Department of Biology
Science 2042
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**What is a Chiropractor? What's the job outlook?**

Chiropractors care for patients with health problems of the neuromusculoskeletal system, which includes nerves, bones, muscles, ligaments, and tendons. They use spinal adjustment and manipulation, among other clinical interventions, to manage patients' health concerns, such as back and neck pain.

Employment for chiropractors is expected to grow 11 percent from 2020 to 2030. Demand is expected to increase for non-surgical, drug-free ways to treat pain and improve overall wellness. Increased interest in integrative healthcare has led to more acceptance of chiropractic treatment of the back, neck, and limbs. Opportunities will also be created by the continued aging of the large baby-boom generation, as older adults are more likely than younger people to have neuromusculoskeletal and joint problems. The annual mean wage for chiropractors in the Denver Metro area is $59,970.*

*U.S. Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Pharmacists, on the Internet at https://www.bls.gov/ooh/healthcare/chiropractors.htm#tab-5

**How do I become a Chiropractor?**

Chiropractors must have a Doctor of Chiropractic (D.C.) degree from a chiropractic college, as well as licensure in the state in which they practice. Prerequisites for entry into chiropractic programs vary. Most chiropractic programs require at least 3 years of undergraduate study (90 credits) with a cumulative GPA of 3.0 or above. Of those 90 credits, a minimum of 24 should be in life and physical science courses with at least half of those courses containing a laboratory component. However, some states require a bachelor's degree in order to practice. D.C. programs typically take 4 years to complete.

Upon completion of the program, prospective chiropractors must pass all four parts of The National Board of Chiropractic Examiners (NBCE) exam and state board exams for the states in which they plan to practice. Many states also require applicants pass a background check and state-specific jurisprudence exams.

Currently in the U.S., there are 15 colleges that provide accredited chiropractic degree programs. A list of these chiropractic colleges can be found on the Colorado Chiropractic Association's website.

Colorado Chiropractic Association - https://coloradochiropractic.org/chiropractic-education/

Biology Faculty Advisor who can guide you on this path:

Dr. Jeff Simpson - simpsonj@msudenver.edu

# MSU Denver - Department of Biology

General course prerequisites required for those interested in pursuing chiropractic school include:

- **General Biology with lab** – BIO 1080/1090 and BIO 1081/1091; 2 semesters
- **General Microbiology** – BIO 2400; 1 semester
- **General Chemistry with lab –** CHE 1800/1801 and CHE 1810/1811; 2 semesters
- **Organic Chemistry with lab** – CHE 3100/3120 and CHE 3110/3130; 2 semesters
- **Biochemistry I** – CHE 4310, no lab required; 1 semester
- **Math –** MTH 1110 and MTH 1120 (prerequisites for CHE & PHY); 2 semesters
- **Calculus** – MTH 1410; 1 semester
- **College Physics** – PHY 2010/2030 and 2020/2040; 2 semesters
- **Composing Arguments** – ENG 1010; 1 semester
- **Presentational Speaking** – COMM 1010; 1 semester
- **Introductory Psychology –** PSY 1001; 1 semester
- **Social Sciences** – cultural anthropology, history, psychology or sociology; 9 semester credits
- **General Education** – does NOT include vocational, arts, crafts or PE courses

**Human Anatomy & Physiology I & II are not required biology prerequisites, but they are HIGHLY recommended** – BIO 2310 and BIO 2320; 2 semesters

**Biomechanics, Kinesiology, Exercise Physiology, or Statistics** - may be substituted for second semester of Physics (depends on individual chiropractic school)

**Social Sciences/Humanities** – 15 credits (does not include mathematics, science, business, computers, engineering or physical education)

MSU Denver - Department of Biology

# REQUIREMENTS FOR B.S. IN BIOLOGY

(2024-2025 or future catalogs ONLY)

## *Major Requirements:*

- Total of 46 total credit hours approved by the Biology Faculty must be completed in the BIO prefix
- C- or better must be earned for any BIO course to apply to your major requirements.
- 27 upper division credit hours in BIO courses must be completed
- Non-biology courses in math, chemistry and other STEM disciplines are required

❑ **Start Smart!** Have you met with a Biology Academic Advisor at least once a semester to ensure timely progression toward your degree and to avoid taking unnecessary courses.

