

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

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

EXISTING COURSE OR NEW COURSE PROPOSAL



**14. PREREQUISITES**

An Accuplacer College Math score of at least 70 or placement into MATH 200X Calculus I.

These will be required before the student is allowed to enroll in the course.

**15. SPECIAL RESTRICTIONS, CONDITIONS**

**16. PROPOSED COURSE FEES**

\$25

Has a memo been submitted through your dean to the Provost for fee approval?

Yes

Yes/No

**17. PREVIOUS HISTORY**

Has the course been offered as special topics or trial course previously?

NO

Yes/No

If yes, give semester, year,

**18. ESTIMATED IMPACT**

WHAT IMPACT, IF ANY, WILL THIS HAVE ON BUDGET, FACILITIES/SPACE, FACULTY, ETC.

This course will be offered in place of one section of MATH 108, a 3 credit math course. Thus, we have added one credit to the total number of credits DMS must teach each semester, a small addition. However, in the long run, we expect the course to reduce the DMS teaching load by allowing appropriate students to take a single 4-credit course to prepare for MATH 200 Calculus I instead of two courses for a total of 7 credits. This course will require extensive use of a computer lab. As a result, enrollment in the course will be strictly limited to available resources.

**19. LIBRARY COLLECTIONS**

**JUSTIFICATION FOR ACTION REQUESTED**

The purpose of the department and campus-wide curriculum change is to ensure that the quality of UAF education is not lowered as a result of the proposed change. Please justify this in your response. This section needs to be self-explanatory. Use as much space as needed to fully justify the proposed course.

With the present curriculum:

... student who needs to take Calculus I will need to pass both MATH 107X Functions for Calculus (4.0 credits) and MATH 108X Trigonometry (3.0 credits) in order to satisfy the prerequisites for Calculus. Most

... prepared to take Calculus I. This is a significant barrier for students in this program.

... non-trigonometric function.

... MATH 107X has been used by a significant number of students. A recent study found that only a small percentage of students who pass MATH 107X ever attend Calculus I.

... advantage that the material of Calculus I is not covered in MATH 107X. This course can be used as a terminal core math course for the majority of engineering students. The proposed course has higher prerequisite requirements than MATH 107X and MATH 108X, explicitly requiring mastery of the majority of topics. So a student who shows mastery of these topics will be able to take the proposed course.

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ALL SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION TO THE GOVERNANCE OFFICE

	Date	
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Signature, Chair

Faculty Senate Review Committee:

Curriculum Review

GAAC



ADDITIONAL SIGNATURES: (As needed for cross-listing and/or stacking)

	Date	
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	Date	
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Signature, Chair, College/School  
Curriculum Council for:

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	Date	
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Signature, Dean, College/School  
of:

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<http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-/uaf-syllabus-requirements/>

The Faculty Senate curriculum committees will review the syllabus to ensure that each of the items listed below are included. If items are missing or unclear, the proposed course (or changes to it) may be denied.

**SYLLABUS CHECKLIST FOR ALL UAF COURSES**

During the first week of class, instructors will distribute a course syllabus. Although modifications may be made throughout the semester, this document will contain the

following information (as applicable to the discipline):

**1. Course information:**

Title,  number,  credits,  prerequisites,  location,  meeting time  
(make sure that contact hours are in line with credits).

**2. Instructor (and if applicable, Teaching Assistant) information:**

Name,  office location,  office hours,  telephone,  email address.

**3. Course readings/materials:**

Course textbook title,  author,  edition/publisher.

Supplementary readings (indicate whether  required or  recommended) and

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Syllabus

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**Instructor:** Jill Faudree

**Contact Details:** Chapman 301D, jrfaudree@alaska.edu, 474-7385

**Office Hours:** MW 1:00pm-2:00pm, T 12:45pm-1:45pm, and by appointment. Also, you are welcome to drop by.

**Textbook (optional):** *Discrete Math* by M. J. Heule, C. B. Jones, G. J. Long, D. W. Long, J. W. Long, J. W. Long, J. W. Long

properties, and its graphical characterizations. It is also useful for the student to recognize that the structure of this course emphasizes *mastery of all* of the material, since Calculus I students will need to have facility with each of the topics covered.

