

HOW TO USE THIS MAP

- UToledo's Major Map is a guide for you to plan for future success while you explore your University experience. The five rows of the map provide a step-by-step guide to integrate your academic courses with experiences on and off-campus that will help build your career readiness.
- Start thinking about life beyond college now and use the map to set short- and long-term goals, such as preparing for graduate or professional schools, preparing for your first career-track job and networking with others in your profession.

RESOURCES FOR SUPPORT

From orientation to graduation, there are many resources to support your University experience.

Your success coach is like your personal GPS. As you navigate from where you are to where you want to be, coaches offer one-on-one guidance and support through referrals to academic support services and other campus resources, and connections to campus engagement and experiential learning opportunities. Visit utoledo.edu/successcoach to connect with your success coach.

Career Services provides comprehensive career planning and preparation services for all UToledo students in order to clarify and implement their academic and career goals. Connect with Career Services during your first year and continue working with them often throughout your academic career. Visit utoledo.edu/career to learn more about the programs, services and events to support your success.



ASTRONOMY/ASTROPHYSICS

TOP FIVE REASONS TO STUDY ASTRONOMY/ASTROPHYSICS AT UTOLEDO

- 1** Work one-on-one with faculty members that are actively engaged in cutting-edge research with ground and space-based telescopes.
- 2** Experiential learning through hands-on undergraduate research as early as your first year, with paid summer research positions also possible.
- 3** Access to Ritter Observatory's 1-meter telescope and additional state-of-the-art education and outreach facilities located on campus such as Ritter Planetarium and Brooks Observatory.
- 4** Conduct research on campus using the [Ohio Supercomputer Center](#) and the 4.3-meter [Lowell Discovery Telescope](#) in Arizona.
- 5** Choose from either a Bachelor of Arts (B.A.) in Astronomy or Bachelor of Science (B.S.) in Physics - Astrophysics concentration - degree program.

PUTTING YOUR DEGREE TO WORK

- Automotive
- Aviation & Aerospace
- Big Data
- Defense & Space
- Financial Services
- Government Administration
- Higher Education
- Hospital & Health Care
- Planetarium Entertainment
- Planetariums & Observatories
- Research
- Secondary Education
- Space Technology

BUILD YOUR EXPERIENCE BEYOND THE CLASSROOM

Experiential learning exists through faculty research opportunities and is built into the B.A. and B.S. degree program through the senior capstone project. The skill sets you develop include hypothesis driven research, data acquisition and handling, as well as presentation of those results. These skills are highly sought after when applying for internship programs with industry and national laboratories or applying for M.S., Ph.D. and professional graduate degree programs and jobs.



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FUELING TOMORROWS

AMPLIFY YOUR MAJOR

- Get involved in undergraduate research to explore parts of the universe no one has seen before!
- Join the observing team as early as your first semester to get experience using a 1-meter research-grade telescope.
- Consider adding a minor in mathematics or data science to gain experience in programming, databases, machine learning and big data to prepare you for many different technical careers.

“Studying astronomy means embracing new challenges, thinking creatively and working with collaborators in many scientific fields across the globe to explore some of the biggest questions we can ask about life, the Universe and everything. Studying astronomy and astrophysics at UToledo means doing all of that with a group of dedicated and profoundly curious fellow explorers eager to help you succeed.”

SAM FEDERMAN, Graduate Research Assistant/Ph.D. Candidate ('22-23), UToledo, B.S. Astrophysics, '17

Astronomy/Astrophysics

Department of Physics and Astronomy



1ST YEAR

2ND YEAR

3RD YEAR

4TH YEAR

EXPLORE YOUR MAJOR AND CAREER PATHWAYS



In the first year, you will have the chance to explore foundational courses along with some electives:

PHYS 1910 Frontiers of Physics & Astronomy
ASTR 2010 Solar System Astronomy

Meet with your [academic advisor](#) to learn more about your [plan of study](#).

CONNECT WITH OTHERS AND BUILD COMMUNITY



Attend the Student Involvement Fair in early fall; explore over 400 [student organizations](#) and attend [campus events](#).

Consider joining a fraternity or sorority and getting involved in [Greek Life](#).

Working on campus is a great way to meet others. Attend the [Job Fair](#) to learn about campus jobs!

BUILD YOUR SKILLS THROUGH EXPERIENCE



Meet with a [Physics faculty member](#) to discuss creative ways to volunteer or intern in your area of interest.

Consider opportunities outside of the classroom. Join a student organization such as:

- [Building Ohio's Sustainable Energy Future \(BOSEF\)](#)
- [Society of Physics Students](#)

ENGAGE IN AN INCLUSIVE GLOBAL PERSPECTIVE



Get to know people who are different from you. Connect with the [Office of Multicultural Student Success](#) (OMSS) by attending OMSS [History and Heritage Month](#) events.

