

Marshall University College of Science
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College of Science Building



Robert C. Byrd Biotechnology Science Center

www.marshall.edu/cos/preprof



A Key to Unlocking Professional Health Care School Admissions



WE ARE...
MARSHALL™

**Prepared by the
College of Science
Dean's Office
Science Building
Room 270**



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The College of Science's Office of Student Services, where the freshmen and sophomore academic advisors are located, will assist you with class selection based on your ACT/SAT scores, Advance Placement classes, and goals. Juniors and Seniors are assigned to a faculty advisor who can assist you with upper-level course choices as well as career paths.

Requirements vary slightly among the professional programs. You need to discuss your options with your advisors in order to meet the requirements for your undergraduate degree and professional area of emphasis. With careful planning, all requirements for graduation and application to professional programs can be met while acquiring an undergraduate degree.



Do not seek advice from students, rely on self advice, or just take courses because they may be fun.

FOR MORE INFORMATION

Browse: www.marshall.edu/cos/preprof
 Email: cos@marshall.edu

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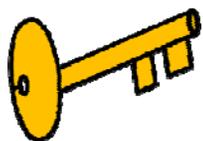
1. all requirements for graduation are met except the completion of a major,
2. you can present certification that you have successfully completed the first year at the professional school, and
3. a sufficient number of semester hours of good quality work has been completed to total 128 when added to these earned at Marshall.

You must attend the regular Marshall University commencement or have permission to graduate "in absentia."

WHAT CAN I DO IF I AM NOT ADMITTED TO A PROFESSIONAL SCHOOL?

Each year many students are disappointed by an unsuccessful application to a professional school. At this point, students look back to evaluate their level of commitment beginning with the freshman year; and they wish that they had devoted more time and effort to insure solid academic credentials. Although the time invested in undergraduate work might not result in admission to a professional school, it could be sufficient for alternative healthcare careers, graduate school, or law school.

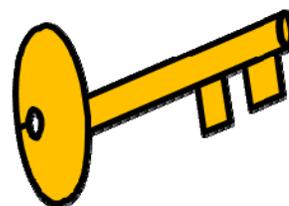
HOW CAN I OBTAIN THE BEST PRE-PROFESSIONAL ADVICE?



The Associate Dean of the College of Science serves as Marshall University's Preprofessional Officer, and can assist you with your preparation and choices. You may speak to the Associate Dean of the College of

Science at any time if you need help or have specific questions.

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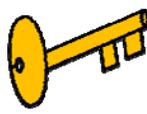


HOW TO USE THIS GUIDE

This guide was prepared to answer common and frequently asked questions about professional schools. Watch for the key symbol for important advice and answers.

WHAT ARE THE SCIENCE REQUIREMENTS FOR ADMISSION TO A PROFESSIONAL SCHOOL?

The actual number of required courses for admission to a professional school is small. The typical required science block is:

 Science Block	Marshall Equivalent
Principles of Biology I & II	BSC 120 and BSC 121
Inorganic Chemistry I & II with labs	CHM 211, CHM 217, CHM 212, and CHM 218
Organic Chemistry I & II with lab	CHM 355, CHM 356, and CHM 361
Physics I & II with labs	PHY 201, PHY 202, PHY 203, and PHY 204
Mathematics	College Algebra (MTH 127 or MTH 130) and Trigonometry (MTH 122), or Calculus (MTH 140 or MTH 229). Most medical and dental schools do not require Calculus but the College of Science requires Calculus for graduation. Pharmacy schools typically require Calculus and additional math to meet admission requirements.

IS COMPLETION OF THE BACCALAUREATE DEGREE REQUIRED FOR ADMISSION TO A PROFESSIONAL SCHOOL?

Even though most professional schools do not require completion of the degree, the tendency among medical or dental colleges is to require four years of pre-professional preparation, and preference is given to applicants having a four year degree. Chiropractors must possess a baccalaureate degree in addition to the Doctor of Chiropractic in order to practice in West Virginia. If you are granted early admission to a doctorate level program you may accept the offer and receive your degree from Marshall University after one year of study at the professional school. If you wish to study medicine or dentistry at a professional school you may be granted a leave of absence during the senior year at Marshall University.



