



North Dakota State University  
Suggested Pre-Chiropractic Curriculum

**90 semester credits at bachelor's degree level:**

**A minimum of 90 semester credits (135 quarter credits) at the bachelor's degree level at a college or university accredited by a regional accrediting agency recognized by the U.S. Department of Education or an equivalent foreign institution.\***

**24 semester credits in the Life and Physical Sciences:**

A minimum of 24 semester credits (36 quarter credits) in the Life and Physical Sciences. Of these 24 semester credits (36 quarter credits), at least half must include a lecture and lab component.

**Minimum cumulative GPA of 3.0 on the best of the 90 semester credits:**

A minimum cumulative GPA of 3.0 on a 4.0 scale on the best of the 90 semester credits (135 quarter credits) completed. The best 90 credits must include the 24 semester credits (36 quarter credits) of Life and Physical Sciences.

**Prerequisites**

**Required courses in the Life and Physical Sciences**

- **General Chemistry I (with lab) – Chem 121/121L General Chemistry I/Lab (4 credits)**
- **Organic Chemistry I (with lab) – Chem 341/341L Organic Chemistry I/Lab (4 credits)**
- **Biology I (with lab) – Biol 150/150L General Biology I/Lab (4 credits)**  
\* Other biology courses listed below will also fulfill this requirement.

**Recommended additional courses in the Life and Physical Sciences**

- **General Chemistry II (with lab) – Chem 122/122L General Chemistry II/Lab (4 credits)**
- **Organic Chemistry II (with lab) – Chem 342/342L Organic Chemistry II/Lab (4 credits)**
- **Biology II (with lab) – Biol 151/151L General Biology II/Lab (4 credits)**
- **Physics I (with lab) and/or Physics II (with lab) – Phys 211/211L College Physics I/Lab and/or Phys 212/212L College Physics II/Lab (4 credits each)**
- **Biochemistry (with lab) – Bioc 460/460L Found of Biochem & Molec Bio I (4 credits)**

Other science courses may qualify, Biol 220/220L & Biol 221/221L Human Anat & Phys I & II/Labs, Biol 315/315L Genetics/Lab, Micr 202/202L Introd Microbiology/Lab. Students may check with the Office of Admissions to review science prerequisites. (4/2015)

## **Why Basic Science prerequisites are important:**

### **To ensure your academic success with a solid foundation**

We want you to be successful in the doctor of chiropractic program at Northwestern Health Sciences University. Basic science courses, including Biology, Physics, Inorganic and Organic Chemistry, are the foundation for the understanding of chiropractic science and the application of chiropractic methods.

To successfully progress through our rigorous chiropractic curriculum, it is very important for you to have a solid foundation in the basic sciences. In our experience, we have found that students who enroll in the College of Chiropractic having taken the proper sequence of basic sciences courses as prerequisites are more likely to do well in their coursework.

The graduate-level basic sciences courses you will be taking in your first and second trimesters are very demanding. The stronger your undergraduate background in the basic sciences, the more confident and capable you will be in meeting these challenges.

### **How Basic Science courses ensure your success**

#### **Biology and Inorganic Chemistry**

Doctors of chiropractic are specialists in neuromusculoskeletal systems. These systems, especially the neuromuscular system, are electrochemical systems. If you enter the College of Chiropractic with a solid background in biology and inorganic chemistry, you'll understand these fundamental concepts that will help you progress through the chiropractic curriculum:

- membrane potentials
- electrical and chemical gradients
- capacitance, ion motion and force
- binding of chemical transmitters to receptors and the interaction with drugs

#### **Physics**

Doctors of chiropractic are also biomechanical experts. Physics is very helpful in understanding the vectors and forces associated with line of drive and the velocities of thrust - important concepts that directly apply to chiropractic methods.

In your prerequisite physics courses, you'll also gain knowledge of work, power, force, and the effects of time – which are all very helpful in understanding the science of chiropractic.

#### **Organic Chemistry**

Organic Chemistry provides the foundational knowledge base for understanding how the body is built, how it manufactures and manages energy, and how it uses raw materials to maintain and repair itself.

Organic Chemistry is necessary to understand Biochemistry, Cell Biology and Clinical Nutrition - courses you will be taking in the doctor of chiropractic program.

#### **We can help**

Our admission representatives are here to help you plan your undergraduate curriculum. We can review your courses and suggest basic science courses that will help ensure your success. Northwestern also offers accelerated basic science courses through the College of Undergraduate Health Sciences to help you fulfill your prerequisites.