

2 IØFHØFDMRQ \$NDVRIX

3 KRQHb

' HØYHU P RGH 2 QØQH

3 KRQHFRQIHUQFHVb8 S VR VKUHHG XØQ VKHVHP HMMU7%\$ P DQG DRW3 )

7HDFKIQJ DMLVWQW1 RQH

3 UHTXLVMMV \* UDG XMMVWQGGQJ LQ67( 0 ØHØG VSK VEV FKHP LVM FLYØHQJHQHUQJ  
HQJHQHUQJ JHRJUDSK JHRSK VEV VK G RØJ VFKQRØJ HQJHQHUQJ P DMHP DMFV  
LQMMKF RØJ

&RXUH' HMFUSMRQ ,QMRG R MRQR\$ VP RVSKHUF6F HQF MFRP SULVMVMSK VEDOFK  
G QDP LF ØSURF MMVRI VMSRVSRSKHUH 7KHJRYHUQJQJ FRQMUJDMRQ E DØFH HTXDMF  
F RMMXHQW G UDLUZ DMUJXE VØQF M VRVØP DW HT XMRQRI FRQMQXW HQHU\  
VKHP RG QDP LF VHQMRS\ ØZ RI VKHP RG QDP LF VDQGP RP HQMP 1 HZ VRQEV  
SVMHQMGDQGH SOLQH

6XEMFW\$ GGUVMHG

Ø LØQØØX VØR V KYUE ØHVE ØYØ V





' LIHUHQFHEHVZ HHQ\$70 DQG\$70 &+(0 ,W VRE DDQF WKHLQMUHWRI XQG HJUDG XMM  
DQJJDG XMMWXG BW 7KHUHRUH , ZLODMWJQVSHFDQVW MIRUJUDG XMMWXGHQVVKDVSUREHVKH  
P DMUDDWJQHGDVVKHJUDG XMMOMHO7KHVDP HDSSOHMIRUMHXQG HJUDGXDMOMHO7KLP HDQVVKHUH  
DUHG WADQF QILHUHQF MLQVKHG HUHRI GIQFXOV LQVKHDMWJQP HQWLDFFRUGZ LKVKHGLIHUHQWRDORI  
VKHODUQJ RXVF IR H 7KLP HDQVDP RQJ RVKHUMKQVVKDWRVHUMKHMV HIUDP HRI VKHFOW JUDGXDM  
WXG BW ZLOKDYHDG QMRCQJHDGQJ DQG RUYLG RZ DMFKLQJ DMWJQP HQWVRDFKLYHVKHODUQJ  
RXVF IR HVDVVKHJUDG XMMOMHO ZLOE HUHT XUHGVRG VEXWUHXOVXQG HDJLYHQDVSHFWZ KLOI  
XQG HJUDG XMMWXG BVDUHQRVDMHGVRG RR ZLOE HUHT XUHGVRUHDGDUHMDFK UHMLZ SDSHU  
UHOMDQVVR VKHVRSLFRI VKHUHSHF VHXQW ZLODZ D VE HDWJQHGG IILHUHQWRUDGGVRCQDOKRP HZ RUN  
SURE IE IO† D @

2 V\HUFUXUHURXUFHV\B\ODVH\DD\H\KD\Z\KHQ\W\X\G\B\W\H\Q\U\R\O\Q\X\Q\Y\H\U\L\X\Q\Y\H

\$OSURE IP VKDYHRE HROHGLQUHDG DIEWOI VFDQHGLODGGVXE RWMGE\ HP DLOZ LK FODU  
LG EMZF MRQRI VHXQVXP E HDGG\ RXUCP HÍ5HDG DIEWOI P HDQ/HVMHUFODUKDGGZ UMQJ RU  
WSHG G RE IVDSDF G XLQJ DWDWD IHI

HP DQDV, F DQRWJDQMHHP DQDF FVW

\$QWVG EWLQVHF DVZ HULQRUP HGDE RVMHSRQFLH/DVWHE HJQQQ RI VHFQWDQGLQVH  
V DE X' DQGLVZ RXGE HKQDLVRHYHU RQHHDHVRJLYHRQSHURQDQH FHSVRQ

