



**Marshall University  
College of Science  
One John Marshall Drive  
Huntington, WV 25755  
304/696-2372**



**WE ARE... MARSHALL™**



**College of Science Building**



**Robert C. Byrd Biotechnology Science Center**

# **From High School to Professional School**

**[www.marshall.edu/cos/preprof](http://www.marshall.edu/cos/preprof)**

**Prepared by the College of Science**

## TABLE OF CONTENTS

What should my ACT/SAT scores be? .....	4
What do I major in at Marshall University? .....	5
What are the science requirements for admission to a professional school? .....	7
Is there a suggested order to taking the science requirements? .....	9
What GPA is required for admission? .....	10
To what professional school should I apply? .....	23
Chiropractic School .....	23
Dental School .....	24
Medical School .....	24
Optometry School .....	25
Osteopathic School .....	25
Pharmacy School .....	26
Physical Therapy .....	26
Podiatry School .....	26
Veterinary School .....	27
Is completion of a baccalaureate degree required for admission to a professional school? .....	28
What can I do if I am not admitted to a professional school? .....	30
How can I obtain the best pre-professional advice? .....	30
For more information .....	31

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.

### FOR MORE INFORMATION

Browse: [www.marshall.edu/cos/preprof](http://www.marshall.edu/cos/preprof)  
Email: [cos@marshall.edu](mailto:cos@marshall.edu)

---

Dr. Wayne Elmore, Associate Dean and  
Chief Pre-Professional Advisor, College of Science,  
Science Building Room 270, [elmore@marshall.edu](mailto:elmore@marshall.edu),  
304/696-3638

---

College of Science Office of Student Services,  
Science Building Room 213/214, [cos@marshall.edu](mailto:cos@marshall.edu),  
304/696-3475 or 304/696-3476

## 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.

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.



Do you have experience with sick people? Will you be comfortable working in an environment where people are in pain, chronically ill, or even in the process of dying? Are your abilities such that you will be successful in a professional school? Do you possess a strong work ethic? Are you dedicated to years of school? If you've thoughtfully and truthfully answered **YES** to these questions then you are probably ready to see a career in the health care profession!

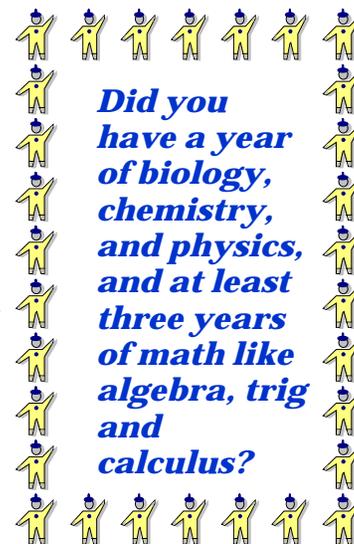
## WHAT SHOULD MY ACT/SAT SCORES BE?

Studies indicate a student who has an ACT Composite and Mathematics of 21 or higher (SAT 500) has a reasonable chance of getting into and through a professional school. This isn't to say that a student with lower or higher ACT/SAT scores cannot go to a professional school. A shortcoming here does not automatically rule out you successfully completing a program in the sciences at Marshall, but it will mean that you will have to work extra hard to catch up. Determination and dedication are another parts.

### But that's not all . . .

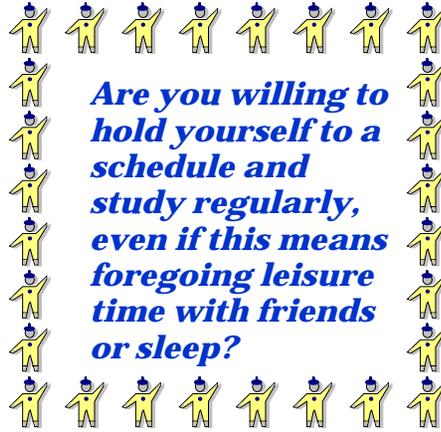
A strong high school course of study in the sciences (biology, chemistry, math, and physics) is a great preparation for entry and success in the College of Science at Marshall University.

Completing the transition from the high school culture to the university culture is a challenge.