HOW DO I REQUEST A LEAVE OF ABSENCE FROM MY SENIOR YEAR AT MARSHALL?

To secure this leave of absence you must file a written report in the College of Science's Office of the Dean, immediately after gaining admission to the professional school and before the termination of coursework at Marshall University. Failure to discharge this responsibility voids candidacy for the degree under this program. At least 96 hours of study must have been completed, a quality point average of 2.0 must have been earned, and the Marshall Plan must have been completed. At the end of the first year in the professional school you then are eligible for the baccalaureate degree from Marshall University, provided that

interests or special skills. These questions are asked to give the interviewers an idea of who you are as a person and how you relate to your fellow human beings. Be sure to talk about related experiences that you might have. If applying to an osteopathic medical school, be sure you know the difference between an osteopathic and an allopathic physician.

DO WV RESIDENTS HAVE A BETTER CHANCE OF BEING ADMITTED TO A WV STATE SCHOOL THAN A NON-RESIDENT?

Yes. All three state medical schools have a legislated mandate to admit state residents almost exclusively. There are exceptions, but the rule is fairly rigid. Private schools, such as the University of Charleston Pharmacy School, receive no state money, so they may admit anyone they choose. These schools are, however, rather expensive compared to a state school's tuition and fees.

WHAT IS THE ACADEMIC COMMON MARKET?

The Academic Common Market enables you to pursue out-of-state majors (like veterinary medicine) at in-state tuition rates, through agreements among the states and college and universities. Visit the Southern Regional Education Board's website for schools and programs offered (www.sred.org).

WHAT IS A FOREIGN BORN STUDENT'S CHANCE OF BEING ADMITTED TO A WV STATE PROFESSIONAL SCHOOL?

Your chances are not very good. Because of the reasons stated previously, foreign-born students are almost exclusively prohibited admission to state funded schools.

Professional exams specifically tests the content from the science block, more advanced courses will give you an admission advantage. Some schools suggest, but not require, courses such as:

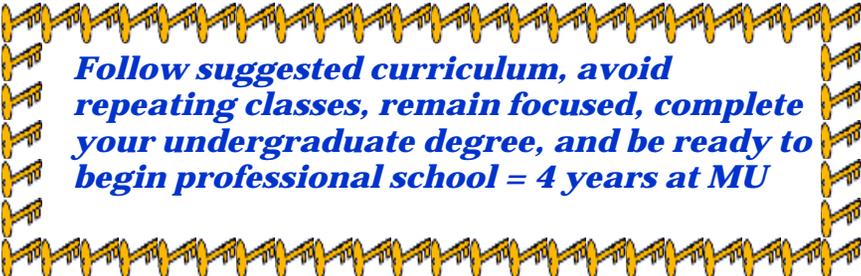
Suggested Courses	Marshall Equivalent
Animal Physiology	BSC 422
Biochemistry	BSC 365 for Biology majors CHM 365 for Chemistry majors
Cell Biology	BSC 322
Comparative Vertebrate Anatomy	BSC 310
Embryology	BSC 301
Genetics	BSC 324
Histology	BSC 300
Human Anatomy	BSC 227
Human Physiology	BSC 228
Immunology	BSC 448
Microbiology and lab	BSC 302 and 304
Social or Behavioral sciences	SOC 200 or PSY 201
Written communication	ENG 101 and ENG 102
Oral communication	CMM 103
Ethics	PHL 302
Statistics	MTH 225



Check the specific requirements of the professional school you want to attend.

You must identify additional admission requirements early and incorporate them into the graduation requirements for your major.

Through careful planning, all of the requirements for professional school and graduation from Marshall University can be included within the courses needed for graduation without taking extra courses or spending unnecessary time.



Follow suggested curriculum, avoid repeating classes, remain focused, complete your undergraduate degree, and be ready to begin professional school = 4 years at MU

IS THERE A SUGGESTED ORDER TO TAKING THE SCIENCE REQUIREMENTS?



