

Good Minors for Meteorology Majors

Ian Stearns

What is a Minor?

- **Minor** - a secondary discipline that a college student chooses to focus on in addition to their major
- Basically the same thing as a major, but less rigorous
- Not on Diploma, but is on your transcripts
- List of minors: <http://www.wiu.edu/academics/minors.php>



Why do we need a minor?

- At WIU, a 16 hour minor is a graduation requirement
 - Exceptions: Double Majors & “Comprehensive Majors”
- Why?
 - The primary purpose of a minor is to broaden the scope of your education
 - More disciplines studied = more well-rounded student, more employable, etc.
 - Most of the time, you will be pushed toward a minor that supports your major
- Of course, you can minor in whatever you want



**Western Illinois
University**

Applied Meteorology Option

Applied Meteorology: 34 s.h.

1. Special Courses: 12 s.h.
GEOG 430; METR 220, 337, 425
2. Directed Electives
 1. Select 3 s.h. from the following courses: 3 s.h.
GEOG 497, 499
 2. Select 17 s.h. from the following courses: 17 s.h. AGEC 447; BC&J 201, 340, 410, 430; CHEM 201; CS 114, 214; EM 251, 252, 276; FIN 311; GEOG 251; GEOL 115, 380; GIS 202, 405; HE 251; MATH 134, 231, 333; METR 300, 333, 422, 429, 432; PHYS 212, 354; POLS 300, 302, 393
3. Open Electives: 2 s.h.

- This presentation will focus more on the Operational Meteorology Option
 - However, many of the core principles are the same
 - Most of these minor options will also be great for the Applied Meteorology Option

1.

Best Minors for Augmenting Professional Skills

1. Mathematics (Non-Teaching)

Minor in Mathematics: 17 s.h.

1. MATH 133, 134: 8 s.h.
 2. At least 9 hours of approved Mathematics Electives with at least 6 of the hours in courses numbered above 300: 9 s.h.
-



- Required Courses
 - Calculus I
 - Calculus II
- Elective Requirements (Total of 9 hours)
 - Math Elective
 - 300+ Level Math Elective
 - 300+ Level Math Elective

1. Mathematics (Non-Teaching)



Minor in Mathematics: 17 s.h.

1. MATH 133, 134: 8 s.h.
 2. At least 9 hours of approved Mathematics Electives with at least 6 of the hours in courses numbered above 300: 9 s.h.
-

- Required Courses

- Calculus I 
- Calculus II 

- Elective Requirements (Total of 9 hours)

- Math Elective (Calculus III) 
- 300+ Level Math Elective (Differential Equations) 
- 300+ Level Math Elective (Usually Linear Algebra)

 = Covered by Meteorology Major

Why Minor in Math?

- It's easy
 - Meteorology Major covers all but 3 hours
- Many employers appreciate math skills
 - NWS know how hard math is
 - Some jobs in applied meteorology expect you to be able to use this math
 - Math is also very useful if you're going into research
- Will improve your resume no matter what field you go into



**Western Illinois
University**

Mathematics and
Philosophy

2. Geographic Information Systems

Minor in Geographic Information Systems: 19–20 s.h.

1. GIS 202 and 405: 7 s.h.
2. GIS 407 or 408: 3 s.h.
3. Choose 3 of the following courses (9–10 s.h.): GIS 108, 201, 309, 402, 403, 404, 407, 408, 410

