

The background is a collage of biological research images. A large hand in a grey and blue striped sleeve reaches towards a white flower in the foreground. In the middle ground, a lake scene shows several people wading in the water, one holding a large white fish. In the bottom left, two students are looking at a computer monitor displaying a microscopic image. The top right corner features the Michigan Tech logo.

MichiganTech

Department of
Biological Sciences

Frequently Asked Questions

from academic preparation to enrollment,
from orientation to learning centers,
here is what you need to know to
attend Michigan Tech and succeed.

Frequently Asked Questions

As you prepare to begin your college education, you are sure to be filled with questions regarding how to prepare for college and to confront the many decisions that you will have to make during the upcoming years. While we cannot anticipate all of your questions, those listed below are commonly asked by students and their parents. For more information, feel free to contact us.

Q. How strong is Michigan Tech's biology program?

- A. The Biological Sciences Department is one of the largest non-engineering departments on campus. Since we were established as a department in 1963, we have graduated over 2,600 students. Our pre-med program has educated over 500 students who have entered the medical field as physicians, dentists, and other health professionals. We enroll over 250 undergraduates and 30 graduate students studying for their MS or PhD degrees. We have a vigorous, thriving department.

Q. What courses should I be taking in high school?

- A. To be prepared for course work at MTU, we encourage you to take a full year each of biology, chemistry, and physics in addition to beginning algebra, intermediate algebra, geometry, and three years of English.

Q. What steps do I take to enroll?

- A.
1. We recommend that you take either the ACT or SAT during your junior or senior year of high school, and have your results sent to Michigan Tech.
 2. You can apply anytime after June 1 of your junior year of high school and by March 1 of your senior year.
 3. Plan to attend Freshman Orientation during the week before the start of classes. You will meet with your advisor, and he/she will assist you with the transition to Michigan Tech. You can also fine-tune your class schedule at this time.

Q. What about housing?

- A. Once you've been accepted, the Residential Services Office will send you a housing contract, which you should return as soon as you can—and no later than May 1 of your senior year.

Q. What about financial aid?

- A. To apply for financial aid, file your Free Application for Federal Student Aid (FAFSA) as soon as possible after January 1, but before February 15 of your senior year, naming Michigan Tech as a recipient of this analysis.

Q. What courses will I take my first year?

- A. A typical first-year student in biological sciences, bioinformatics, or clinical laboratory science will take biology, chemistry, math, a writing course called *Perspectives on Inquiry*, and possibly an elective (depending on your course load). First-year clinical lab majors will replace one term of

biology with a clinical lab science course. An orientation course (in biological sciences, pre-health, or clinical lab science) is required during fall semester.

Q. How will I know what my first semester's schedule will be?

- A. Once you have been accepted to Michigan Tech's biology program, you will have an opportunity to register on-line for your fall semester classes as you are completing your high school education. Instructions for registration will be sent to you. A faculty advisor will help you choose your courses and plan your schedule.

If you decide not to register on-line, the Office of Student Records and Registration will set up your fall semester class schedule based on your major and declared interest.

Your first semester placement into chemistry and math classes is based on your ACT or SAT score. Michigan Tech offers a Math Diagnostic Test during Freshman Orientation for students with no scores or for those who wish to test into higher levels. You choose your electives during orientation with the help of faculty advisors.

Q. What are the required "core courses"?

- A. If you are majoring in biological sciences or clinical lab science, you must take certain courses—biology, chemistry, math and physics—regardless of your concentration. If you are majoring in bioinformatics, you must take biology, chemistry, math, and computer science courses. These courses are listed in the *Undergraduate Catalog* and can be seen on the Web at: http://www.bio.mtu.edu/degree/undergrad/degree_options/index.htm.

Q. How large will my classes be and who will teach them?

- A. Introductory lecture classes in biology will have from 80 to 140 students. Upper-division elective courses may have no more than a dozen students. Laboratory courses typically have 10–20 students.
- All courses are taught by faculty. Some of the laboratories are instructed by graduate students with faculty supervision. Well-qualified undergraduate students volunteer their time to assist the instruction in many of our laboratories.

Q. Who will be my advisor?

- A. Once you have been accepted into the department, you are assigned a faculty advisor. We encourage you to contact your advisor with any questions you may have even before you arrive on campus. Your

advisor can be particularly helpful in planning your first semester schedule before you complete your on-line registration. You will meet with your advisor during freshman orientation week, when he or she can help you fine-tune your schedule. All faculty are available as advisors and you may change advisors at any time.