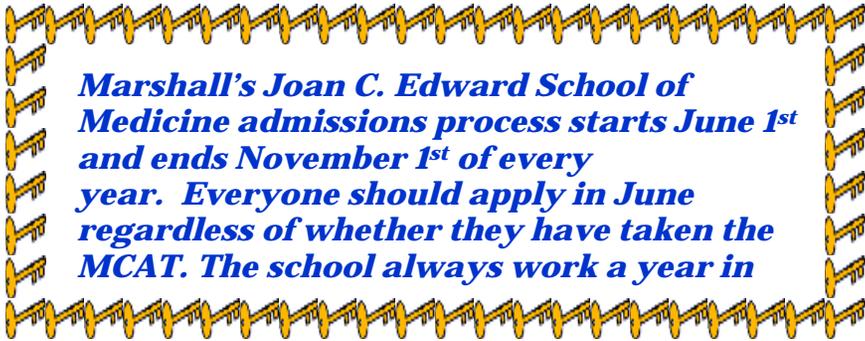
Freshmen and sophomore years focus on the science block courses for admission to professional school then the general education courses. The science block courses prepare you for the professional exam (MCAT, PCAT, DAT, etc.) which should be taken during your junior year. Focusing on your general classes during your freshmen and sophomore years prolongs your admission to a professional school.

7. Go by the College of Science Dean's Office and pick up forms that will assist you in getting letters of recommendation from the faculty. These forms are designed to insure that faculty members will not have to write letters to all of the schools to which you expect to apply.
8. Have everything completed and mail your application as soon as possible during your junior year, and before your senior year. Honor the application deadlines for the individual schools.



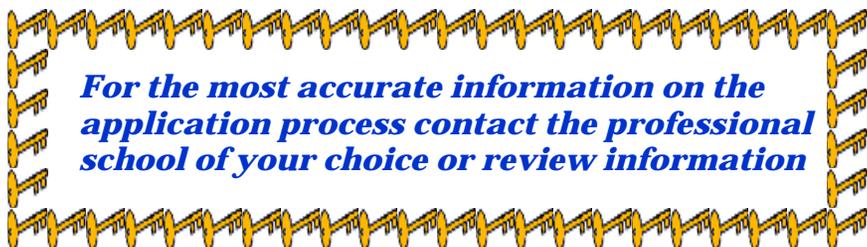
Late applications will seriously reduce your chances of being admitted.

9. The last step, and perhaps the most important step, is the personal interview. This should not be a totally intimidating situation. You will usually be asked the premier question, "Why do you want to be a physician (pharmacist, dentist, etc.)?" You should seriously think through this question before arriving at the interview. Always be honest and sincere. A light hearted or comedic answer will most likely not be appreciated. During the interview you may be asked about hobbies,



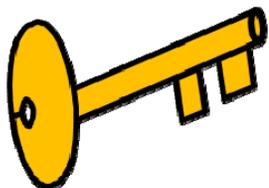
Marshall's Joan C. Edward School of Medicine admissions process starts June 1st and ends November 1st of every year. Everyone should apply in June regardless of whether they have taken the MCAT. The school always work a year in

WHEN SHOULD I BEGIN THE APPLICATION PROCESS TO PROFESSIONAL SCHOOL?



This activity begins shortly after taking the professional exam. The actual process of applying to a professional schools is a long and tedious one, often taking 12 to 15 months. As previously recommended, you should take your professional exam during your junior year and apply the beginning of your senior year.

Remember, the rules and the overall application process vary for each professional school. See the professional school materials for critical dates and requirements.



1. Begin by acquiring an application from the professional school's admission office or the school's preferred professional website like the AMCAS for medical schools.
2. Carefully fill out all required material.
3. Go to the Registrar's office and have an official transcript sent to the professional school.
4. Get a copy of your transcript and calculate your science and non-science GPA.
5. Begin the process of writing your entrance essay and have a trusted individual read and critique the essay.
6. Call at the appropriate time and check to see that your test scores have arrived.