5HTXLHG7HFKQRQJ\ 6RIVZ DUH 6VXG EWP XWKDYHUHXQUDF FVVRDFRP SXMUDQGVKH, QMLQHVR  
DF FVVRQHP DMUDQVQVLF DMURRP SDJH 6VXG EWHHGDO SVRS 3& 0 DFRUMZEMZ LMKD  
E BZVHUD8\$) HP DQDG GHUVRDF FVWVHT XMRQQDLH/DQGT XJ] HV DQGDFFHVVVR VHLQMLQH2 Q  
VHG MF HRIVZ DUVRZ DMF KPS YLGRVKDVR E HQWQDG, H] S IFVWQV RX FDQKQGGDQZ RUNZ LMK  
\$G E HUDG HJRRJQIRUP V JRRJQIG R JRRJQVHW DQGH FHC

\$ FDGHP LF ,QMUUW + RGRU&RGHDQG3 OJLDULP , H SHF WXXG BMMR VXE PLVRZ QRUIIQDOZ RUNDQG  
UHUHGF HDORMHUZ RUNDGGIQQMDF XDOG BVZ LMK DSSURSUDM UH HUHGFHDGGFVDMRQ \$ VGHMUEHGE  
8 \$) VF IRDMF GVKRQHW F RMMXMM/YRDMRQRI VHXQYHULW UKDMV DGGUHXDMRQ/DGGIV  
SXQLKDE IDF FUBQ VR VHSURF B XHVRXVCHGE\ 8 \$) 6FKRDMF GVKRQHW LQFOXGHV EXWVQRW  
OP LMGVR F KDMQ RQDQH DP SOJLDULP DGGFRDMRQ &KDMQ LQFOXG MSURYLGQJ DQZ HUVVRU  
VNLQJ DQZ HUVIURP DQRMHUMXG B3 OJLDULP LQFOXG MXVHRI DQRMHUXMRE/Z RUGVRUDJXP HQW  
Z LMKRXVMMIE XMRQ &RDMRQLQF XG MXQDXMRUJ HGFROE RDMRQZ LMK DQRMHUSHURQLQSUSDUQJ  
Z UVMQZ RUNIRUIXO@W



( [ SODMRQRI 1 % , : JUDGHV  
7KLVF RUMHDG KUHVRWKH8 \$) UHJUGQJ WKHJUDQMJ RI 1 %\* UDG M7KH1 %JUDGHLVIRUXVHRQO LQ  
VUXDMRQV/LQZ KLF KMKHLQMKF RUKDV1 R%DVLXSRQZ KLFKVR DMJQDJUDGH ,QJHQHJDOMKH1 %JUDGH  
Z LQGRVE HJUDQMG

<RXULQMKF RUIRQZ VVKH8 QLYHJLV RI \$ QMD) DLE DNO, QFRP SOMM\* UDG3RQF í7KHOMMUÍ,Î  
,QF IR SOMM LV/DWP SRDU JUDG HXVHGVR LQG EDMMVKDWMH VVG E MKDVVDM DFVRUO FRP SOMMG & RU  
E MMU WKHP DVUW RI Z RUNLQDF RUMHE XVRUSHURQDOUHVRQVE HROGVMH VVG HQM/FRQVROVFK DV  
VF QHW KHKDVQRVE IHQDE QMR F IR SOMMVKHFRXUHG XIQ VKHUHXDUM-P HMMU1 HJQHJFHU  
LGGILHJGF HUHQRVDF FSNDE HUHVRQVIRUDQÍ,Î JUDG ÎH

6XF FVHXOMP HO F IR SOMRQRI VMLFRXUHG SHGG VRQFRP P LMQJ \ RXUHODHUO DQGP DLQZLQJ \ RXU  
HURVSDRKHVR VXE FLVDMJQP HQVLDVWP HO P DQGHUP D UHXONQIDFXOV LQVDMG: LKGDZ DOURP  
VKHF RUM Z KLF KF QHXONQD: RQ RXUMDQFUSW

,QWKFVRUHSRQVHP H , WHGHJDO VNHVP HDE RVDZ HHNRUVRVR JUDG HZ UMMQDMJQP HQVDVU  
VXE FLVMRQ 7KHUHDHYROQMU T XJ] HVKDVSRYG HP P HG DMIIHG E IN FQDGGVRQVR \ RXUJUDGH  
\ RXZ LQHF HHIHG E DIFRP P HHLVHULQVKHFRP P HQVE IR RUDVDQDMFKP HQV( DFKXQLVKDVD) \$4  
VH FVQDVZ HO

