MCC
McHenry County College

Syllabus - EAS 120 001

INTRODUCTION TO METEOROLOGY - 4 Credit(s)

HAMILL, PA - FALL 2010

Days: M 10:00AM - 12:50PM Room: A 228

Course Begins: 8/23/2010 Course Ends: 12/13/2010 Last day to Withdraw: 11/12/2010

Lab A01	Days: W 10:00AM - 12:50PM Room: A 228	
	Lab Begins: 8/25/2010 Lab Ends: 12/15/2010 Last day to Withdraw: 11/12/2010	
Lab A02	Days: W 10:00AM - 12:50PM Room: TBA TBA	
	Lab Begins: 8/25/2010 Lab Ends: 12/15/2010 Last day to Withdraw: 11/12/2010	

Lab Hrs: 3.00	***Lecture Hrs:*** 3.00	***PCS:*** 1.1	***Articulated:*** Y	***How:***
IAI Core: P1 905L	***IAI Majors:***			

Course Description:

An introduction to the processes that produce weather. Analysis of the basic elements of meteorology including temperature, pressure, moisture, and wind. Topics also include severe storm analysis such as tornadoes and hurricanes. Laboratory includes weather forecasting basics along with current weather conditions affecting our daily lives.

Course Note:

Students cannot earn credit for both EAS 120 and EAS 171.

Course Prerequisite:

Credit or concurrent enrollment in MAT 075 or MAT 095.

Course Objectives:

Cognitive:

1. Demonstrate a familiarity with the basic vocabulary of meteorology.
2. Apply the basic principles and concepts of meteorology to laboratory and field exercises.
3. Apply the concepts of meteorological analysis to atmospheric phenomena classification, weather map interpretation and prediction, and climatological analysis.
4. Demonstrate an ability to examine meteorological information through critical reading and discussion.
5. Employ the scientific method of inquiry to investigations in the laboratory and the field.

Affective:

1. Appreciate the meteorological processes and the magnitude of the atmospheric forces that transform the Earth's landscape.
2. Accept responsibility for pursuing an increased awareness of the uniqueness of the Earth and its importance as a biosphere.
3. Recognize the influence of both historical and present discoveries in meteorology on our daily lives.
4. Understand the importance of meteorological events and their significance in affecting human lives.

Manipulative:

1. Demonstrate skill in field observations and the recording of data.
2. Apply the meteorological tools of lab and field instruments, weather maps, graphs, tables, and models to the examination and analysis of the atmosphere.
3. Evaluate existing weather conditions for the interpretation of recognizable trends and patterns.

Course ScanSkills:

1. Performs basic mathematical computations associated with meteorological variables.
2. Understands and interprets weather information from maps and graphs.
3. Recognizes weather patterns and devises appropriate decisions with creating weather forecasts.

Course Outline:

1. Composition, Structure, and Temperature of the Atmosphere
2. Moisture in the Atmosphere
   a. Atmospheric Condensation
   b. Cloud Development and Atmospheric Stability
   c. Precipitation Processes
3. Movement of Air
   a. Pressure and Wind
   b. General Atmospheric Circulation
   c. Air Masses and Fronts
4. Atmospheric Disturbances
   a. Mid-Latitude Cyclones
   b. Thunderstorms and Tornadoes
   c. Tropical Storms and Hurricanes
5. Human Activities
   a. Weather Forecasting and Analysis
   b. Human Effects on Weather

Laboratory Outline:

Lab 1: The Atmosphere

Lab 2: Solar Radiation and Seasons

Lab 3: Temperature Trends and Statistics

Lab 4: Atmospheric Pressure

Lab 5: Atmospheric Moisture

Lab 6: Surface Weather Map Analysis

Lab 7: Atmospheric Stability and Clouds

Lab 8: Air Masses and Frontal Zones

Lab 9: Introduction to Weather Forecasting and 15-Day Forecasting Contest

Lab 10: General Atmospheric Circulations

Lab 11: The Mid-Latitude Cyclone

Lab 12: Severe Storms

Lab 13: Tropical Disturbances

Lab 14: Weather Forecasting 2 and Daily Forecasting Contest

Special Needs Statement:

McHenry County College offers support services for students with special needs. It is the student's responsibility to meet with the Special Needs Coordinator and provide current documentation regarding his/her disability. Please stop in or call the Special Needs Department, room A-260, 815-455-8676, as soon as possible if you would like more information about the accommodations that are available. In addition, it is important for you to discuss those accommodations with me so you are able to fully participate in this course.

Academic Integrity:

As an educational community, McHenry County College values the pursuit of academic excellence and integrity. In accordance with this philosophy and Chapter 10, Act 5 of the 1994 Illinois Community College Act, academic dishonesty in any form, including cheating, plagiarism, and all other acts of academic theft, is considered intolerable. Appropriate sanctions, up to and including suspension from the college will be imposed by authorized College personnel.