## Required Introductory Courses:

❑ BIO 1080 & 1090: General Biology I w/ Lab
❑ BIO 1081 & 1091: General Biology II w/ Lab

*Two semesters of math:*

❑ MTH 1109/ 1110: College Algebra, or higher
❑ Another semester of Math > MTH 1110

*Choose one of the following chemistry sequences:*

❑ CHE 1800 & 1801: General Chemistry I w/ Lab
❑ CHE 1810 & 1811: General Chemistry II w/ Lab

*** **OR** ***

❑ CHE 1110 & 1150: Principles of Chemistry w/ Lab
❑ CHE 2100 & 2150: Into to Organic & Biol Chem w/ Lab

**Pro Tip!** Biology students do not need additional General Studies coursework for Natural & Physical Sciences or Quantitative Literacy. Your required Biology, Chemistry, and Math courses will fulfill these.

## Additional Required Biology courses:

*Choose one of the following:*

❑ BIO 2100: General Botany (5cr.)
❑ BIO 2310: Human Anatomy & Physiology I (4cr.)
❑ BIO 2400: General Microbiology (5cr.)
❑ BIO 3200: Invertebrate Zoology (4cr.)
❑ BIO 3260: Vertebrate Zoology (4cr.)

*Take General Ecology and a Genetics course:*

❑ BIO 3520: General Ecology (3cr.)

*Choose one of the following:*

❑ BIO 3600: General Genetics (4cr.)
❑ BIO 3610: Genetics: Principles & Analysis (4cr.)

❑ **Professionalize!** Have you met with a Faculty Advisor to personalize your path and ensure you select courses and extracurricular experiences that will best serve you?

# MSU Denver - Department of Biology

## Biology Elective Course Requirement:

- At least 46 total credit hours must be completed in BIO courses.
- At least 27 total credit hours must be upper division BIO courses (3000/4000 level).
    - Includes any upper division Zoology, General Ecology, Genetics, and BIO Senior Experience

| **Lower Division BIO Courses** (1000/2000 level) | **Credit Hours** | **Upper Division BIO Courses** (3000/4000 level) | **Credit Hours** |
|---|---|---|---|
| ❑ BIO 1080/1090 – General Biology I w/Lab | 4 | ❑ BIO 3520: General Ecology | 3 |
| ❑ BIO 1081/1091 – General Biology II w/Lab | 4 | ❑ BIO 36XX: Genetics | 4 |
| ❑ | | ❑ | |
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| ❑ | | ❑ | |
| ❑ | | ❑ | |
| ❑ | | ❑ | |
| ❑ | | ❑ | |
| ❑ | | ❑ BIO Senior Experience (recommended) | |
| **Total lower division BIO credit hours:** | | **Total upper division BIO credit hours:** *AT LEAST 27 UPPER DIVISION BIO CREDIT HOURS REQUIRED* | |
| **Total BIO prefix credit hours:** *LOWER DIVISION + UPPER DIVISION (AT LEAST 46 TOTAL BIO CREDIT HOURS REQUIRED)* | | | |

## Required Non-Biology Science Electives:

- 9 credits total, at least 6 of which must be upper division (3000 /4000 level).
- Any Math course selected would be in addition to the two semesters required above.

| **Non-Biology Science Elective Courses** | **Credit Hours** |
|---|---|
| ❑ | |
| ❑ (upper division) | |
| ❑ (upper division) | |
| **Total Non-Biology Science Elective credit hours:** *At least 6 credit hours must be upper division (3000/4000 level)* | |

# MSU Denver - Department of Biology

## Senior Experience Requirement:

- A capstone course is required to graduate.
- A Biology Senior Experience is recommended.
- Courses outside Biology marked (SE) fulfill the Senior Experience requirement but would ***not*** count toward your BIO hours.

BIO 4050: Advanced Cell & Molecular Biology
BIO 4230: Issues in Conservation Biology
BIO 4271: Parasitology
BIO 4300: Neurobiology
BIO 4510: Microbial Ecology
BIO 4540: Animal Ecology
BIO 4820: Developmental Biology
BIO 4850: Evolution

## Are you ready for graduation?

→ Please see your Degree Progress Report for General Studies and MSU Denver graduation requirements. ←

- ❑ Have you completed a total of 46 credit hours of BIO courses approved by the Biology Department?
- ❑ Have you completed at least 27 upper division BIO coursework (3000/ 4000 level)?
- ❑ Have you completed at least 39 total upper division credit hours?
- ❑ Have you completed a Senior Experience course?
- ❑ Have you had a final advising appointment?
- ❑ Have you submitted an application for graduation?