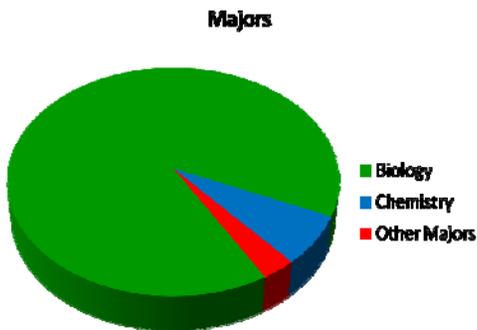


## And did we mention commitment and a strong work ethic?

The course work will probably be much more difficult than you may anticipate, even if you are a high school honor student. The first semester's performance is an excellent indicator of your ability and dedication to succeed. From the beginning you must hold yourself to tough standards. Successful pre-professionals (medical, dentistry, pharmacy, etc.) must possess both the intellectual ability and drive required to achieve academically. The number of applicants to professional programs is increasing, the competition is very stiff, so you need to convince yourself from the beginning that you can and will do the work. Only those who persevere will achieve their goal. Realistically, you should spend two to three hours studying for each hour spent in class.



## WHAT DO I MAJOR IN AT MARSHALL UNIVERSITY?



The majority of students admitted to medical school declare biology as their undergraduate major (approximately 90%). About 7% are chemistry majors and the rest of the applicants have a variety of majors

of 2.8 or higher is competitive. Since West Virginia does not have a podiatry school, local podiatrists earn substantial annual incomes.

## Veterinary School

Veterinary schools are extremely difficult to get into because there are very few schools in the country and the competition for these limited seats is fierce. There are a few out-of-state schools that accept, up to six, West Virginia residents with in-state tuition and fees. Requirements are very similar to those for medical school. It may be futile to apply to Vet school if you have a GPA of less than 3.5 and if you do not have good professional exam scores.

## 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.



GPA's in the range of 3.5 or higher are required along with excellent PCAT scores. PCAT scores at the 50th percentile and higher are competitive. There are two pharmacy schools in West Virginia, West Virginia University and the University of Charleston.

### **Physical Therapy**

There is only one physical therapy school in West Virginia and it is located at WVU. Only 26 — 28 students are admitted to this program each year, so competition is very stiff. A GPA of 3.6 and high professional exam scores are required for admission. Students are required to have an appropriate undergraduate degree in order to be admitted to the Master of Physical Therapy degree program. Students normally have a degree in biology or chemistry. Contact WVU for degree requirements.

### **Physician Assistant**



These programs are at the masters level whereas the other health care professional programs are at the doctorate level. Physician assistants work under the supervision of a physician. They can write some prescriptions, diagnose, and treat patients. Frequently they work in family practice clinics. But, they may not build a practice on their own beyond the supervision of a physician.

### **Podiatry School**

Podiatry is one that many students have not considered. These physicians do everything that a medical doctor does, with the restriction that medical practices are limited to the feet and ankles. One can specialize in pediatric podiatry, geriatric podiatry, diabetes problems, or general podiatry. Many students gain admission after three years in undergraduate school. The undergraduate course requirements are similar to those for medical school. A GPA

including physics, mathematics, and psychology. Pre-pharmacy students typically choose chemistry for a major. The entire science requirement for a professional exam (MCAT, PCAT, DAT, etc.) is required for biology majors and most of the courses are also required of chemistry majors, so you should consider choosing one of these two science majors. You will probably need fewer hours to graduate in a biology or chemistry major than with other majors.

You can choose any major. However, if a non-science major (Psychology, English, Nursing, Athletic Training, etc.) is chosen, the science requirements for professional school still must be met. An additional year or two may be required to complete the science requirements along with coursework for a non-science major. But, if you have a longing to pursue a major that is non-science, that choice is not likely to influence your chances for admission to a professional school, provided you have met all of the requirements.

### **Debating on which major?**

Ask yourself these two questions:



1. Do you enjoy the subject matter in one major more than another?
2. Can you complete all of the science courses and those in the selected major within a reasonable amount of time?

This is not a decision you have to make as a first-semester freshman at Marshall, but it is a choice you will have to make early in your college career.

### **A choice only you make!**

## 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, and it varies according to the prior preparation of the individual. The 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
Math	College Algebra (MTH 127 or MTH 130) <b>and</b> Trigonometry (MTH 122), <b>or</b> 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.

