

**RAMAPO COLLEGE OF NEW JERSEY**  
**First-Year Seminar**  
**Severe Weather - Thunderstorms, Tornadoes, Hurricanes**

**Course Information**

Course Number:	INTD 101-44 (CRN: 41175)
Course Title:	Severe Weather - Thunderstorms, Tornadoes, Hurricanes
Credit Hours:	4
Prerequisites and/or Co-requisites:	None
Semester & Year Offered:	Fall 2023
Class Meeting Day(s), Time:	Monday and Thursday, 8:00 AM - 9:40 AM
Location:	B225

**Instructor Information**

Instructor's Name, Title:	Dr. Stefan Becker
Office Location & Phone No.:	G-416. (201) 684-7208
Office Hours:	By appointment or Monday and Thursday, 9:40 AM - 11:20 AM
E-mail Address:	sbecker@ramapo.edu
Mailbox Location:	TBA

**Common FYS Description**

Designed for first-time, full-time, first-year students, First-Year Seminar (FYS) provides a comprehensive introduction to college-level learning. Seminar courses are developed around an academic theme or topic that is based on one of Ramapo College's academic pillars. First-Year students will have the opportunity to select a seminar that best suits their interests while learning about Ramapo's academic foundation. The First-Year Seminar course helps students in their transition from high school to college life both in and out of the classroom. The common learning outcomes of FYS are: technological competency, understanding diverse communities, oral communication, and information literacy. FYS classes are small to emphasize open discussion and experiential learning within the context of the theme of the seminar course. Peer facilitators play an essential role in each FYS class ensuring that first-year students have guidance from a more experienced student. FYS is also the home of the Ramapo Summer Reading Program; all first-year students read the same book and discuss and write about it in their seminars. FYS encourages new students to participate in a community of learners, to strengthen their critical thinking skills, and to communicate effectively both orally and in writing.

**Course Description**

In this course you will learn about the science background and the impacts of severe weather events such as thunderstorms, tornadoes, and hurricanes. Through presentations, discussions, and group work you will learn to understand and critically evaluate relevant concepts, processes, and events. In addition, you will learn basic ideas how to design and conduct a research project in science and use basic methods of data evaluation.

**Course Goals**

Students will be able to

- Critically analyze and summarize resources related to severe weather
- Apply basic concepts of weather and climate to explain severe weather phenomena
- Communicate key concepts related to science and impacts of severe weather events
- Design a science research project
- Analyze and present quantitative data related to severe weather

**Measurable Student Learning Outcomes**

Objective	Outcome	Information Literacy Session	Oral Presentation	Peer Curriculum	Research Papers or Projects	Summer Reading Paper	Classroom discussions and projects
<b>1. Develop the skills necessary to locate, evaluate, and employ information effectively.</b>	Locate, cite, analyze, summarize, and synthesize relevant literature sources pertaining to severe weather in general and the chosen severe weather event in particular.	X			X		
<b>2. Speak effectively in scholarly and creative contexts.</b>	1. Deliver a central message that is easy to identify, vivid, and memorable.		X				
	2. Use appropriate language for the subject and the audience.		X				
	3. Deliver oral communications in an engaging manner.		X				
<b>3. Use technology to communicate, manage, or solve problems</b>	1. Use technology to communicate information.		X		X		
	2. Use technology to manage information.	X			X		
<b>4. Understand diverse communities on local, national, and/or global levels</b>	Demonstrate understanding of the intersections of issues that affect diverse communities in their local, national, and/or global context.					X	
<b>5. Participate in an engaged, experiential</b>	Critically reflect on the experiential activity and articulate your conclusions			X			X

<b>activity that connects course material to real world settings</b>							
<b>6. Understand and effectively communicate basic science concepts</b>	Effectively communicate specific concepts related to science and impact of extreme weather events				X		X
<b>7. Design and conduct a science research project</b>	Design and conduct a basic science research project analyzing extreme weather events						X
<b>8. Apply basic quantitative methods</b>	Analyze time series to identify and characterize extreme weather events						X

### Peer Facilitators

As an added resource for first-year students, each section of First-Year Seminar (FYS) will have one or two peer facilitators. These upper-level students will attend FYS classes and act as student leaders modeling engaged participation in this seminar. They will serve as discussion leaders on issues that pertain to your personal and social development and they will facilitate weekly discussions. Your peer facilitator will be your mentor and will be available to you to provide guidance on navigating the different personal and social hurdles that you may encounter in your first year at Ramapo.

