



Salem State University Department of Geography

GPH100PL: Weather and Climate Lab

Spring 2019 Sections 24, 25 & 26

Professor Brian M. Cacchiotti

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Office Hours: Thursday 1:30 – 2:30 and by appointment

Website: <http://www.itsallgeography.com/> → Follow instructions

This lab section is a **required** part of Weather and Climate (GPH100P) and will count as 25% of your final grade for that class.

Text: *Weather and Climate Laboratory Manual* available at the SSU bookstore
Please note that this text is **REQUIRED** and you must have a **personal copy** for lab.

Goals: The lab portion of this course is designed to supplement and expand upon the teachings, readings and activities of the lecture portion of *Weather and Climate* and to assist students, using experimentation and hands-on learning, to better understand the concepts and methods discussed in this course. Your grade will be determined by combining your lecture class grade (75%) and your laboratory grade (25%) for a total 100% grade.

Lecture	75%
Lab	25%
Total	100%

Course Description: *Weather and Climate* (GPH100P) is comprised of two components – the classroom lectures and the laboratory sessions. The course description for the *Weather and Climate* course is supplemented by the laboratory sessions in order for the student to further investigate the information and concepts presented during the class lectures.

The Salem State Catalog <<http://catalog.salemstate.edu>> has the following course description:

GPH 100P WEATHER AND CLIMATE, 4 credits DII, Q

This course analyzes the elements and controls of weather on the earth's surface including the extent and composition of the atmosphere, atmospheric heating and cooling, pressure and winds, moisture and precipitation. An introduction to weather forecasting techniques and a descriptive analysis of world climate regions. Introduction to maps and basic topics in physical geography. Three lecture hours and one two-hour laboratory per week. Satisfies laboratory science sequence requirement with GLS100. Required of B.S. Geological Sciences, Earth Science Concentration. Not open to students who have received credit for GGR100P, GGR101P, or GPH 101P.

Learning Objectives: To help students better understand the ideas and materials covered in lecture, laboratory sessions will strive to prepare the student with both basic and more advanced knowledge of geographic and earth science concepts. These include, but are certainly not limited to:

- Geographic grid (lat/long)
- Earth/Sun relationship
- Vertical structure of the atmosphere
- Cloud formation and type
- Synoptic weather charts
- Basic weather prediction
- Severe weather safety
- Weather characteristics
- Air masses and effects
- Hurricane tracking and dangers

IMPORTANT NOTE CONCERNING WEATHER & CLIMATE LABS FOR FALL AND SPRING 2018 AND 2019

The Geography Department, in conjunction with the Center for Teaching Innovation and the School of Arts and Sciences, is reconsidering the current labs and lab manual. During the 2018 and 2019 Spring and Fall semesters, different labs will be tested to assess how these new and improved labs might increase the exchange of concepts and ideas as well as enhance the learning outcomes from these activities.

All students will be required, as usual, to purchase the standard lab manual; however, additional lab handouts and materials may be provided to you for your use in lab in place of the current manual. These additional handouts and materials will be at NO COST to you.

We ask that you keep an open and inquisitive mind during any and all labs, but we would especially appreciate your active participation, and critique, of the new labs we are going to pioneer during your time in lab.

We will be using a web-based clicker system during the course as well. Instructions and requirements will be made available in class in week 3.

Note also that the grading and calendar included in the syllabus will be modified to reflect the changes brought on by the new labs and activities.

Attendance: **Attendance is mandatory.** Attendance will be taken each class. **You are allowed to remain in the course if you miss three (3) labs or fewer. If you miss 4 labs, you will be automatically withdrawn and a grade of F will be assigned.** You will be required to sign a statement that you understand and will abide by this policy in order to be allowed to take any Weather and Climate lab section.

If you miss a lab session, you must turn in your work the following week or on your first day back in lab. Failure to turn in your work on this date will result in no credit for the missed work and a penalty to your grade (see Lab Work below.)

Some material presented in lab is not available in the textbook or lab manual and **you will be responsible for this material.** Also, I encourage you to wisely choose lab partners. All manual-based lab work is permitted to be done together as a collaborative effort for all the labs. This is difficult to accomplish if any partners miss class.

Note: Non lab manual work (papers, quizzes, etc) are INDIVIDUAL efforts.

