

# What can I do with a degree in... **BIOLOGY** (B.S. in Biology)

## Why study **BIOLOGY?**

Biology is the science of life and living organisms, including their structure, function, growth, origin, evolution, distribution, and taxonomy. Scientists in the field work on scales from electrons to the entire planet. Studying biology at Western Carolina University includes a program of discovery in genetics, physiology, and ecology... and that's just the beginning! If you enjoy the field of biology, our core curriculum is designed for you with research opportunities ranging from regenerative medicine and protein dynamics to animal behavior and ecological conservation.

The Biology Program prepares students to succeed at the next level, whether that's pursuing a career in biological research, health professions, management, or education. We offer a broad range of learning opportunities, including traditional classroom experiences, hands-on experiences in the field and the laboratory, independent study, and full student engagement in research.

## What are the **DEGREE OPTIONS?**

### **Bachelor of Science (B.S.) in Biology**

*NOTE: Students who wish to teach Biology at the high school level may earn a Bachelor of Science in Education (B.S. Ed.) in Secondary Science Education and choose the Biology concentration. Students may also opt to minor in Biology.*

## What are the **CONCENTRATIONS?**

There are four undergraduate degree options available to students within the biology major: **Cellular and Molecular Biology, Ecology and Evolutionary Biology, General Biology, and Pre-health Professional.**



- **Cellular and Molecular Biology:** for students more interested in basic biochemistry and how the cells operate and interact.
- **Ecology and Evolutionary Biology:** for students more interested in the interactions among organisms and between organisms and their environment.
- **General Biology:** for students still forming opinions about which parts of the broader field interests them most.
- **Pre-health Professional:** for students interested in pursuing a professional degree (e.g. DPT, DMD, MD, DO, or DVM) after their B.S.

## What is the **ADMISSION PROCESS?**

Students may declare the Biology Major and concentration by speaking with someone in the Advising Center, 2nd floor of Killian Annex or by speaking with one of the Biology Department faculty. Please make an appointment with your advisor via your MyWCU student portal.

## What **JOBS ARE AVAILABLE?**

All careers that touch on the life sciences may be approached from a degree in Biology, but regardless of the career, a biologist will have many responsibilities, such as conducting research, collecting samples, and performing tests. Our graduates work in a tremendous variety of careers including:

- Biochemistry
- Bioengineering
- Education
- Environmental Sciences & Man.
- Evolutionary Science
- Fisheries & Wildlife Research & Management
- Food Science
- Forensic Science

## Who employs **BIOLOGY** graduates?

Our graduates work in a variety of sectors including governmental agencies and non-governmental organizations, the healthcare industry including hospitals, diagnostic laboratories, and research centers as well as research and development for the pharmaceutical industry, and educational organizations including primary and secondary schools, colleges and universities, science museums, zoos and aquariums.

# MAJOR MAP

**How to use this map:** Review the four categories and suggestions of activities and when you should consider engaging in them. Remember, these are just suggestions! There is a fillable space for you to add in any other ideas you have to set yourself up for success in life after college.

## 1st YEAR

## 2nd YEAR

### EXCEL IN ACADEMICS

The courses you take your first year should include your introductory biology and chemistry classes (BIOL 140, 141, & 180 and CHEM 139 & 140). Become acquainted with the Hunter Library Research Guide for Biology. The remaining space in your schedule should be used to begin work on your math pathway and Liberal Studies requirements. You should also check out the [8-semester plan for your concentration](#) and make an appointment with your advisor.

In your second year you should take BIOL 240 & 241 and CHEM 241 & 242. You should also focus on completing your math pathway and Liberal Studies requirements. Be sure to check out the [8-Semester Plan for your concentration](#) and make an appointment with your advisor.

### GET HANDS-ON EXPERIENCE

Check out [WCU's DegreePlus program](#) and choose which events in any of the four categories you want to attend. Categories include: Professionalism, Teamwork, Leadership, or Cultural Responsiveness.

See what on-campus employment opportunities are available by logging in to JobCat via your MyWCU.

Get involved with the Biology Club.

Explore the research interests of Biology Department faculty to look for opportunities to help with ongoing research.

If you are thinking about attending a health-related professional school, start engaging in hands-on experiences required in professional school admissions.

Engage deeper with [DegreePlus](#)

### BE PART OF THE COMMUNITY

Connect with the [Center for Service Learning](#) and ask about the [Lily Award](#), a program aimed to encourage students to be connected with their community.

Develop deeper relationships with the organizations for which you volunteer. Ask for special projects or responsibilities that you can highlight on a resume.

If you want to [study abroad](#), this is a good year to have that experience. Talk with a study abroad advisor about targeted experience for your concentration.

