



Directions for Undergraduate Program Director Reports:

1. Talk to students in your major, ask around if there are any current academic issues.
(ex: class conflicts within the major, issues with professors, etc)
2. Look at Degree Navigator, write down the course requirements
3. Formulate a list of things you would like to know about the program (corporate connections with the university, current research projects, opportunities for students to get involved, etc)
4. Email Undergraduate Program Director and Arrange Appointment
5. Fill out Undergraduate Report Sheet
6. email to vicepresident@sgc.rutgers.edu and complete by December 16th



Name: Nicole Tallman

Major: Meteorology

Date: 11/10/2016

Semester: Fall 2016

Undergraduate Program Director: Dr. Steven Decker

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I. Major Options - What options are offered within the major? How do they differ?

Operational- numerical methods in Env Sci, Hydrologic Processes, Tropical Meteorology.

This is the "Forecasting" option. For people who want to forecast and not research.

Environmental- numerical methods in Env. Sci., Chemical Principles of Env. Sci., Air quality monitoring.

I personally do not know anyone on this path and am unsure if it is still in use

Climate- basic stats for research, Hydrologic processes, physical oceanography

This is the option you take when you want to go to grad school or do research

II. Total number of students within the major

57 total

III. Goals within the major - What are expectations of students post-graduation?

Employment or Graduate School within the field of Meteorology

IV. Major Courses - What is the goal of each course? What should students be learning?

11:670:101 Introduction to Meteorology

Exhibit critical thinking when confronting new information, Interpret basic weather forecasts as presented on television/radio/Internet, Explain basic atmospheric phenomena from a physical perspective, Apply the physical foundations of meteorology to solve problems using analytical methods
Know whether they might enjoy pursuing further study in the atmospheric sciences.

11:670:102 Intro to Climate Science

Interpret basic climate information as presented via mass media, Explain basic climate processes from a physical perspective, Apply the physical foundations of climate science to solve quantitative problems.

11:670:111-112 Weather Climate & TV 1 & 2

Construct speeches in a logical format, Deliver speeches extemporaneously

11:670:211 Meteorological Analysis

Conduct a weather discussion and make a seven-day national and local weather forecast, describing the weather that will occur and the mesoscale and synoptic weather systems that will be responsible, Communicate clearly orally and in writing, including by electronic means, Apply the mathematical and physical foundations of meteorology and climatology to solve problems using analytical and computational methods.

11:670:212 Computational Methods of Meteorology

Communicate clearly orally and in writing, including by electronic means, Apply the mathematical and physical foundations of meteorology and climatology to solve problems using analytical and computational methods.

11:670:323 Thermodynamics of the Atmosphere

Thermodynamics of the atmosphere; energy conservation; ideal gas law; water and its transformations; moist air; aerosols; hydrostatic stability and convection vertical motion; cloud formation; precipitation.

11:670:324 Dynamics of the Atmosphere

Develop a conceptual understanding of atmospheric dynamical processes, Master the foundational mathematical and physical principles of atmospheric dynamics, Apply the conceptual understanding and mathematical and physical principles to solve problems, Use specialized software to analyze real-time and historical meteorological data

11:670:334 Severe Weather Forecasting Field Trip

The purpose of this course is to provide students with experience forecasting, observing, and analyzing severe convection in the field. By verifying their forecasts with their own eyes, students will better understand the dynamics and thermodynamics that lead to some of the most beautiful yet complex atmospheric circulations on Earth. While we may see tornadoes during the field trip, this cannot be guaranteed.

11:670:414 Hydrological Processes

Physical processes governing the occurrence and movement of water through the atmosphere, lithosphere, and biosphere. Techniques for collecting and analyzing hydrologic data and predicting the hydrologic states of particular systems

11:670:431 Physical Meteorology

Exhibit critical thinking when confronting new information, Apply the mathematical and physical foundations of Meteorology and Climatology to solve problems using analytical and computational methods, Be able to identify observable optical phenomena and explain the underlying physics, Exhibit a basic understanding of boundary layer structure and turbulence

11:670:433 Weather Analysis and Forecasting 1: Synoptic Meteorology, 434 Mesoscale Meteorology

Conduct a weather discussion and make a seven-day national and local weather forecast, describing the weather that will occur and the mesoscale and synoptic weather systems that will be responsible, Communicate clearly orally and in writing, including by electronic means, Apply the mathematical and physical foundations of meteorology and climatology to solve problems using analytical and computational methods.

11:670:444 Tropical Meteorology

Develop a theoretical understanding of the thermodynamics and dynamics of the tropics, apply quantitative principles to solve problems in tropical meteorology/ climate,

11:670:451 Remote Sensing of the Atmosphere

Develop a basic understanding of the types and applications of remote sensor technology used in Atmospheric and Oceanic Science, Develop specific understanding of the radar and satellite remote sensors used to conduct a weather discussion of mesoscale and synoptic weather systems, and ocean state. Develop specific understanding of the physical principles used to, remotely sense atmospheric and oceanic structure, Communicate clearly orally and in writing, including by electronic mea

11:670:453 Air Quality Modeling

To provide students with a command of the concepts essential to understanding the principals and governing equations regarding chemical transformation and transport of atmospheric trace gases and particles,

11:670:461 Climate Dynamics

Demonstrate an understanding of anthropogenic impacts on atmospheric chemistry and climate and their potential environmental and societal consequences, Apply the mathematical and physical foundations of meteorology and climatology to solve problems using analytical and computational methods.

V. Concerns/Student issues with classes? How to resolve, suggestions?

"Too many group presentations, not a public speaking major" "comp met was too much. I still do not know python. I would rather take CS110"

"Professors need to communicate when their major assignments and exams are. they always overlap."

" There is always a huge final project AND final exam. It should be one or the other. Both is very overwhelming."

"Some undergrads struggle in math"

In general, students felt like they weren't learning the material rather they are just completing the many many assignments asked of them

VI. Things going on within the major (Research, Visitors, Talks, Seminars within the major)

Friday weather discussion, anyone can attend. Seminars on Friday, department wide. Speakers for the Weather TV class. Meteorology Club speakers, for met club members. Research through many professors.

VII. Research Opportunities

J miller- oceanography, climate change research

B Lintner- cyclones

Many faculty advise research the above are just examples

There are GH cook opportunities too

VIII. Job Outlook, suggestions for students in this major (ex: organizations to join, news to pay attention to)

Internships if possible before graduation

Find your Niche to stand out

Organizations that are common to work for after Rutgers

- Weather Service -News 12 - GFDL - Weather Works -NY or Philly TV

IX. Changes within the major in the upcoming year?

Replacement for Mr. Arnesen for 101 and 102, he retired

X. Other Suggestions

More funding for AMS, Stress the importance of AMS and encourage more participation in the the severe weather field trip