Objectives and Learning Outcomes: The objective of this course is to introduce the student to basic interpretation of surface and upper-air analysis, and to apply theoretical ideas to actual data and situations.

In terms of the meteorology curriculum, this course provides a basic understanding of atmospheric processes beyond the introductory level. Our focus will be on large-scale atmospheric phenomena common to the mid-latitudes. Certain topics will be somewhat rigorous in nature, but the underlying mathematics and its application to the topic will be discussed.

The theory of mid-latitude weather systems covered in class will be supplemented by laboratory exercises that involve subjective (hand) analysis and/or electronic media (see appropriate sections below).

In terms of learning outcomes, we shall:

1. formulate conceptual models of mid-latitude weather systems;

2. integrate theoretical and applied (i.e., real-life) meteorological concepts;

3. introduce and apply tools of modern weather observation, diagnosis, and prediction.

Text: None required. However, material will be drawn from numerous sources. You may wish to examine the original texts. Therefore, it is important that you save your books from your major courses. Now is the time for you to build your professional library.
Lectures will be delivered electronically. Course notes will be made available prior to class meeting times via Blackboard.

**Topics:** The topics to be covered include the following; others will be added if time permits.

- Atmospheric variables and units
- Basic equation introduction
- Atmospheric observation systems (in situ/remote sensors)
- Scales of motion
- Atmospheric kinematics (vorticity, divergence, deformation)
- Fronts and frontogenesis
- Thermal wind and its applications
- Extratropical cyclones/cyclogenesis and baroclinic instability

**Weather Challenge Forecasting Contest:** The College at Brockport will be participating in the Weather Challenge forecasting contest, beginning sometime in mid-September; more information will be forthcoming. *All meteorology students are STRONGLY encouraged to participate, and YOU will be required to do so.* Prior participation is a prerequisite for ESC 312 (Synoptic Meteorology II), and will be a course requirement, i.e., if you are planning to take Synoptic II in the spring. While your performance in the contest will not *directly* affect your grade (bad forecasts ≠ bad grade), lack of participation will have an adverse effect upon it (too many missed forecasts = bad grade). Missed forecasts will be penalized via the class participation part of your grade. The top three forecasters in this class at the end of the semester will have points added (4, 3, and 2, respectively) to their final average.
**Map Discussions:** There will be no scheduled map discussions in this class. However, formal weather briefings will take place as a part of the Intermediate/Advanced Weather Lab (ESC 390/490) on Monday and Wednesday afternoons from 2:30-3:45 pm in 302A Lennon. While I cannot require you to attend, I would strongly encourage your attendance and participation. If you wish to learn about the weather (and I assume that you do), this is an excellent way to bridge the gap between what you see on a blackboard and what you see out the window.

**Lab Assignments:** I will be assigning various lab exercises (decoding, plotting, analyses, etc.) throughout the semester. There may also be additional homework exercises to reinforce the material; these issues will be addressed as needed. Some lab exercises will be completed in class, while others may require more time.

**Exams:** There will be a total of four exams during the course, including a non-comprehensive final. I do not typically have a time limit on exams, but I do have the following conditions:

1. If you are late to an exam session, you will be required to turn in your exam when the last person who started the exam on time turns her/his exam in, whether or not you are done.

2. If you do arrive for an exam after the first person completes her/his exam, you will not be allowed to take the exam and receive a grade of zero for said exam.

3. These policies apply unless prior alternative arrangements are discussed and approved by the professor. Such arrangements will be made at my sole discretion.

These are the dates of the exams. Plan accordingly; they can change if deemed necessary.

