# Atmospheric Physics

**Fall 2017**

**Location:** Room 310, Workman Bldg.

**Hours:** Tu,Th from 12:30 to 13:45 am.

**Instructor:** Carlos Lopez Carrillo.
email: `carlos.lopezcarrillo@nmt.edu`
Tel: 835-5047, Office: 111 Workman Bldg.

**Office hours** Monday, 11:30–13:30; other times by appointment.

**Textbook:** *Physics of the Atmosphere and Climate*, by Murry L. Salby, 2012; Cambridge.

**Purpose:**Atmospheric Physics laid the foundation for further studies in convection and dynamics.

**Content:** Dry and moist thermodynamics, radiative transfer, microphysics.

**Learning Outcomes:** This course will touch on many aspects of the subject. Nevertheless, the following are key aspects that should be learned in this class. Understand adiabatic processes in the atmosphere, in particular, their application to parcel theory; Demonstrate working knowledge in the analysis of atmospheric soundings; demonstrate working knowledge of radiative transfer concepts.

**Etiquette:** Avoid class disruptions: Cell phones should be reserved for emergencies –no text. If you must, please take the call outside. Come prepared and ready to work with questions, and materials needed. Being on time is important. If you are late, please try to keep the disruption to a minimum.

**Homework:** It will be assigned during class on Tuesday. A draft is due at the **beginning** of the following class period and you should be able to present any of the exercises to the class. The final draft is due at the beginning of the following class; it must be stapled with each page showing the homework number and problem number clearly at the top of the page. Your work should show enough detail, so it is easy to follow. When a numerical or algebraic answer is required, draw a box around it. Answers must be labeled with the proper units. Homework papers which do not meet these guidelines may be rejected with no grade.

**Partial Exams:** There will be two partial exams: one on thermodynamics and another on radiation; they are to be taken individually. The actual content of each exam may vary as I see fit, but I let you know at least a week in advance.

**Final Exam** The final exam is also an individual task and will be given at the time and place announced by the Registrar. It will emphasize the later parts of the course but will be inclusive of the whole course.

**Final Project:** The purpose of the final project is to let you explore further any of the basic topics discussed during course. The projects are individual and will have oral and written components. The written component consist of a summary in the form of a conference extended-abstract and the oral is a presentation between 10 to 20 minutes [TBA]. You are expected to pick a topic no later than mid-term. A draft of you abstract is due two weeks before your presentation. Final drafts are due the day of your presentation.

**Grading:** No grade of "incomplete" will be awarded for any reason. The weighting of your final grade will be as follows :

| | |
|---|---|
| Homework | 40% |
| Partial Exams I | 15% |
| Partial Exams II | 15% |
| Final Project | 15% |
| Final Exam | 15% |

**POLICES.-**

**Permissions:** Changing due day of homework or exam day could be granted if the circumstances, in my opinion, warrant such change.

**Grading:** I will grade your homework and exams as soon as possible. Once I have returned them, you will have a maximum of one week to dispute your grade. There is, however, no time limit to discuss your work with me.

**Homework:** You are encouraged to discuss homework problems with your classmates, but I expect that the work that you present to me for grading is your own.

**Exams:** The content of each exam may vary as I see fit, but I let you know at least a week in advance. Exams are to be taken individually. The final exam will emphasize the later parts of the course, but it will be inclusive of the whole course. It will be given at the time and place announced by the Registrar.

**Academic Honesty:** You may discuss the material with each other, and I encourage it, but anything that is written must be your own work. It is not permissible to give or receive answers in a way that bypasses the need to think on your own about the assignments. Help received from any source must be acknowledged. Omitting proper acknowledgment is a violation of this policy and can have serious consequences. If in doubt, please ask me. Violation of the letter or intent of this policy will result in severe harm to your grade and may result in a recommendation for suspension from the Institute. Note that New Mexico Tech has formal policies regarding academic honesty, please refer to them on the Tech's catalog.

## NMT Services and Policies

**Reasonable accommodations.** New Mexico Tech is committed to protecting the rights of individuals with disabilities. Qualified individuals who require reasonable accommodations are invited to make their needs known to the Office of Counseling and Disability Services (OCDS) as soon as possible. To schedule an appointment, please call 835-6619.

**Counseling services.** New Mexico Tech offers mental health and substance abuse counseling through the Office of Counseling and Disability Services. The confidential services are provided free of charge by licensed professionals. To schedule an appointment, please call 835-6619.

**Academic honesty.**New Mexico Techs applicable policy regarding academic honesty is expressed in the NMT Undergraduate Catalog. You are responsible for knowing, understanding, and following this policy.

**Respect Statement.** New Mexico Tech supports freedom of expression within the parameters of a respectful learning environment. As stated in the New Mexico Tech Guide to Conduct and Citizenship: New Mexico Techs primary purpose is education, which includes teaching, research, discussion, learning, and service. An atmosphere of free and open inquiry is essential to the pursuit of education. Tech seeks to protect academic freedom and build on individual responsibility to create and maintain an academic atmosphere that is a purposeful, just, open, disciplined, and caring community.