AT741 - Radar Meteorology

Spring 2020

Course Syllabus

Course name: Radar Meteorology

Course number: AT741

Instructors: Prof. Michael Bell, 205 ATS, 491-8345;
            Prof. Steven Rutledge, 307 ATS, 491-8283.

Web page: http://radarmet.atmos.colostate.edu/AT741/

Office hours: TBD

Classroom and meeting time: ACRC 212B, 11:00 AM – 12:15 PM, Monday and Wednesday

Prerequisites: AT652, or permission of instructor

Course goals and Objectives: AT741 is designed to provide a foundational understanding of radar meteorology. Topics presented include microwave scattering theory, Doppler principles, polarimetric radar, dual-wavelength radar, mm-wave radars with applications. The course also provides information on the theory of radar including engineering principles. The objective of the course is to provide the student with a working knowledge of radar meteorology including applications to remote sensing of clouds and precipitation.

Textbook: None

Course readings: As recommended during the semester, also see course web page.

Course calendar: Follows CSU course calendar

Expectations: Regular attendance is strongly recommended. Read the class notes in advance of class.

Statement on academic dishonesty: This course will adhere to the CSU Academic Integrity Policy as found in the General Catalog (http://www.catalog.colostate.edu/FrontPDF/1.6POLICIES1112f.pdf) and the Student Conduct Code (http://www.conflictresolution.colostate.edu/conduct-
code). At a minimum, violations will result in a grading penalty in this course and a report to the Office of Conflict Resolution and Student Conduct Services.

**Exam schedule:** There are no examinations. Course grading is based on homework assignments, projects, and in-class presentations.

**Contact hours:** Roughly two hours of effort are expected to complete readings and homework assignments outside of class for each hour of class time.

**TA information:** Kyle Chudler (Kyle.Chudler @ colostate.edu), 317 ATS. Office hours are TBD.

**Course grading:** The course grade will be based on homework exercises (including some computer-based exercises), in-class presentation/discussion of assigned papers and a final class project (including oral presentation).

**Suggested references:**
- Atlas (1990), *Radar in Meteorology*, AMS (Battan Memorial volume)
- Battan (1973), *Radar Observation of the Atmosphere*

**Course content:**

**SECTION 1 – *(Basics and Scattering)*


**SECTION 2 – *(Radar Basics and Data)*


**SECTION 3 – *(Doppler Radar)*

SECTION 4 – *(Multiparameter Radar)*


SECTION 5 – *(Spaceborne Radar Topics)*

SECTION 6 – *(Radar Detection of Lightning)*