Prerequisites

Welcome to the University of North Carolina's School of Medicine Academic Requirements page. We thank you for your interest in our program.

The goal of the School of Medicine is to produce outstanding physicians who are well prepared for meeting society's health care needs in the 21st century. This section of the web site is designed to help you understand our admissions process, including our policies, procedures, requirements, and admissions criteria. Our Admissions Committee seeks students who will thrive in the educational setting at UNC's medical school and who demonstrate altruism, integrity, leadership, community service, motivation, and the ability to communicate effectively with others.

Prerequisites

Barring extraordinary circumstances, a bachelor's degree is required for admission; and, in fact, all students in recent years have had degrees. Students are encouraged to pursue one or more scholarly interest in depth during the undergraduate years, but course work must demonstrate proficiency in the natural sciences. A student who earns a degree in less than four years may apply, but should recognize that understanding the human condition and developing good judgment require experience. Without unusual qualifications, questions about breadth of education, maturity, experience, and motivation may put such an applicant at a disadvantage.

Academic preparation should include these prerequisite courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Minimum Semester Hours</th>
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<tbody>
<tr>
<td>Biology including at least one course with lab. It is strongly suggested that students take at least one course in Cell and Molecular Biology or Genetics.</td>
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<tr>
<td>General and Organic Chemistry with labs. In addition, a course in Biochemistry is strongly recommended.</td>
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<tr>
<td>General Physics with labs</td>
<td>8</td>
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<tr>
<td>English*</td>
<td>6</td>
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*If you satisfy your undergraduate institution's English or Literature requirement for your degree program, you will satisfy ours.

If your degree is from an educational institution not located in the United States or Canada, AMCAS, the degree verification service, will not certify your credentials. Therefore, our prerequisites must be met from an accredited college or university within the United States or Canada to allow eligibility for verification by AMCAS.

After your prerequisites have been successfully completed, and AMCAS has verified your credentials, UNC School of Medicine will review your application, and take into consideration all of your educational degrees.

Beyond the fixed requirements, a variety of undergraduate educational experiences are appropriate to medicine. The school values a pattern of preparation for medicine that shows serious and mature use of the undergraduate years. Course work in the humanities and social sciences as well as advanced work in the sciences and mathematics is preferred. Proficiency in English is essential.

The Medical College Admission Test (MCAT) is required. MCAT Scores older than five years from the year of matriculation are not considered. Applicants must take the test no later than September before the year they wish to enter into medical school.

Required Courses

Vanderbilt University School of Medicine seeks students with a strong background in both science and the liberal arts who will have the baccalaureate degree before matriculation. The Medical College Admission Test (MCAT) is required and used along with other data to predict success in preclinical course work.

Applicants must present evidence of having satisfactorily completed the minimum requirements listed below by the end of the fall semester in the year in which they apply to medical school. A semester hour is the credit value of sixteen weeks of work consisting of one hour of lecture or recitation or at least two hours of laboratory.

Advanced placement credits, CLEP credits and pass/fail credits are not acceptable in lieu of ANY required courses. Advanced courses in the same discipline may be substituted for the requirements when the applicant has placed out of the entry level course.

- **Biology:** A minimum of 8 semester hours, including laboratory.
- **Chemistry:** A minimum of 16 semester hours including laboratories, 8 in inorganic chemistry and 8 in organic chemistry.
- **English and Composition:** A minimum of 6 semester hours in English literature and/or writing.
- **Physics:** A minimum of 8 semester hours, including laboratory.
Requirements

Although a minimum of 90 undergraduate semester hours is needed for admission, almost all students have earned degrees before matriculation. Eight semester hours each in general biology, general chemistry, organic chemistry, and physics are generally considered as minimum preparation. Prerequisite course work from community colleges is strongly discouraged because of the difficulty in adequately assessing the quality of that preparation. If a prerequisite course is completed at a community college, student must take subsequent courses in that discipline at a four-year college or university in the United States or Canada.