The Peer Facilitation content is a part of the course and attending is part of completing the attendance hours for this four-credit course. The Peer Facilitators plan to deliver their content following the instructional delivery method(s) of your course. In addition, your Peer Facilitators will hold gatherings on campus to help you form close connections with your entire FYS course.

### First-Year Academic Advising

As part of the Ramapo College Academic Advisement Plan, each First-Year Student is assigned an Academic Advisor from the Center for Student Success. During the fall semester, the First-Year Students have a mandatory advisement meeting with their assigned Advisor to select spring 2023 courses and to develop a personalized academic plan. You can see who your academic advisor is through the CONNECT software system. If you have any questions regarding Academic Advisement, please contact the Center for Student Success at (201) 684-7441 or via email at [success@ramapo.edu](mailto:success@ramapo.edu).

### Texts, Readings, Materials

- C. Donald Ahrens and Perry J. Samson (2011): Extreme Weather and Climate. Cengage Learning. ISBN-13: 978-0-495-11857-2. ISBN-10:0-495-11857-5 (Required)
- Summer Reading. (Required):
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- Hacker, Diana, and Nancy Sommers. Rules for Writers with 2020 APA Update. 9th ed. Bedford/St. Martin's, 2020. ISBN: 978-1-319-36130-3. (Recommended)
- Laptop Computer (for in-class projects and quizzes)

## Course Requirements

### Class participation / attendance:

- You will receive up to 15 points for your regular attendance at the meetings. You can have up to one unexcused absence from the meetings without penalty. In addition, you can have three excused absences without penalty if you provide a valid written reason for your absence before the next class session. Beyond that, I will subtract one point for each absence. I will subtract 0.25 points for each 15 minutes that you arrive late or leave early without a valid excuse.
- To complete the class successfully, you cannot miss more than nine class meetings.
- College policy states that students must notify faculty within the first three weeks of the semester if they anticipate missing any classes due to religious observance.

### Homework assignments

- Most lessons have reading and writing assignments. Submit a paper in which you answer the questions in the homework assignment on Canvas. Use complete sentences. The length must be at least 500 words).
- You can earn up to 1 point for each homework assignment. I will give full points if the answers meet the above-stated requirements.
- I will generally not accept late submissions of homework assignments unless you provide a valid excuse, in which case I may award partial credit.

### In-class project assignments

- You will work individually or in groups on several projects during class throughout the course. You can earn up to 1 point for each in-class assignment. The lowest two scores will be dropped. You can earn up to 10 points for the project documentations that will be submitted via Canvas.

### Research paper:

- Research paper on the background and impact of one extreme weather event of your choice.
- The paper must be well-structured and contain a minimum of 1000 words.
- At least five credible sources need to be cited according to APA conventions.
- The research paper will be graded based on the following rubric:

Criterion	Indicator	Meets or exceeds expectations	Meets expectations partially	Meets expectations only marginally	Does not meet expectations
Content and focus	Demonstrates in-depth understanding of the topic. Clearly focuses on the topic. Strong and rich supporting details.	3	2	1	0.5
Organization	Strong introduction and conclusion. Consistent and coherent logical progression. Clear and skillful transitions.	3	2	1	0.5
Style	Formal language (avoiding slang). Strong and varied sentence structure.	3	2	1	0.5
Sources/ Format	Five or more credible sources. Correct APA style citations.	3	2	1	0.5
Conventions	Correct spelling and grammar. Required length.	3	2	1	0.5

- I will generally not accept late submissions of research papers unless you provide a valid excuse in which case I may award partial credit.

