

October 2025



**Missouri
State**
UNIVERSITY

Pathways to Healthcare Professions Handbook



PreHealth@MissouriState.edu



MCHHS.MissouriState.edu/PreHealthHandbook



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Handbook Introduction

This handbook was created for those interested in pursuing careers in healthcare by providing guidance for the undergraduate academic journey at Missouri State University. Missouri State University is not just an institution for higher learning; it is a catalyst for your journey toward a rewarding and impactful healthcare career. It is where your passion can flourish, skills can be refined, and ambitions can become reality. Whether you are beginning your journey or actively preparing to apply to graduate or professional school, this handbook can serve as a reference for understanding common prerequisites and admission requirements, guide academic and extracurricular planning, track progress and provide exercises to prepare application materials. This Handbook is reviewed and revised annually by representatives in the College of Natural and Applied Sciences and the McQueary College of Health and Human Services.

Within this handbook you will find information about several professional pathways. Program titles marked with a **Bear Head** indicate graduate programs offered at Missouri State University. Program titles **without the Bear Head** are not offered at MSU, but you can still complete prerequisite coursework and preparation [here](#).

Programs Offered at MSU

- Athletic Training
- Audiology
- Occupational Therapy
- Physical Therapy
- Physician Assistant Studies

Programs Not Offered at MSU

- Anesthesiologist Assistant
- Chiropractic
- Dentistry
- Medicine
- Optometry
- Veterinary Medicine

****Please note:** Missouri State University does not offer a professional pharmacy program, however, due to a close partnership with the University of Missouri-Kansas City (UMKC) School of Pharmacy, the availability of a satellite campus in Springfield and the availability of reverse transfer credit through Missouri State University, this program will appear with the Missouri State Bear Head logo.



Planning Tools and Resources

The appendices at the end of this handbook provide practical tools to help you stay on track, reflect on your goals, and prepare competitive applications. Here is how each one supports your journey:

Appendix A: General Timeline:

- This section breaks down suggested action steps for each year of your undergraduate experience—from exploring majors and joining organizations in year one, to completing applications and preparing for interviews in years three and four. Use it to stay organized and make the most of your time at Missouri State.

Appendix B: Shadow/Clinical Hours:

- Many graduate programs require you to document observation or clinical hours. This log helps you track who you shadowed, where, when, and what you observed. Keeping accurate records now will make your application process much smoother later.

Appendix C: Reflection Activity:

- Designed to help you start thinking about your personal statement, this section encourages you to reflect on your motivations, future goals, and the qualities you have seen in healthcare professionals. These reflections are also helpful to share with advisors during planning meetings.

Appendix D: MSU Equivalent Courses:

- This is a list of Missouri State courses that commonly meet prerequisite requirements for healthcare programs. Use this section when planning your schedule or checking to make sure you are meeting the expectations of your chosen professional path.

Appendix E: Additional Resources

- This is a list of professional and student organizations related to each health profession. Getting involved with these organizations is a great way to build connections, enhance your campus experience, and strengthen your résumé or curriculum vitae (CV) for graduate school.



What Does It Mean to Be Pre-Professional at MSU?

A professional program helps prepare you for careers in specific fields. These programs vary in length depending on the program and the institution that you attend. ¹ Professional degrees and licensure are required before an individual can begin their practice in a specific occupation.

The dedication of faculty to the success of their students is unmistakable. The expertise, mentorship, and support they offer is invaluable, making Missouri State an environment in which students thrive. Coupled with cutting-edge facilities and modern laboratories, the university provides an ideal platform to receive hands-on, up-to-date training, preparing students for the dynamic world of healthcare.

The university actively engages in research that impacts healthcare. Whether you aspire to participate in research projects, publish your findings, or engage in healthcare-related community service, Missouri State University provides a supportive environment for your aspirations.

At Missouri State University, being a pre-professional student means you are intentionally preparing to apply for a graduate or professional program in healthcare, such as medical, dental, veterinary, physician assistant, physical therapy, etc., while completing your undergraduate degree.

Indicating that you are pre-professional is simply a designation that is attached to your academic record. **It is NOT an undergraduate major.** This designation reflects your career goals and helps your support team on campus better guide you as you navigate your academic and extracurricular planning. Because pre-professional students can pursue any major on campus, these indicators help provide structure for completing prerequisites, connecting with advising resources, and gaining experience that will strengthen your application.

Choosing a Major

Pre-professional designations, such as pre-med or pre-physical therapy, can be added to any degree program on campus to reflect your career goals. However, these do not change the requirements for your bachelor's degree. Because professional programs consider students from all majors, **it is most important to choose a major that genuinely interests you.** Typically, students select majors that naturally incorporate professional school prerequisites, but this **does not** mean students are limited to specific majors. The [Career Center](#) offers tools and assessments that can help with major exploration if you are unsure of your undergraduate pathway. The

[Academic Advising and Transfer Center](#) is also a great resource for students with undecided undergraduate majors.

In addition to the major, students may also want to consider adding a minor or an undergraduate certificate to gain specialized skills, explore a personal interest, or strengthen their application. For a list of all the majors, minors, and certificates offered at Missouri State University, students should consult the [academic catalog](#). To officially declare a pre-professional designation, major, minor, or an undergraduate certificate, students may use the [online request form](#).

Connecting With an Advisor

Missouri State University utilizes a hybrid model for academic advising. This means that some academic colleges rely exclusively on professional staff advisors while others rely on staff and faculty advisors. Whether you have selected a major or you are still deciding, **it is recommended that you schedule an appointment with your assigned academic advisor early each semester to ensure you are efficiently planning academic requirements.** Your assigned academic advisor is listed on your student record in the My Missouri State portal.

Preparing to Apply

Applying to graduate or professional school is a multi-step process that requires planning, preparation, and reflection. While each program may have its own specific requirements, most application processes follow a similar timeline (See [Appendix A: General Timeline](#)) and include the following components:

Academic Preparation: Start by understanding the prerequisites for your intended program. These often include foundational coursework in the life sciences (biology/biomedical science), natural sciences (chemistry, physics, math), and/or social sciences, depending on the field. Strive to maintain a strong GPA, especially in your pre-requisite science and major-related courses.

Gaining Relevant Experience: Many programs look for applicants with hands-on experience. This could include shadowing professionals, participating in undergraduate research, volunteering in healthcare or community settings, or working in a related role. These experiences help you explore your interests while demonstrating commitment to the field.

Building Relationships with Mentors: Letters of recommendation are a crucial part of most applications. Build strong connections with faculty, supervisors, or professionals who can speak to your academic abilities, work ethic, and potential for success in graduate school.

Preparing for Entrance Exams: Most graduate or professional programs require a standardized entrance exam such as the Medical College Admission Test (MCAT) or the Graduate Record Exam (GRE). Give yourself time to prepare, register, and retake the test if necessary. Many students begin studying 3 to 6 months before their exam date.

Researching Schools and Programs: Identify programs that align with your goals, values, and academic strengths. Consider factors such as program structure, location, cost, reputation, support services, and admission criteria.

Personal Statements and Application Materials: Prepare a compelling personal statement that reflects your journey, motivations, and readiness for graduate study. Organize transcripts, test scores, CV/résumé, and other documents early to avoid delays.

Timelines and Deadlines: Application deadlines vary by program, so create a calendar to track important dates. Many students begin preparing in their third year and submit applications the summer before their final year of their undergraduate program.





