SYLLABUS ATM601/CHEM601

ATM601/CHEM601
Carmen N. Moelders, aka Nicole MÃ¶lders
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Thursday 1-2 pm on google hangout or zoom
: Akasofu 309
: +1 907 474 7910
: Online
: Up to three during the semester TBA (mandatory P/F)
: As needed, may substitute phone conferences TBA (mandatory P/F)
: Asking and answering questions once a week (letter grade)
: None
: Graduate standing in STEM fields (physics, chemistry, civil engineering, geological engineering, geography, geophysics, hydrology, technology engineering, mathematics) or permission of instructor

Introduction to Atmospheric Sciences comprises the physical, chemical and dynamical processes of the troposphere. The governing conservation (balance) equations for trace constituents, dry air, water substances, total mass (equation of continuity), energy (1st law of thermodynamics), entropy (2nd law of thermodynamics), ÁÎÄ Í Ï Í ÅÎôÕ Í ¡ . Å×ôÏ Î‰Ó ς Î Ä ÁØÉÏ Í ą ÁÒÅ ÐÒÅÓÅ Î ôÅÄ Á Î Ä ÅØÐÌÁÉ Î ÅÄ‰

Frontal systems, hurricanes, clouds
Chemical processes taking place in the atmosphere
Kinetic, synoptic and dynamic processes
Thermodynamics of reversible and irreversible processes
Photolytical and gas phase oxidation processes, aqueous chemistry, as well as gas-to-particle conversion
Fundamentals of biogeochemical cycle
Origin of the ozone layer
Solar and terrestrial radiation, major absorbers, radiation balance, radiative equilibrium, radiative-convectikTQq0.00000912 0 612 792 reW*nQ EMC /P <MCID 5>BDC 70.58m.169

quizzes and exams. Note that (just) solving the problems at the undergraduate level will not prepare you sufficiently to pass the quizzes and exams at the graduate level.

: There is no difference between the grading of the completeness, correctness, and understanding of quizzes and the exam. I try to balance the interests of chemistry and atmospheric sciences students and the importance of the material taught for their discipline by assigning applications relevant for their discipline as much as possible. Thus, I will occasionally assign ATM601 and CHEM601 students different kind applications, or parts of exams or quizzes. Students can gain extra credit for also doing the tasks not assigned to them. A difference on an application task could be that ATM601 students have to plot the results of a problem for various quantities, while CHEM601 students have to discuss what the results of the problem mean for the chemical distribution in the atmosphere.

This class has a strong online component. Students need a laptop, PC, Mac or tablet with a browser, a UAF email address to access the questionnaires and quizzes, and access to the internet. On the device software to watch mpi videos has to be installed. I expect that you can handle and work with Adobe reader, google forms, google doc, google sheets, and excel. You can download the device software to watch mpi

you choose will be public to the world. If you do not wish to use your real name, we suggest using your university username (your login username for Blackboard or you may choose to use a nickname alias instead). If you are working in WordPress, from the Dashboard edit your profile and set your display name to the nickname of your choice. Contact your instructor directly if you have questions or concerns.
Each unit gets graded. You will have to do your reading, video watching, questionnaire, and problem assignments as posted and/or stated in schedule. Participation in the google group discussions are mandatory and part of your grade. Excused late submissions are approved in advance (prior to the due date) or due to a documented emergency. Such ÄÏÃÕ Í ÅÎÔÁÔÉÏ Î Í ÕÓÔ ÂÅ Í ÁÄÅ É Í Í ÅÄÉÁÔÅÌÙ ÕÐÏ Î ÔÈÅ ÓÔÕÄÅÎÔ¿Ó ÂÅÉÎÇ ÁÂÌÅ Ô Ï ÁÃÃÅÓÓ ÔÈÅ internet. However, unexcused late submissions lead to an on the units you missed. Please understand that this is a college course ; you are expected to submit your assignments on time.
All problems have to be solved in readable style, scanned in and submitted by email with ÃÌÅÁÒ ÉÄÅÎÔÉÆÉÃÁÔÉÏ Î ÏÆ ÔÈÅ ÕÎÉÔ ÎÕ Í ÂÅÒ ÁÎÄ ÙÏÕÒ ÎÁ Í Å¸Ó2ÅÄÄÁÂÌÅ ÓÔÙÌÅ¿ Í ÅÁÎÓ ÅÉÔÈÅÒ ÃÌÅÁÒ hand writing or typed, double-spaced, using at least a 12-point font, one-inch margins, and in hard copy format. Latex is a great software to write equations. If you have not met these stipulations, I will return it to you ungraded. Submission will not be accepted via fax unless you make prior arrangements with me. When programming tasks are assigned the code has to be submitted as part of the assignment, i.e. it is not sufficient to just submit the results. I want to see how you got there. All results of problem tasks will have to be discussed what they mean for the water cycle.

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I encourage teamwork, as teamwork will be the way to work in future work places. Research also showed that students working together typically become better presenters (a goal of this class) and are more successful in class. If you co-work in groups, everybody of the group must submit the work and it has to be stated as group work with a disclosure of the team and a brief summary of the discussion. The latter is to ensure that nobody takes group work as a free ride.

1. No weapons allowed in the final examination or during office hours.
2. Due dates are firm, with the exceptions mentioned above as well as documented emergencies.
3. If you have a disability and require any auxiliary aids, services or accommodations under the Americans with Disabilities Act, please contact me after class, see me in the my office, or call me during the first week of the semester to be able to define specific accommodation needs and have enough time for any necessary preparation. Also

ÄÉÄÎ‰Ô ÆÉÎÄ Á ÓÏÌÕÔÉÏ Î ÉÎ ÔÈÅ &! 1 ÏÒ ÄÉÓÃÕÓÓÉÏ Î ÂÏÁÒÄ‘ ÐÌÅÁÓÅ ÌÅÔ Í Å ËÎÎ Ï×‡) ×ÁÎÔ ÙÏÕ ÔÏ understand the material and that you can apply the material to solve problems. Please use the office hours to seek clarification.