#### Oral Presentation:

- You will give an oral presentation on the topic your research paper. The presentation should be 8 - 10 minutes long and supported by an engaging PowerPoint/Google Slides/Prezi/... presentation.
- The presentation file must be uploaded to Canvas by 7:00 AM of the day when it is due.
- You can use an external video with your presentation; however, its length must not exceed 1:30 minutes.
- The oral presentation will be graded based on the following rubric:

Criterion	Indicator	Meets or exceeds expectations	Meets expectations partially	Meets expectations only marginally	Does not meet expectations
Content and	Clearly focuses on the topic.	2	1	0.5	0

focus	Strong and rich supporting details.				
Organization. Length of the presentation.	Strong introduction and conclusion. Consistent and coherent logical progression. Length of the presentation is within a range of two minutes of the allocated time.	2	1	0.5	0
Style and vocal elements	Formal language (avoiding slang). Clear articulation.	2	1	0.5	0
Preparedness	Student is completely prepared and seems to have rehearsed the presentation.	2	1	0.5	0
Audience appeal and eye contact	Engages the audience. Establishes eye contact with the audience	2	1	0.5	0

**Exams:**

- Mid-term exam and final exam
- I will provide study guides before the exams.

If you miss the exam, please contact me via email no later than the day of the missed exam with a valid excuse. Based on the reason for missing the exam, I may allow you to take it at another time for full or partial credit.

**Quizzes**

- Every reading assignment is accompanied by a short quiz that will be taken in class.

**Group work assignments**

- Most weeks will have a group work assignment. Your active contribution to the group work is required.

**General Education Program Course**

This course fulfills the First-Year Seminar category of the general education curriculum at Ramapo College. Common to all First-Year Seminar (FYS) courses, you will develop critical thinking skills that are basic to college level study, regardless of your area of interest. You will be reading, writing, and participating in thoughtful group discussions with the aim of developing the skills of a scholar. You will learn to support your arguments using a foundation of knowledge and facts rather than simply using personal opinions and experiences.

The course fulfills the FYS "Science and Society" category. It focuses on the science background related to extreme weather events and encompasses their societal impacts.

## Weekly Class Schedule

Date	Class topic, Presentations	Assignments (with due date)
<b>Week 1</b>	Thursday, Aug. 31: <ul style="list-style-type: none"> <li>• Introduction to the course</li> </ul>	
<b>Week 2</b>	Monday, Sep. 4: <ul style="list-style-type: none"> <li>• Labor Day – no class</li> </ul> Thursday, Sep. 7: <ul style="list-style-type: none"> <li>• Chapter 1: The turbulent atmosphere</li> </ul>	
<b>Week 3</b>	Monday, Sep. 11: <ul style="list-style-type: none"> <li>• Chapter 1: The turbulent atmosphere</li> <li>• Quiz 1</li> </ul> Thursday, Sep 14: <ul style="list-style-type: none"> <li>• Chapter 2: Energy that drives the storms</li> <li>•</li> </ul>	Monday, Sep. 11, 8:00 AM: <ul style="list-style-type: none"> <li>• Homework 1</li> <li>• Sign up for oral presentation</li> </ul>
<b>Week 4</b>	Monday, Sep. 18: <ul style="list-style-type: none"> <li>• Information Literacy Session (Librarian)</li> <li>• Chapter 2: Energy that drives the storms</li> </ul> Thursday, Sep 21: <ul style="list-style-type: none"> <li>• Chapter 3: Temperature and humidity extremes</li> <li>• Quiz 2</li> </ul>	Thursday, Sep. 21, 8:00 AM: <ul style="list-style-type: none"> <li>• Homework 2</li> </ul>
<b>Week 5</b>	Monday, Sep. 25: <ul style="list-style-type: none"> <li>• Chapter 3: Temperature and humidity extremes</li> <li>• Quiz 3</li> </ul> Thursday, Sep 28: <ul style="list-style-type: none"> <li>• Chapter 4: Condensation in the atmosphere</li> <li>•</li> </ul>	Monday, Sep. 25, 8:00 AM: <ul style="list-style-type: none"> <li>• Homework 3</li> </ul>
<b>Week 6</b>	Monday, Oct. 2: <ul style="list-style-type: none"> <li>• Chapter 4: Condensation in the atmosphere</li> <li>• Quiz 4</li> </ul> Thursday, Oct. 5: <ul style="list-style-type: none"> <li>• Chapter 5: Clouds and Stability</li> <li>• Extended Peer Facilitator session</li> </ul>	Monday, Oct. 2, 8:00 AM: <ul style="list-style-type: none"> <li>• Homework 4</li> </ul>

