

Preparing for Medical School: Information for Premedical Students

Shoreline Community College/Advising & Counseling and Science Divisions

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Degree Preparation

In general, US medical schools require that a Bachelor's Degree is completed before entering the medical school. Students may choose any Bachelor's Degree and you are encouraged to choose one that you will find valuable regardless of whether you will actually enter medical school. Thus the degree progression is as follows:

- *Associates Degree* (more on next page) *Bachelor's Degree in any major* *Medical School*

Exceptions: a few schools offer a combined Bachelor's/Medical School early entrance program, and, on rare occasion a medical school will admit an exceptional candidate without a Bachelor's Degree.

If you have already earned a Bachelors Degree or higher before determining your interest in Medical School, you will not need a further degree, and can focus on course and experiential preparation.

Course Preparation

Most medical schools require the following *college courses*, regardless of your choice of major. In addition, the MCAT test requires knowledge in these areas:

- 1 year general chemistry with labs: CHEM 171/with lab 181, 172/lab 182, 173/lab 183
- 1 year organic chemistry with labs: CHEM& 241/with lab 271, 242/lab 272, 243/lab 273
- 1 year general biology with labs: BIOL& 211, 212, 213.
- 1 year general physics with labs: PHYS& 114, 115, 116 (algebra-based); or PHYS& 221, 222, 223 (with calculus)
- Biochemistry: currently recommended for most schools and required for some, including the University of Washington School of Medicine. Shoreline CC offers Chem 255 and 256; these courses transfer to the UW as Biochemistry 405 and 406. Starting in 2015 this will also be on the MCAT.
- Biological, Psychological and Sociological Determinants of Behavior: this will be a new MCAT section starting 2015 that content from biology, psychology, sociology and anthropology.

Additional courses:

- English: approximately 65% of medical schools require two or three quarters in English.
- Mathematics: approximately 30% require two or three quarters of college mathematics, and usually one quarter calculus suffices. The level of math you need also depends on your major in the Bachelor's Degree.
- Statistics: not currently required by many schools, but highly recommended and helpful for MCAT
- Liberal Arts: all medical schools value a broad based education and encourage course work in the arts, communication, ethics, multicultural studies and social studies.

Preparation Outside the Classroom

Personal Attributes

Medical schools are looking for superior personal attributes in areas such as integrity, responsibility, leadership, purpose, initiative, curiosity, problem solving skills, perseverance, breadth of interests, and communication skills. Cross-cultural awareness, knowledge and skills are also very important. These attributes can be developed and strengthened in a wide range of experiences in and outside the classroom. Some examples are:

- pursuing a talent in depth (music, sports, other),
- on campus club or event organization and leadership,
- community organization or event participation and leadership (neighborhood, faith community, non-profit, K-12 schools, etc),
- at a job (any job, especially if you earn a promotion to supervise or lead others),
- volunteer or work with people whose ethnic/cultural background is different from your own, language studies, study abroad and other multicultural experiences.

Understanding the US Health Care System

Read newspapers and magazines, talk with health care professionals, talk with patients, volunteer or work in one or more health care settings, discuss issues. In your personal statement and in the interview you will be answering questions such as, "Why do you want to be a physician?", "What are your personal strengths and weaknesses as it relates to the role of a doctor?", "What are some of the critical issues in health care today?"

Associates Degree and Course Planning

The **Associate in Science Transfer -Track 1** degree is designed to prepare students for the junior year at a university biology, biochemistry, chemistry or related program. This degree automatically includes many of the premed course requirements and works well for many pre-med students.

Students who plan on a major not in science, may need to take a few more courses in preparation for that major during their community college years. You can choose to take those courses in addition to the AS Track 1 requirements, or use the **Associate in Arts – Individualized Plan** degree. The AA-IP allows students to design their own degree plan with a mix of science and non-science courses.

Planning guides for these degrees are available on the SCC web site, at the Advising & Counseling Center in the FOSS/5000 building, at the 2800 building and from an advisor.

Scheduling: medical schools need evidence that you can succeed in a demanding full-time course schedules. Part-time students are recommended to include some quarters of full-time studies.

Sample Course Plan

For many students it takes three years to complete all the courses. Students who place immediately into college level English and calculus and whose circumstances make it possible for a demanding course load can do an Associates degree with appropriate science courses in two years.

