

MIT Academic Preparation for Application to Medical School

The MIT Committee on Prehealth Advising has provided the following information to guide MIT students on how to fulfill the academic requirements for admission to most U.S. medical schools. Specific requirements may vary for a particular school, and thus we suggest also referring to the Medical School Admission Requirements (MSAR) and information directly from particular schools to which you plan to apply.

REQUIRED COURSES:

| |
|--|
| General Biology with lab (2 semesters) |
| Introductory Biology (7.012, 7.013, 7.014, 7.015, or 7.016) |
| and one of the following: |
| Intro. To Experimental Biology and Communication (7.02/10.702) |
| Laboratory Fundamentals in Biological Engineering (20.109) |
| Experimental Molecular Neurobiology (9.12) |
| General and Organic Chemistry with lab (3 semesters) |
| Principles of Chemical Science (5.111 or 5.112) |
| or Intro to Solid State Chemistry (3.091) |
| and |
| Organic Chemistry I (5.12) |
| <i>Note: Some schools require 2 semesters of organic chemistry</i> |
| and |
| Laboratory Chemistry (5.310) |
| or Fundamentals of Spectroscopy, Synthesis of Coordination Compounds and Kinetics, and Organic Structure Determination (5.351, 5.352, 5.363) |
| Biochemistry (1 semester) |
| General Biochemistry (7.05) |
| or Biological Chemistry (5.07/20.507) |
| Physics (2 semesters) |
| Physics I (8.01) and Physics II (8.02) or equivalent |
| Math (2 semesters) |
| Calculus (18.01) and Calculus II (18.02) or equivalent |
| <i>Note: AP credit will be accepted for math.</i> |
| English/Writing and Humanities (2 semesters) |
| Courses in writing and humanities that satisfy the CI-H requirement. |

RECOMMENDED COURSES:

Taking some of the additional subjects below may provide additional breadth and depth in preparation for medical school. The list is not intended to provide an exhaustive list of courses that all premedical students should take, but rather, is provided to guide students in the selection of a few electives that may be of interest.

| Biology | |
|---|--|
| 7.03 Genetics | |
| 7.06 Cell Biology | |
| 7.20 Human Physiology | |
| Chemistry | |
| 5.08 Biological Chemistry II | |
| 5.13 Organic Chemistry II | |
| 5.60 Thermodynamics and Kinetics | |
| 20.110J Thermodynamics of Biomolecular Systems | |
| Math/Statistics | |
| 18.05 Introduction to Probability and Statistics | |
| Social/Behavioral Sciences | |
| The following subjects provide a broad perspective on humanities and social science subjects and may be of particular interest to students interested in health-related careers. These subjects may also provide background in foundational concepts and scientific inquiry and reasoning skills for the new Psychological, Social, and Biological Foundations of Behavior section of the MCAT. | |
| Psychology | Sociology |
| 9.00 Introduction to Psychological Science | 21A.156 Introduction to Sociology |
| Anthropology | Political Science |
| 21A.00 Introduction to Anthropology: Comparing Human Cultures | 17.309J Science, Technology, and Public Policy |
| 21A.300 Practicum in Global Health and Development | 17.315 Health Policy |
| 21A.301 Disease and Health: Culture, Society, and Ethics | 17.317 U.S. Social Policy |
| 21A.302J Dilemmas in Biomedical Ethics: Playing God or Doing Good? | 17.30J Making Public Policy |
| 21A.303J The Anthropology of Biology | Science, Technology, and Society |
| 21A.305J Drugs, Politics, and Culture | STS.049 The Long War Against Cancer |
| 21A.306 Culture, Embodiment, and the Senses | STS.006J Bioethics |
| 21A.308 Global Mental Health | STS.012 Science in Action: Technologies and Controversies in Everyday Life |
| 21A.310J Global Sexualities | STS 450 The Global History of Medicine and Public Health |
| 21A.331J Infections and Inequalities: Interdisciplinary Perspective on Global Health | Women's and Gender Studies |
| Economics | WGS.225J The Science of Race, Sex and Gender |
| 14.21 Health Economics | WGS.151 Gender, Health, and Society |
| Linguistics and Philosophy | |
| 24.236 Topics in Social Theory and Practice | |

Note: Other health profession programs, such as dentistry and veterinary medicine, may require additional prerequisite courses. See the school/program web sites for more information.