Q. What if I need extra help in biology, chemistry, math, physics, and/or English?

- A. If you need extra help, self-help computer labs and tutors are available in the Departments of Biological Sciences, Chemistry, Math, Physics, and Humanities. These departments all maintain learning centers to help you. You can either walk in for help with a specific problem or set up appointments for more extensive assistance.

Q. What are the different biology and clinical lab sciences concentrations?

- A. There are a number of concentrations or options in both the biological sciences and clinical laboratory sciences degrees. The bioinformatics degree does not yet have formal concentrations. For details, please go to our Website: http://www.bio.mtu.edu/degree/undergrad/degree_options/index.htm

Note that the degree concentrations are intended as advising tools and are not intended to lock you in or out of any particular profession. Students in the ecology concentration have gone to medical school and students in the pre-health professions have gone into environmental careers.

Q. What if I don't know what area of biology to go into?

- A. Enroll in the general biology concentration. The courses in this concentration, along with your biological sciences orientation course, will help you find an area you'll enjoy. You may stay with general biology or transfer to another concentration. It's not unusual to change concentrations or even majors several times before graduation.

Q. What if I don't know now what I'll want to do after graduation?

- A. Most first-year students don't know what they'll want to do after college graduation. As your college career progresses, keep talking with your advisor, who is not only an academic advisor, but also a career counselor. It's also helpful to talk to a professional in your field of interest. If possible, spend the day following that person around on the job (called job shadowing). Pick his or her brain;

find out the most rewarding part of the job, as well as the downside. How did he or she get where he or she is now? What college courses were the most helpful?

Q. What if I want to change majors?

A. Many college students change their major during their college careers. Changing majors and transferring between departments are not unusual. Your advisor can help you link up with an advisor in your new major, as well as tell you what paperwork needs to be completed to make the change official.

Q. What can I do with a bachelor of science degree in biological sciences or clinical laboratory science, plus a secondary education teaching certificate?

A. With biological sciences or clinical lab science serving as your major, depending on what minor you choose, you could teach high school biology, chemistry, computer science, general science, earth science, physical science, physics, or math. (See the Teacher Education and Development section of the *Undergraduate Catalog*).

Q. What about the volunteer work required for admission to medical school, veterinary school, and physical therapy programs?

A. We have excellent arrangements with our local hospital, veterinary clinic, physical therapy clinic, and other facilities in which our students are able to obtain such exposure during the academic year. Many pre-health professional students continue their volunteer work in clinical facilities at home during breaks and over the summer.

Q. Are there jobs for people with a bachelor of science degree in biological sciences, bioinformatics, or clinical laboratory science?

A. Our goal is to prepare you for the profession of your choice. There are exciting careers waiting for you in many areas of the biological sciences. Please see our pamphlet, *Careers in Biological Sciences*, for more information.

Q. What about graduate school?

A. Your baccalaureate degree will qualify you for many entry-level positions. However, continuing your education beyond the BS degree offers the best chance for advancement and growth. The Department of Biological Sciences offers both the master of science (MS) and doctor of philosophy (PhD) degrees, and some of our graduates remain here for their graduate work. We also place our graduates into nationally ranked graduate programs at major research schools. Our graduates have entered graduate programs at such institutions as Johns Hopkins University, Purdue University, Cornell University, The University of California at Berkeley, the University of Michigan, Michigan State University, the University of Notre Dame, the University of Iowa, and others.

Q. Does Michigan Tech offer sufficient course work in biology to allow me to enter a professional biology career?

A. The Department of Biological Sciences offers a wide variety of course work to prepare you for your future career. Related departments add to the variety of course offerings. A list of available biology and related courses follows:

Human Biology/Medical

- Introduction to Pre-Medicine
- Introduction to Clinical Laboratory Science
- Principles of Anatomy and Physiology (two semesters)
- Medical Terminology
- Human Nutrition
- Current Health Issues
- Occupational Hygiene
- Medical Bacteriology
- General Immunology
- Medical Parasitology Laboratory
- Virology
- Histology
- Cardiopulmonary Physiology
- Exercise Physiology¹
- Aerospace Physiology¹
- Cell and Tissue Mechanics¹
- Clinical Chemistry
- Clinical Laboratory Science Clinical Practicum²
- Histotechnology Practicum²
- Cytotechnology Practicum²
- Clinical Immunology and Serology
- Hematology and Immunohematology
- Clinical Laboratory Instrumentation
- Introduction to Mycology
- Toxicology
- Biomedical Ethics³
- Economics of Health Care⁴
- Physiological Psychology⁵