<b>Week 7</b>	<p>Monday, Oct 9:</p> <ul style="list-style-type: none"> <li>Chapter 5: Clouds and Stability</li> <li>Quiz 5</li> </ul> <p>Thursday, Oct. 12:</p> <ul style="list-style-type: none"> <li>Chapter 6: Precipitation extremes</li> </ul>	<p>Monday, Oct. 9, 8:00 AM:</p> <ul style="list-style-type: none"> <li>Homework 5</li> </ul>
<b>Week 8</b>	<p>Monday, Oct. 16:</p> <ul style="list-style-type: none"> <li>Chapter 6: Precipitation extremes</li> <li>Quiz 6</li> </ul> <p>Thursday, Oct. 19:</p> <ul style="list-style-type: none"> <li>Chapter 7: Atmospheric motion</li> <li>Quiz 7</li> </ul>	<p>Monday, Oct. 16, 8:00 AM:</p> <ul style="list-style-type: none"> <li>Homework 6</li> </ul> <p>Thursday, Oct. 19, 8:00 AM:</p> <ul style="list-style-type: none"> <li>Homework 7</li> </ul>
<b>Week 9</b>	<p>Monday, Oct. 23:</p> <ul style="list-style-type: none"> <li>Mid-term exam</li> </ul> <p>Thursday, Oct. 26:</p> <ul style="list-style-type: none"> <li>Chapter 7: Atmospheric motion</li> </ul>	
<b>Week 10</b>	<p>Monday, Oct. 30:</p> <ul style="list-style-type: none"> <li>Chapter 8: Wind systems</li> <li>Quiz 8</li> </ul> <p>Thursday, Nov. 2:</p> <ul style="list-style-type: none"> <li>Chapter 8: Wind systems</li> <li>Extended Peer Facilitator session</li> </ul>	<p>Monday, Oct. 30, 8:00 AM:</p> <ul style="list-style-type: none"> <li>Homework 8</li> </ul> <p>Monday, Oct. 30, 11:59 PM:</p> <ul style="list-style-type: none"> <li>Research paper outline</li> </ul>
<b>Week 11</b>	<p>Monday, Nov. 6:</p> <ul style="list-style-type: none"> <li>Chapter 9 Air-masses and fronts</li> <li>Quiz 9</li> </ul> <p>Thursday, Nov. 9:</p> <ul style="list-style-type: none"> <li>Chapter 10: Mid-latitude cyclonic storms</li> </ul>	<p>Monday, Nov 6, 8:00 AM:</p> <ul style="list-style-type: none"> <li>Homework 9</li> </ul> <p>Thursday, Nov 9, 8:00 AM:</p> <ul style="list-style-type: none"> <li>Homework 10</li> </ul>
<b>Week 12</b>	<p>Monday, Nov 13:</p> <ul style="list-style-type: none"> <li>Chapter 10: Mid-latitude cyclonic storms</li> <li>Quiz 10</li> </ul> <p>Thursday, Nov 16:</p> <ul style="list-style-type: none"> <li>Chapter 11: Thunderstorms</li> <li>Extended Peer Facilitator session</li> </ul>	<p>Thursday, Nov 16, 11:59 PM:</p> <ul style="list-style-type: none"> <li>Research paper draft</li> </ul>
<b>Week 13</b>	<p>Monday, Nov. 20:</p> <ul style="list-style-type: none"> <li>Chapter 11: Thunderstorms</li> <li>Quiz 11</li> </ul> <p>Thursday, Nov 23:</p>	<p>Monday, Nov 20 8:00 AM:</p> <ul style="list-style-type: none"> <li>Homework 11</li> </ul>