WHAT GPA IS REQUIRED FOR ADMISSION?

There are several factors that collectively determine the admission decision: GPA, your professional exam score, outside activities, and the admission interview. More applicants have between 3.8 – 4.0 GPA than between 3.4 – 3.6 GPA.



However, there is neither a guarantee that a student with a higher GPA will be accepted nor a certainty that a student with a lower GPA will not be admitted. Someone with a high GPA (3.8 or above) can be rejected and an applicant with slightly lower GPA (3.4 – 3.7) can be selected. The decision rests on the overall application. Also, professional school selection committees vary from year to year in what they look for in a successful candidate.

IS IT TRUE THAT ONLY MY SCIENCE GPA IS REVIEWED?

Many professional schools calculate the GPA for each applicant in three ways: science, non-science, and overall. Depending on the institution, some may only count the first grade received in a course. Thus a course retaken, even under the D&F Repeat Rule, would not count. Others count the highest grade, or average the two them. These differences could cause the calculated GPA to differ from your GPA calculated by Marshall University. It is a good idea to check with the professional school admissions office, or consult the institution's web site, to learn how GPA calculation is handled. ***Students who have sought academic forgiveness may not be eligible for professional school.***



WHICH NATIONAL PROFESSIONAL EXAM SHOULD I TAKE AND WHERE ARE THEY GIVEN?

Check with the professional school of your choice for specific admission test requirements. Most of the exams are given at Marshall University or at West Virginia University in Morgantown. Application packets for these exams are available online at the national exam's website. The tests are:

Chiropractic	No admission exam required
Dental	DAT (Dental Admission Test)
Medicine	MCAT (Medical College Admission Test)
Optometry	OAT (Optometry Admission Test)
Osteopathic Medicine	MCAT (Medical College Admission Test)
Pharmacy	PCAT (Pharmacy College Admission Test)
Physical Therapy	GRE (Graduate Record Examination)
Physician Assistant	GRE (Graduate Record Examination)
Podiatry	MCAT (Medical College Admission Test) or GRE (Graduate Record Examination)
Veterinary Medicine	MCAT (Medical College Admission Test) or GRE General Test and GRE Biology Subject Test.

DO I NEED PRACTICAL EXPERIENCE?

Be sure you take the opportunity of getting some of practical experience before you decide to dedicate a great amount of time and effort toward becoming a health-care professional. Talk with a family care provider; a great way to see the professional in action is to shadow him/her for a day. Volunteering at the local Red Cross or a home for the elderly would also give valuable experience, or you may prefer work as an aid in a hospital. Summer employment in the medical field (positions such as an aide, orderly, or a pharmacy tech) is valuable. Perhaps as important as the major you choose, is your practical experience related to medicine.

DO I NEED TO BE INVOLVED IN EXTRACURRICULAR ACTIVITIES?

Concentrating on academics to achieve the best grades possible is extremely important. However, outside activities can play a crucial role in admission to professional school. Activities that might be helpful would include some volunteer work (e.g. the Red Cross, Habitat for Humanity, hospitals, etc.).



MU Students raise a wall on a Herd Habitat for Humanity house. Photo compliments from MU Communications Dept.

Alpha Epsilon Delta

Alpha Epsilon Delta is the pre-professional student honorary fraternity dedicated to helping students get into a professional school. You meet twice a month to discuss professional opportunities and hear speaker from health-related fields.

HOW MANY TIMES MAY I TAKE MY PROFESSIONAL EXAM?

Professional schools use multiple sets of scores in several ways. Some schools weigh all sets of scores equally and note improvements. Others consider only the most recent set of scores. Still others take an average of all sets of scores. Finally, some schools use only the highest set of scores or the highest individual section scores. Of the four methods, the first is the most common. Contact the professional schools of your choice to find out directly information about its score acceptance procedure.