- Eight semester hours of vertebrate zoology or general biology
- Eight semester hours of general physics
- Eight semester hours of general chemistry
- Eight semester hours of organic chemistry

BIOLOGY

Courses should provide a broad survey of the animal kingdom, an awareness of animal types and their classifications, and a view of man in nature. Such information is usually covered in one year of general biology. A laboratory course which provides opportunity for dissection is desirable.

CHEMISTRY

The student should have a working knowledge of chemical principles and basic quantitative and physiochemical concepts of the properties of chemical elements and ions, and the relationship of chemical properties to structure and function. It is important that the student’s experience includes adequate time in the laboratory and familiarity with quantitative techniques.

PHYSICS

Knowledge of the fundamental principles of electricity, electromagnetic radiation, sound, heat, mechanics, and optics is valuable and can usually be obtained in a one-year course in general physics.

Admission Requirements

The Medical College Admission Test (MCAT) is required of all applicants who seek admission to the Brody School of Medicine. Information about this test, which is administered in the spring and fall, may be obtained online at www.aamc.org/students or from the MCAT Program Office, P.O. Box 4056, Iowa City, IA 52243-4056. Applicants are asked to take this test in the spring, but no later than fall, of the year prior to their desired matriculation date in medical school, and to have the results sent to the Brody School of Medicine at East Carolina University.

While most successful applicants will have completed an undergraduate degree before enrollment, each applicant must have the equivalent of at least three years of acceptable work at an accredited college or university prior to matriculation in medical school. No specific undergraduate major is required, but regardless of the major interest area, the applicant must have completed one year of each of the following courses (preferably prior to taking the MCAT, and definitely prior to admission):

- General Biology or Zoology with laboratory (Botany alone is not sufficient to meet this requirement),
- General Chemistry with laboratory (which must include both qualitative and quantitative analysis),
- Organic Chemistry with laboratory,
- Physics with laboratory, and
- English

While not required, courses in genetics, biostatistics, humanities, social science, and an additional year of English are strongly recommended. In keeping with AAMC recommendations, applicants are encouraged not to enroll in undergraduate or graduate courses which are likely to be repeated in the medical school curriculum.
What prerequisites do I have to have?

Almost every medical school requires the following courses, and though not explicitly stated, expect you to have obtained an A in each of them: Introduction to Biology (two semesters), General Chemistry (two semesters), Organic Chemistry (two semesters), and Physics (two semesters). A significant number of schools also require 4-6 courses in the humanities (e.g., English, History, Philosophy, etc.), and a few require a year of calculus. You should always determine a school's requirements before you apply. Admission to Duke requires at least 90 hours of approved college credit, including:

- One year of college English or a university writing course
- One year of inorganic chemistry/one year of inorganic chemistry lab
- One year of organic chemistry/one year of organic chemistry lab
- One year of physics/one year of physics lab
- One year of biology or zoology/one semester of biology lab
- One semester of calculus plus one semester of an additional college-level math, such as statistics

We recommend that you take an introductory course in biochemistry during the senior year, if possible. All science requirements must be completed not more than seven years before you enter medical school.

**COURSE REQUIREMENTS**

Applicants are required to complete at least 90 semester hours (or 135 quarter hours) of a balanced undergraduate education from a regionally accredited institution in the United States or Canada. Completion of the baccalaureate degree is highly preferred.

Minimum course requirements include:

- **Physical Science** 8 semester hours (with lab)
- **Biology** 8 semester hours (with lab)
- **Chemistry** 8 semester hours (with lab)
- **Organic Chemistry** 8 semester hours (with lab)
- **English** 6 semester hours
- **Humanities/Social Sciences** 18 semester hours

Science course requirements are intended to demonstrate a sound knowledge in each of the basic science areas. We expect medical school students to have a strong foundation in these areas, prior to attending medical school. An applicant’s GPA in the sciences is carefully considered, although not weighted.

The English requirement is intended to demonstrate competency in grammar and composition at the college level. Literature courses may be used to fill the English requirement if the course was writing-intensive.