Becoming A Competitive Candidate

Though characteristics of competitive candidates vary by school and discipline, most programs will consider a candidate's academic profile (grades and standardized test scores), observation or paid clinical experience, and letters of recommendation as part of the application process. Often the format for letters of recommendation includes a ranking of the candidate's demonstrated professional behaviors. Professional behaviors common to all healthcare professionals include the following:

Commitment to Learning: the ability to self-assess, self-correct, and self-direct; identify needs and sources of learning; continually seek new knowledge and understanding.

Interpersonal Skills: the ability to interact effectively with patients, families, colleagues, other healthcare professionals, and the community; deal effectively with cultural or ethnic diversity issues.

Communication Skills: the ability to communicate effectively (speaking, body language, reading, writing, listening) for varied audiences and purposes.

Effective Use of Time: the ability to obtain the maximum benefit from a minimum investment of time and resources.

Use of Constructive Feedback: the ability to identify sources of and seek out feedback; to effectively use and provide feedback for improving personal interaction.

Ethical and Professional Behavior: the ability to exhibit appropriate ethical and professional conduct and to represent the profession effectively.

Responsibility: the ability to fulfill commitments, be accountable for actions and outcomes, and to persevere to achieve goals.

Critical Thinking: the ability to question logically; identify, generate, and evaluate elements of logical argument; recognize and differentiate facts, illusions, assumptions; distinguish the relevant from the irrelevant.

Stress Management: the ability to identify sources of stress, develop effective coping behaviors, and adapt well to change.

Problem Solving: The ability to recognize and define problems, use imagination and creativity to solve problems, analyze data, develop and implement solutions, and evaluate outcomes.

Leadership: the ability to take initiative and motivate or guide others; generates ideas and plans a vision for the future.

ANESTHESIOLOGIST ASSISTANT

What do Anesthesiologist Assistants do?

Anesthesiologist assistants serve as advanced care providers who work under the supervision of anesthesiologists to support patients before, during, and after surgical or diagnostic procedures. They help develop anesthesia care plans, prepare and maintain equipment, administer medications, and closely monitor patients' vital signs throughout procedures. Anesthesiologist assistants may also assist with airway management, provide emergency life support, and oversee patient recovery after anesthesia. They typically work in hospitals, surgical centers, and other healthcare facilities where anesthesia services are provided. Most work full-time and may have schedules that include nights, weekends, or on-call hours depending on surgical demands.²

General Requirements for Graduate Admission

(Requirements vary by program.)

- Bachelor's degree
- Cumulative GPA of 3.0 or higher
- Program-specific prerequisites, which may include:
 - Standardized entrance exams such as the Graduate Record Exam (GRE) or Medical College Admission Test (MCAT)
 - Documented clinical or professional observation hours
 - Academic and professional letters of recommendation

Advice from an Advisor:

- Be mindful of prerequisite science sequences. Students will want to begin foundational courses as soon as possible to remain on track.
- Research the role, shadow anesthesia professionals, and learn the differences between anesthesia careers.
- Focus on maintaining a strong GPA, test scores, and volunteer hours to stay competitive.

Professional Degree Required to Practice

- Master's degree in Anesthesiologist Assistant Studies

Preparation to Practice

- Pass the National Commission for Certification of Anesthesiologist Assistants (NCCAA) exam to become credentialed
- Obtain state-awarded licensure
- Additional requirements vary by state

Application Checklist

- Create a Centralized Application Service for Anesthesiologist Assistants (CASAA) account
- Submit required application components which could include:
 - All official transcripts
 - Course descriptions for prerequisite coursework (if required)
 - Personal statement and/or resume
 - Professional/academic letters of recommendation
 - Standardized test scores (GRE or MCAT, if required by programs)
 - Evidence of professional observation or clinical/shadowing hours
 - Complete support information section in CASAA (experiences, achievements, certifications)
- Ensure technical standards of the profession can be met
- Pay application fee

Most Common Pre-Anesthesiologist Assistant Requirements

Course	Number of Courses
General Biology (with lab)	Two courses
General Chemistry (with lab)	Two courses
Organic Chemistry (with lab)	Two courses*
Biochemistry	One course*
Calculus	One course
Physics (with lab)	Two courses*
Human Anatomy (with lab)	One course
Human Physiology (with lab)	One course
English Composition	One course
Statistics	One course

*Requirements vary by university. Review requirements on programs' dedicated sites.

Transfer equivalencies can be found [here](#).



What do Athletic Trainers do?

Athletic trainers serve as specialists who work with physicians to educate and treat patients. Through examination and rehabilitation, athletic trainers are able to treat acute or chronic injuries or medical conditions as well as educate patients on wellness and injury prevention. Athletic trainers can work in several different environments, including educational settings, hospitals, fitness centers, physicians' offices, for professional sports teams, or for performing artists. They can also work with the military or law enforcement. An athletic trainer's work schedule is dependent on what their work environment looks like. Most work full-time, and some must work during evenings and on weekends. Some athletic trainers have to travel often on the job.³

General Requirements for Graduate Admission

(Requirements vary by program.)

- Bachelor's degree
- Cumulative GPA of 3.00 or above
- Specific pre-requisites as dictated by individual graduate programs. This may include:
 - Standardized entrance exams such as the Graduate Record Exam (GRE)
 - Professional observation
 - Academic and professional letters of reference

Advice from an Advisor:

- Observe and work with athletic trainers to gain firsthand experience and understand the realities of the profession.
- Excel in core science courses like biology, anatomy, and physiology to build a strong foundation in human movement and sports medicine.
- Strengthen your communication skills to effectively engage with patients, athletes, and healthcare professionals.

Professional Degree Required to Practice

- Master's degree in Athletic Training

Preparation to Practice

- Pass national board exam to become professionally credentialed
- Obtain state-awarded licensure
- Additional requirements vary by state

Application Checklist

- Create an Athletic Training Centralized Application System (ATCAS) account
- Complete ATCAS application
- Submit official transcripts
- Provide course description for all prerequisite courses and upload to ATCAS
- Request and obtain two letters of recommendation:
 - One from an academic source and one from an athletic trainer that supervised your observation hours
- Complete support information section in ATCAS (observation hours experiences, achievements, and evidence of Emergency Cardiac Care [ECC] certification)
- Pay application fee

Most Common Pre-Athletic Training Requirements

Course	Number of Courses
English/Writing Composition	Two courses
Introductory Biology	One to two courses
Anatomy (with lab)	One course
Physiology (with lab)	One course
General Chemistry (with lab)	One course
Introductory/General Psychology	One course
General Physics (with lab)	One course
College Math	One course
Statistics	One course
Biomechanics	One course*
Exercise Physiology	One course*
Medical Terminology	One course*
Human Nutrition	One course*

*Requirements vary by university. Review requirements on programs' dedicated sites.

Transfer equivalencies can be found [here](#).

**Missouri State University's
Athletic Training Program
Prerequisites**



What do Audiologists do?

Audiologists are healthcare providers specializing in diagnosing, treating, and preventing hearing and balance disorders in people of all ages. Audiologists can work in a variety of settings, including hospitals, specialty clinics, physician's offices, and schools (primary, secondary, and higher education). Audiologists perform clinical services including newborn hearing screenings, activating and programming cochlear implants for children and adults, working with cancer patients experiencing hearing loss from treatment, and assisting veterans with hearing loss or tinnitus (ringing in the ears). ^{4,5}

General Requirements for Graduate Admission

(Requirements vary by program.)