DAT	Three times without special permission. You must wait 90 days between testing dates.
GRE	As many times as you want. You need to find out from the professional school of your choice which set of scores are accepted.
MCAT	Three times per year but you can only register for one testing session at a time. There is no specific waiting period between testing sessions.
OAT	As many times as you want. You need to find out from the optometry school of your choice which set of scores are accepted. You must wait 90 days between testing dates.
PCAT	As many times as you want. You need to find out from the pharmacy school of your choice which set of scores are accepted.

WHAT ARE THE PROFESSIONAL EXAMS LIKE?

The exams are structured somewhat similarly and assess mastery of basic concepts in biology, general and organic chemistry, and physics; facility with scientific problem solving and critical thinking; and writing skills.

DAT

A four and one-half hour computer-based examination consisting of 280 multiple-choice items distributed across a battery of four tests. First, the natural sciences [90 minutes consisting of 100 test items distributed across biology (40 items), general chemistry (30 items), and organic chemistry (30 items)]. Second, the perceptual ability (60 minutes consisting of 90 items distributed across six subtests). Third, the reading comprehension (60 minutes across three reading passages with a total of 50 items). Fourth, the quantitative reasoning (45 minutes to complete 40 items).

The approximate cost is \$190.00. Additional fees such as late registration, change of testing site, or rescheduling fees can be included in the total cost.

Standard scores range from 1 to 30; a score of 17 typically signifies the average national performance. There are no passing or failing scores. Unofficial score reports, generated at the test center, are provided upon completion of the test. Official score reports are sent directly to those schools requested on the application approximately three to four weeks after the test.

For the most current information, review the DAT web site.

GRE

A three hour computer-based general test is composed of verbal reasoning (30 minutes consisting of 30 questions), quantitative reasoning (45 minutes consisting of 28 questions), and analytical writing sections. The analytical writing section is always first and is split between an issue task and argument task. For the issue task, two topics will be presented and you will choose one. The argument task present one topic. In addition, one unidentified un-scored section may be included, and this section can appear in any position in the test after the analytical writing section. Questions in the un-scored section are being tested for possible use in future tests, and answers will not count toward your scores. The verbal and quantitative sections may appear in any order. Treat each section presented during your test as if it counts.

The approximate cost is \$140.00. Additional fees such as late registration, change of testing site, or rescheduling fees can be included in the total cost.

Three scores are reported on the General Test:

1. Verbal Reasoning - a 200-800 score scale, in 10-point increments.
2. Quantitative Reasoning - a 200-800 score scale, in 10-point increments.
3. Analytical Writing - a 0-6 score scale, in half-point increments.

Official scores will be sent to you and the professional schools you designated within 10 to 15 days after you take the test. Any section in which you answer no questions at all will be reported as a no score (NS).

The GRE Biology Subject Test consists of approximately 200 five-choice questions organized into three major areas:

WHEN AND HOW DO I REGISTER FOR MY PROFESSIONAL EXAM?

You must pre-register for the professional exam. There are no walk in arrangements. The pre-registration dates are listed on the professional exam's web site. You should familiarize yourself with the expectations of exam admittance by reviewing information given on each professional exam's web site.

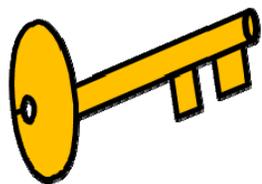
SHOULD I RETAKE MY PROFESSIONAL EXAM?

If you feel that your scores are low, or that they do not accurately reflect your abilities, you may wish to retake the exam again. Most studies indicate that about 60% of those who retake the exam better their grades, 20% do about the same, and 20% make lower grades the second time. Some considerations for retaking the exam include:

- Is there an unusual discrepancy between your college grades and the exam scores?
- Was your coursework in the areas covered on the test inadequate?
- Did you misunderstand the directions or incorrectly recorded your answers?
- Were you seriously ill at the time of the test?
- Has a member of a professional school admission committee recommended that you retest?



WHEN AND HOW SHOULD I PREPARE FOR MY PROFESSIONAL EXAM?



Typically, you take the professional exam during your junior year. If you take your professional exam in April the scores will be ready for a June admissions process. You must take it by mid-September so scores are ready by November.