#### STUDENT LEARNING OUTCOMES:

In the list below the *standard type of function or expression* refers to the list of functions in

the course description: polynomial, rational, exponential, logarithmic, and trigonometric. After completing this course, students will be able to:

- identify and find solutions to equations and inequalities of the standard set of functions.
- simplify expressions of the standard types.
- graph and interpret graphs of the standard functions.
- understand the basic properties of functions generally.
- apply a variety of techniques to find solutions to given equations.
- move between numerical, algebraic, and graphical representations of the standard set of functions with facility.
- apply both the unit circle definition and the triangle definition to evaluate or graph trigonometric functions.

#### INSTRUCTIONAL METHODS:

This is a “hands-on” mathematics class. The four designated lecture hours will consist of short over-view lectures followed by in-class work including quizzes. There is also a one-hour lab session



5. (week 5) Polynomial Functions: quadratics, higher-order polynomials, division of polynomials, zeros of polynomials. 3.1-3.4
6. (week 6) Rational Functions: definition and graphs of rational functions. 3.7; Review. Test I on Chapters 1,2, and 3.
7. (week 7) Exponential and Logarithmic Functions, Part I: definitions and basic properties of exponential and logarithmic functions. 4.1-4.4
8. (week 8) Exponential and Logarithmic Functions, Part II: equations containing exponential and logarithmic expressions. modeling with exponential and logarithmic functions. 4.5-4.6

Note that the final ALOs Objective will consist of a Final Assessment that covers the entire course.

the course. It will be expected that students will be able to apply the knowledge and skills learned in the course.

to: missing an exam, repeatedly failing to take quizzes or to complete Aleks objectives, or having a failing average (below 70%) at the withdrawal date.

ated. It is a violation of the Student Code of Conduct and will be considered a violation of the Student Code of Conduct.

### Aleks

Aleks is a web-based assessment and learning program. It can be directly aligned with a number of precalculus textbooks. An instructor can assign problems from a particular section of the textbook by means of Aleks Objectives. These problems will be similar to those in the text, but not the exact same

lab hour but is completing less than 2 Assignments on the lab hour. If we see a student spend 45

this to the attention of the student and attempt to remedy any problems. If we see a student spend 45

minutes on one particular topic, the TA can address this topic with this student directly in the lab.

The Lab Hour will be mandatory for all students. Students will be allowed two excused absences during the whole of the semester. Any unexcused absences or tardiness in addition to the excused absences will

result in a loss of 5% from their homework average for each absence.

Math 194X Preparation for Calculus  
Spring 2014

Quiz 1: Sections 2.5 and 2.6

Friday 1 February 2014

NAME: \_\_\_\_\_

No calculators, notes, books, or aids of any kind. You must show your work to receive full-credit. This quiz has two questions is worth 20 points.

(1) (10 points) Given the quadratic function  $f(x) = x^2 + 4x + 3$ , find the following:

(a) (5 points) Express the function in standard form.

(b) (5 points) Find its vertex and any  $x$ - or  $y$ -intercepts.

Math 194 Preparation for Calculus  
Spring 2014  
Worksheet: Combining Functions

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Let  $f(x) = \sqrt{x-1}$  and let  $g(x) = x^3 + 2$ .

(a)  $f(g(0))$

(b)  $g(f(0))$

(c)  $g(f(9))$

(d)  $(g + f)(10)$



UNIVERSITY  
of ALASKA

Tom Green <tkgreen@alaska.edu>

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## Math 194X Trial Course

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Jill Faudree <jrfaudree@alaska.edu>

Wed, Sep 25, 2013 at 6:14 AM

To: Tom Green <tkgreen@alaska.edu>

Cc: Jessica Larsen <jflarsen@alaska.edu>, Channon Price <cpprice@alaska.edu>

Hello Tom, Jessica, and Channon...

1) Is the request for the core designation sufficient as justified in the



[Quoted text hidden]

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**Dr. Jill Faudree**  
**Associate Professor of Mathematics**  
**Department of Mathematics and Statistics**  
**University of Alaska Fairbanks**  
**Fairbanks, AK 99775**

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907-474-7385