- Bachelor's degree
- Cumulative GPA of 3.00 or above
- Specific pre-requisites as dictated by individual graduate programs. This may include:
 - Standardized entrance exams such as the Graduate Record Exam (GRE)
 - Professional observation
 - Academic and professional letters of reference

Advice from an Advisor:

- Complete observation hours with an Audiologist to strengthen your application.
- Request at least two recommendation letters from instructors who can speak directly to your academic performance.
- Stay involved in student organizations, research, or leadership opportunities, as these experiences are valued in the review process.

Professional Degree Required to Practice

- Doctoral degree in Audiology

Preparation to Practice

- Pass national board exam to become professionally credentialed
- Obtain state-awarded licensure
- Additional requirements vary by state

Application Checklist:

- Create a Communication Sciences and Disorders Centralized Application Service (CSDCAS) account or follow instructions provided by institution if CSDCAS is not used.
- Submit required application components which could include:
 - All official transcripts Essay question responses
 - Personal statement and/or resume Professional/academic letters of recommendation Standardized test scores Evidence of professional observation
 - Ensure technical standards of profession can be met

Most Common Pre-Audiology Requirements

Course	Number of Courses
College Math (Pre-Calculus or above recommended)	One course
Statistics	One course
Behavioral Science	One course
Biological Science	One course
Physics or Chemistry Science	One course
Anatomy and Physiology of Speech	One course*
American Sign Language	One course*
Normal Language Development	One course*
Aural Rehabilitation	One course*
Hearing and Speech Science	One course*
Audiology	One course*
Speech and Language Disorders in Adults or Children	One course*
Phonetics	One course*

*Requirements vary by university. Review requirements on programs' dedicated sites.

****Some programs require a degree in Communication Sciences and Disorders or significant coursework in the areas covered by this degree.**

Transfer equivalencies can be found on the [Transfer Equivalency Database](#).

Missouri State University's
Audiology Program
Prerequisites

CHIROPRACTIC

What do Chiropractors do?

Chiropractors assess and treat patients with disorders of the neuromusculoskeletal system (involving nerves, bones, muscles, ligaments, and tendons). These healthcare professionals seek to examine, diagnose, and treat disorders to prevent them from negatively influencing the overall health of patients. They are “trained to recommend therapeutic and rehabilitative exercises, as well as to provide nutritional, lifestyle, and dietary counseling.” Chiropractors can work in a variety of environments, including solo practices, group practices, and self-employment. While most chiropractors work full-time, some choose to work part-time.^{6,7}

General Requirements for Graduate Admission

(Requirements vary by program.)

- At least three years of undergraduate study
- GPA of 3.00 or above
- Shadowing and clinical hours
- Specific pre-requisites as dictated by individual programs. This may include:
 - Professional observation and/or experience
 - Academic and professional letters of reference
 - Standardized entrance exams such as the Graduate Record Exam (GRE)

Advice from an Advisor:

- Engage in clinical shadowing with practicing chiropractors to gain insight into the scope of the profession.
- Complete foundational science courses such as anatomy, physiology, physics, chemistry, biomechanics, and exercise physiology.
- Build both academic knowledge and hands-on experience to prepare for the rigor of graduate education.

Professional Degree Required to Practice

- Doctor of Chiropractic (DC)

Preparation to Practice

- Pass national board exam and become credentialed by the National Board of Chiropractic Examiners (NBCE)
- Obtain state-awarded professional license
- Additional requirements vary by state

Application Checklist:

- Submit required application components as directed which could include:
 - All official transcripts
 - Personal statement and/ or resume
 - Professional/academic letters of reference
 - Standardized test scores
- Ensure technical standards of the profession can be met

Most Common Pre-Chiropractic

Course	Number of Courses
English/Writing Composition	Two courses
General Biology or Zoology (with lab)	One to two courses
Anatomy (with lab)	One course
Physiology (with lab)	One course
General Chemistry (with lab)	One to two courses
Organic Chemistry or Biochemistry (with lab)	One course
Introductory/General Psychology	Varies*
General Physics	One to two courses
Biomechanics/Kinesiology/Exercise Physiology	Varies*
Additional Humanities/Social Sciences	Varies*

*Programs vary; generally speaking, students must complete a minimum of 24 credit hours of life and physical science coursework where half of those courses have labs.

Transfer equivalencies can be found on the [Transfer Equivalency Database](#).

DENTISTRY

What do Dentists do?

Dentists seek to prevent, diagnose, and treat oral diseases and conditions. They do this by educating patients and evaluating their oral health. Dentists are trained to give exams, in addition to installing fillings, crowns, and implants. They perform extractions and corrective surgeries as well. A dentist can work in several different environments. These include within their own practice, alongside a small staff, with partners in their practice, and as an associate dentist for an established practice. Some dentists choose a specialty to work in, while others practice general dentistry.⁸

General Requirements for Graduate Admission

(Requirements vary by program)

- Bachelor's degree
- Cumulative GPA of 3.00 or above
- Specific pre-requisites as dictated by individual programs. This may include:
 - Completion of the Dental Admission Test (DAT)
 - Professional observation and/or clinical experience
 - Academic and professional letters of reference

Advice from an Advisor:

- Research target schools during your first year to ensure specific requirements are met.
- Dental schools highly value shadowing; check requirements and gain consistent experience to show commitment.
- Shadow both general dentists and specialists (e.g., orthodontics).
- Join the Pre-Dental Society for resources and leadership opportunities.

Professional Degree Required to Practice

- Doctor of Dental Surgery (DDS)
OR
- Doctor of Medicine in Dentistry (DMD)

Preparation to Practice

- Pass the National Board Dental Exam to become professionally credentialed
- Obtain state-awarded professional license
- A professional residency may be required
- Additional requirements vary by state

Application Checklist

- Create an American Dental Education Association Associated American Dental Schools Application Service (ADEA AADSAS) account or follow institutional directions if centralized application is not used
- Submit required application materials which could include:
 - All official transcripts
 - Personal statement/ essay and/or resume
 - Professional/academic letters of reference
 - Standardized test scores such as the Dental Admission Test
 - Evidence of observation and/or clinical experience
- Complete admission interview if applicable
- Ensure technical standards of the profession can be met

Most Common Pre-Dental Requirements

Course	Number of Courses
English/Writing Composition	Two courses
College Math	One course
Statistics	One course
General Biology or Zoology (with lab)	Two courses
Molecular Biology/Genetics	One course
Anatomy (with lab)	One course
Physiology (with lab)	One course
Microbiology (with lab)	One course
Immunology	One course*
Histology	One course*
Cell Biology	One course
General Chemistry (with lab)	Two courses
Organic Chemistry (with lab)	Two courses
Biochemistry (with lab)	Two courses
Humanities/Social Sciences	One course
General Physics (with lab)	Two courses

*It is recommended that pre-dental students take courses or engage in activities that develop fine motor skills.

****Texas Medical & Dental School Application Services (TMDSAS) in the state of Texas**

Transfer equivalencies can be found on the [Transfer Equivalency Database](#).

MEDICINE

What do Physicians do?

Physicians are medical professionals who assess patients to establish diagnoses and provide treatments for injuries or illnesses. They seek to keep patients' overall health maintained as well. Physicians primarily identify and attend to patients' medical conditions, while surgeons perform operations on patients to remedy injuries and diseases. A physician could work in a clinical setting (physician's office or hospital) or a non-clinical setting (government agency, non-profit organization, or insurance company).^{9,10}

General Requirements for Graduate Admission

(Requirements vary by program)

- Bachelor's degree
- Cumulative GPA of 3.00 or higher
- Specific pre-requisites as dictated by individual programs. This may include:
 - Completion of the Medical College Admission Test (MCAT)
 - Professional observation and/or clinical experience
 - Academic and professional letters of reference (letter from the institutional Pre-Med Committee is typically requested)
 - Admission interviews often required

Advice from an Advisor:

- Balance academics with experiences beyond the classroom.
- Build hours in volunteering, shadowing, clinical work, and research; start early.
- Join the Premedical Society for connections and resources.
- Pursue a committee letter through MSU's Premedical Committee to strengthen your application.

