



BIOLOGY PRE-MEDICINE

Including: ALLOPATHIC MEDICINE
OSTEOPATHIC MEDICINE
PODIATRY
OPTOMETRY

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PRE-MED (Allopathic or Osteopathic)

There is an on-going high demand for primary care physicians, especially family practice, in both rural and inter-city areas. Your initial goals need to include completion of all courses with superior grades. The required courses and electives recommended by an academic advisor are considered the courses necessary for preparation for the Medical College Admissions Test (MCAT), which normally is taken during or after the sixth semester (Spring, Junior Year). The computer based MCAT is offered several times each year. It measures skills and knowledge bases considered important for successful completion of medical school curricula.

<https://students-residents.aamc.org/about-mcat-exam/about-mcat-exam> It is recommended that students obtain a MCAT practice tool early in their academic tenure - during the first year is best. Preparatory courses offered by private sources for a fee are also available.

The AAMCAS or AACOMAS Central Application Service submission of GPA and MCAT scores serves as initial screening data used by many medical school admissions offices. Only applicants reporting adequate grades and scores will be asked to complete a "secondary application" to enter the applicant pool for potential interviews and acceptance for admission.

Proper form and thoughtful writing skills are very important for the application process. In addition to the MCAT applicants must include a concise personal statement in their application. That statement must be well written and include information relating why you want to become a physician and why you are unique and special compared to other applicants.

"The Medical School Admissions Requirements" booklet and MCAT and AMCAS application forms are available at this web site: www.aamc.org/students/

PRE-PODIATRY

Podiatry is a growing field of healthcare. Information on Podiatric schools may be found through the American Association of Colleges of Podiatric Medicine: <http://www.aacpm.org/> and applications are submitted through the AACPMAS portal: <https://portal.aacpmas.org/>.

Deadline for priority consideration is April 1st of each year for the upcoming Fall admission. The final application deadline date is June 30th of each year for Fall admission of the same year. Course requirements are similar to medical schools and MCAT is typically required.

PRE-OPTOMETRY

Applicants to professional optometry schools must complete at least 90 credit hours, although most schools now require or prefer a completed B.S. degree. Pre-optometry requirements can vary with different schools. Therefore, it is important to identify and complete those courses required and recommended by the schools to which you intend to apply. A directory of schools and information on 21 schools, prerequisite requirements, and applying to programs can be obtained from the Association of Schools and Colleges of Optometry (ASCO) website at www.optomcas.org. It is also recommended for students to get some experience or exposure to the optometric health care field.

Students should plan to sit for the Optometry Admissions Test (OAT) during their junior year or early senior year at the latest. It is recommended that students obtain an OAT practice manual during their freshman year. Information on the OAT can be obtained at <https://optometriceducation.org/>

Average GPA of admitted students in 2013 was 3.31, varying among schools. You may elect to apply for WICHE financial support for optometry schools in participating states (Oregon and California). Information on WICHE is available at www.wiche.edu.

GENERAL NOTES:

It is extremely important to work closely with your pre-medicine advisor immediately after the decision is made to apply to Medical School. The Medical Sciences Society, a student-run club at CSU-Pueblo, provides opportunities for pre-med students to be directly involved with local physicians and programs through experimental learning activities. It is a great idea to be an active member of this student organization. This club has its own room on the second floor of the Life Sciences building (LS 239). It also has a chapter of Alpha Epsilon Delta, a National Pre-Health Honor Society.

Academic success is the primary goal of your undergrad preparation for medical school. Students should then consider the co-curricular activities and experiences that will compliment and strengthen their application. These other activities include potential participation in research projects, community service, and/or leadership responsibilities on or off campus. All students should plan to gain exposure to healthcare professions through shadowing, volunteering or paid employment. Your academic advisor or Med Sciences Society can discuss suggestions for accomplishing this.