Examples of Humanities/Social Sciences courses include:
Entrance Requirements

- Medical College Admission Test (MCAT) scores are required (must be less than 5 years old).

The MCAT should be taken no later than spring or fall of the year preceding admission. To do well on the MCAT, students are advised to take 2 semesters of introductory biology, introductory physics, general chemistry, and organic chemistry prior to taking the test.

- At least ninety semester hours (90) semester hours are required. Preference is given to applicants who have completed four years of college work and have earned a baccalaureate degree. Only those applicants with extremely unusual circumstances are admitted after 90 semester hours.

- Although no prerequisite courses are required, most successful applicants to this medical school complete two semesters of the following courses prior to matriculating: general biology, general chemistry, organic chemistry, and physics. Other courses that have been shown to be of value are: anatomy, biochemistry, cell biology, embryology, genetics and physiology.

Completion of a minimum of 90 semester hours of undergraduate courses at a regionally accredited college or university is required to be eligible for admission.

<table>
<thead>
<tr>
<th>Required Courses</th>
<th>Semester Hours</th>
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<tbody>
<tr>
<td>General Chemistry (with labs)</td>
<td>8</td>
</tr>
<tr>
<td>Organic Chemistry (with labs)</td>
<td>8</td>
</tr>
<tr>
<td>Physics (with labs)</td>
<td>8</td>
</tr>
<tr>
<td>Biology (with labs)</td>
<td>8</td>
</tr>
<tr>
<td>Communication Skills</td>
<td>9</td>
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<tr>
<td>Course Electives</td>
<td>49</td>
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</tbody>
</table>

With the exception of the required courses noted above, applicants are strongly urged to follow their own personal interests in developing their premedical course of study. Undergraduate majors in the humanities or sciences are equally acceptable.
Preparations

- English composition and literature- two semesters or three quarters
- Biology with laboratory- Work in general biology, general zoology, or botany is acceptable. No more than four semester hours may be botany. Two semesters or three quarters
- General inorganic chemistry* with laboratory- Work in qualitative analysis, quantitative analysis, or physical chemistry is acceptable. Two semesters or three quarters
- General organic chemistry* with laboratory- This course work should include studies of aliphatic and aromatic compounds. Two semesters or three quarters
- Strongly Preferred- Physics, Histology and Biochemistry. Clinical experience

*All science course work must be acceptable for continued study by department majors.

- For most applicants, a strong preparation in the natural sciences is the best basis for the study and understanding of the medical sciences. For this reason, the Admissions Committee recommends that most applicants complete more than the minimum requirements in the area of natural science.
- College Level Examination Placement (CLEP) and Advanced Placement (AP) credits are acceptable, provided that such credits have been accepted by an undergraduate school toward a degree, are clearly indicated on the official transcript, and do not represent more than 25 percent of all undergraduate credit awarded. Applicants with CLEP or AP credit in basic premedical courses are advised to take a full year of course work in the same area at the more advanced level.
- Preference is given to applicants who will, upon enrollment, hold a bachelor's degree. Applicants occasionally are admitted on the basis of 90 semester hours of outstanding undergraduate achievement.
- As a matter of policy, the School of Medicine can accept applications only from those individuals who are currently citizens of the United States or who are permitted by the Immigration and Naturalization Service to reside permanently in the United States.
- The School of Medicine can accept applications only from those individuals who have completed their undergraduate premedical education at a college or university in the United States or Canada.

Admissions Requirements

There are five (5) major areas considered in admissions decisions:

1. Undergraduate academic preparation and achievement
2. Personal qualities as assessed from interviews
3. Professional evaluation and references
4. Professional college admission test scores
5. Scores on the Medical College Admissions Test (MCAT)

Undergraduate Academic Preparation

Because the College of Medicine recognizes the importance of a broadly based undergraduate education in the liberal arts and sciences, no specific major is required for medical school admission. Prospective candidates are strongly encouraged to major in their area of greatest interest, and regardless of choice of major, are encouraged to pursue a broad education that includes the natural sciences, the behavioral sciences, and the humanities.