	<ul style="list-style-type: none"> <li>Thanksgiving recess – no class</li> </ul>	
<b>Week 14</b>	<p>Monday, Nov. 27:</p> <ul style="list-style-type: none"> <li>Chapter 12: Tornadoes</li> <li>Quiz 12</li> </ul> <p>Thursday, Nov. 30:</p> <ul style="list-style-type: none"> <li>Chapter 12: Tornadoes</li> </ul>	<p>Monday, Nov. 27, 8:00 AM:</p> <ul style="list-style-type: none"> <li>Homework 12</li> </ul> <p>Thursday, Nov 30, 11:59 PM:</p> <ul style="list-style-type: none"> <li>Final research paper</li> </ul>
<b>Week 15</b>	<p>Monday, Dec. 4:</p> <ul style="list-style-type: none"> <li>Chapter 13: Hurricanes</li> <li>Quiz 13</li> </ul> <p>Thursday, Dec. 7:</p> <ul style="list-style-type: none"> <li>Chapter 13: Hurricanes</li> </ul>	<p>Monday Dec. 4, 8:00 AM:</p> <ul style="list-style-type: none"> <li>Homework 13</li> </ul>
<b>Week 16</b>	<p>Monday, Dec 11:</p> <ul style="list-style-type: none"> <li>Chapter 14: Weather forecasting</li> <li>Quiz 14</li> </ul> <p>TBA:</p> <ul style="list-style-type: none"> <li>Final Exam</li> </ul>	<p>Monday, Dec. 11, 8:00 AM:</p> <ul style="list-style-type: none"> <li>Homework 14</li> </ul>

### Important Dates

First Day of Classes:	August 30
Last day for Class Adjustments (on the Web):	September 5
Last day to withdraw from courses with "W" grade:	November 10
Final Exam Week:	December 14 - 20
Last day to request "I" grades:	December 20

### Grading Policy

Graded item	Maximum number of achievable points
Attendance and participation	15
Research paper	15
14 homework assignments (1 point each, lowest two scores omitted)	12
14 quizzes (1 point each, lowest two scores omitted)	12
Oral presentation	10
In-class projects (1 point each. The lowest two scores will be dropped)	10
Mid-term exam	10
Final exam	16
Total points possible (100%)	100

Final grade:

The final grade will be calculated based on the sum of points.

Grade	Percentage
A	>= 93
A-	90 – 92.9
B+	87 – 89.9
B	83 – 85.9
B-	80 – 82.9
C+	77 – 79.9
C	73 – 76.9
C-	70 – 72.9
D+	65 – 69.9
D	60 – 64.9
F	< 60

Incomplete Grade

- Given in exceptional circumstances when approved by the instructor and when requested by a student who has satisfactorily completed at least two-thirds of course requirements prior to the end of a term, for reasons of illness or other emergency. When the work is completed by the date indicated on the academic calendar, the grade assigned replaces the I. If work is not satisfactorily completed by the date indicated in the Academic Calendar, the grade is changed to F.
- The last day to request an incomplete grade is Dec. 20, 2022
- Please see the academic calendar and the colleges policies for details:  
<https://www.ramapo.edu/academic-calendars/>  
<https://www.ramapo.edu/registrar/grading-options/>

**College-wide policies:** <https://www.ramapo.edu/fa/arc/college-wide-policies-courses/>

**Electronic Forms of Communication**

In accordance with College policy, I will use your Ramapo College email address (@ramapo.edu) or Canvas to communicate with you about all course-related matters.

**Students with Disabilities**

If you need course adaptation or accommodations because of a disability that has been documented with the Office of Specialized Services, please make an appointment with me. Contact the Office of Specialized Services (OSS) at x7514 or email at [oss@ramapo.edu](mailto:oss@ramapo.edu).

**Policy on Academic Integrity**

Students are expected to read and understand Ramapo College's Academic Integrity Policy, which can be found online in the *College Catalog* (<https://www.ramapo.edu/catalog-2017-2018/academic-policies/>). Members of the Ramapo College community are expected to be

honest and forthright in their academic endeavors. Students who are suspected of violating this policy will be either required to meet with the faculty member (and in the event of a 'responsible' finding, reported to the Office of the Provost), or be referred directly to the Office of the Provost, which will adjudicate the matter.

## **Procedure**

### Responsibilities

The Office of the Provost has responsibility for the oversight and enforcement of the Academic Integrity Policy and for making the policy an institutional priority. The Office of the Provost is also responsible for publishing the policy and for educating both faculty and students about the policy.