Frequently asked questions regarding premedical requirements:

Q: Is one full year of organic chemistry required?

A: Medical school requirements have recently been changing at a number of schools. In particular, many schools now no longer recommend a second semester of organic chemistry, but instead, require a semester of biochemistry. The MIT requirements listed above are in accordance with these revisions. However, during this transitional time, some schools may still require a second semester of organic chemistry. MIT students can fulfill this requirement by taking 5.13, a second semester course emphasizing organic synthesis. Some MIT students have also fulfilled the requirement of a second semester course in organic chemistry after 5.12 by taking Chemistry 27 at Harvard University, a course offered in the spring that is focused on organic chemistry in biological systems.

Q: Is a full year of general and/or inorganic chemistry required?

A: The MIT Committee on Prehealth Advising recommends that the MIT course sequence of 5.111 or 5.112 (3.091 is also an acceptable alternative although the Department of Chemistry recommends 5.111/5.112 as optimal preparation for 5.12), 5.12, and a semester-long lab course (either 5.310 or 5.351-5.352-5.363) should satisfy the general and organic chemistry requirement for most medical schools, including the laboratory requirements. A course in physical chemistry (e.g. 5.60) may serve as an elective course for schools that require additional chemistry, but in general, is not required for admission to medical school.

Q: Can I take prerequisites abroad?

A: No. Medical schools will not accept international coursework, so you should not take any of the prerequisites at an International college or university.

Q: Can I take prerequisites on pass/no record?

A: With the exception of any courses completed during the first semester of your freshmen year, applicants should not take prerequisites on pass/no record.

Q: Do any medical schools require the release of freshmen year hidden grades?

A: No

Q: What if I received AP credit for prerequisite courses?

A: For the most part, as long as you took an upper level course in that same discipline at MIT or another 4 year university you should be ok. (For example, if you received AP credit for 8.01, but took 8.02 at MIT you will be fine. Or, if you received AP credit for 8.01 and 8.02, but took an upper level physics or applied physics course [i.e. engineering] you should be fine.) Unique cases should talk with Prehealth Advising.

Q: I took an ASE for one or more of the prerequisite courses. How will the medical schools view these grades?

A: ASE grades do appear on your official transcript, so you will enter them into the AMCAS application just like any other course (noting CLEP as the special course type), and they will be viewed just like your other course work. While ASE grades do not factor into the MIT GPA, ASE grades will factor into the AMCAS GPA.

Q: I took a prerequisite(s) at another college other than MIT, but MIT did not accept the credit. Do I need to retake it at MIT?

A: If the course is not required for your MIT degree than no, you do not need to retake the course. When you apply to medical school you will be asked to present coursework taken at every U.S. college or university you've attended.

Q: Can I take prerequisites after I've submitted my AMCAS application?

A: While it is preferred that you complete all of the prerequisites before submitting your primary application, applicants can take the final prerequisites during the year of application/interview. When you fill out your AMCAS application you can include courses that you intend to take in the coming year. This lets the school know of your plan to complete these courses before matriculating.

Common MCAT Questions:

Q: What courses should I take pre-MCAT?

A: We recommend completing the required courses prior to taking the MCAT. Some recommended courses may also provide helpful additional preparation.

Q: When should I plan to take the MCAT?

A: Summer and IAP are the most popular times to test. You should test no later than April of the year you intend to submit your application. It is preferred that you take the exam only once, when you are most prepared and ready. All attempts are on the record and seen by medical schools.

Q: What about changes in the "new" MCAT?

A: In addition to revised content regarding the natural sciences, the new exam requires test takers to demonstrate competencies in scientific inquiry and reasoning, research methods, and statistical analysis as applied to the social and behavioral sciences. The change is in acknowledgement of the important role of socio-cultural and behavioral determinants of health and health outcomes.

Q: How can I learn more about the MCAT? Where can I find prep materials?

A: Applicants should review the MCAT information provided by the [AAMC here](#)