Submit original with signatures + 1 copy + electronic copy to Faculty Senate (Box 7500).

See <a href="http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-/">http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-/</a> for a complete description of the rules governing curriculum & course changes.

		LIMIL COUR	SE OR NEW COURSE PROP	
UBMITTED BY Department	Physics		College/School	CNSM
Prepared by	Daniel Solie	;	Phone	474-2616
Email		cka.edp	Faculty Contact	Channon Price
Justify uppe	ESIRED (CHECK O. DENTIFICATION  Tr/lower division  The of credits:	NE):  This development and high school course is rarely This six-credisemesters, allescheduling checkled Lecture: (210 Laboratory is (2820min)/ (21) Han	l student population in rural regions of available. It (5 credits lecture, 1 credit lab) co	well as more adequately meeting the Alaska.  5040 min/ 800min/cr. >5cr. t needs of distance students:
: : :			eriment Session (additional 4 hou up Collaborative Experiment (add	
s. <i>PROPOSEL</i>	COURSE TITL	E:	Bush Physics for th	e 21 <sup>st</sup> Century
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	9. CONTACT HOURS PER W.	EEK: 3.5	hours/weeks	hours /	voek   0	hours /week
	<u> </u>	<u>,</u>	1 Hours/ weeks		veen	
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	minutes in non-science lab=1 credit	t. 2400-4800 minutes	of practicum=1 cred	it. 2400-8000 minut	es of internship=1	credit. This must
	match with the syllabus. See http://	/www.uaf.edu/uafgov/	faculty-senate/curr	culum/course-degre	e-procedures-/guid	lelines-for-computing-
	∠ for more information on number of	of credits.				
	OTHER HOURS (specify type)	9 hrs off-line on	weekly lab exper	iments; 4 hrs in-d	epth experiment:	6 hrs group
		collaborative ex	periment data col	lection	•	•
-	10. COMPLETE CATALOG DES		ing dept., number	r, title, credits, cı	edit distribution	a, cross-listings
	and/or stacking (50 words o	or less if possible):				
	Physics 094: Bush Physics for	the 21st Century (B	P21), 6 credits.			
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	14. PREREQUISITES	Placement in DEVM105 or satisfactory high school Algebra 1 with instructor permission.  Additional prerequisites for High School Students: Must have passed the Alaska High School Exit Exam, and instructor permission based on school official/math teacher
	<u>T</u>	assessment of student's math preparation.  hese will be required before the student is allowed to enroll in the course.
		IONS, CONDITIONS none
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	Has a memo been submitted	d through your dean to the Provost for fee no
	approval?	l I
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	DDPIZATE HICKORY	
	17. PREVIOUS HISTORY  Has the course been offere  Yes/No	ed as special topics or trial course previously?  Yes
	,	DEVS F104 Spring 2002 (Acr 1978), ser 1924a) DEVS F104. Spring 2006 (Acr CRN
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RESTRICTIONS ON ENROLLMENT (if any)

2) Instructor led introduction to experimentation and university lab courses with a more in-depth experiment and report. Lab instructor in the village school also is "scientist in residence" for school while there. 3) GCE- place based collaboration and presentation via distance. -This course uses examples from traditional and modern life in rural Alaska, including 21st-century examples of high-latitude 

Draft Syllabus for Trial Course PHYS 094 Course: Bush Physics in the 21<sup>st</sup> Century (6 credit, distance course including a Laboratory)

D. Solie February 2012

## BUSH PHYSICS FOR THE 21ST CENTURY

# <u>BUSH PHYSICS for the 21<sup>st</sup> Century</u> A Distance Delivery College/High School Physics Course Targeting:

- Alaska Native and Rural Students
  - Small Village Schools
    - Native Cultures



(Photo: M. Parsons)

## 1) Course Information:

Title: Bush Physics for the 21st Century (with Laboratory)

Course Number: PHYS 094 dual credit developmental physics course Late Start-Fall /Spring

2012/13, CRN # (-----)

<u>Credits</u>: 6 (5 credits lecture + 1 credit Laboratory)

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eFAX Number: 907-474-3176 (for assignment submission)

2) Instructor: Dr. Daniel Solie

Office: 101F Harper Bld. (Tel. 907-474-2616)