Biology B.S. with Pre-Med Concentration Course Requirements

| Biology Courses | Course Name | Credits | Semester |
|---------------------------------|---|----------------|-----------------|
| BIOL 171 | First Year Seminar | 1 | |
| BIOL 181/L & 182/L | College Biology I & II with Labs | 8 | |
| BIOL 201/L or 202/L | Botany or Zoology/Lab | 4 | |
| BIOL 301/L | General Microbiology/Lab | 5 | |
| BIOL 350 | Mendelian & Population Genetics | 2 | |
| BIOL 351 | Molecular Biology and Genetics | 2 | |
| BIOL 352 | Evolution and Ecology | 3 | |
| BIOL 412/L OR BIOL414/L | Cellular Biology/Lab* (S) Vertebrate Physiology/Lab* (F) | 4 | |
| BIOL 493 | Seminar | 1 | |
| Biology Electives | See Upper Division Electives Sheet | 12 | |
| | Total | 42 | |
| Chemistry Courses | | | |
| CHEM 121/L | General Chemistry I/Lab | 5 | |
| CHEM 122/L | General Chemistry II/Lab | 5 | |
| CHEM 301/L | Organic Chemistry I/Lab | 5 | |
| CHEM 302/L | Organic Chemistry II/Lab | 5 | |
| CHEM 311 or 411 | Biochemistry | 3 | |
| | Total | 23 | |
| Math and Physics Courses | | | |
| MATH 221 | Applied Calculus | 4 | |
| MATH 156 | Intro to Statistics | 3 | |
| PHYS 201/L OR PHYS 221/L | Principles of Physics I/Lab OR General Physics I/L | 4-5 | |
| PHYS 202/L OR PHYS 222/L | Principles of Physics II/Lab OR General Physics II/Lab | 4-5 | |
| | Total | 15-17 | |
| Gen Ed Courses | | | |
| ENG 101/102 | English Composition I and II | 6 | |
| COMR103 | Speaking and Listening | 3 | |
| General Education | (Humanities, History) | 9 | |
| PSYCH 100 | General Psychology (SS) | 3 | |
| SOC 101 | Intro to Sociology (SS) | 3 | |
| | Total | 24 | |
| General Electives | | 14-16 | |
| | Overall Course total | 120 | |

Minimum Required Courses for Pre-Medicine prep (Major other than Biology)

| Science Courses | Course Name | Cr. | Semester |
|-----------------------------|---|--------------|-----------------|
| BIOL 181/L | College Biology I-Organismal Bio/Lab | 4 | |
| BIOL 182/L | College Biology II-Cellular Bio/Lab | 4 | |
| CHEM 121/L | General Chemistry I/Lab | 5 | |
| CHEM 122/L | General Chemistry II/Lab | 5 | |
| CHEM 301/L | Organic Chemistry I/Lab | 5 | |
| CHEM 302/L | Organic Chemistry II/Lab | 5 | |
| CHEM 311 or 411 | Biochemistry | 3 | |
| PHYS 221/L OR PHYS 201/L | General Physics I/Lab OR Principles of Physics I/Lab | 4-5 | |
| PHYS 222/L OR PHYS 202/L | General Physics II/Lab OR Principles of Physics II/Lab | 4-5 | |
| | Science Total | 39-41 | |
| Other Courses | | | |
| Math 156 | Introduction to Statistics | 3 | |
| Math 221 | Applied Calculus | 4 | |
| ENG 101 | Composition I | 3 | |
| ENG 102 | Composition II | 3 | |
| ENG | Literature Course | 3 | |
| PSYCH 100 | General Psychology (SS) | 3 | |
| SOC 101 | Intro to Sociology (SS) | 3 | |
| | Total | 22 | |
| | Overall Total | 61-63 | |

*Many courses have prerequisites that may be found in the catalog.

Other helpful courses include but are not limited to:

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| <ul style="list-style-type: none"> • Genetics**/Molecular Biology • Cell Biology** • Ethics** • Microbiology | <ul style="list-style-type: none"> • Immunology • Physiology • Histology • Computers |
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**Highly recommended for pre-med student preparation