***In other words...* Don't miss class. If you do miss class, turn in the missed lab at the next lab meeting.**

Lab Work: All lab assignments **MUST** be completed on time to receive proper credit for the lab assignment. This is a serious issue and will affect your success in this class! If you fail to turn in a lab you will receive a grade of zero for that lab **and also lose an additional 10 points from your final lab grade for each incomplete lab.** Note: Labs are DUE the lab meeting after they are assigned. For this reason I ***STRONGLY ENCOURAGE YOU TO COMPLETE ALL LABS ON TIME AND IN CLASS.*** Labs will be collected at the end of the lab period. If you miss lab you may turn in your work before the beginning of the next lab period. It must be accurate and complete (grade B or better) **or no credit will be given.**

This means if you do not turn in one lab assignment during the semester you will lose 14 points (4 pts for the lab + 10 deduction) and your maximum grade will become an 86. Missing two will bring your maximum grade down to 72. Not turning in three labs results in a maximum grade of 58 = FAIL.

Student Work: Students may work individually or in groups. As your instructor, **I strongly encourage students to work together in a collaborative and supportive environment.** This is not only of benefit for students when trying to master difficult concepts and material, but also as a preparation for the ever-increasing needs of business and industry who need employees able to excel in a collaborative environment.

Grading: Your lab grade will be based on successful (and on time) completion of ALL the lab exercises, quizzes, a short paper and class participation. The schedule for labs, quizzes and the paper is outlined below. Please note that this schedule is subject to change without notice but will be announced in class before changes will occur. I will drop the one lowest lab grade, but all labs still must be completed!

Grading will be as follows:

Labs	4 pts. (each)	10 x 4 pts =	40
Quizzes	25 pts (each)	2 x 25 pts =	50
Film Paper.....	10 pts	1 x 10 pts =	10
TOTAL			100 pts

Schedule:

Date (W,Th)	Lab #	Other Activity (if any)	Note:
1/16 & 17	Lab 0		Email me!
1/23 & 24	Lab 1		
1/30 & 1/31	Lab 2		
2/6 & 7	Lab 3	Darwin Festival handout	
2/13 & 14	No Class	DARWIN FESTIVAL	Special assignment and schedule
2/20 & 21	Lab 4		
2/27 & 28	Lab 5*	Study Guide 1 available	
3/6 & 7	→ → →	Quiz 1 (first 60 mins of class)	Labs 1- 5* & Darwin Fest
3/13 & 14	No Class	SPRING BREAK	
3/20 & 21	FILM	Film: Paper Assigned	
3/27 & 28	Lab 7		
4/3 & 4	Lab LA1		Film Paper Due
4/10 & 11	GPS Lab		
4/17 & 18	Lab 14	Study Guide 2 available	
4/24 & 25	→ → →	Quiz 2 (first 60 mins of class)	Labs 7, B1, LA-1, GPS, 14 & Film
5/1	No Class		

NOTE: Schedule subject to change based on class progress! Will be announced in class!

Lab Rules: My number one rule is **RESPECT!** I believe that classes, like all other aspects of life, need to be a place where everyone is made to feel welcomed and valued. The best way we can achieve this is through treating each other with respect! I will insist that you treat other students, me, and most importantly YOURSELF with respect... at least while in this class!

Success?: Thus... in order to do well in GPH100P... you need to do well in **LAB** as it counts for 25% of your final grade... and to do that... you really need to come to class! And you really need to do your lab assignments in class and turn them in on time!

Cheating: Don't cheat. IF you are tempted to cheat... come and talk to me and we will figure it out together... don't throw away your academic careers on one desperate act! It is important that you understand cheating, plagiarism and other such offenses are wrong and can involve drastic penalties. It is in your best interest to fully understand your rights and responsibilities concerning these behaviors. The Salem State University Academic Catalog discusses these offenses and penalties in depth (available at http://www.salemstate.edu/registrar/ugrad_0810.pdf).