Professional Degree Required to Practice

- Doctor of Allopathic Medicine (M.D.)
OR
- Doctor of Osteopathic Medicine (D.O.)

Preparation to Practice

- Complete an approved internship or residency program
- Pass national licensing exam such as the U.S. Medical Licensing Examination (USMLE) or the Comprehensive Osteopathic Medical Licensing Examination (COMLEX) to become professionally credentialed
- Obtain state-awarded professional license
- Additional requirements vary by state

Application Checklist:

- Create American Medical College Application Service (AMCAS) account and/or American Association of Colleges of Osteopathic Medicine Application Service (AACOMAS) or follow institutional directions if centralized application is not used
- Submit required application materials which could include:
 - All official transcripts Essay question responses
 - Personal statement and/ or resume Professional/academic letters of reference MCAT scores
 - Evidence of Observation and/or clinical experience
- Ensure technical standards of the profession can be met
- Interview

Most Common Pre-Medicine Requirements

Course	Number of Courses
English/Writing Composition	Two courses
General Biology or Zoology (with lab)	Two courses
Genetics	One course
Anatomy (with lab)	One course
Physiology (with lab)	One course
Cell Biology or Microbiology (with lab)	One course
General Chemistry (with lab)	Two courses
Organic Chemistry (with lab)	Two courses
Biochemistry (with lab)	One course
Introductory/General Psychology	One course
General Physics (with lab)	Two courses
Introductory/General Sociology	One course
Statistics	One course
College Math	One course

*Requirements vary by university. Review requirements on programs' dedicated sites.

****Texas Medical & Dental School Application Services (TMDSAS) in the state of Texas**

Transfer equivalencies can be found on the [Transfer Equivalency Database](#).

OCCUPATIONAL THERAPY

<https://www.missouristate.edu/OT>



What do Occupational Therapists do?

Occupational therapists are healthcare providers who work with clients across the lifespan to enhance quality of life. They perform clinical evaluations on clients and determine intervention plans for those who are experiencing barriers in their daily lives. The goal of occupational therapists is to help clients be more independent in meaningful personal activities by gaining the strength and skills to meet their daily needs. In addition to supporting clients in these ways, these professionals advise clients regarding accessibility accommodations that should be made in the home, at their place of work, or at the school they attend. Occupational therapists can work in various settings, including telehealth, the client's home, community settings, hospitals, and numerous types of childhood and care facilities.¹¹

General Requirements for Graduate Admission

(Requirements vary by program)

- Bachelor's degree
- Cumulative GPA of 3.00 or above
- Specific pre-requisites as dictated by individual graduate programs. This may include:
 - Standardized entrance exams such as the Graduate Record Exam (GRE)
 - Professional observation
 - Academic and professional letters of reference

Advice from an Advisor:

- Start your application early to allow time for corrections.
- Know the OTCAS verification process. Schools can't see your application until it's verified, which may take 3 days to 3 weeks.
- Begin logging experience hours early; include employment, volunteering, clubs, and activities beyond healthcare.
- Prepare for interviews with an OT "elevator speech" explaining why you chose OT and specific programs

Professional Degree Required to Practice

- Master's degree in Occupational Therapy (minimum) OR
- Entry-Level Doctorate of Occupational Therapy (EL-OTD)

Preparation to Practice

- Pass the National Board for Certification in Occupational Therapy (NBCOT) exam to become professionally credentialed
- Additional requirements vary by state

Application Checklist:

- Create an account with the Occupational Therapist Centralized Application Service (OTCAS) or follow institutional directions if centralized application system is not used
- Submit all required application materials which could include:
 - All official transcripts
 - Personal statement and/or resume
 - Professional/academic letters of reference
 - Evidence of professional observation
- Ensure technical standards of the profession can be met
- Interview if required

Most Common Pre-Occupational Therapy Requirements

Course	Number of Courses
English/Writing Composition	Two courses
General Biology or Zoology (with lab)	One to two courses
Anatomy (with lab)	One course
Physiology (with lab)	One course
General Chemistry (with lab)	One to two courses
Introductory/General Psychology	One course
Medical Terminology	One course
Statistics	One course
College Math	One course
Abnormal Psychology	One course
Developmental/Lifespan Psychology	One to two courses
Introductory/General Sociology or Cultural Anthropology	One course
General Physics (with lab)	Varies*
Communication Studies	One course

*Requirements vary by university. Review requirements on programs' dedicated sites.

Transfer equivalencies can be found on the [Transfer Equivalency Database](#).

**Missouri State University's
Occupational Therapy Program
Prerequisites**

OPTOMETRY

What do Optometrists do?

Optometrists are professionals that specialize in diagnosing and treating conditions that affect the eye, in addition to providing primary vision care. They are licensed to prescribe medications or corrective lenses to patients to manage abnormal conditions or diseases.¹¹ Optometrists give guidance to patients to not only care for their eye health, but also to maintain their general health. Optometrists' potential work environments include offices and optical goods stores. They can either choose to work full-time or part-time, but schedules may vary in the evenings and during weekends. Optometrists can specialize in primary care, cornea and contact lenses, or ocular disease.^{12,13}

General Requirements for Graduate Admission

(Requirements vary by program)

- Bachelor's Degree
- Cumulative GPA of 3.00 or above
- Specific pre-requisites as dictated by Individual programs. This may include:
 - Standardized admission exam such as the Optometry Admission Test (OAT) or
 - Graduate Record Exam (GRE)
 - Professional observation and/or experience
 - Academic and/or professional letters of reference
 - Admission interviews often required

Advice from an Advisor:

- Gain shadowing and clinical experience early to strengthen your application.
- Prepare for the Optometry Admission Test (OAT) well in advance.
- Seek multiple settings or optometrists to broaden your perspective.

Professional Degree Required to Practice

- Doctor of Optometry (OD)

Preparation to Practice

- Pass national board exam through the National Board of Examiners in Optometry (NBEO) to become professionally credentialed
- Obtain state-awarded professional license
- Additional requirements vary by state

Application Checklist:

- Create an Optometry Centralized Application Service (OptomCAS) account or follow institutional directions if a centralized application is not used
- Submit required application materials including:
 - All official transcripts Personal statement and/ or resume
 - Professional/academic letters of reference Optometry Admission Test (OAT) or Graduate Record Exam (GRE) scores
 - Evidence of observation and/or professional experience
 - Complete application interview if required
- Ensure technical standards of the professional can be met

Most Common Pre-Optometry Requirements

Course	Number of Courses
English/Writing Composition	Two courses
General Biology or Zoology (with lab)	Two courses
Anatomy (with lab)	One course
General Chemistry (with lab)	One course
Organic Chemistry (with lab)	Two courses
Biochemistry (with lab)	One course
Introductory/General Psychology	One course
General Physics (with lab)	One course
Microbiology (with lab)	One course
Organic Chemistry (with lab)	One course
Statistics	One course
Calculus	One course

*Requirements vary by university. Review requirements on programs' dedicated sites.

Transfer equivalencies can be found on the [Transfer Equivalency Database](#).



What do Pharmacists do?

