

Are You Ready for Meteorology?

Aspiring to a career in meteorology carries with it some responsibilities. For any endeavor, you need a foundation. It is your responsibility to build it. Having two broken legs is not the time to begin ballet lessons.

Our meteorology degree program assumes a level of preparation for our entering students. To succeed, it is vital that you begin with the necessary academic and life-skills toolkit. Contrary to popular opinion, meteorology is a mathematical science that requires many scientific skills (such as physics, mathematics, and computer programming). The biggest issue is that of mathematical sophistication. ***The most common obstacle for success among our students*** (especially in the operational meteorology concentration) ***is inadequate preparation or progress in mathematics courses***. To advance in all our programs, you need to make progress in classes that require proficiency up through Calculus II (and through Differential Equations if you are an operational meteorology student). Note the word “proficiency.” Being a C/D student is not proficient. Math grades are a good predictor of how you do in the core courses central to Meteorology. Ideally, you would already have some calculus under your belt, but if not, you should be ready to take calculus your first semester here.

Many of our Meteorology students reach a crossroads early in their upper-level math classes. If you begin to struggle, it is ***vital*** that you talk to your departmental advisor to either develop more effective strategies to succeed in math classes and/or explore other career options that may require less calculus. Some students who struggle with calculus have other cognate skills that make them well suited to the Meteorology BA degree and career paths that they had not previously considered but may better align with their talents.

If you must start with pre-calculus mathematics, it is important to realize that this may cost you to have to spend an extra semester or more to finish your degree. Our upper-level courses have substantial mathematical prerequisites, and – since many of these courses are offered only every-other year – being a semester behind in math can force you to have to wait an additional ***two years*** to complete a required course in our program. Graduating in 4 years is ***only a realistic goal if you can stay on-track in math***. That being said, graduating “on time” is a popular myth. Some things cannot be rushed. This is particularly the case for students who are underprepared mathematically. It is better to slow down, and get a degree with higher distinction, than to barely squeeze by, or not get a degree at all.

We often hear, “I know I did poorly/didn’t pass the required class, but I really need to take the next class now. I know I can do it. I promise to work hard.” Moving ahead without having demonstrated adequate command of the assumed tools is a recipe for trouble. Promising you can do something is not a substitute for showing you have done it. Prerequisites are there for your protection; mastery of that material is truly necessary to have a chance to succeed in the courses that rely upon it. Many students have AP credit that will allow them to bypass some introductory classes. In our experience, it is still best to start with PHYS 111, even if your AP credit allows you to skip it. AP classes are rarely the equivalent of real college-level courses. Also, there are worse ways to start your college career than with easy A’s. This advice applies to the calculus sequence too.

Among the worst advice or approach to any major is, “get all of the general education courses out of the way, then start the major.” General education (GenEd) courses are the easiest to schedule, and the most flexible of all classes. Major courses are sequenced, and many are offered only once every other year. Talking to many students, in many majors, one of the things that stands out is the likelihood of changing majors. The earlier you dive into a major, the earlier you can bail out. If you don’t start major courses right away, you may be lengthening your time to graduation without realizing it. This is also an important thing for transfer students to realize; many students come in with dozens of credits and are alarmed to hear that it still will take them longer than they expect to graduate. It is mentioned above, but bears repeating – our major courses are sequenced and it is unlikely those major courses will have been offered at your high school or at a community college; transferring in credits will likely make your per-semester number of credit hours required smaller, but is unlikely to substantially shorten your time to graduation in our program.

Once in the program, the pace of study is much faster than that of high school, and you are much more responsible for yourself in terms of learning the material. The instructor provides a structure and guidance, and you do the learning. You practice, you identify your weaknesses and attack them. You do NOT put off learning necessary skills.

Expect to take tests, write papers, give talks, do research, and evolve into being a professional. Expect problems and assignments that contain elements of novelty, that can be built up from your baseline knowledge and skills. Real problems are not merely repeated versions of homework; they require you to synthesize new approaches and tools from your prior experience. This guide is not a substitute for the more thorough, individualized advice that the faculty in our department can give you. ***If you are planning on majoring in Meteorology, you should declare early, get an advisor among the Atmospheric Physics Faculty (Drs. Larsen, Lindner, and Williams), and meet with your departmental advisor at the earliest possible time to make sure you have a reasonable plan to attack your goals.***