## METR 122: Aviation Meteorology (3 credit hours)

Instructor: Dr. Greg Goodrich, Associate Professor<br/>Department of Geography & Geology<br/>Phone: 270 745 5986<br/>Email: gregory.goodrich@wku.eduOffice: VirtualMain Office: 270 745 4555

Office Hours: Monday/Wednesday	2:00 pm – 3:00 pm
Tuesday/Thursday	2:00 pm – 3:00 pm

**Time:** Monday/Wednesday/Friday, 10:20 – 11:15 am, Virtual

**Required Text:** None. All our course content will come from FAA manuals relevant to Aviation Meteorology (*Pilot's Handbook of Aeronautical Knowledge, Advisory Circular 00-6B – Aviation Weather, Advisory Circular 00-45H Aviation Weather Services*). Another reference I use is the "*Aviation Weather Handbook*" by Terry Lankford.

**Course Objective:** Aviation Meteorology will build on physical processes first learned in METR 121 to enable students to understand the atmosphere as it pertains to flight. You will develop skills in reading and interpreting weather reports and charts, in particular those that have direct application to aviation. These skills form the basis for pilot briefings and other forms of aviation weather services. These skills and concepts will also permit progression into more advanced courses offered in the Meteorology Program.

**Course Format:** Three 55 minute sessions per week. All class sessions will be through Zoom at the regular class time. Two sessions will be lecture while the third session will feature in-class lab assignments.

**Class Attendance:** Attendance in lecture is expected and will be recorded. Students are allowed three unexcused absences for any reason. Four or more unexcused absences will result in automatic failure for the course. If you experience life-altering circumstances and cannot attend class, contact me about withdrawing from the course.

If a student will miss a class period due to a university-sanctioned activity, Western Kentucky University requires that the student: (1) identify himself/herself prior to missing the class, (2) provide the instructor with a copy of their travel schedule, and (3) discuss with the instructor the procedure to make up missed work.

**Disability Services:** In compliance with university policy, students with disabilities who require accommodations (academic adjustments and/or auxiliary aids or services) for this course must contact the Student Accessibility Resource Center in room 1074 of the Downing Student Union. The SARC telephone number is 270 745-5004 (TTD 270 745-3030). Per University policy, please DO NOT request accommodations directly from me without a letter of accommodation from SARC.

**COVID-19:** If a student misses a lecture or lab for COVID-19 related reasons no points will be lost. Contact me to make arrangements for the missed work.

**Required Materials:** Bring a #2 pencil, good eraser, colored pencils, scientific calculator, and ruler to each class.

**Student Evaluation:** Two mid-term exams (20% each) and one final exam (20%) will comprise 60% of the grade for this course. In-class lab assignments (40%) will comprise the remaining points.

### There will be no extra credit of any kind given on an individual basis in this course.

There is no provision for undocumented make-up exams. Exceptions will be made only for documented serious illness or family/medical emergencies. You must inform me or the departmental secretary within 36 hours of the scheduled exam that will be/was missed. If you fail to receive approval for a make-up exam within this time frame you will not be allowed a make-up for any reason. A grade of "0" will be given in these instances.

Grades:	A	90-100%	
	В	80-90%	
	С	70-80%	All grades subject to curve at end of semester
	D	60-70%	
	F	<60%	

**Departmental Drop Policy:** The Department of Geography and Geology strictly adheres to the course drop policy found in the Undergraduate and Graduate Catalogs. It is the sole responsibility of individual students to meet the cited deadlines for dropping a course. In exceptional cases, the deadline for schedule changes (dropping a course) may be waived. The successful waiver will require written description of extenuating circumstances and relevant documentation. Poor academic performance, general malaise, or undocumented general stress factors are not considered as legitimate extenuating circumstances. Since granting of waivers are rare, we urge you to follow the established guidelines.

1/26: Last day to drop a course w/o grade. 3/25: Last day to drop a course with a W.

### Please turn off cell phones during class!!

Academic Honesty: Cheating absolutely will not be tolerated. Students are expected to adhere to the Western Kentucky University Code of Student Conduct.

### Any updates to this syllabus, including the course outline, will be given in class

# **Tentative course outline**

Date	Торіс
Monday, 1/18	No class: Martin Luther King, Jr. day
Wednesday, 1/20	Introduction/Syllabus/History of Flight
Friday, 1/22	Principles of Flight/Aerodynamics
Monday, 1/25	Aerodynamics/Aircraft Performance
Wednesday, 1/27	Structure of the Atmosphere
Friday, 1/29	Lab 1: How to tell time/Station IDs
Monday, 2/1	Temperature
Wednesday, 2/3	Pressure
Friday, 2/5	Lab 2: Surface and Upper Air Station Models
Monday, 2/8	Wind
Wednesday, 2/10	Moisture
Friday, 2/12	Lab 3: Isotherm analysis
Monday, 2/15	Stability
Wednesday, 2/17	Exam Review
Friday, 2/19	Exam 1
Monday, 2/22	Case Studies
Wednesday, 2/24	Clouds and Precipitation
Friday, 2/26	Lab 4: Isobar analysis
Monday, 3/1	Air Masses and Fronts
Wednesday, 3/3	Turbulence/Adverse Winds
Friday, 3/5	Lab 5: Isodrosotherm/Cloud/Precipitation analysis
Monday, 3/8	Icing
Wednesday, 3/10	Case Studies

Friday, 3/12	Lab 6: Identifying fronts
Monday, 3/15	Thunderstorms
Wednesday, 3/17	Fog/Visibility
Friday, 3/19	Lab 7: Advection analysis
Monday, 3/22	Other Weather Hazards
Wednesday, 3/24	Exam Review
Friday, 3/26	Exam 2
Monday, 3/29	Case Studies
Wednesday, 3/31	METARS
Friday, 4/2	Lab 8: METAR decoding
Monday, 4/5	Aviation Weather Services
Wednesday, 4/7	PIREPS
Friday, 4/9	Lab 9: Jet Stream Analysis
Monday, 4/12	Case Studies
Wednesday, 4/14	Radar/RAREPS
Friday, 4/16	Lab 10: Vertical profile
Monday, 4/19	TAFs and FAs
Wednesday, 4/21	SIGMETS and FD
Friday, 4/23	Exam Review
Friday, 4/30	Final exam: 10:30 am to 12:30 pm