Email: djsolie@alaska.edu

Office Hours: (101F Harper Bld. /Tel./email /e-Live by arrangement): TBA

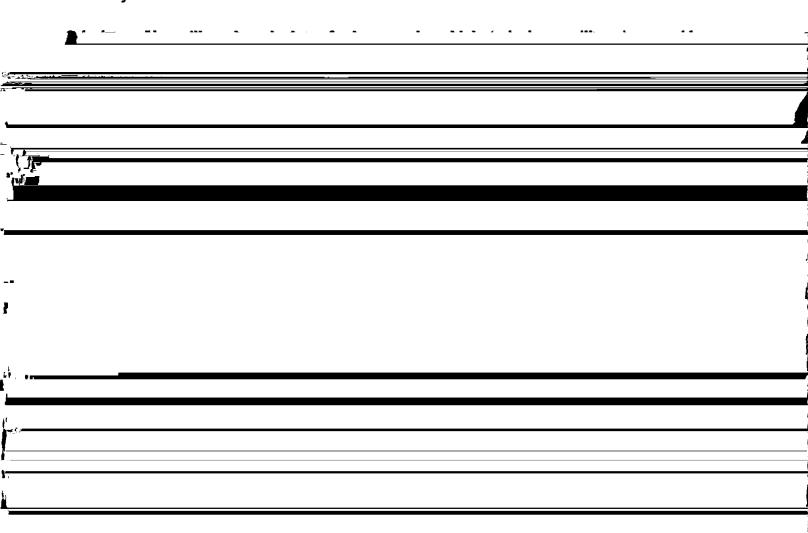
**Laboratory Instructor: TBD** 

Email: TBD

#### 3) Course Materials:

Required Text: Physics A World View, Kirkpatrick/Francis (7<sup>th</sup> edition) Thompson, Brooks/Cole (Pub.)

<u>UAF BlackBoard Site</u>: course readings, instructor notes, class homework assignments, video clips, laboratory exercises and information and web links are available on the course Black Board site.



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experime	ntal study with instruct	tor guidance. In ade	dition, students par	ticipate in a group o	collaborative
_	nt where they make base te with others in the co				e and then
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and lab through written assignments and exams.

2. Demonstrate a scientific understanding of physical experiment using words, mathematical analysis, graphing and excel spreadsheets in lab reports.

analysis and interpretation of experiments)

- 4. Improve collaborative skills.
- 5. Improve presentation skills (orally and in writing).

#### 7) Instructional Methods:

Lecture/Recitation sessions are delivered via video conference, recorded and then posted to the VCS content server. eLive will also be utilized to communicate with students during office hours, or special sessions. Course readings and additional online material are on UAF BlackBoard (BB).

- Weekly homework assignments will average roughly 6-8 problems (17 homework sets total) and are due one week after assignment unless otherwise specified.

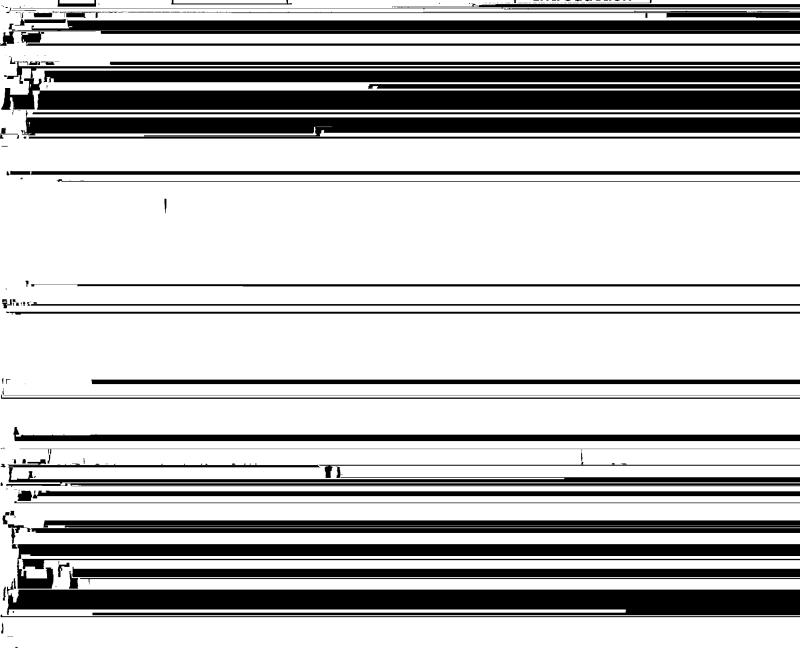
	some short answer. They will cover concents and examples from the text. lecture material, homework
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	problems, and recitation problems. Solutions to exams will be posted on Black Board.
	o <u>DISTANCE STUDENTS</u> : Exams must be taken with a qualified proctor (exams are to be FAXed or scanned & emailed to the instructor. If necessary a hard copy of exams can mailed the instructor.)
	Exam Dates:  1. Exam 1: In Class Thursday 15 November (1 hr. covering Newton's Laws and Mechanics)  2. Exam 2: In Class Thursday 13 December (1½ hr. covering Fall Material—Mechanics and
	Thermodynamics.)
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-	4. Final Exam: In Class Thursday 2 May (2+ hours comprehensive: covers all fall and spring material,)

