

## CLIM301-201 Weather Analysis and Prediction -Lab

**Instructor:** Dr. Ralph Getzandanner  
**Semester:** Fall 2021  
**Credit:** 4 (Combined with lecture portion)  
**Time:** Lab: 1:30 pm - 2:45 pm, Tuesday and Thursday  
**Location:** Research Hall Rm 121  
**Office Hours:** By appointment

### **Content:**

CLIM-301 The lab portion of this course will provide practical reinforcement of information given during the lecture. Students will also practice encoding and decoding meteorological observations, analyzing and interpreting surface and upper air weather maps, and basic procedures and products of numerical weather prediction. Students will also spend time on manual forecasting techniques, including rules of thumb.

**Textbook and Materials:** There is no required textbook. Students will need to be able to print material at various times during the semester for hand analysis. Students will also need regular and colored pencils and a good eraser.

### **References:**

Aguado E. and J. E. Burt: Understanding Weather and Climate, 7<sup>th</sup> edition

Stull, R., 2017: "Practical Meteorology: An Algebra-based Survey of Atmospheric Science" -version 1.02b. Univ. of British Columbia. 940 pages.

Vasquez, T.: Weather Analysis and Forecasting Handbook (ISBN 978-0-9832533-8-9)

Wallace, J. M., and P. V. Hobbs: Atmospheric Science: An Introductory Survey. Second edition.

### **Lab schedule (may change slightly based on circumstances):**

August	24-26	<i>Lab introduction, Atmospheric Basics</i>
	31	<i>Observation Formats, Data and Weather Symbols and</i>
September	02	<i>Introduction to isobaric analysis</i>
	07-09	<i>Pressure and Vertical Structure of the Atmosphere</i>
	14-16	<i>Wind and Atmospheric Motion, introduction to upper air analysis</i>
	21-23	<i>Air Masses and Fronts, introduction to frontal analysis and introduction to Mid-latitude Cyclones</i>

September	28-30	<i>Mid-latitude Cyclones and introduction to Weather Prediction</i>
October	05-07	<i>Weather Prediction I (cont.), introduction to atmospheric moisture</i>
	12	<i>Fall Break</i>
	14	<i>Atmospheric Moisture (cont)</i>
	19-22	<i>Atmospheric Moisture, introduction to Atmospheric stability</i>
	26-28	<i>Atmospheric Stability/ Introduction to Thermodynamic Diagrams, introduction to clouds and precipitation</i>
November	2-4	<i>Clouds and Precipitation, thunderstorms, and Tornadoes</i>
	9-11	<i>Thunderstorms and Tornadoes</i>
	16-18	<i>Tropical Storms and Hurricanes</i>
	23	<i>Tropical Storms and Hurricanes (cont.)</i>
	25	<i>Thanksgiving recess</i>
	30	<i>Weather Prediction II</i>
December	02	<i>Weather Prediction II (cont.)</i>

***Lab Format and Grades:***

Each lab will start with a current weather presentation and discussion led by a student. Also, in each lab, students will participate in a weather contest in which students will submit a 3-day forecast for various locations. Lab assignments will usually be assigned each week with the goal that lab work can be completed during the lab period. The lab grade represents 40% of the final grade of the course.

Grades will be determined from:

Weather presentation and discussion	(20%)
Participation in the lab and prediction contest	(10%)
Lab work	(70%)

***Policy for late assignments:*** Any assignment turned in late without a legitimate excuse will be assessed with a 5% penalty for each day late and will not be accepted beyond one week of the due date. Late submissions for the forecast contest will not be accepted.