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

### Optometry School

There are only 16 optometry schools in the United States, and admission is difficult. Job prospects are good for those who finish, but the increasing popularity of laser surgery may cause decreased demand for corrective lenses.



### Osteopathic School

Osteopathic schools are less competitive, although the number of applicants has increased dramatically in recent years. Some students still do not know what an osteopath does, as they are not widespread in this area of the country. The distinction is that osteopaths give special attention to spinal manipulation (similar to chiropractic procedures) in their practice for some patients. The distinction between the two types of doctors is dwindling each year. With the proper resident training, an osteopath can become a brain surgeon, a heart surgeon, a pediatrician, gynecologist, or any other kind of doctor that one might think of.

Osteopathic and allopathic residents frequently work side by side in local hospitals. The West Virginia School of Osteopathic Medicine located at Lewisburg, WV is the only osteopathic medical school in the state. A GPA of 2.8 and MCAT cumulative scores of 18-21 are competitive.

### Pharmacy School

Pharmacology degrees used to be given at undergraduate institutions, but now many students are going on to earn the Pharm.D. degree. This usually requires an additional year or two of school. Normally, students complete two years of pre-pharmacy undergraduate work at Marshall before applying to a pharmacy program.

- the undergraduate course requirements are the same as those for medical school, and
- you do not need a degree to be admitted to this program. Only ninety hours of undergraduate work are required.

Tuition tends to run about \$25,000 per year. Financial aid can be arranged.

### Dental School

Dentistry tends to be less competitive than other professional schools because the surplus of dentists produced in the 40s, 50s, and 60s are now retiring. It is still relatively easy to gain admission to dental school, and a young person can join an established practice and make a good living as a dentist. Many students gain admission after three years in undergraduate school. The duration of dental school is approximately four years, but no internship is required. West Virginia University has the only school of dentistry in the state.



### Medical School

An M.D. degree is the most highly sought after prize. Admission to medical school is prestigious and the eventual monetary benefits are great. Approximately one out of three **qualified** students who apply to West Virginia medical schools are admitted. The drawbacks are:

- it requires four or more years at the undergraduate level, four years in med school, and three to seven years in a certified residency program before you make much money;
- the admission process is highly competitive; and
- an overall GPA of 3.3 and MCAT scores of 8 or better in each section are competitive for the Marshall School of Medicine and the West Virginia University Medical School.

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 (does not count toward Biology degree)
Human Physiology	BSC 228 (does not count toward Biology degree )
Immunology	BSC 448
Microbiology and lab	BSC 302 and 304 (BSC 250 does not count toward a Biology degree)
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

You must identify additional admission requirements early and incorporate them into the graduation requirements for your major. For example, some schools require two social or behavioral courses for admittance. Through careful

planning, all of the requirements for professional school and graduation from Marshall University can be included within the 121 hours (four years) needed for graduation without taking extra courses or spending unnecessary time.



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

### **IS THERE A SUGGESTED ORDER TO TAKING THE SCIENCE REQUIREMENTS?**

Your 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 professional school. By following the suggested curriculum, avoiding repeat classes, and remaining focused, you can complete your undergraduate degree within four years and be ready to begin professional school.

### **WHAT GPA IS REQUIRED FOR ADMISSION?**

The answer to this question is not straight forward because there are several factors that collectively determine the admission decision. These factors include GPA, your professional exam score, outside activities,



and the admission interview. The average distribution of GPAs for applicants accepted are skewed with more applicants having 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.

### **TO WHAT PROFESSIONAL SCHOOL SHOULD I APPLY?**

The first and foremost reason for applying to a professional school of any type is a sincere desire to be engaged in that profession for the rest of your life. This decision should be made very carefully; if a mistake is made you will have made a considerable commitment of time, personal energy, and money to something that you may hate. You should (1) discuss the career with professionals in the field, (2) shadow a professional, (3) volunteer or work as an aid. Any and all of these will give you a pretty good idea of what the professional does on a daily basis.

#### **Chiropractic School**

Chiropractory is becoming popular. The concept of chiropractic manipulation is readily accepted and most insurance companies now pay for coverage. Advantages you might consider are:

- the application process is shorter because most schools admit three or more times during the year,
- a professional exam is not required for admission,
- a minimum 2.0 GPA is typically required,