanities and social sciences. These courses can give you an understanding of the psychological, social, and biological foundations of behavior, as well as an understanding of ethics, morality, culture and ethnic background of patients you might treat, as well as living conditions and health worldwide. So in preparing for medical school, work in courses that give you a glimpse and understanding of people in this world. If you are looking for another course for the fall, see if you can find a course that appeals to you.

There is a list of courses at the end of this document that you might find interesting. Some may not have many seats available, but perhaps the list will give you some ideas.
8. Should I send my AP scores to Duke, or ignore them and just start at the beginning?

It's best to send your scores to Duke and follow the placement guidelines by departments. This is because...

* All of your AP credits appear on your Duke transcript. They can look impressive, indicate you were doing advanced work in high school and that you have a strong foundation. This can help with jobs, internships, applications, etc. If you have AP scores, have them sent.

* Repeating coursework at Duke can be boring; students sometimes find it's hard to study and then they don't do as well as they should.

* Repeating courses at Duke can be unexpectedly challenging, as courses here may be taught in a different way than in high school. They are not necessarily a review or easier.

* There are a lot of premed courses to take at Duke; if you can replace some with AP credits, it will give you more time for other things and you may have an easier time scheduling courses.

9. Will all medical schools accept my AP credits in math, chemistry, physics, english, psychology and statistics?

Mostly yes. Because of the changes in the MCAT this year, medical schools are in the process of changing requirements for admission. Some medical schools are requiring fewer courses or are allowing flexibility in how you demonstrate "competency". Because you are at least three, and probably four years away from applying to medical school, our recommendation are these:

* Use the placement guidelines for chemistry and math according to those departments.

* If have AP credit, assume for now it will be acceptable.

* In your sophomore and junior years, begin to check the requirements of medical schools in your home state or others you might apply to.

* If you need to, you could add an extra course or courses during your junior or senior year or in a summer, if you decide to apply to a school that restricts AP credits. You would confer with your prehealth advisor at that time.

10. I'm in the Pratt School of Engineering ... are my premed requirements the same as for Trinity students?

Almost the same. Pratt students should follow Pratt schedules and fit in prehealth courses whenever they can. Specifically -

* Chemistry: Follow the same coursework as Trinity students.

* Math: You will take many more math courses than required by medical schools.

* Physics: Enroll in Physics 151L and 152L instead of Physics 141L and 142L; schedule these courses according to Pratt guidelines.

* Biology: Enroll in Biology 201L and BME 244L. Biology 202L is optional. You don't need to enroll in a physiology course or statistics, as these are covered in BME 244L.

* Statistics is optional; you will cover statistics in BME 244L.

* Psychology, sociology: You could add Psychology 101, 105, 106 or 212 when you can; also perhaps a sociology course that deals with health.

* English: If you don't have AP credit for English, enroll in an English course or course with a W (writing) code (or an English course with a W code to be very safe). Medical schools will look for a year of English/writing. Writing 101 will be one course and you will need to add another.
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<td>Math 105L</td>
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</table>

Also add:

- Statistics
- Psychology
- Sociology
- English/W

*If you have a 5 on the AP chemistry exam (Chem 21) and go directly into organic chemistry (Chem 201DL), you may need to add an additional chemistry course (e.g., Chem 210DL, Biochem 302, Biochem 401) later. You may need to add other courses junior or senior year, depending on the schools that you apply to and their requirements.

Physiology courses include Biology 329D, 329L, 278LA and Cell Biology 503.

For course suggestions for psychology, sociology and statistics, see prehealth.duke.edu/prepare > course requirements.

Prospective physics, biophysics and math majors should take Physics 161L, 162L. Pratt students with AP credit for Physics 25 and 26 should enroll in Physics 153L.

Dental and veterinary schools have similar requirements. All students should check the websites of health professions schools they may apply to, to see if there are additional courses needed.