Faculty members play a crucial role in the Academic Integrity Policy. They are responsible for educating their students about the importance of academic integrity and for communicating to students their expectations with respect to academic integrity in course work. They are also urged to report alleged violations of the policy to the Vice Provost.

Students have the responsibility to understand the Academic Integrity Policy and to comply with the policy in their academic work.

### Criteria

There are four (4) broad forms of academic dishonesty:

#### **1. Cheating**

Cheating is an act of deception by which a student misrepresents his or her mastery of material on a test or other academic exercise. Examples of cheating include, but are not limited to:

- copying from another student's work;
- allowing another student to copy his/her work;
- using unauthorized materials such as a textbook, notebook, or electronic devices during an examination;
- using specifically prepared materials, such as notes written on clothing or other unauthorized notes, formula lists, etc., during an examination;
- collaborating with another person during an examination by giving or receiving information without authorization from the instructor;
- taking a test for another person or asking or allowing another to take the student's own test.

#### **2. Plagiarism**

Plagiarism occurs when a person represents someone else's words, ideas, phrases, sentences, or data as one's own work. When a student submits work that includes such material, the source of that information must be acknowledged through complete, accurate, and specific footnote or endnote references; additionally, verbatim statements must be acknowledged through quotation marks. To avoid a charge of plagiarism, a student should be sure to include an acknowledgment of indebtedness:

- whenever he or she quotes another person's words directly;

- whenever he or she uses another person's ideas, opinions, or theories, even if they have been completely paraphrased in one's own words;
- whenever he or she allows another individual to contribute to the work in some significant fashion (for instance, through editing or sharing of ideas);
- whenever he or she uses facts, statistics, or other illustrative material taken from a source, unless the information is common knowledge.

Examples of standard citation formats can be found on the George T. Potter Library Website: <https://www.ramapo.edu/library/citation-help/>

### 3. **Academic Misconduct**

Academic misconduct includes the alteration of grades, involvement in the acquisition or distribution of unadministered tests, and the unauthorized submission of student work in more than one class. Examples of academic misconduct include, but are not limited to:

- changing, altering, falsifying, or being the accessory to the changing, altering, or falsifying of a grade report or form, transcript, or other academic record, or entering any computer system or College office or building for that purpose;
- stealing, buying, selling, giving way, or otherwise obtaining all or part of any unadministered test or paper or entering any computer system or College office or building for the purpose of obtaining an unadministered test;
- submitting written work (in whole or in significant part) to fulfill the requirements of more than one course without the explicit permission of both instructors;
- disregarding policies governing the use of human subjects or animals in research;
- sabotaging another student's work through actions designed to prevent the student from successfully completing an assignment;
- knowingly facilitating a violation of the academic integrity policy by another person.

### 4. **Fabrication**

Fabrication refers to the deliberate use of invented information or the falsification of research or other findings with the intent to deceive. Examples of fabrication include, but are not limited to:

- citing information not taken from the source indicated;
- citing of sources in a "works cited" that were not used in that project;
- altering, stealing, and/or falsifying research data used in research reports, theses, or dissertations;
- submitting as one's own any academic work prepared in whole or in part by others, including the use of another's identity;
- falsifying information or signatures on registration, withdrawal, or other academic forms and records.

### Reporting Violations

In order to ensure due process, any member of the community who is aware of a violation of the Academic Integrity Policy is expected to report the incident to the Vice Provost. A faculty member may choose to resolve the incident him/herself or send the case to the Vice Provost for review (see below). In either case, the faculty member reports the incident to the Vice Provost on the reporting form, which serves not only to report the incident but also to record the finding and the sanction in situations in which the faculty member chooses to resolve the

case. A faculty member is encouraged to report an alleged violation of academic integrity within 30 days of the discovery of the alleged violation but must do so no later than the last day to submit grades for the term in which the alleged violation occurred. A faculty member may report an incident after that date, but only if he/she has new evidence.

More details on Ramapo College's academic integrity policy can be found here:

<http://www.ramapo.edu/catalog-2019-2020/academic-policies/>