Pharmacists are trained to provide patients with prescription medications and important information about those medications. To meet patients' needs, pharmacists maintain and review medical records to ensure unfavorable reactions do not occur as a result of taking their prescription medications. They keep patients informed about proper dosages and potential side effects. Before prescribing medication to a patient, pharmacists assess and ensure the accuracy of what is being prescribed. In addition to prescribing medications, pharmacists are licensed to vaccinate patients and provide advice regarding patients' general health. A pharmacist can work in a hospital, retail store, nursing home, assisted living facility, or a university.¹⁴

General Requirements for Graduate Admission

(Requirements vary by program)

- Completion of specific pre-requisites as dictated by individual programs which may include:
 - Specific coursework, particularly in areas of math and science
 - Earn a minimum GPA (typically 3.00)
 - Academic/professional letters of reference
 - Admissions interview
 - Bachelor's degree preferred, though not required

Advice from an Advisor:

- While grades are important, pharmacy is about more than academics. Pharmacists must communicate complex medical information with empathy and clarity.
- Gaining experience as a pharmacy technician or by shadowing a pharmacist can help you explore the field.
- With over 100 career options, pharmacists are passionate about their work and happy to share insights to help you reach your goals.

Professional Degree Required to Practice

- Doctor of Pharmacy (Pharm.D.)

Preparation to Practice

- Pass the Multistate Pharmacy Jurisprudence Examination (MPJE)
- Pass the North American Licensure Examination (NAPLEX) for individual state licensure
- Additional requirements vary by state

Application Checklist:

- Create a Pharmacy College Application Service (PharmCAS) account
- Submit required application materials including:
 - All official transcripts
 - Personal statement and/ or resume
 - Professional/academic letters of reference
- Ensure technical standards of the profession can be met
- Interview for program

Most Common Pre-Pharmacy Requirements

Course	Number of Courses
English/Writing Composition	Two courses
General Biology or Zoology (with lab)	One course
Anatomy (with lab)	One course
Physiology (with lab)	One course
Cell Biology	One course
General Chemistry (with lab)	Two courses
Organic Chemistry (with lab)	Two courses
Biochemistry (with lab)	One course
Introductory/General Psychology	One course
General Physics (with lab)	Two courses
Communication Studies	One course
Microbiology (with lab)	One course
Additional Humanities/Social Sciences	Varies*
Medical Terminology	Varies*
Economics	Varies*
Calculus	One course
Statistics	One course
Genetics	Varies*

*Requirements vary by university. Review requirements on programs' dedicated sites.

Transfer equivalencies can be found on the [Transfer Equivalency Database](#).

More information on Reverse Credit Transfer can be found on the [Reverse Transfer - Doctor of Pharmacy - Missouri State](#)

[Missouri State University and UMKC's Pharmacy Program Prerequisites](#)

PHYSICAL THERAPY

<https://www.missouristate.edu/PhysicalTherapy/default.htm>



What do Physical Therapists do?

Physical therapists are professionals who play an integral role in providing patients with treatment and rehabilitation to increase mobility and minimize pain. Patients that need physical therapy typically have conditions such as chronic illnesses or injuries that inhibit their ability to perform physical activity. Physical therapists evaluate and diagnose patients, establish treatment goals, create treatment plans, and keep track of patients' progress. They also keep patients and their families informed about expectations and obstacles they may face. A physical therapist has the option of working in several different environments, including private offices, clinics, hospitals, patients' homes, and nursing homes.¹⁵

General Requirements for Graduate Admission

(Requirements vary by program)

- Bachelor's degree
- Cumulative GPA of 3.00 or above
- Completion of specific pre-requisites as dictated by individual programs. This may include:
 - Standardized entrance exam such as the Graduate Record Exam (GRE)
 - Professional observation (multiple settings encouraged)
 - Academic and/or professional letters of reference
 - Admission interview

Advice from an Advisor:

- Gain experience in diverse clinical settings to strengthen your application and broaden your perspective.
- Build strong connections with professionals who can speak to your skills and character in recommendation letters.
- Stay organized by logging your hours and reflecting on what you learn from each experience.

Professional Degree Required to Practice

- Doctor of Physical Therapy (DPT)

Preparation to Practice

- Pass the National Physical Therapy Examination (NPTE) to become professionally credentialed
- Obtain state-awarded professional license
- Additional requirements vary by state.

Application Checklist:

- Create a Physical Therapist Centralized Application Service (PTCAS) account or follow institutional directions if a centralized application is not used
- Submit all required application materials including:
 - All official transcripts Personal statement and/ or resume
 - Professional/academic letters of reference Standardized test scores such as the Graduate Record Exam (GRE)
 - Evidence of professional observation across multiple settings
- Complete interview for program if required
- Ensure the technical standards of the profession can be met

Most Common Pre-Physical Therapy Requirements

Course	Number of Courses
English/Writing Composition	Two courses
General Biology or Zoology (with lab)	Two courses
Anatomy (with lab)	One course
Physiology (with lab)	One course
General Chemistry (with lab)	Two courses
Introductory/General Psychology	One course
General Physics (with lab)	Two courses
College Math	One course
Statistics	One course
Abnormal/Advanced Psychology	One course
Medical Terminology	Varies

*Requirements vary by university. Review requirements on programs' dedicated sites.

Transfer equivalencies can be found on the [Transfer Equivalency Database](#).

**Missouri State University's
Physical Therapy Program
Requirements**

PHYSICIAN ASSISTANT

<https://www.missouristate.edu/SHCP/PAS/default.htm>



What do Physician Assistants do?

A physician assistant is a professional who evaluates patients, orders the administration of diagnostic examinations, reviews results, and establishes diagnoses for patients. They are trained to treat a variety of conditions in patients. Physician assistants are also licensed to prescribe medications and advise patients about treatment and their general health. They keep track of patients' records and progress over time by updating their medical histories. It is important for them to stay up to date on new developments regarding the treatments that are available to patients to provide the best possible care. Physician assistants can work in physicians' offices, hospitals, or outpatient clinics.¹⁶

General Requirements for Graduate Admission

(Requirements vary by program)

- Bachelor's Degree
- Cumulative GPA of 3.00 or higher
- Completion of specific pre-requisites as dictated by individual programs. These may include:
 - Standardized Test scores such as the Physician Assistant College Admission Test (PA-CAT) or Graduate Record Exam (GRE) or Medical College Admission Test (MCAT)
 - Professional observation
 - Relevant professional experience such as direct patient care

Advice from an Advisor:

- Focus on earning competitive grades in prerequisite courses, particularly in math and science.
- Begin paid healthcare experience early and ensure it meets the requirements of your desired PA programs.
- Get involved in campus or community organizations to demonstrate leadership and commitment.

Professional Degree Required to Practice

- Master's degree as the minimum required with clinical doctorates offered

Preparation to Practice

- Pass the Physician Assistant National Certifying Examination (PANCE) to become professionally credentialed
- Obtain state-awarded professional license
- Additional requirements vary by state

Application Checklist:

- Create a Centralized Application Service for Physician Assistants (CASPA) account
- Submit all required application materials including:
 - All official transcripts
 - Personal statement and/ or resume
 - Professional/academic letters of reference
 - Standardized test scores such as the Physician Assistant College Admissions Test (PA-CAT), Graduate Record Exam (GRE), or Medical College Admission Test (MCAT)
 - Evidence of PA observation
 - Evidence of paid direct-patient care experience
- Ensure technical standards of the profession can be met
- Interview

Most Common Pre-Physician Assistant Requirements

Course	Number of Courses
English/Writing Composition	Two courses
General Biology or Zoology (with lab)	Two courses
Anatomy (with lab)	One course
Physiology (with lab)	One course
General Chemistry (with lab)	Two courses
Organic Chemistry (with lab)	One to two courses
Biochemistry (with lab)	Varies*
Introductory/General Psychology	One course
College Math	One course
Microbiology (with lab)	One course
Medical Terminology	One course
Statistics	One course
Additional Social/Behavioral Sciences	Varies*

*Requirements vary by university. Review requirements on programs' dedicated sites.