The Committee on Admissions is particularly impressed by students whose education has provided a broad range of intellectual experiences, including opportunities for analytical thinking and independent study. With rare exceptions, the completion of a baccalaureate degree will be necessary in order to fulfill educational expectations.

A student who has been awarded advanced placement credit or other non-traditional credit in prescribed science courses by the undergraduate college will have those credits honored in fulfilling requirements for the College of Medicine, provided such placement has been followed by a more advanced course in the same discipline. (Example: A student who received advanced placement credit in calculus may be required to take a more advanced course in calculus.)

The Committee on Admissions will consider grade averages stated in both prescribed and elective courses. A grade of "C" or better in each of the prescribed pre-medical courses is required. If a prospective student is uncertain of the acceptability for pre-medical credit of a proposed course of study, and if the pre-professional advisor cannot advise in the matter, the prospective student is invited to make inquiry to the Office of Admissions, College of Medicine, 910 Madison Avenue, Suite 300 at The UT Health Science Center, Memphis, TN 38163.

Chemistry [16]

A minimum of sixteen semester hours of chemistry is required. Eight semester hours must be in organic chemistry and another eight semester hours must be in inorganic chemistry, which may include analytical chemistry. Each of these courses must be standard, college-level course utilizing full laboratory facilities. In instances where students feel uncertain of their preparation in chemistry and wish to take additional work, biochemistry is recommended.

Physics [8]

Acceptable courses in physics must include laboratory credits and must adequately cover mechanics, heat, light, sound, electricity, and magnetism. Survey types of courses will not satisfy this requirement.

Biology [8]

Eight semester hours in modern concepts of mammalian biology, including laboratory are required. Courses in botany do not meet this requirement. Applicants, particularly non-science majors, are strongly encouraged to pursue upper level coursework in the biological sciences beyond the minimum requirement. Such courses might include biochemistry, cell biology, comparative anatomy, embryology, general genetics, histology, immunology, mammalian physiology, microbiology or related courses.

English/Literature [6]

Faculty in the use of both oral and written English is considered highly essential to the successful study of medicine. Introductory freshman English (six semester hours) will meet the admission requirement. Students who qualify for advanced placement credit in English will not be required to take additional English courses, although such students are encouraged to do so.

Electives [52]

In as much as the medical curriculum is devoted largely to the biological and physical sciences, a student should acquire a broad cultural background in the pre-medical preparation. The behavioral sciences, including psychology, sociology, etc., are considered valuable. Additional dimensions are derived from higher mathematics, computer sciences, languages, literature, philosophy, history, political science, economics, etymology and statistics.

Total Hours [90]

Ninety semester hours at an accredited American college or university
Applicants must have completed:

- ** Biology
  - One academic year** of general biology or zoology with lab

- **Chemistry
  - One academic year of general/inorganic chemistry with lab
  - One academic year of advanced chemistry, two quarters or one semester of which must be organic chemistry with lab. The other quarter or semester may be fulfilled by any advanced chemistry course (lab not necessary).
  - Biochemistry is strongly recommended.

- **Physics
  - One academic year of physics with lab

- **English
  - One academic year of English or whatever portion in the academic year is required for the baccalaureate degree in an accredited college or university.

**one academic year is equal to two semesters, three quarters, or two quarters and a semester**

Courses recommended:

- Cellular biology and statistics

- All required courses should be taken on a graded grading scale (e.g., A, B, C, D, F) when possible. A pass/fail type system should not be used.

**MCAT Requirement**

Applicants must take the Medical College Admission Test (MCAT) preferably in the spring before applying. The deadline is September 2009.

**All applicants must have taken the MCAT no earlier than April 2007 and no later than September 2009.**

Early Decision Program applicants must take the MCAT by June 18, 2009. Regular applicants must take the MCAT by September 2009.

MCAT registration packets can be requested from the MCAT Program Office, 2255 North Dubuque Rd., P.O. Box 4056, Iowa City, IA 52243 or by visiting the MCAT section on the AMCAS Web site at www.aamc.org.