- More Realistic Required Courses

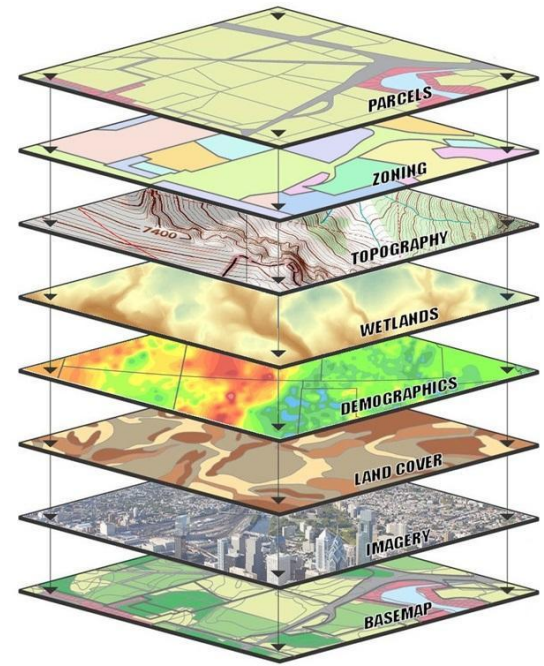
- Basic Principles of GIS (GIS 202)
- GIS Data Integration (GIS 309)*
- Advanced GIS Spatial Analysis (GIS 405)
- Environmental Applications of GIS (GIS 408)**

- Elective Requirements (Total of 6 or 7 hours)

- GIS 108, 201, and 402 are still regularly offered
- Choose 2 of the above

Why Minor in GIS?

- Makes you *extremely* employable
 - GIS proficiency is sought after in pretty much every field
 - Spatial Analysis skills are very useful for people going into Meteorology
- GIS skills are transferable to non-GIS fields/jobs
- Opportunity to work at the WIU GIS Center
 - Provides real-world GIS experience
 - Paid student job



3. Emergency Management (Operational)

Minor in Emergency Management: 18 s.h.

1. Required Courses: EM 276, 304, 323, 401: 12 s.h.
2. Electives: EM 251, 252, 306, 425, 461, 470, 477, 478; FS 210; GEOG 430; GIS 202; HS 400; POLS 300: 6 s.h.

Minor in Emergency Management—Operational: 17–23 s.h.

Plan B—Minor in Emergency Management—Operational for students whose major is other than Emergency Management

1. Choose 3 of the following courses: 9–10 s.h.
EM 276, 304, 323; GIS 202
2. Choose 3 of the following courses: 8–13 s.h.
EM 251, 252, 276, 304, 323, 441, 461; GEOL 310; GIS 201, 202; LEJA 208, 309; METR 220

Why Minor in Emergency Management?

- The NWS is actively looking for people with emergency management experience
 - Want people who are experienced in communicating with emergency managers
- Many jobs related to meteorology involve emergency management and disaster response skills
 - Same with GIS
- Many jobs related to emergency management involve meteorology (and GIS)



4. Computer Science (Traditional)

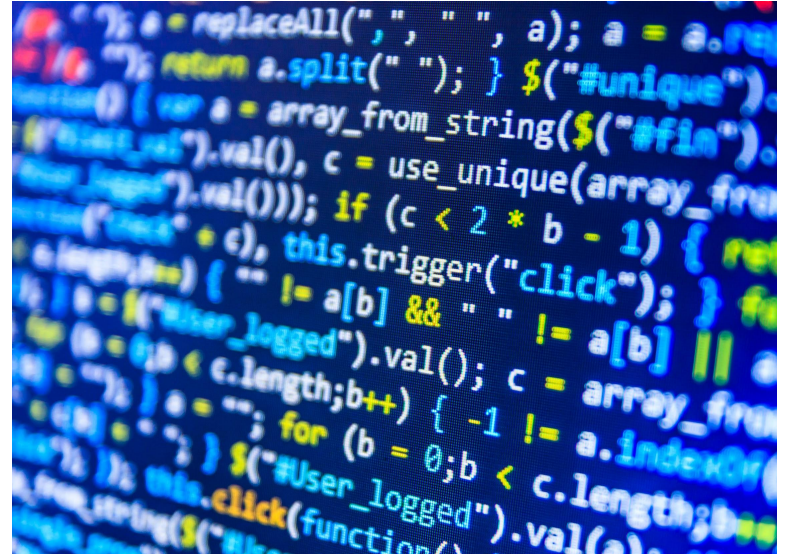
Minor in Computer Science: 18 s.h.

Traditional

1. CS 114, 214, 250: 9 s.h.
2. Computer Science Electives: 9 s.h.

Note: A total of 6 s.h. must be at the 300 level or above.