Transfer equivalencies can be found on the [Transfer Equivalency Database](#).

**Missouri State University's
Physician Assistant Studies
Program Requirements**

VETERINARY MEDICINE

What do Veterinarians Do?

Veterinarians are professionals who evaluate, diagnose, and treat animals to maintain their general health. They examine animals to check for diseases and administer vaccinations to prevent them. Veterinarians are trained to carry out surgical procedures and utilize x-ray machines and other medical equipment to examine animals. They guide animal owners to properly care for their pets and maintain their health. They provide prescription medications when necessary. Veterinarians can work in private clinics, hospitals, farms, laboratories, public health departments, and zoos.¹⁷

General Requirements for Graduate Admission

(Requirements vary by program)

- Bachelor's degree recommended
- Cumulative GPA of 3.00 or above
- Completion of specific pre-requisites as dictated by individual programs. This may include:
 - Professional observation and experience
 - Academic and/or professional letters of reference
 - Standardized exams such as the Graduate Record Exam (GRE) or Medical College Admission Test (MCAT)
 - Admissions interview

Advice from an Advisor:

- Check prerequisites for each school early and plan accordingly.
- Keep a strong GPA, especially in science courses.
- Build varied veterinary experience through clinics, shadowing, research, and volunteering.
- Develop soft skills like communication, leadership, and ethics through service and involvement.
- Track application logistics, including hours, recommendation letters, and VMCAS deadlines.

Professional Degree Required to Practice

- Doctor of Veterinary Medicine (DVM)
OR
- Veterinariae Medcinae Doctoris (VMD)

Preparation to Practice

- Pass the North American Veterinary Licensing Examination (NAVALE) to become professionally credentialed
- Obtain state-awarded license
- Additional requirements vary

Application Checklist:

- Create a Veterinary Medical College Application Service (VMCAS) account
- Submit all required application materials including:
 - All official transcripts
 - Personal statement and/or resume
 - Professional/academic letters of reference
 - Graduate Record Exam (GRE) or Medical College Admission Test (MCAT) scores
 - Evidence of clinical observation and/or experience
- Ensure technical standards of the profession can be met

Most Common Pre-Veterinary Requirements

Course	Number of Courses
English/Writing Composition	Two courses
Public Speaking	Varies*
College Math/Statistics	Varies*
General Biology or Zoology (with lab)	Two courses
Genetics	One course
Anatomy (with lab)	One course
Physiology (with lab)	One course
Microbiology (with lab)	One course
General Chemistry (with lab)	Two courses
Organic Chemistry (with lab)	One to two courses
Biochemistry (with lab)	One course
General Physics (with lab)	Two courses
Humanities/Social Sciences	Varies*
Advanced Life Science or Animal Science Coursework	Varies*

*Requirements vary by university. Review requirements on programs' dedicated sites.

****Texas Medical & Dental School Application Services (TMDSAS) is used for DVM programs in the state of Texas**

Transfer equivalencies can be found on the [Transfer Equivalency Database](#).

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Appendix A: General Timeline

Below you will find a general guide to recommended pre-professional student activities beginning with the first year on campus. As you navigate this document, always keep in mind that what is presented to you is **based upon general information for all pathways. You will want to be sure to confirm specific timelines with your desired programs/disciplines of interest.** For example, if you are interested in the Missouri State University Physician Assistant Studies Program, you will note that this program begins in January. This means that the application due dates for this program will look different to that of a program that begins in June or August.

Year One

Meet with an advisor to begin making a personalized plan and goals and get to know your faculty better.

- This all starts with classroom engagement – attend class, ask/answer questions, and demonstrate an interest in the course content.
- Be sure all interactions with faculty or staff members are courteous and professional.

Begin taking prerequisite/foundation coursework specific to your area of interest.

- Remember that necessary science and math courses usually have prerequisites and may take several semesters to complete.
- Be aware of the types of credit you may have previously taken – dual credit, Advanced Placement (AP), or part of an International Baccalaureate (IB) program – as well as what specific courses/subjects your prior credit may have covered. ****Keep in mind that many professional programs require that courses used to meet prerequisites have a grade (rather than just a pass or not pass [P/NP]), meaning a course taken for credit by examination (AP, College Level Examination Program [CLEP], or IB) may have to be repeated for a grade.**

Join professional student organizations on campus.

- Examples of those we offer include: Athletic Training Students Association, Pre-Dental Society, Pre-Medical Society, Pre-Occupational Therapy Club, Pre-Physical Therapy Society, Pre-Physician Assistant Society, and Pre-Veterinary Club.

Begin shadowing/accumulating clinical hours associated with your area of interest.

- Springfield is home to two major healthcare systems – CoxHealth and Mercy – both of which allow students to observe.
- Consider beginning an observation log where you can document times, dates, locations, and contact information for those observed (see [Appendix B](#)).
- Some programs, such as Physician Assistant Studies, expect students to have ***paid*** work experience in healthcare. You may want to begin searching for paid positions early so that you can accumulate the number of hours needed for program application by the time you complete your degree.

Begin connecting to the community and the campus by engaging in community service and student activities/organizations.

- Community service is a great way to give back to the community and help demonstrate a desire to make a difference in the lives of others. Our [Center for Community Engagement](#) is a great place to start if you are trying to get connected to opportunities.

Begin researching your chosen discipline and the available professional programs of study, including becoming familiar with admission requirements (academic and non-academic).

- Professional websites, such as those listed in ([Appendix E](#)) will have sections specifically for students. You can start learning more about current professional issues, professional trends, specialty areas, and more.
- Additionally, you will want to start identifying the specific requirements for your programs of interest. Knowing these prerequisites for admission will help you build your course schedules moving forward.
 - **If you believe you may be interested in medicine, become familiar with the pre-med committee on campus and how/when students connect to it.** Visit the [Pre-Medical Committee website](#) for more information.

Create your résumé.

- It's a great idea to begin a document that can be updated as you move through your semesters on campus. Having a résumé "in progress" allows you to add any relevant experiences or activities as they happen, which will make life easier when you are trying to complete applications to professional programs.
- The [Career Center](#) is a great place to go for help.

Achieve competitive grades in all undergraduate courses (not only prerequisite courses).

- Most generally, professional programs will require a 3.0 GPA minimally to apply. A general recommendation for GPA to be competitive is to remain within the 3.5–4.0 range.

Year Two

Continue completion of prerequisite coursework and focus on achieving the best GPA possible.

- Prerequisite courses may become more complex and discipline specific. Be sure to keep your course sequences in mind as you work through requirements.
- You will also likely want to decide on a major area of study by the end of year two if you have not already done so.
- Continue accumulating and documenting observation/paid clinical experience and community service.
- Consider engaging in leadership opportunities if you have not already done so.
- Continue building relationships with faculty and staff on campus.

Begin the preparation process for any standardized exams you may be required to take for admission to your professional program.

- Investigate exam costs, test availability, and structure (length of test/time needed to complete the test, identification of a test center, the number of times per year it is available, whether you are permitted to retest, etc.).
- Find available study aids, which may include test prep books, online resources, and test prep classes.