Copyright Policy:

The College will maintain current procedures and guidelines to ensure that all staff and students comply with applicable copyright laws and other intellectual property protection laws. The College will encourage staff and students to engage in the development of intellectual property and facilitate ownership protections with respect to such development of intellectual property.

The College expects that staff and students will act responsibly and ethically in a manner consistent with all copyright laws and College copyright procedures and guidelines. This policy authorizes the College to adopt and maintain such procedures and guidelines necessary to ensure compliance with copyright laws and to facilitate ownership protection with respect to the development of intellectual property.

Student Code of Conduct and the Judicial Process:

Consistent with the McHenry County College mission is an expectation that students will govern themselves in terms of appropriate behavior with emphasis on self-respect and respect for others. It is the practice of the College to respect the properly exercised rights of its students. The College recognizes a student's rights within the institution to freedom of speech, inquiry and assembly; to the peaceful pursuit of education; and to the reasonable use of services and facilities of the College.

The College has adopted a Student Code of Conduct and judicial process in order to maintain a learning environment of respect, civility, safety, and integrity for all members of the College community.

Whenever possible, sanctions for violations of the Student Code of Conduct may be educational in nature. However, violations affecting the health and safety of members of the College community are deemed to be the most serious. Therefore, acts of violence, threats or dangerous behavior are most likely to result in a suspension from the college. Violations of the academic dishonesty policy may also result in suspension or expulsion from the institution and/or reduced or failing grade.

Children on Campus:

For the safety of children on campus, children (e.g., less than 16 years of age) are not permitted on campus unattended by a parent/guardian, except when they are attending classes offered by the College for children. The College requires that no children be allowed into a classroom/laboratory environment, including the Testing Center, Learning Center and computer labs, solely for the purpose of a parent/guardian to provide direct supervision of his/her child.

Teaching Schedule:

The scheduling of the activities and teaching strategies on this syllabus, but not the objectives or content, may be altered at any time at the discretion of the instructor.

Instructor Office: B252, Room F
Instructor Office Phone: 455–8698
Instructor Email: phamill@mchenry.edu
Instructor Web Page: www.mchenry.edu/faculty/phamill
Instructor Office Hours: To be announced during the first meeting.

Earth Science, Geography, and Geology Office: B252
Dept. Chair: Paul Hamill – 455–8698
Division Secretaries: Chris, Carol, and Connie – 455-8750 or 455-8760
Earth Science and Geography home page:
http://www.mchenry.edu/EarthScience/index.asp

I. INSTRUCTIONAL MATERIALS:

A) Text: Aguado, Edward and Burt, James, *Understanding Weather and Climate, 5*th edition, Prentice Hall. 2010. ISBN: 0-321-59550-5

B) Audiovisual Materials: Transparencies, Videos, PowerPoint visuals and CdRoms.

C) Other Instructional Aids: Various models, charts, and instruments are used for demonstrations and laboratory exercises.

II. INSTRUCTIONAL METHODOLOGIES:

The instructional format for the lecture section of the course will include formal lectures, group discussion, review sessions, cooperative learning groups, and occasional demonstrations. Laboratory sessions are more informal with direct interaction between students and between student and instructor. A semi-discovery approach is used in laboratory assignments.

III. EVALUATION TECHNIQUES:

A) Exams and Tests: Exams, a midterm, and a final comprehensive exam are given.

B) Laboratory Exercises: Diligent participation as well as content and written summaries are considered in evaluating lab work.

C) Primary Grading Basis:

*Lab Work	20%
*Lecture Exams	30%
*CLGs	10%
Midterm Exam	20%
Final Exam	20%

*The instructor will drop the lowest lab, lecture exam, and CLG from the total point accumulation, therefore any lab, lecture exam, or CLG missed due to an absence from the class will be used as your dropped score.

D) Grading Scale: The components of the primary grading basis will be totaled to determine your cumulative. The grade awarded will be determined on the following scale:

A – 90%
B – 80%
C – 70%
D – 60%
F – below 60%

IV. ADDITIONAL REQUIREMENTS:

1. Class and laboratory attendance are required. If a student has two unexcused absences from lab, their grade for the entire course will be lowered one full letter grade. You must be on time and in attendance during the entire class to be marked present.

2. Any lecture exam, CLG or laboratory exercises missed due to an unexcused class absence cannot be made up. You may obtain a missed CLG or lab for learning purposes, but the score will not count.

3. Office hours are for those students who attend class. The instructor will not repeat classroom instruction for non-attending students.

Teaching strategies and activities, but not content or course objectives, may be altered at any time by any instructor.