- Required Courses
 - Intro to Computer Science (CS 114)
 - Principles of Computer Science (CS 214)
 - Data Structures (CS 250)
- Elective Requirements (Total of 9 hours)
 - A number of different options
 - Definitely try to learn Python!



Why Minor in Computer Science?

- Obviously, computer competency is a must in any profession
- Meteorologists often do programming
 - Whenever a particular weather map isn't available, you make it yourself
 - We learn a bit of Python in Synoptic
- Even if you don't know a particular programming language, having programming experience makes learning a new language way easier
 - Makes you much more attractive to employers



**Western Illinois
University**

College of Business and
Technology

2.

**Good Minors for Specialized
Applications**

5. Broadcasting and Journalism

- Obviously, you should choose this if you want to go into broadcast meteorology
- Merged with journalism minor a few semesters ago
- Ugh, Journalism... right?
 - Most of the time, especially early in your career, you will only be doing the weather once or twice a week
 - You need to be able to find and report on news stories that may have nothing to do with the weather
 - Journalism helps with that



Alumnus Devin Biggs on WIU NEWS3

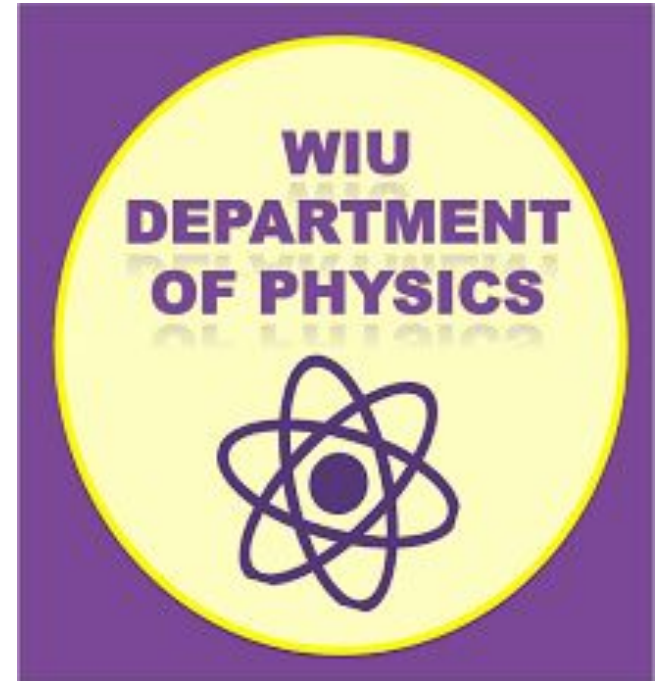
6. Agriculture

- There are a number of options
- Agriculture Economics would likely be the specific minor you'd be pushed towards
- Farmers depend on meteorologists in a lot of ways
 - Of course, crop conditions, soil conditions, etc. depend on weather



7 & 8. Physics and/or Chemistry

- Like math, these are generically good minors to have on a meteorology major
 - Meteorology is grounded in these fields
 - NWS in particular likes applicants to be familiar with generic chemistry, as well as atmospheric chemistry
- These would also be good options if you were considering research meteorology
 - Of course, talk to your academic advisor if you are interested in doing that



3.

**What if you're not a
Meteorology Major?**

Weather and Climate Minor

Minor in Weather and Climate: 16–17 s.h.

1. METR 120, 220, 327, 337: 13 s.h.
2. Choose one of the following: GEOG 301, 430; METR 300, 322, 329, 333, 432: 3–4 s.h.

- Required Courses

- Intro to Weather and Climate (METR 120)
 - Severe and Unusual Weather (METR 220)*
 - Environmental Climatology (METR 327)
 - Understanding Climate Change (METR 337)
- 1 other upper-level course
- Options include Quantitative Geography, Natural Hazards, Instruments, Synoptic and Dynamic I, Physical Meteorology,

Why minor in Weather and Climate?

- Meteorology is awesome!
- As mentioned in the rest of the presentation, Meteorology has its hand in a ton of different fields/disciplines
 - Likewise, a ton of different fields rely on meteorology to some extent
- Therefore, the Weather and Climate minor is perfect for obtaining that knowledge/skill set



Thanks for listening!

Questions?