Exam 1: 22 September 2015 (Tuesday)
Exam 2: 15 October 2015 (Thursday)
Exam 3: 17 November 2015 (Tuesday)
Final Exam: 17 December 2015 (Thursday; 8:00 in the blessed am)

**Grading:** The grade distribution is as follows:

- Exams: 50%
- Lab/homework assignments: 35%
- Class participation/forecast preparation: 15%

There will be no opportunity for personalized extra credit. The labs, assignments, and exams have been designed to assess your mastery of the learning outcomes discussed earlier in the syllabus. Therefore, if you fail to make arrangements to make up a missed assignment or exam, it will adversely affect your grade.
**Attendance:** This is college. This is an upper-division course. We’re all big boys and girls, and you will be trusted to act accordingly, so formal attendance will not be taken. However, this is a fairly small class, and your presence (or absence) will be noted. Excessive unexcused absences will not act in your favor, especially with respect to a final grade; unexcused absences that exceed 15% of the scheduled class meetings could result in a failing grade. If the need arises that attendance be taken, then I reserve the right to do just that. Be advised that I have had to resort to this in the past; I was less than pleased. Let us not repeat such unpleasantness, shall we?

It is in your best interest to attend the lectures; since there is no text for the course, material for the exam will come directly from the lectures. Lack of attendance (or attention during class) indicates a lack of interest in the course material; if you find that you cannot bring yourself to class, then it would be better for you to drop the course and reconsider your intentions.

Official policy states that a student can receive a failing grade if (s)he misses ≥15% of the class meetings. There are 28 class meetings in this term; 15% of 28 = 4.2 (round down to 4). If you miss four or more meetings (unexcused), do not be surprised if you fail the course.

**Late/Missed Assignments and Exams:** If you know that you will not be able to turn in an assignment on time, please let me know prior to class if at all possible (via phone, e-mail, or in person). I realize that this is not always possible; if not, please contact me as soon as possible after the missed class/assignment.

Unless otherwise noted, assignments are due at the beginning of class. After that, 20% will be deducted for each day that it is late, including the day it is due (providing you do not hand it in at the beginning of class). For example, if an assignment is handed in one day late, and it’s worth 50 points, the best possible grade would be 30/50, or 60%. Any other points would be subtracted as normally.

Exams must be made up before the next class meeting, unless prior arrangements have been made. If you fail to do so, you will receive a zero for that exam.

It is YOUR responsibility to contact me if you have missed an assignment or exam. I will not come looking for you. I advise you to contact me as soon as possible after an absence to find out what you missed, or to ask a classmate. If for some reason you cannot find me, send me e-mail or leave a message for me with the secretary or another faculty member.

**Addendum for Fall 2015:** I will be away a few times this semester. Alternate arrangements will be made on an as-needed basis, and lecture material will be covered.
**Cell Phones/PDAs:** Out of common courtesy (and, I hope, common sense) I ask that you have cell phones/PDAs turned to vibrate/off during class meetings. You should realize that it is distracting to all concerned to have one go off in the middle of a lecture or exam. You should also realize that I have a rather twisted sense of humor, and might be inclined to embarrass you if it’s your phone that goes off. You might also be asked to leave the room for the rest of the session. Consider yourself warned.

In addition, **NO ELECTRONIC DEVICES OF ANY KIND** (except for a calculator) will be allowed in front of you during exams. If one is found within your reach during an exam (even if it is not yours), you will receive a zero for that exam.

**Supplies:** Below is a list of required supplies that you should bring to every class (esp. lab sessions).

- Regular pencils
- Colored pencils (red, blue, yellow, green, purple, brown, black)
- Ruler/straight edge
- Scientific calculator (*always* bring one for exams)
- Three-ring binder (suggested, to organize course notes)

**Field Trips:** On occasion, there are regional conferences that take place during the semester. **IT WOULD BE IN YOUR BEST INTEREST TO ATTEND IF YOU ARE ABLE.** Registration fees are often negligible (if not free), so all you would be responsible for would be food and lodging. The reasons for attending are many: 1) You would be exposed to material on a given subject that may not be covered thoroughly in class (if at all), especially regional forecast issues (e.g., Northeastern winter weather, lake-effect snow). 2) You would be seeing presentations of the latest research in the field, which may spark an interest in areas you hadn’t thought about. 3) Most importantly, you would be meeting people who could well become future employers, research advisors, etc. Oftentimes it’s not just what you know, but who as well. Bottom line: go.