Years Three and Four

Finalize the list of programs to which you plan to apply.

- Generally, students will apply to four to eight professional programs.
 - Think about the financial costs associated with program applications, as this may help you determine which programs and how many you will choose.
- It is recommended that you attend open houses for your programs (if available) to make sure you have all the information you need to take your next steps.

Schedule and complete your admission exam to professional school (if required). These exams may include:

- Graduate Record Exam (GRE)
- Dental Admission Test (DAT)
- Medical College Admission Test (MCAT)
- Optometry Admission Test (OAT)
- Physician Assistant College Admission Test (PA-CAT)
- The timing of the exam will largely depend on the application timeline(s) for your program(s) of interest. You may be completing your exam as early as the middle of year three or as late as the middle of year four.

Subscribe to any professional centralized application services (CAS system), if used, once your application cycle begins.

- Most CAS systems have an annual subscription fee that is charged to students. These systems also tend to delete user information at the close of each cycle, so it is recommended that you only subscribe when you intend to apply to programs.
- Not all programs use CAS systems, so it will be important to understand the application process for all programs/disciplines in which you are interested.

Consider participating in a mock interview exercise.

- The [Career Center](#) offers these opportunities to students at no cost. Your pre-professional student organization may also provide resources related to these exercises.

Prepare your personal statement.

- In [Appendix C](#), you will find space available for you to begin jotting down thoughts about what you would want to include in your personal statement.
- Become familiar with the expectations of your programs. In some instances, you may receive a prompt (or several prompts), while other programs will have vague expectations. Follow all guidelines regarding length, items to include, etc.
- The [Career Center](#) on campus, will review personal statements and provide feedback.
- Seek guidance from advisors and faculty members.

Begin finalizing your résumé for your application(s).

- Not all programs require a résumé as part of their application requirements, but if a program uses a CAS system, you may enter elements of your résumé as part of the application. Verify that it is up to date and reflects the extent of your experiences **during college**.

Secure your references.

- Many programs require students to provide a minimum of three letters of recommendation as part of their application materials. Your programs may provide guidance on these, such as requiring that a certain number of your letters be written by academic faculty. If you have not been provided with guidelines, consider references who can comment comprehensively about your knowledge, skills, and abilities.
- It is good practice to prepare a “request packet” when asking for references. This would include your résumé, unofficial transcripts, a list of programs you are applying to, your personal statement (or a statement of interest), and any other pertinent details you may want to provide (test scores, etc.).
- **Provide references with ample time to write letters. Anywhere from six to ten weeks is standard.** ***If you are requesting a letter from the pre-med committee, please be sure to follow the instructions provided on [the pre-med committee's website](#).*

Finish completing the prerequisite coursework, degree requirements, and professional program application.

- Keep in mind that some prerequisite coursework may be permitted to be in-progress at the time you submit your application (this varies by program). However, **all coursework must be completed by the time you begin your professional program.**
- Ensure that all non-academic program admission requirements, such as clinical observation or work experience, are completed by application deadlines.
- Ensure that your professional program application is submitted by the published deadline.

Appendix B: Shadow/Clinical Hours

GENERAL OBSERVATION/EXPERIENCE FORM

Student Name: _____

Profession Observed:

- | | | |
|--|---|--|
| ☐ Athletic Training | ☐ Medicine (DO/MD) | ☐ Physical Therapy |
| ☐ Audiology | ☐ Occupational Therapy | ☐ Physician Assistant |
| ☐ Chiropractic Medicine | ☐ Optometry | ☐ Veterinary Medicine |
| ☐ Dentistry | ☐ Pharmacy | ☐ Other _____ |

Name and address of facility where activity occurred:

Type of Setting: (e.g., school setting, home health, inpatient, outpatient, rehabilitation, etc.):

Type of Experience:

- ☐ Observation only
- ☐ Paid experience

Date(s) of experience and time spent:

DATE: _____ START TIME: _____ END TIME: _____

DATE: _____ START TIME: _____ END TIME: _____

DATE: _____ START TIME: _____ END TIME: _____

DATE: _____ START TIME: _____ END TIME: _____

DATE: _____ START TIME: _____ END TIME: _____

DATE: _____ START TIME: _____ END TIME: _____

Total hours spent at this location: _____

Summary of activities observed:

Professional's Information:

Name of Professional: _____

(Optional) License #: _____

Contact Information/Phone number: _____

(Optional) Signature (Professional)

Date





Appendix C: Reflection Activity

This reflection activity is designed to prepare students to draft a personal statement and can be used to help advisors efficiently prepare students to enter a professional program.

In 4 – 5 sentences, tell your advisor about yourself and how you realized you wanted to be a healthcare provider.

What traits have you seen in others who practice in the healthcare profession you hope to enter?

- 1.
- 2.
- 3.

Imagine yourself 10 years in the future as a healthcare provider, list a few specific tasks you see yourself doing with patients as part of their care.

- 1.
- 2.
- 3.

Many healthcare professions will require an advanced degree and/or certification. What are a few institutions that you might be interested in attending to complete this requirement?

- 1.
- 2.
- 3.

Appendix D: MSU Equivalent Courses

***Remember that if any of these courses are taken elsewhere and transferred to MSU, you will need to check the equivalency of the ORIGINAL course with your program of interest.*

Animal Sciences

- **AGS 101** – Animal Science
 - **AGS 301** – Physiology of Farm Animals
 - **AGS 310** – Animal Nutrition
 - **AGS 311** – Feeds/Feeding
 - **AGS 316** – Animal Breeding
-

Anatomy & Physiology

Anatomy

- **BIO 380** – Comparative Vertebrate Anatomy (with lab)
- **BMS 307** – Human Anatomy (with lab)
- **KIN 250** – Applied Human Anatomy (with lab)

Physiology

- **BIO 361** – General Physiology (with lab)
 - **BMS 308** – Human Physiology (with lab)
 - **BMS 442** – Physiology of the Human Cell
 - **BMS 542** – Physiology of Organ System Medical Physiology
 - **KIN 252** – Applied Human Physiology (with lab)
-

Biology *(*continued on next page)*

Cell Biology & Immunology

- **BIO 320** – Cellular and Molecular Biology
- **BIO 511** – Immunology (with lab)
- **BMS 521** – Molecular Cell Biology

Genetics

- **BIO 236** – Genetics Lab
- **BMS 230** – Human Genetics
- **BMS 231** – Human Genetics with Lab
- **BMS 232** – Human Genetics Lab
- **BMS 235** – Genetics

Introductory Biology

- **BIO 121** – General Biology (with lab)
- **BMS 110** – Intro to Human Biology
- **BMS 111** – Intro to Human Biology Lab

- **Microbiology**

- **BIO 212** – Elements of Microbiology
 - **BIO 213** – Elements of Microbiology Lab
 - **BIO 312** – Microbiology
 - **BIO 313** – Microbiology Lab
 - **BMS 317** – Medical Microbiology (with lab)
-

Chemistry

- **Biochemistry**

- **BMS 321** – Biomolecular Interactions (with lab)
- **CHM 352** – Introduction to Biochemistry
- **CHM 353** – Introduction to Biochemistry Lab
- **CHM 554** – Biochemistry I
- **CHM 555** – Biochemistry Lab I

- **General Chemistry**

- **CHM 160** – General Chemistry I
- **CHM 161** – General Chemistry I Lab
- **CHM 170** – General Chemistry II
- **CHM 171** – General Chemistry II Lab