Ecology/Environmental Biology

- Botany
- Zoology
- Evolution
- Principles of Ecology
- Environmental Toxicology and Society
- Environmental Biochemistry
- Tropical Island Biology
- Phycology
- Limnology
- Plant Taxonomy
- Entomology⁶
- Forest and Landscape Ecology⁶
- Soil Science⁶
- Conservation Biology⁶
- Remote Sensing and GIS
- Wildlife Habitat⁶
- Ornithology⁶
- Field Ornithology⁶
- Insect Ecology⁶
- Ecosystem Modelling⁶
- Wetlands⁶
- Mammalogy⁶
- Wildlife Ecology⁶
- Environmental Law⁴

Genetics/Biochemistry/Molecular Biology

- Principles of Biochemistry
- Genetics
- Genetics Laboratory
- Cell and Molecular Biology for Bioinformatics
- Cell Biology
- Introduction to Genomics
- Biochemistry I & II
- Molecular Biology
- Environmental Biochemistry
- Plant Physiology
- Biochemical Laboratory Techniques
- Advanced Biochemical Techniques
- Molecular Biology Techniques
- Plant Biotechnology⁶
- Tree Biotechnology⁶
- Molecular Genetics of Trees⁶

Microbiology

- General Microbiology
- Medical Bacteriology
- Environmental Microbiology
- Applied and Industrial Microbiology
- Mycology
- Virology
- Forest Diseases and Fungal Ecology⁶

Plant Sciences

- Botany
- Phycology
- Plant Physiology
- Introduction to Mycology
- Plant Taxonomy
- Vegetation of North America⁶
- Tree Physiology and Genetics⁶
- Plant Biotechnology⁶
- Tree Biotechnology⁶
- Molecular Genetics of Trees⁶
- Mushrooms of Veracruz⁶

Interdisciplinary/Other

- General Biology
- Introduction to Biological Sciences
- Biological Sciences Teaching Experience
- Special Problems in Biology
- Honors Research in Biology
- Biological Simulation Techniques
- Analysis of Biological Data
- Senior Essay

Bioinformatics

- Introduction to Genomics
- Cell and Molecular Biology for Bioinformatics
- Critical Discussions in Bioinformatics
- Plant Bioinformatics⁶

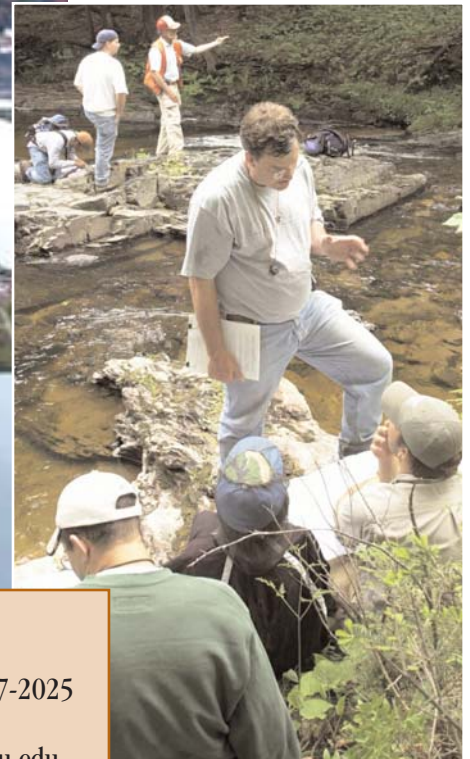
Notes

1—Offered by Biomedical Engineering Department
 2—CLS majors only
 3—Offered by Humanities Department

4—Offered by School of Business
 5—Offered by Department of Education
 6—Offered by School of Forest Resources and Environmental Science

MichiganTech

Michigan Technological University
1400 Townsend Drive
Houghton, MI 49931-1295



For more information, contact

Department of Biological Sciences
740 Dow Environmental Sciences and Engineering Building
Michigan Technological University
1400 Townsend Drive
Houghton, MI 49931-1295

Telephone 906-487-2025
Fax 906-487-3167
Email biology@mtu.edu
Website www.bio.mtu.edu