Fall	cr	Winter	cr	Spring	cr	Summer	cr
MATH 099	5	MATH& 141	5	MATH& 142	5		
ENG 090 or 100	5	ENG 100 or &101	5	ENG& 101 or 102	5		
HUMDV 101 or your choice	2-5	CHEM& 121	5	Multicultural Studies	5		
Fall	cr	Winter	cr	Spring	cr	Summer	cr
MATH& 151	5	MATH& 152	5	MATH& 163 or 211	5		
CHEM 171/181	6.5	CHEM 172/182	6.5	CHEM 173/183	6.5		
ENG& 101 or General Education*	5	General Education*	5	General Education*	5		
Fall	cr	Winter	cr	Spring	cr	Summer	cr
Choose two from: CHEM& 241/271 PHYS& 114 or 221 BIOL& 211	7 5 5	Continue sequence: CHEM& 242/272 PHYS& 115 or 223 BIOL &212 Or CHEM 255	7 5 5 3	Complete sequence: CHEM& 243/273 PHYS&116 or 222 BIOL& 213 Or CHEM 256	7 5 5 3		
General Education*	5	General Education*	5	General Education*	5		

* General Education requirements: ENG 102 or Multicultural or Humanities or Social Science as noted on the degree planning guide.

Specific Requirements of the UW's Medical School

<http://uwmedicine.washington.edu/Education/MD-Program/Admissions/Pages/default.aspx>

- 7 qtrs of Social Science or Humanities: must be “human-based” coursework, not studio art.
- 9 qtrs of Chemistry and Biology: subject matter must include general chemistry, general biology, biochemistry, molecular genetics, and cell biology/cell physiology.
- 3 qtrs Physics: 3 qtrs; algebra or calculus-based (or 2 qtrs physics plus 2 qtrs calculus).

Course sequencing

Most of the required premedical courses need to be completed before taking the MCAT test and the application to medical school, both of which are at least one year before the date of entrance.

In general it is recommended to take **some science courses at a baccalaureate school** because some admissions committee members worry that CC grades are inflated compared to university grades. Of course your MCAT score is a nationally comparable measure of your academic learning and ability which allows you to demonstrate how strong our Shoreline courses are. Admission is determined by many factors and so this is not a requirement or rule, but something to consider in your overall planning.

Planning / Timeline

Many pre-med students take five years to study and complete their Bachelor's Degree and prepare to apply. However, some students do it in four years and some students have a non-traditional schedule for all or part of the time which results in six or more years. Yet other students already have a Bachelor's Degree and will do it in two or three years. Here is a sample time line:

Year/ Phase	Academic	Personal Development	Getting to Know Medicine	Application Process
One SCC	*Get good at being a college student, study skills, etc. *Take English, math and general education courses *Start with intro to chemistry if needed *When ready begin general chemistry sequence (CHEM& 171/181 is first quarter)	*Become active using college resources and clubs *Pursue off-campus interest	*Reflect: -what is my passion? – why do I want to be a physician? *Seek a medical related volunteer experience	*Attend information session about medicine and medical school
Two SCC	*Begin or continue in chemistry *Take more math, especially if you are thinking of a science major *Explore non-science courses for a possible major	*Consider your strengths and weaknesses. What type of skills and experiences do you want to add/strengthen?	*Read newspaper articles, magazines, etc about health care in the US and worldwide. *More volunteer or work experience	*Apply for a Summer enrichment program, or make your own arrangements for a valuable Summer experience
Three SCC	*Take organic chemistry *Take either biology or physics *Complete Associate Degree requirements *Take remaining courses to prepare for your major	*Continue developing your personal interests and strengths *Take on a leadership role at your community college club or work or other organization.	*What medical issues are you interested in? *Pursue a more in-depth experience for volunteering or work.	*Apply to transfer to a university *Learn about the AMCAS and MCAT *Talk to professors about letters of recommendation
Four Univ.	*Take either biology or physics *Courses in your major *If ready to do so, take Biochemistry	*Continue gaining experience (does not all have to be in health care) *Consider participating in a research project	*Read about medical schools and begin to select where you want to apply *Begin writing the personal statement	*Take the MCAT *Apply with the AMCAS *Begin the Secondary Applications (applications by school) *Gather letters of recommendation
Five Univ.	*Complete Bachelors Degree *Take Biochemistry *What other courses do you want to add? Be sure to explore in liberal arts courses.	*Begin or continue research? *Prepare for moving to another location	*Prepare for the interview: reflect on your personal attributes and preparation. *Keep learning about medicine, especially current events and developments.	*Complete Secondary Applications by the stated deadlines (Oct – Dec) *Research each school before the interview. *Practice interviews before the actual ones. *Apply for financial aid by each school's deadline *Keep record of each school and do all necessary follow up.