Students with Disabilities: Salem State University is committed to non-discrimination of handicapped persons as specified in Section 504 of the Rehabilitation Act of 1973. Students who qualify as handicapped persons under the definition of this Act should notify the instructor at the beginning of the class so that reasonable modifications in the course's requirements may be made when necessary. It is your responsibility to contact the Office for Students with Disabilities as soon as possible to obtain the appropriate documentation and other services/information. See the most current Salem State catalog for more information.
(<http://catalog.salemstate.edu/content.php?catoid=18&navoid=1802>)

Additional Information:

- All assignments handed in up to one week late will receive a substantially reduced score, and any work turned in after one week will receive a grade of **ZERO UNLESS PRIOR** arrangements have been made.
- Students are responsible for ALL material found in the required lab readings, outside readings, films, exercises and lectures.
- PLEASE ask questions if something is unclear. You may do so during class (within reason) and during my office hours.
- Be respectful! Disruptive behavior will not be tolerated.
- No firearms, illegal drugs or alcohol in the classroom.
- No tobacco, E-cigarettes or vaping is allowed in the classroom.
- My primary method of contact (outside of the classroom) is via email.
It is VITAL that I have your current email address on file.
- This syllabus is tentative and is subject to change.

Problems? Talk to me (see RESPECT above). I can usually help and am glad to do so if I can!

University Declared Emergency: In the event of a university declared critical emergency, Salem State University reserves the right to alter this course plan. Students should refer to <http://www.salemstate.edu> for further information and updates. The course attendance policy stays in effect until there is a university declared emergency.

In the event of an emergency, please refer to the alternative educational plans for this course located in the Geography Office. Students should review the plans and gather all required materials before an emergency is declared.

Other closings (weather, etc.): Announcements of university closings, delayed openings, early closings, or class cancellations will be made at salemstate.edu, a recorded message at (978) 542-6000 and the following radio and TV stations: **WBOQ 104.9FM, WBZ-TV (4), WCVB-TV (5), WHDH-TV (7), Fox (25), WLVI-TV (56)** Regardless of media reports, delayed openings mean classes begin at 10:30 am.

University Policies

Requirements: All students are expected to be familiar with the academic regulations, including those regarding Academic Integrity, for Salem State University as published in the university catalog. In addition, each student is responsible for completing all course requirements and for keeping up with all that goes on in the course (whether or not the student is present).

Equal Access: Salem State University is committed to providing equal access to the educational experience for all students in compliance with Section 504 of the Rehabilitation Act and The Americans with Disabilities Act and to providing all reasonable academic accommodations, aids or adjustments. Any student who has a documented disability requiring accommodation, aid, or adjustment should speak to the instructor immediately. Students with disabilities who have not previously done so should provide documentation and schedule an appointment with the Office for Students with Disabilities and obtain appropriate services.

Academic Integrity: The University assumes that all students come to Salem State University with serious educational intent and expects them to be mature, responsible individuals who will exhibit high standards of honesty and personal conduct in their academic life. All members of the Salem State University academic community have a responsibility to ensure that scholastic honesty and academic integrity are safeguarded and maintained. Cheating and plagiarism are unfair, demoralizing, and demeaning to all of us. Cheating, plagiarism, and collusion in dishonest activities are serious acts which erode the University's educational role and cheapen and diminish the learning experience not only for the perpetrators, but also for the entire community. It is expected that Salem State University students will understand and subscribe to the ideal of academic integrity and that they will be willing to bear individual responsibility for their work. Materials (written or otherwise) submitted to fulfill academic requirements must represent a student's own efforts.

Critical Emergency Policy: In the event of a university declared critical emergency, Salem State University reserves the right to alter this course plan. Students should refer to www.salemstate.edu for further information and updates. The course attendance policy stays in effect until there is a university declared critical emergency. In the event of an emergency, please refer to the alternative educational plans for this course which will be sent by email. Students should review plans and gather all required materials before an emergency is declared.

MONDAY, 11 FEBRUARY 2019		
9:00 AM	VIDEO: HHMI BioInteractive: <i>"The Making of the Fittest"</i> Adaptive evolution in action	Slater
11:00 AM	"METAMORPHOSIS IS NOT ALWAYS A NEW BEGINNING: DARWIN AS A MODEL" – Jan Pechenik, Tufts University	Vets
12:30 PM	VIDEO: NOVA Wonders: <i>"What's Living in You?"</i> Discover the microbes living in and on you	Slater
1:45 PM	"FROM THE DEEP SEA TO NEW ENGLAND COASTS: NOVEL MICROBIOME DIVERSITY IN MARINE SYMBIOSES" – Colleen Cavanaugh, Harvard University	Vets
3:05 PM	VIDEO: Netflix Original Documentary: <i>"Chasing Coral"</i> Our changing oceans	Slater