For the year of English, Trinity students will fulfill this with Writing 101 and their two W courses (for the curriculum). Pratt students will take Writing 101 and then should add an English course or a course that has a W code (or English-W course).
LISTING OF OTHER FALL COURSES THAT MIGHT BE APPEALING

The courses below will not fulfill the core premed requirements, but they will give you a chance to expand your knowledge of the world, or perhaps find new areas to explore. As a physician or health care worker, you will want to develop good communication skills, an understanding of people, diversity, cultures, lifestyles and how health care is best addressed. Some of these courses might help you prepare for study abroad, or Duke Engage, or other experiences you will have.

1. **Courses for MCAT preparation** - you should have an understanding of the psychological, social and biological foundations in health care; these courses would be useful, but you could find others as well

   - Psy 101 Introduction to psychology
   - Psy 106 Biologic basis of behavior (requires some bio background)
   - Soc 110D Sociological inquiry

2. **Courses in departments that teach about people, lifestyle, health, diversity, culture etc.**

   - AAAS
   - AMES
   - ICS
   - GLHLTH - the intro course (101) is full, but you might look at 200 and 300 classes; some are open and GLHLTH 101 does not need to be taken first

3. **Specific courses that deal with people, lifestyle, health, diversity, culture etc.** (we can't promise that seats will be available; but these courses might give you ideas)

   - AMI 101 Introduction arts of the moving image
   - ARTS&SCI 298D Discovering education and human development
   - Bio 158 Plants and human use
   - Bio 199D Introduction to biological thinking
   - Culanth 101 Intro to cultural anthropology
   - Culanth 130.01 Anthropology and film
   - Educ 101 Foundation of education (service-learning course, tutor in local schools)
   - Evanth 101 and 101D Introduction to evolutionary anthropology (sometimes an alternate to a biology major)
   - ICS 106S Intro to Latino/a studies
   - ICS 110 Intro to African studies
   - ISIS 110 Information, society and culture
   - Latamer 230 Intro contemporary Latin America
   - Psy 102 Cognitive psychology (Psy 101 experience recommended)
   - Psy 103 Developmental psychology (Psy 101 experience recommended)
   - Psy 104 Social psychology (Psy 101 experience recommended)
   - Psy 105 Abnormal psychology (Psy 101 experience recommended)
   - Neurosci 101 - this introductory course is full, but consider it in the spring
   - Soc 218 Sex, gender, society
   - VMS 130 Anthropology and film
   - VMS 202D Intro visual culture
   - WST 202S Study of sexualities
   - WST 222 Gender and philosophy
   - WST 230 Women in the economy
   - WST 239D Women/gender/sexuality in the US
   - WST 363S Interpreting bodies

4. **House courses** - these are 0.5 credit courses taught on a satisfactory/unsatisfactory basis:

   - HC 59.04 Inquiry into HIV/AIDS (0.5 credit)
   - HC 59.05 Chemistry in society
   - HC 59.06 Science of malaria
   - HC 59.08 Ounce of prevention
   - HC 59.10 Does God exist? morality and religion
   - HC 59.11 Intergroup dialogue and identity
5. A course in a department in which you might **major**.

6. A course that deals with an area of the world you'd like to **travel to** (could be religion, arthistory, history, political science, a foreign language, etc.)

7. A course that deals with an **extracurricular activity** you spent a lot of time on in high school, and that you'd like to continue at Duke (e.g. leadership, politics, theater, children)

8. A course that is a **strength** of yours, for instance look for W courses if you like to write, or a music course if you enjoy music.

9. A **service learning** class if you feel strongly about being engaged in civic and community support.

Chem 180 Chemistry Outreach: Sharing Chemistry with the Community (requires AP chemistry)
Educ 101 Social and Philosophical Foundations of Education
Writing 101.57 Grassroots Activism

10. If you can't find a fourth course and are in Writing 101, add a seminar and finish that requirement. If you can't find a fourth course and are in a seminar, see if there is a Writing 101 section open during drop/add that you could enroll in

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