***Students with Disabilities:***

*If you are a student with a disability and need academic accommodations, please see me and contact the Office of Disability Services (ODS) at 993-2474, <http://ods.gmu.edu>. All academic accommodations must be arranged through the ODS.*

***GMU Email:***

All George Mason students are issued an email account. *Students must use their MasonLive email account to receive important University information, including messages related to this class. See <http://masonlive.gmu.edu> for more details.*

## **SAFE RETURN TO CAMPUS STATEMENT:**

*All students taking courses with a face-to-face component are required to follow the university's public health and safety precautions and procedures outlined on the university Safe Return to Campus webpage (<https://www2.gmu.edu/safe-return-campus>). Similarly, all students in face-to-face and hybrid courses must also complete the Mason COVID Health Check daily, seven days a week. The COVID Health Check system uses a color code system **and students will receive either a Green, Yellow, Red, or Blue email response**. Only students who receive a "green" notification are permitted to attend courses with a face-to-face component. **If you suspect that you are sick or have been directed to self-isolate, please quarantine or get testing. Faculty are allowed to ask you to show them that you have received a Green email and are thereby permitted to be in class.***

*Students are required to follow Mason's current policy about facemask-wearing. As of August 11, 2021, all community members are required to wear a facemask in all indoor settings, including classrooms. An [appropriate facemask](#) must cover your nose and mouth at all times in our classroom. If this policy changes, you will be informed; however, students who prefer to wear masks will always be welcome in the classroom.*

## **HONOR CODE:**

*Mason is an Honor Code university; please see the Office for Academic Integrity for a full description of the code and the honor committee process. The Biology Department strongly enforces the GMU Honor Code. Students are expected to read and adhere to the George Mason University Honor Code. **Ignorance of the Honor Code is no excuse for infractions thereof.** The principle of academic integrity is taken very seriously, and violations are treated gravely. What does academic integrity mean in this course? Essentially this: when you are responsible for a task, you will perform that task. When you rely on someone else's work in an aspect of the performance of that task, you will give full credit in the proper, accepted form. Another aspect of academic integrity is the free play of ideas. Vigorous discussion and debate are encouraged in this course, with the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas, perspectives, and traditions. When in doubt (of any kind), please ask for guidance and clarification.*

## **MASON DIVERSITY STATEMENT:**

George Mason University promotes a living and learning environment for outstanding growth and productivity among its students, faculty, and staff. Through its curriculum, programs, policies, procedures, services, and resources, Mason strives to maintain a quality environment for work, study and personal growth.

An emphasis upon diversity and inclusion throughout the campus community is essential to achieve these goals. Diversity is broadly defined to include such characteristics as, but not limited to, race, ethnicity, gender, religion, age, disability, and sexual orientation. Diversity also entails different viewpoints, philosophies, and perspectives. Attention to these aspects of diversity will help promote a culture of

inclusion and belonging and an environment where diverse opinions, backgrounds, and practices have the opportunity to be voiced, heard, and respected.

The reflection of Mason's commitment to diversity and inclusion goes beyond policies and procedures to focus on behavior at the individual, group and organizational level. The implementation of this commitment to diversity and inclusion is found in all settings, including individual work units and groups, student organizations and groups, and classroom settings; it is also found with the delivery of services and activities, including, but not limited to, curriculum, teaching, events, advising, research, service, and community outreach.

Acknowledging that the attainment of diversity and inclusion are dynamic and continuous processes, and that the larger societal setting has an evolving socio-cultural understanding of diversity and inclusion, Mason seeks to continuously improve its environment. To this end, the University promotes continuous monitoring and self-assessment regarding diversity. The aim is to incorporate diversity and inclusion within the philosophies and actions of the individual, group, and organization, and to make improvements as needed.

**WHERE TO GET HELP:**

If you encounter any difficulties in this course, first contact your research advisor **immediately!** Do not wait until the end of the semester to ask for help in understanding the material to improve your grade - by then, it may be too late. Do not be afraid to ask for help - that is our job!

The Counseling Center is committed to improving academic and personal skills and offers many workshops and counseling groups throughout the semester.

Make use of the many rich academic and personal opportunities available at Mason!

Updated 08/20/21