TUESDAY, 12 FEBRUARY 2019		
8:00 AM	VIDEO: PBS: <i>"Lethal Seas"</i> Can we save changing oceans before it's too late?	Slater
9:25 AM	"CLIMATE CHANGE AND OCEAN O₂ CONCENTRATIONS" – Rebecca Robinson, University of RI	Vets
10:50 AM	"NATURAL SOLUTIONS TO MEET THE CHALLENGE OF CLIMATE CHANGE" – William Moomaw, Tufts University	Vets
12:15 PM	VIDEO: PBS: <i>"Sinking Cities: Miami"</i> Preparing a city for climate change	Slater
1:45 PM	WHODUNNIT? THE IMPORTANCE OF FORENSIC SCIENCE IN CRIMINAL INVESTIGATIONS" – Paul Zambella, Forensic Scientist	Vets
3:05 PM	VIDEO: NOVA Science Now: <i>"Can I Eat That?"</i> What science lies behind your favorite foods?	Slater

WEDNESDAY, 13 FEBRUARY 2019		
8:00 AM	VIDEO: BBC: <i>"Nature's Most Amazing Events – The Great Melt"</i> Arctic awakens during spring	Slater
9:25 AM	"CARBON POLLUTION – IT'S TIME TO DEMAND 'WE PUT A PRICE ON IT'" – Robert Bonney	Vets
10:50 AM	VIDEO: NOVA Wonders: <i>"Can We Make Life?"</i> The opportunities and perils of gene editing	Slater
12:15 PM	"SCULPTING THE EVOLUTION OF WILD POPULATIONS" – Kevin Esvelt, MIT	Vets
1:45 PM	"COSMIC EVOLUTION: THE RISE OF COMPLEXITY IN NATURE" – Eric Chaisson, Harvard	Vets
3:00 PM	VIDEO: NOVA: <i>"Life's Greatest Miracle"</i> Trace human development from embryo to newborn	Slater

THURSDAY, 14 FEBRUARY 2019		
8:00 AM	VIDEO: NOVA <i>"Can Alzheimer's be Stopped?"</i> Researchers race to find a cure	Slater
9:25 AM	VIDEO: NOVA <i>"Vaccines - Calling the Shots"</i> The science and the risks of opting out.	Slater
10:50 AM	"CONSUMERISM, DNA, AND HEALTH: PROMISES AND PITFALLS" – Catharine Wang, BU	Vets
12:15 PM	"CHARLES DARWIN'S 'FOOL'S EXPERIMENTS' – LESSONS FROM AN INVETERATE EXPERIMENTISER" – James Costa, Western Carolina University	Vets
1:45 PM	VIDEO: PBS: <i>"The Shape of Life: Explosion of Life"</i> How animals create the diversity of life today	Slater
3:05 PM	"DISCOVERING HOW THE ECOSYSTEM THAT DARWIN NEVER SAW WORKS: STRONG BIOLOGICAL INTERACTIONS AND CLIMATE FORCING IN THE GALAPAGOS ROCKY SUBTIDAL" – Jon Witman, Brown University	Vets

FRIDAY, 15 February 2019		
8:30 AM	VIDEO: <i>"Symbiotic Earth"</i> Lynn Margulis: Life evolves through collaboration, Part 1	Slater
10:50 AM	"GROWING UP CHIMPANZEE: THE DEVELOPMENT OF SEX DIFFERENCES IN WILD CHIMPANZEES" – Zarin Machanda, Tufts University	Vets
12:15 PM	VIDEO: <i>"Symbiotic Earth"</i> Lynn Margulis: Life evolves through collaboration, Part 2	Slater
1:45 PM	"FISH OUT OF WATER: DID OUR ANCESTORS WALK ONTO LAND?" – Stephanie Pierce, Harvard	Vets
3:05 PM	VIDEO: PBS <i>"Your Inner Fish"</i> Tracing our anatomy to the first fish	Slater

Veterans Hall is located on the 2nd floor of the Ellison Campus Center.
Slater Lecture Hall is located on the 4th floor of Meier Hall.

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