### PREPARE FOR LIFE AFTER COLLEGE

Further explore your career options or career interests using the [Center for Career and Professional Development's](#) online resources, [Focus 2](#), and Onet Online.

Connect with a career counselor early on to explore opportunities and experiences you can do while in college to further develop your professional resume.

Check out [CCPD's list of career-building activities](#) and participate in an activity this year, such as attending Career Fair Plus.

Start a spreadsheet of professional/ graduate schools you wish to apply to in a few years with their admission requirements so that you are aware of what the expectations are.

# Looking for a minor? Consider these options:

Chemistry  
Environmental Health  
Geology

Natural Resource Management  
Parks & Recreation Management  
Philosophy

Psychology

## 3rd YEAR

Third year courses depend on your concentration and will include a mix of three prescribed upper-level biology electives within your chosen concentration and a menu of other upper-level biology electives you may choose from to broaden your knowledge. Be sure to check the [8-Semester Plan for your concentration and your advisor](#) for more information.

By your third year you should have identified faculty working on interesting research. Reach out to them for opportunities to gain experience working as part of their research team. If you are considering graduate school, strongly consider doing an undergraduate thesis with a faculty mentor. If you are thinking about professional or graduate school, study for the GRE or MCAT and schedule the test. Consider internship experiences that will give you practical and hands-on experience, and/or networking with professionals in your field at national or regional conferences.

Continue to build relationships and volunteer with area organizations in your field.

Connect with alumni in your field through social media.

Visit the CCPD to hone your CV and cover letter. Apply for internships. Utilize the [Writing and Learning Commons](#) for MCAT, GRE, and other professional exam preparation sessions. Take the MCAT, GRE, etc. Use [Big Interview](#) to learn more about professional interviews. Schedule a visit to tour professional schools of your choice, if applicable.

Take advantage of mock interview opportunities.

## 4th YEAR

In your fourth year, you will continue to take the upper-level electives begun in your third year and complete your Liberal Studies requirements. Be sure to review the [8-semester plan](#), make an appointment with your advisor, complete your degree audit, and [apply for graduation!](#)

Investigate requirements for your chosen career path and assess what skills or experiences you're lacking. Connect with your faculty advisor or career counselor.

Join professional Biology organizations suggested by your research mentors or instructors.

Network with employers and non-profits at the annual Career Fair Plus event, held each Sept.-October and February-March.

Apply to professional/ graduate schools, if applicable.

Look for and [apply for jobs](#) between 4 and 6 months before graduation.

Polish your CV, cover letter, and interview skills by visiting the [CCPD](#).

Internships are still the number-one educational experience employers look for in a recent college graduate resume. (Chronicle of Higher Education's study on 59,000 employers)

**DID YOU KNOW?**

# MORE INFORMATION

## INTERNSHIP Information

Cooperative education is a program in which students combine academic study with career-related work experience while pursuing a degree. Designed to be an integral part of the educational experience, the program offers experiential learning in both full-time and part-time positions in virtually all majors. Biology majors may receive up to 3 credit hours for BIOL 389, Cooperative Education in Biology, for approved internships.

## SKILLS LEARNED in the classroom

The core competencies will center on developing scientific research skills, knowledge, and attitudes such as:

- independent thinking
- critical thinking
- problem solving
- written and oral communication
- professional teamwork
- analytical and quantitative reasoning
- curiosity and creativity
- statistical evaluation
- technical skills

## KNOWLEDGE Base

This program will prepare students to:

- understand the basic principles of biology and how they are connected by evolutionary processes
- perform basic biological investigations, to apply the disciplines of mathematics, chemistry and physics to biological problems

- Develop the quantitative, communication, and technical skills necessary to make successful contributions to the sciences and to society

## Professional RESOURCES

- A list of professional organizations links associated with the Biological Sciences maintained by the National Association of Biology Teachers: <https://nabt.org/Professional-Organizations>
- Careers in Biology information from the American Institute of Biological Sciences: <https://www.aibs.org/careers/%20with%20links%20for%20career%20development%20and%20job%20hunting>.
- The National Science Foundation's list of Research Experiences for Undergraduates (REU) sites: [https://www.nsf.gov/crssprgm/reu/list\\_result.cfm?unitid=5047](https://www.nsf.gov/crssprgm/reu/list_result.cfm?unitid=5047)

## QUESTIONS?

For questions, please call the Biology program at 828-227-3648 or visit [biology.wcu.edu](http://biology.wcu.edu).

To schedule an appointment with a career counselor, contact the Center for Career and Professional Development, 828-227-7133 or [careerservices@wcu.edu](mailto:careerservices@wcu.edu).