: Students should expect to spend 10-12 hours per week on this class. Students are expected to complete the weekly assignments by their due dates. If circumstances arise that cause you to need extra time on any assignment(s), email your instructor for guidance. Extensions of due dates may be granted, but your instructor expects to be informed in advance if you are not able to submit your assignment on time. (Emergency situations will be dealt with as needed.) Students are expected to maintain a working backup plan to be implemented in the event of a computer malfunction or an interruption of their normal Internet service during the course.

I expect students to submit own original work and reference all other work and intellectual ideas with appropriate reference and citation. As described by UAF, scholastic dishonesty constitutes a violation of the university rules and regulations and is punishable according to the procedures outlined by UAF. Scholastic dishonesty includes, but is not limited to, cheating on an exam, plagiarism, and collusion. Cheating includes providing answers to or taking answers from another student. Plagiarism incÌÕÄÅÓ ÕÓÅ ÏÆ ÁÎ ÏÔÈÅÒ ÁÕÔÈÏ‰Ó ×ÏÒÄÓ ÏÒ ÁÒÇÕ Í ÅÎÔÓ ×ÉÔÈÏÕÔ attribution. Collusion includes unauthorized collaboration with another person in preparing written work for fulfillment of any course requirement. Scholastic dishonesty is punishable by removal from ÔÈÅ ÃÏÕÒÓÅ ÁÎÄ Á ÇÒÁÄÅ ÏÆ Ô&‰• For more information go to Student Code of Conduct.

This class is a success-oriented course. My aim is for all students to meet their individual learning and grade goals. Of course, this does not mean that you can avoid working hard or work hardly. Instead, it means that (1) all students who do well in the assignments, group discussions, and final examination as well as regularly answer peer questions on the discussion board will be rewarded accordingly, and (2) the grade distribution will not be adjusted to make sure it fits a bell-shaped curve. I expect that (1) you aim to give your personal best in the course, and (2) use the peer-questions, questionnaires, quizzes, problems and the final examination as an opportunity to ÄÅ Í ÏÎÔÓÒÁÔÅ ÙÏÕÒ ÕÎÄÒÓÔÁÎÄÉÎÇ ÏÆ ÔÈÅ Í ÁÔÅÒÉÁ‰ 4Ï ÏÂÔÁÉÎ ÁÎ Ó!‚• grade you will need to produce work that far exceeds my normal expectations. My normal expectations are hard work evidence of time spent with the material and an ability to demonstrate knowledge of the material and ability to apply the material.

Grading for this class will follow the UAF guidelines. Your grade will be 10% questionnaires, notes/summary, 30% applications problems, and 40% final exam, 10% participation in group discussions, and 10% quizzes.

4Ï ÇÅÔ Á Ô#ñ• grade, 50% of the points in each category have to be earned. I will give +/- grades with the following UAF rules A 4.0, A- 3.7, B+ 3.3, B 3.0, B- 2.7, C+ 2.3, C 2.0, C- 1.7, D+ 1.3, D 1.0, D- 0.7, and F 0.0, respectively. Thus, 90% and better is an A, 85-89% is A-, 77-84% is B+, 70-76% is B, 64-69% is B-, 57-63% is C+, 50-

This course adheres to the UAF regarding the granting of NB Grades The NB grade is for use

UAF Help Desk: Go to https://www.alaska.edu/oit/ to see about current network outages and technology news. For technical questions, contact the Help Desk at: e-mail at helpdesk@alaska.edu, phone: 450.8300 (in the Fairbanks area) or 1.800.478.8226 (outside of Fairbanks)

Students who have difficulties with oral presentations and/or writing are strongly encouraged to get help from UAF Department of #Ï Í Õ Î É Ã Á Ô É Ï Î ‡Ó Speaking Center (907.474.5470, speak@uaf.edu) and/or UAF %Î Ç Ì É Ó È ‡Ó $Å Ð Á Ò Ô Í Å Î Ô ‡Ó Writing Center(907.474.5314, Gruening 8th floor); #4#‡Ó Learning Center (604 Barnette st, 907.455.2860)

: Since there is only limited capacity for proctoring due to COVID-19, we will discuss at the beginning of the semester how students prefer to take their exams. Students should keep up-to-ÄÁÔÅ Ï Î ÔÈÅ Õ Î É Ö Å Ò Ó É Ô Ù ‡Ó Ð Ï licies, practices, and mandates related to COVID-19 by regularly checking this website: https://sites.google.com/alaska.edu/coronavirus/uaf/uaf-students?authuser=0 &Õ Ò Ô È Å Ò ï ÓÔÕÄÅ Î ÔÓ ÁÒÅ ÅØÐÅÃÔÅÄ Ô Ï ÁÄÈÅÒÅ Ô Ï ÔÈÅ Õ Î É Ö Å Ò Ó É Ô Ù ‡Ó Ð Ï Ì É Ã É Á Ó ï Ð Ò Á Ã Ô É Ã Å Ó ï Á Î Ä mandates and are subject to disciplinary actions if they do not comply.

UA is an AA/EO employer and educational institution and prohibits illegal discrimination against any individual: www.alaska.edu/titleIXcompliance/nondiscrimination.

Goto the class schedule