- **Organic Chemistry**

- **CHM 201** – Essentials of Organic Chemistry
 - **CHM 202** – Organic Chemistry Lab
 - **CHM 342** – Organic Chemistry I
 - **CHM 343** – Organic Chemistry II
 - **CHM 345** – Microscale Organic Chemistry Lab
 - **CHM 445** – Intermediate Organic Chemistry Lab
-

Communication Sciences & Disorders

- **CSD 210** – Phonetics
- **CSD 312** – Normal Language Acquisition
- **CSD 315** – Language Disorders in Children
- **CSD 316** – Introduction to Language and Cognitive-Linguistic Disorders in Adults
- **CSD 319** – Anatomy and Physiology of Speech
- **CSD 360** – Hearing and Speech Science
- **CSD 370** – Audiology
- **CSD 572** – Aural Rehabilitation
- **SPE 311** – Introduction to American Sign Language (ASL)

English & Communication

- **English Composition I**
 - **ENG 105** – Writing I with Studio
 - **ENG 110** – Writing I
 - **English Composition II**
 - **AGR 320** – Writing II: Writing in the Applied Sciences
 - **ENG 210** – Writing II: Writing Across the Disciplines
 - **ENG 221** – Writing II: Writing for the Professions
 - **ENG 310** – Writing II: Writing for Graduate and Professional Schools
 - **GLG 358** – Writing II: Reporting Geological Information
 - **HST 210** – Writing II: Historical Inquiry
 - **Public Speaking/Communication**
 - **COM 115** – Fundamentals in Public Speaking
-

Kinesiology & Biomechanics

- **ATC 444** – Applied Orthopedic Review
 - **BMS 585** – Histology
 - **KIN 360** – Kinesiology
-

Medical Terminology

- **ATC 413** – Informatics and Terminology in Healthcare
 - **IPE 413** – Informatics and Terminology in Healthcare
 - **LLT 102** – Scientific and Medical Terminology
-

Mathematics & Statistics *(*continued on next page)*

- **College-Level Mathematics**
 - **MTH 136** – Pre-Calculus I
 - **MTH 137** – Pre-Calculus II
 - **MTH 138** – Pre-Calculus Mathematics
 - **MTH 261** – Analytical Geometry & Calculus I
 - **MTH 287** – Computational Calculus with Analytical Geometry I

- **Statistics**

- **AGR 330** – Statistical Applications in Agriculture
 - **MTH 340** – Statistical Methods
 - **MTH 545** – Applied Statistics
 - **PSY 200** – Psychological Statistical Methods
 - **BIO 550** – Statistical Methods for Biologists
 - **IPE 381** – Statistics for Health Professions
 - **PSY 527** – Advanced Psychological Statistical Methods
 - **QBA 237** – Basic Business Statistics
 - **REC 328** – Statistical Applications in Recreation
 - **SOC 220** – Statistics for Social Research
-

Nutrition

- **DTN 240** – Introduction to Nutrition
-

Social Sciences

- **Economics, Government, & Ethics**

- **ECO 155** – Principles of Microeconomics
- **ECO 165** – Principles of Macroeconomics
- **PHI 115** – Ethics and Contemporary Issues
- **PLS 101** – American Democracy and Citizenship

- **Psychology**

- **PSY 121** – General Psychology
- **PSY 304** – Abnormal Psychology

- **Developmental Psychology/Lifespan Development**

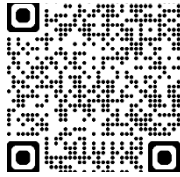
- **CFD 155** – Principles of Human Development
- **PSY 331** – Psychology of Childhood
- **PSY 350** – Psychology of Adulthood and Aging
- **PSY 441** – Psychology of Adolescence

- **Anthropology, Religion, and Sociology**

- **ANT 125** – Exploring Our Human Ancestry
- **REL 100** – Introduction to Religion
- **SOC 150** – Introduction to Society

Appendix E: Additional Resources

The table below lists professional organizations, student organizations, and key resources for each health profession. **For direct links, scan the Pre-Health Resources QR code, and use the BearLink QR code** to connect with Missouri State student clubs and organizations; you can also follow student organizations on social media for the most up-to-date information.

	Professional and Student Organizations	Key Resources
QR Codes: Links to Resources		
Anesthesiologist Assistant	American Academy of Anesthesiologist Assistants (AAAA), American Society of Anesthesiologists (ASA)	Anesthesiologist Assistant Centralized Application Service (CASAA), National Commission for Certification of Anesthesiologist Assistants (NCCA)
Athletic Training	Missouri Athletic Trainers' Association (MoATA), National Athletic Trainers' Association (NATA), Missouri State University Athletic Training Students Association (ATSA)	Athletic Training Centralized Application Service (ATCAS) Applicant Help Center, Commission on Accreditation of Athletic Training Education
Audiology	National Student Speech-Language Hearing Association (NSSLHA), Student Academy of Audiology, Missouri Academy of Audiology, Missouri Speech-Language-Hearing Association, American Speech-Language-Hearing Association (ASHA)	American Academy of Audiology, Communication Sciences and Disorders Centralized Application Service (CSDCAS) Application Center
Chiropractic	Missouri Chiropractic Physicians Association (MCPA), American Chiropractic Association	The Clinical Compass, The Journal of Chiropractic Education
Dentistry	Missouri Dental Association (MDA), National Dental Association (NDA), Missouri State University Pre-Dental Society	American Dental Education Association Associated American Dental Schools Application Service (ADEA AADSAS) Applicant Help Center, American Student Dental Association

	Professional and Student Organizations	Key Resources
Medicine	Missouri State Medical Association (MSMA), American Medical Association (AMA), Missouri State University Pre-Med Society	American Medical College Application Service (AMCAS) 2024 Applicant Guide, Medical School Headquarters, Missouri State University Pre-Medical Committee
Occupational Therapy	Missouri Occupational Therapy Association (MOTA), American Occupational Therapy Association (AOTA), Missouri State University Pre-Occupational Therapy Club	Missouri Occupational Therapy Association (MOTA), American Occupational Therapy Association (AOTA), Missouri State University Pre-Occupational Therapy Club
Optometry	Missouri Optometric Association (MOA), American Optometric Association (AOA), American Optometric Student Association (AOSA), Missouri State University Pre-Optometry Club	Optometry Centralized Application Service (OptomCAS) Applicant Help Center
Pharmacy	Missouri Pharmacy Association (MPA), American Pharmacists Association (APhA), American Society of Health-System Pharmacists (ASHP), Missouri State University Pre-Pharmacy Society	Pharmacy College Application Service (PharmCAS) Applicant Help Center, <i>Pharmacy is Right for Me</i> , Missouri State University PharmD Reverse Transfer
Physical Therapy	Missouri Physical Therapy Association (MPTA), American Physical Therapy Association (APTA), Association of Student Physical Therapists (ASPT), Missouri State University Pre-Physical Therapy Society	Physical Therapist Centralized Application Service (PTCAS) Applicant Help Center, American Council of Academic Physical Therapy
Physician Assistant	Missouri Academy of Physician Assistants (MOAPA), American Academy of Physician Assistants (AAPA), Missouri State University Pre-Physician Assistant Society	Centralized Application Service for Physician Assistants (CASPA) Applicant Help Center, <i>The PA Life</i>
Veterinary Medicine	Missouri Veterinary Medical Association (MVMA), American Veterinary Medical Association (AVMA), Missouri State University Pre-Veterinary Club	Veterinary Medical College Application Service (VMCAS) Applicant Help Center, Veterinary Information Network

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