One of the best way is to get a good freshman or sophomore textbook in each of the disciplines covered by the exam and review the material you had a year or so earlier. The scientific competency you will be expected to demonstrate includes basic principles and concepts in biology, general chemistry, organic chemistry, math, and physics.

You are strongly encouraged to take practice exams in order to help familiarize yourself with the exam and timing. These online exams can help you determine which areas you may need to study further. Minimize distractions, time yourself, and take the sections in their standard order.

Some students benefit by taking professional test taking courses. Two of the most widely known preparatory services are the Kaplan Course and the Princeton Review. These review services are expensive, but are gaining favor with local students.

cellular and molecular biology, organismal biology, and ecology and evolution. Approximately equal weight is given to each of the three areas. In addition to the total score, a subscore in each of these subfield areas is reported

The approximate cost for the GRE Biology Subject Test is \$130.00.

For the most current information, review the GRE web site.

MCAT

A five and one-half hour self-paced computerized exam. Optional breaks are including during the exam. The exam is divided into four parts: verbal reasoning (40 questions lasting 60 minutes), biological sciences (52 questions lasting 70 minutes), physical sciences (52 questions lasting approximately 70 minutes), and writing sample (approximately 2 questions lasting 60 minutes).

The approximate cost is \$210.00. Additional fees such as late registration, change of testing site, or rescheduling fees can be included in the total cost.

There is no penalty for guessing; which means that if you are unsure of your answer, you should guess rather than leave the question unanswered. Unanswered items are incorrect, but there are no additional score reductions for answers that you guess incorrectly. The scores range from a low of 1 to a high of 15 for each of the three multiple-choice sections of the test. Writing Sample essays are rated by a group of trained readers. Your raw score on the Writing Sample is the sum of four individual raw scores ranging from 1 to 6. Your total raw score is converted to an alphabetic scale ranging from J (lowest) to T (highest).

For the most current information on cost, review the MCAT web site.

PCAT

A 4-hour exam composed of 240 multiple-choice questions and 2 writing assignments. A short break is given half-way through the test. The exam is divided into seven subtests

1. Writing assignment lasting 30 minutes.
2. Verbal Ability. Thirty minutes and 48 questions testing sentence completion and nonscientific vocabulary.
3. Biology. Thirty minutes and 48 questions testing general biology knowledge (60%), microbiology (20%), human anatomy and physiology (20%).
4. Chemistry. Thirty minutes and 48 items covering general chemistry (60%) and organic chemistry (40%).
5. Writing assignment lasting 30 minutes.
6. Reading Comprehension. Fifty minutes and 48 multiple-choice questions concerning six separate science-related reading passages.
7. Quantitative Ability. Forty minutes and 48 questions evaluating basic math skills (15%), algebra (20%), probability and statistics (20%), pre-calculus (22%), and calculus (22%).

The approximate cost is \$125.00. Additional fees such as late registration, change of testing site, or rescheduling fees can be included in the total cost.

You will receive a scaled score and percentile for each of the five multiple-choice sections of the PCAT, and for all five of the multiple-choice sections as a whole (composite scores). Scaled scores run from 200 to 600. A separate score, ranging from one through five, is given for the Writing sections. A score of five is “superior”, and a score of one is “weak”.

For the most current information, review the PCAT web site.

OAT

A computerized exam that consists of four areas: natural sciences, reading comprehension, physics, and quantitative reasoning. The exam is approximately four hours long with a short break.

The approximate cost is \$130.00. Additional fees such as late registration, change of testing site, or rescheduling fees can be included in the total cost.

Scores are scaled from 200 to 400. An overall score of at least 300 and at least 320 on the natural science section are considered high. Average overall scores ranged from 310 to 350.

For the most current information, review the OAT web site.

SHOULD I PREPARE FOR MY PROFESSIONAL EXAM?

YES! 3 to 5 months ahead
3 to 5 hours per day

Don't take this test “cold”! Don't cram for this test!

The DAT, MCAT, OAT, and PCAT are very difficult (and expensive) exams, and the rewards for doing well are great. It is very shortsighted to not prepare in a significant way for an exam.