6XSSRUWHUJFHV' RVRVKH6VXG EMV DQG ERNIRUMKQJ VQNHDFDG FIFDG WQJ VVRUJQ QEUU DQG  
DF D FIFVXSSRUWG VDE QV VUJF M FRP SVMQJ DQGVFKQRQJ\ YHMUDQDQGP LQMU VSSRUW  
DFDQ FIFR SOMVMMQDKN VK



## Introduction to Atmospheric Sciences

Number: ATM401

Instructor: Carmen N. Moelders, aka Nicole Mölders

Email: cmoelders@alaska.edu

Office hours: Thursday 1-2 pm on google hangout

Office location: Akasofu 309

Phone: +1 907 474 7910

Delivery mode: Online

Phone conferences: Up to three during the semester TBA (mandatory P/F)

Teaching assistant: None

Prerequisites: Upper class standing in STE

- Solar and terrestrial radiation, radiative equilibrium, radiative-convective equilibrium
- Basics of meteorology
- Satellite remote sensing
- Greenhouse effect
- Ocean circulation
- ... and their influence on general circulation

So, after, all students will be able to

1. ... thinking
2. ...ation (balance) equations for aerosol mass (equation of continuity), energy dynamics, and momentum (Newton's ...)

want to take this class. The application assignments are tailored to the different student groups (ATM401, ATM601, CHEM601). However, in the discussion group the students at both levels are in the same cohort. There might be up to three phone conference during the semester where I will call you to discuss class material.

Suggested Readings/Textbooks: All reading and application assignments are available on Canvas.

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to program

All problems have to be solved in readable style, scanned in and uploaded to the problem sheet.

“Readable style” means either clear 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 ya

equation sheets. Moreover, there will be tasks that are ONLY designed for graduate students and these tasks are indicated as such. These tasks require skills that undergraduate students usually do not have yet (e.g., programming) or that are not an expected learning goal for them right now (e.g. making reasonable assumptions, justify assumption). The undergraduate students will be assigned a task at the undergraduate level to work on at that time.

Required Technology Software: Students must have regular access to a computer and the Internet to access online materials on this classroom page. 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 mp4 videos has to be installed. I expect that you can handle and work with Adobe reader, google forms, google doc, google sheets, and excel. 🟡

All problems have to be solved in readable style, scanned in and submitted by email with clear identification of the unit number and your name. "Readable style" means either clear 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.

yss

It is the student's responsibility to submit the assignments and participate in the discussion group in time. I strongly suggest that you plan and schedule your work and start working on your assignments before they are due. I recommend having backup systems in place so you can have all work completed on schedule. Getting work done on time is a key to early success in your business or scientific career. A major complaint of employers is that faculty do not instill a sense of responsibility in students.

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\ h h d g . # # ] b h f c ! U h a c g ! g W] " W c a a i b ] h m

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G m ` ` UVA (g\$ % p ` = b h f c X i Wh ] c b ` h c ` 5 h a c g d \ Y f ] W ` G W] Y b W

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\ h h d g . # # ] b h f c ! U"hiaLzq"! YgXW] # gWc`a`aU Voi] gh!mU h a ( \$ % #

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### Explanation of NB/I/W grades

This course adheres to the UAF regarding the granting of NB Grades The NB grade is for use only in situations in which the instructor has No Basis upon which to assign a grade. In general, the NB grade will not be granted.

helpful resources, and maximize their distance learning experience. Contact the UAF eCampus Student Services staff at 907.455.2060 or toll free 1.800.277.8060 or contact staff directly – for directory listing see: <https://ecampus.uaf.edu/contact>

UAF Help Desk: Go to <http://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](mailto:helpdesk@alaska.edu), phone: 450.8300 (in the Fairbanks area) or 1.800.478.8226 (outside of Fairbanks)

### Effective communication

Students who have difòculties with oral presentations and/or writing are strongly encouraged to get help from [UAF.Department.of.Comm@com](mailto:UAF.Department.of.Comm@com)

## Unit schedule and form due times

This schedule lists what will be covered by the class and applications, and which units has to be completed in which week. Note that<sup>n</sup>