Application Process

MCAT

Application to medical school begins the spring and summer of the year before the year of entry. The Medical College Admission Test (MCAT) is computerized and available on a number of dates between January and September. The test covers all the science areas as well as reading and writing. For more information and to schedule a test date, go to the web site: <http://www.aamc.org/students/mcat/> Study materials are available at various bookstores (including the University Bookstore) or from the AAMC (see resources).

AMCAS and AACOMAS

Almost all US and Canadian medical schools use one of the application services, the American Medical Colleges Application Service (AMCAS) or American Association of Colleges of Osteopathic Medicine Application Service (AACOMAS). These are online applications in which you enter your courses and calculate your gpa, as well as submit the personal statement. You also need to send in official transcripts at that time and choose which medical schools you are applying to. Go to the AAMC or AACOM web sites for more information. Apply in July or August.

Secondary Applications and Interviews

Once the medical schools have received your AMCAS or AACOMAS application and your MCAT scores, they will review them and send you the application materials specific to their school. You will need to submit a fee and letters of recommendation to each school, as well as a written statement about your interest in that particular school. Deadlines range from October to December; responding early is best. Interviews occur between November and March. Sometimes you will receive an offer of admission within 2 to 3 weeks of the interview; other times you may not hear until April.

Letters of recommendation

Most admission committees require academic and character recommendations. The typical requirement is for letters from two or three college teachers representing both science and non-science courses, and one or two optional character references. Students should gather letters of recommendation during their sophomore and junior years in order to meet application deadlines early in their senior year.

Students who take classes at a baccalaureate school can usually make use of a letter-of-recommendation file service at the school.

Resources

Premedical Advisors at Shoreline CC

- Karen Kreutzer, Chemistry, Rm. 2817, 546-4576
- Linda Kuehnert, Chemistry, Rm 2821, 546-4575
- Dave Phippen, Chemistry, Rm. 2822, 546-4572
- Amar Yahiaoui, Chemistry, Rm 2820, 546-4738
- Joyce Fagel, Science Advisor, Rm. 2814, 546-6984,
Premed information sessions are held quarterly. Our blog <http://new.shoreline.edu/science/PreHealth/PreHealth-Notes.aspx> provides info about health related lectures, volunteer opportunities, and more.

Pre-Medical Sciences Club at Shoreline CC

This student club organizes activities to support and inform students and provides an opportunity for student leadership.

<http://echo.shoreline.edu/organization/premed>

University of Washington: the Pre-Health Advising:

<http://www.washington.edu/students/ugrad/advising/premed.html> web pages are excellent and include a great online pre-med workshop.

UW School of Medicine web site is also very helpful:

<http://uwmedicine.washington.edu/Education/MD-Program/Admissions/Pages/default.aspx>

Association of American Medical Colleges

(<http://www.aamc.org>) provides an MCAT Study Manual and also has a great information web site for pre-med students: www.aspiringdocs.org

Association of American Colleges of Osteopathic Medicine (<http://www.aacom.org>)

American Medical Association

A good resource for keeping up with current issues in health care: <http://www.ama-assn.org/>

Financial Information

Going to medical school costs a lot of money. Fortunately many medical students qualify for financial aid. Check with every school about the financial aid deadline as this is usually due before you know where you are admitted. Learn about the costs, the types of loans that are offered and scholarship sources at

https://www.aamc.org/services/first/first_factsheets/

Applying is also expensive; a typical average cost is about \$1000. The AAMC offers a fee waiver program for AMCAS; apply for this in January:

<https://www.aamc.org/students/applying/fap/> The MCAT and many schools also offer a fee reduction to eligible applicants.

To prepare, pay off outstanding consumer debt, including car payments, computers, moving costs.