Learn another language or culture to develop new perspectives and build your marketable skills. Visit [World Languages and Cultures](#) for more information.

PREPARE FOR POST-GRADUATION



Complete your [Handshake Profile](#) (use your UTAD log-in credentials).

Explore [What Can I Do With This Major?](#) and [Candid Career](#) to learn about career paths and employers within your field of study.

Meet with [Career Services](#) to begin developing your resume and a plan to get career ready.

Start to dive deeper into the discipline of Astronomy/Astrophysics. Explore [undergraduate research](#), join the [SPS](#) (Society for Physics Students) or [Ritter Observing team](#), or volunteer for the [Ritter Planetarium](#).

Continue working on core requirements as well as your major requirements: [B.A. Astronomy](#) or [B.S. Physics – Astrophysics](#) concentration.

Explore organizations that complement your major. Many colleges have academic-focused organizations. Learn more on [InvoNet](#).

Community service is a great way to get experience as well as give back to the community. Consider joining a [volunteer organization](#).

Improve your study strategies and visit the [Learning Enhancement Center](#).

Explore summer job opportunities related to your major by scheduling a meeting with [Career Services](#).

Consider applying to the Office of Undergraduate Research [Summer Research and Creative Activities Program](#) to earn a research scholarship.

Connect with the [Education Abroad Office](#) to learn more about the opportunities to live and learn in a different country. Meet with your advisor to see how your credit will transfer and discuss the best time to study away.

Consider completing the OMSS [Student Diversity Certificate](#) program.

Attend events sponsored by the [Office of Diversity, Equity and Inclusion](#).

Utilize Handshake and InvoNet to find opportunities to meet employers and expand your network by attending career fairs and other events.

Meet with Career Services to update your [resume](#) and LinkedIn profile.

Meet with your [academic advisor](#) to make sure you are on track for graduation and have planned out your courses for the next year.

Complete major upper-level physics courses including Astrophysics I and II and Astrophysical Measurements.

Plan and study for the GRE.

Consider doing research with a faculty member. UToledo students often apply for and receive funding for their research and present their results at conferences. Check out the [Office of Undergraduate Research](#) to learn more.

Join a professional association related to your interests.

Interested in undergraduate research? Apply for funding through the [Office of Undergraduate Research](#).

Explore internship opportunities at the [Ritter Planetarium](#), [faculty research groups](#) and other local organizations.

Join an international student organization to learn more about other cultures.

Attend the I-Village event or I-Dinner, two premier UToledo international events.

Use Handshake to apply to part-time jobs, internships or externships to gain practical and relevant experience.

Gain interviewing skills with [Big Interview](#) or schedule an appointment with Career Services for a mock interview.

Join groups on LinkedIn reflecting specific careers or topics of interest in astronomy/astrophysics.

Be sure to finish up all your courses for your major and any optional minor and/or additional major(s).

Final courses include the Undergraduate Professional Development Seminar and Senior Capstone Project - both preparing you for your future after graduation.

Need to take the GRE? Start [here](#).

Present your research at a research exhibition on campus. Consider attending and presenting your work at a regional or national conference with a faculty member for networking and exploring career opportunities.

Be sure to include these experiences in your resume: community service, student leadership, organization membership and philanthropic efforts.

"Overall employment of physicists and astronomers is [projected to grow 8 percent from 2020 to 2030](#), about as fast as average for all occupations."-BLS

Investigate internships or full-time jobs related to careers of interest by attending events for graduating seniors sponsored by [Career Services](#). Review [Careers in Physics & Astronomy](#) for more resources and career information.

Build your intercultural competencies by learning more about diversity, equity and inclusion through OMSS and the Office of Diversity, Equity and Inclusion programs.

Solidify post-graduate plans.

Get help from your academic advisor, faculty and Career Services with job searching, resumes, interviews and graduate school applications.

Learn about co-op's, internships, career opportunities and more through the [American Astronomical Society \(AAS\)](#) and the [American Physical Society \(APS\)](#).

WHAT WILL I LEARN?

Develop your career readiness competencies to ensure you are prepared to launch your career upon graduation:

- Career & Self Development
- Communication
- Critical Thinking
- Equity & Inclusion
- Leadership
- Professionalism
- Teamwork
- Technology

HOW WILL I USE IT?

Use your degree to attain career positions such as:

- Astronomer
- Astrophysicist
- Atmospheric scientist
- Computer programmer
- Data scientist
- Deputy principal investigator
- Faculty member
- Government administrator
- Head observational researcher
- Instrument scientist
- Lecturer
- NASA flight director
- Observatory director
- Patent examiner
- Physicist
- Planetarium director
- Product development manager
- Professor
- Research analytics specialist
- Scientist
- Software engineer
- Technical writer