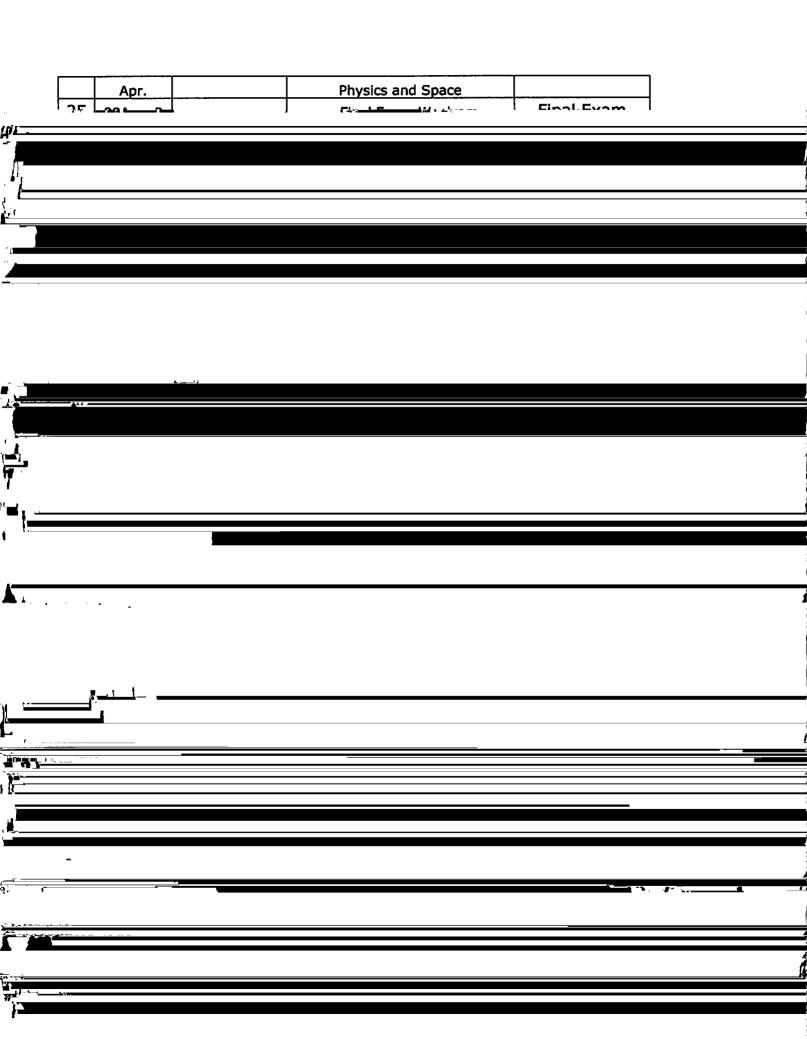
<u>Laboratory:</u> Laboratory skills are crucial to success in science and engineering at the university. To pass this course you must pass the laboratory portion of the course. The Laboratory portion of this course

significant out of class time. Data collection must be done during spring break and will require at least 6-8 hours, or more, spread over several days. Note: If weather or other factors beyond the students control preclude the student from making the necessary measurements, an alternative assignment will be provided.

	8) Course Calendar:				
	Course Schedule (Daily):				
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	Presentation of new concepts	/examples/demonstration	ns	-	
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9	26-29	Ch. 11 & 13	Intro Thermodynamics:	Lab 6: Phase
	Nov		Temperature, Ideal Gas Law	change
			and The First Law	
10	3-5 Dec.	Ch. 13	Thermodynamics Cont.	Exam Review
11	10-13		Review for Exam2	Exam 2
	Dec.			
	17Dec		HOLIDAY BREAK	Holiday Break
	16 Jan			
12	17 Jan.			GCE
				Introduction





a) Weekly Labs (12 (lowest 1 dropped) (10%) b) Experiment Session: (5 %) c) Group Collaborative Experiment (5%)  TOTAL: 100%  11) Support Services: Instructors will work with the student to help them obtain additional tutoring if	
TOTAL: 100%  11) Support Services: Instructors will work with the student to help them obtain additional tutoring if	
11) Support Services: Instructors will work with the student to help them obtain additional tutoring if	
necessary (either local one-on-one, or via distance communication).	
12) Special Needs: The office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. We work	
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to students with disabilities.