**Professional Society Membership:** As you know by now (or will soon learn), meteorology is an evolving science. It doesn’t matter what you wind up doing: as long as you are in weather, you will need to keep up with the latest advances in the field. The best way to do this is to become a member of one of the professional societies. The big one in this field is the American Meteorological Society (AMS). The cost for students is less than half of that for full membership: one year of student membership is $20.00. This entitles you to reduced registration fees at AMS conferences (trust me, any discount is welcome), and you get the *Bulletin of the AMS*, the official ‘organ’ of the society. On occasion there is an interesting article published in *BAMS*. In addition, students can subscribe to other AMS journals at a reduced rate. The AMS website can be found at [www.ametsoc.org](http://www.ametsoc.org).
**Professional Society Membership** (continued): The other society worth mentioning is the National Weather Association (NWA), an organization dedicated mainly to operational meteorology. Dues in this society are reduced for students ($20 per year). This entitles you to electronic access of the monthly newsletter along with the *Journal of Operational Meteorology*. The NWA website can be found at [www.nwas.org](http://www.nwas.org).

If you are interested in joining either society (and you should be, if you haven’t already), contact any of the meteorological faculty.

**Friendly Advice**: The material in this course can be somewhat daunting. Get used to it, as it does not get easier as the course number increases. I might suggest that you study in small groups. One in your group may remember or recall a particular detail missed by the others, or may be able to explain a concept in such a way that the others can better understand it. You might also wish to see me in small groups outside of class if you have questions that you do not wish to ask in class.

You are all in the same boat here, going through many of the same things at the same time. At the very least, misery loves company. 😊 I cannot make you work together if you do not wish to, or if you know it will not work for you. I’m just offering a suggestion that may be of benefit to you.

**Drop/Withdrawal Policy**: At The College at Brockport you may *drop* a course during the first four weeks of the semester. Simply take your registration form to the Office of Registration and Records, and they’ll officially remove you from the course and notify the instructor. You may also drop by computer, mail, or fax, but I suggest the personal approach (to avoid any surprises at the end of the semester). **The deadline for dropping this course is 5:00 pm Tuesday, 29 September 2015.**

After this date you may *withdraw* from the course. **Between 30 September and 6 November 2015 (Friday)**, you may withdraw from the course without departmental or instructor permission. It must be done in person, it costs $20, and it will give you a ‘W’ on your transcript.

**Between 7 November and 4 December 2015 (Friday)**, you may only withdraw from the course with department permission (chair’s signature). College policy dictates that permission to withdraw should be given “only for extraordinary circumstances.” It will be your responsibility to demonstrate that your own circumstances apply through written documentation, without which the Department of the Earth Sciences will not grant permission to withdraw from the course. It must be done in person, it costs $20, and it will give you a ‘W’ on your transcript. **The absolute deadline for withdrawal from this course is 5:00 pm Friday, 4 December 2015.** Failing the course is **NOT a legitimate reason to withdraw.** Consult Your Right to Know & Academic Policies Handbook ([http://www.brockport.edu/publications/yrtk/](http://www.brockport.edu/publications/yrtk/)) for any questions with regard to this policy.
**Academic Dishonesty:** Academic dishonesty is a serious breach of trust that exists between a student, one’s fellow students, and the instructor. Academic dishonesty is a major violation of College Policy, which can result in the failure of a course as well as a range of disciplinary actions, from an official warning to suspension or dismissal from the College. Any student suspected of such a violation will be subjected to charges. Violations of academic dishonesty include, but are not limited to, the following:

1. Plagiarism - presenting as one’s own, the words, ideas, or products of another without providing a standard form of documentation, such as footnotes, endnotes, or bibliographic documentation.
2. Fabricating facts, statistics, or other forms of evidence in papers, laboratory experiments, or other assignments.
3. Presenting someone else’s paper, computer work, or other material as one’s own work. This includes work done as part of group/team collaboration unless specifically approved by the instructor. Students should assume that any out-of-class assignments or take home examinations are to be done individually and without collaboration unless the instructor specifically states otherwise.
4. Writing or attempting to write an examination, paper, computer work, or other material for another student, or otherwise representing one’s own performance as another’s (for example, signing another student into class); allowing someone else to take one’s examinations or do one’s classwork/assignments.
5. Buying and selling, or sharing of examinations or assignments; possession of examinations or answers to examinations without the instructor’s permission.
6. Using “cheat sheets,” looking onto another’s paper, or talking to someone other than the instructor or proctor during an examination, without the instructor’s permission.
7. Failing to follow the rules of conduct for taking an examination as stipulated by the instructor prior to the examination or as stated by him or her in a written course syllabus.
8. Presenting work for one course for which credit has been received or will be received in another course without the consent of both instructors.
9. Published divisional, departmental, unit, and/or individual program policies may address additional violations unique to specific programs and their ethical codes.

For more details regarding this policy, see the current issue of Your Right to Know & Academic Policies Handbook.
Disability Statement: Students with documented disabilities may be entitled to specific accommodations. The College at Brockport’s Office for Students with Disabilities makes this determination. Please contact the Office for Students with Disabilities at (585) 395-5409 or osdoffic@brockport.edu to inquire about obtaining an official letter to the course instructor detailing any approved accommodations. The student is responsible for providing the course instructor with an official letter. Faculty work as a team with the Office for Students with Disabilities to meet the needs of students with disabilities.

Title IX Compliance: Gender discrimination and sexual harassment are prohibited in class. Title IX legislation requires the College to provide gender equity in all areas of campus life. If you or someone you know has experienced gender discrimination, sexual harassment, or sexual assault, we encourage you to seek assistance and to report the incident through resources available at www.brockport.edu/titleix/index.html. Confidential assistance is available at Hazen Center for Integrated Care. For these and other regulations governing campus life, please see all of our Student Polices at www.brockport.edu/policies/index.php.

Important Dates for Fall 2015

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<tr>
<th>Date</th>
<th>Event</th>
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<tr>
<td>August 28, Friday</td>
<td>Welcome Weekend/New Student Registration</td>
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<td>August 31, Monday, 8 am</td>
<td>Instruction Begins</td>
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<tr>
<td>September 8, Tuesday, 5 pm</td>
<td>Deadline to Add a Class (without fee)</td>
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<tr>
<td>September 17, Thursday, 5 pm</td>
<td>Deadline to Add a Class</td>
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<tr>
<td>September 22, Tuesday</td>
<td>Constitution Day (Classes in Session)</td>
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<tr>
<td>September 29, Tuesday, 5 pm</td>
<td>Deadline to Drop a Class (without withdrawing)</td>
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<tr>
<td>October 17, Saturday, 5 pm</td>
<td>Mid-term (1st Quarter Ends)</td>
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<td>October 19-20, Monday and Tuesday</td>
<td>Mid-semester Break</td>
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<td>October 19, Monday, 4 pm</td>
<td>Student Progress Evaluations Due in Registrar’s Office</td>
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<td>October 21, Wednesday, 8 am</td>
<td>Instruction Resumes</td>
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<td>November 6, Friday, 5 pm</td>
<td>Deadline to Withdraw Without Departmental Permission</td>
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<td>November 25, Wednesday</td>
<td>Thanksgiving Recess Begins</td>
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<tr>
<td>November 30, Monday, 8 am</td>
<td>Instruction Resumes</td>
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<tr>
<td>December 4, Friday, 5 pm</td>
<td>Deadline to Withdraw</td>
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<tr>
<td>December 12, Saturday, 5 pm</td>
<td>Regular Course Schedule Ends (2nd Quarter Ends)</td>
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<tr>
<td>December 14, Monday, 8 am</td>
<td>Final Exam Period Begins</td>
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<tr>
<td>December 19, Saturday, 5 pm</td>
<td>Final Exam Period Ends (Semester Ends)</td>
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<tr>
<td>December 24, Thursday, 4 pm</td>
<td>Grades Due From Faculty</td>
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