112-UCCH.
38-GCCH.

(sigs)

FORMAT 2

Submit originals (including syllabus) and one copy and electronic copy to the **Faculty Senate Office**
See http://www.uaf.edu/uafgov/faculty-senate/curriculum/course-degree-procedures-/ for a complete description of the rules governing curriculum & course changes.

CHANGE COURSE (MAJOR) and DROP COURSE PROPOSAL
Attach a syllabus, except if dropping a course.

SUBMITTED BY:

Department	Elementary	**College/School**	School of Education
Prepared by	Jann Laiti/Carol Barnhardt	**Phone**	6447/6457
Email Contact	jmlaiti@alaska.edu cabarnhardt@alaska.edu	**Faculty Contact**	Carol Barnhardt

1. COURSE IDENTIFICATION: As the course now exists.

Dept	ED	**Course #**	478/678	**No. of Credits**	2

COURSE TITLE Math Methods and Curriculum Development

2. ACTION DESIRED: Changes to be made to the existing course.

Change Course [x] **If Change, indicate below what change.** **Drop Course** [ ]

NUMBER		**TITLE**		**DESCRIPTION**	
PREREQUISITES				***FREQUENCY OF OFFERING***	
CREDITS (including credit distribution)		3		***COURSE CLASSIFICATION***	
CROSS-LISTED		**Dept.**		**(Requires approval of both departments and deans involved. Add lines at end of form for such signatures.)**	
STACKED Not a (400/600) new ***Include syllabi.*** stacking.	x	**Dept.**	ED	**Course #**	678
OTHER (please specify)	To take effect summer 2013. Change credit distribution.				

3. COURSE FORMAT

NOTE: Course hours may not be compressed into fewer than three days per credit. Any course compressed into fewer than six weeks must be approved by the college or school's curriculum council and the appropriate Faculty Senate curriculum committee. Furthermore, any core course compressed to less than six weeks must be approved by the core review committee.

COURSE FORMAT: (check all that apply)	[ ]	***1***	[ ]	***2***	[ ]	***3***	[ ]	***4***	[ ]	***5***	[x] ***6 weeks to full semester***
OTHER FORMAT (specify all that apply)											
Mode of delivery (specify lecture, field trips, labs, etc)											

4. COURSE CLASSIFICATIONS: (undergraduate courses only. Use approved criteria found on Page 10 & 17 of the manual. If justification is needed, attach on separate sheet.)

H = Humanities [ ] **S = Social Sciences** [ ]

Will this course be used to fulfill a requirement for the baccalaureate core?	**YES**		**NO**	x

IF YES, check which core requirements it could be used to fulfill:

O = Oral Intensive, Format 6 also submitted		W = Writing Intensive, Format 7 submitted		Natural Science, Format 8 submitted	

5. COURSE REPEATABILITY:

Is this course repeatable for credit?	**YES**		**NO**	x

Justification: Indicate why the course can be repeated (for example, the course follows a different theme each time).	

How many times may the course be repeated for credit?		**TIMES**
If the course can be repeated with variable credit, what is the maximum number of credit hours that may be earned for this course?		**CREDITS**

6. CURRENT CATALOG DESCRIPTION AS IT APPEARS IN THE CATALOG: including dept., number, title and credits SEE NEXT PAGE FOR F678.

ED F478 Math Methods and Curriculum Development

2 Credits
Offered Fall

Study and application in the classroom of best practices from research-based strategies for the teaching and learning of mathematical concepts, content and methods for students in elementary classrooms with diverse populations. Requires development and classroom implementation of mathematics unit. Concurrent internship required. Prerequisites: Admission to Internship Year. Stacked with ED F678. (2+0)

7. COMPLETE CATALOG DESCRIPTION AS IT WILL APPEAR WITH THESE CHANGES: (Underline new wording ~~strike-through old wording~~ and use complete catalog format including dept., number, title, credits and cross-listed and stacked.) PLEASE SUBMIT NEW COURSE SYLLABUS. For stacked courses the syllabus must clearly indicate differences in required work and evaluation for students at different levels. SEE NEXT PAGE FOR F678

ED F478 Math Methods and Curriculum Development

~~2~~ 3 Credits
Offered Fall

Study and application in the classroom of best practices from research-based strategies for the teaching and learning of mathematical concepts, content and methods for students in elementary classrooms with diverse populations. Requires development and classroom implementation of mathematics unit. Concurrent internship required. Prerequisites: Admission to Internship Year. Stacked with ED F678. (2+0+~~1~~ 3) (2+0+3)

8. IS THIS COURSE CURRENTLY CROSS-LISTED?

YES/NO	No	If Yes, DEPT		NUMBER	

(Requires written notification of each department and dean involved. Attach a copy of written notification.)

9. GRADING SYSTEM: Specify only one

LETTER:	x	**PASS/FAIL:**	

F678
Course
descriptions.

O = Oral Intensive, Format 6 also submitted ☐ W = Writing Intensive, Format 7 submitted ☐ Natural Science, Format 8 submitted ☐

5. COURSE REPEATABILITY:

Is this course repeatable for credit?	**YES** ☐	**NO** x	
Justification: Indicate why the course can be repeated (for example, the course follows a different theme each time).			
How many times may the course be repeated for credit?	☐ **TIMES**		
If the course can be repeated with variable credit, what is the maximum number of credit hours that may be earned for this course?	☐ **CREDITS**		

6. CURRENT CATALOG DESCRIPTION AS IT APPEARS IN THE CATALOG: Including dept., number, title and credits

ED F678 Mathematics Methods and Curriculum Development

2 Credits
Offered Fall

Study and application in the classroom of best practices from research-based strategies for the teaching and learning of mathematical concepts, content and methods for students in elementary classrooms with diverse populations. Requires development and classroom implementation of mathematics unit. Concurrent internship required. Prerequisites: Admission to the post-baccalaureate elementary licensure program; graduate standing; or permission of instructor. Stacked with ED F478. (2+0)

7. COMPLETE CATALOG DESCRIPTION AS IT WILL APPEAR WITH THESE CHANGES: (Underline new wording ~~strike-through old wording~~ and use complete catalog format including dept., number, title, credits and cross-listed and stacked.) PLEASE SUBMIT NEW COURSE SYLLABUS. For stacked courses the syllabus must clearly indicate differences in required work and evaluation for students at different levels.

ED F678 Mathematics Methods and Curriculum Development

~~2~~ 3 Credits
Offered Fall

Study and application in the classroom of best practices from research-based strategies for the teaching and learning of mathematical concepts, content and methods for students in elementary classrooms with diverse populations. Requires development and classroom implementation of mathematics unit. Concurrent internship required. Prerequisites: Admission to the post-baccalaureate elementary licensure program; graduate standing; or permission of instructor. Stacked with ED F478. (2.0+0+~~1.0~~ 3) (2+0+3)

Comment [SE1]: Same as for 478?

8. IS THIS COURSE CURRENTLY CROSS-LISTED?

YES/NO No If Yes, DEPT ☐ NUMBER ☐

(Requires written notification of each department and dean involved. Attach a copy of written notification.)

10. ESTIMATED IMPACT

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

No impact.

11. LIBRARY COLLECTIONS

Have you contacted the library collection development officer (kljensen@alaska.edu, 474-6695) with regard to the adequacy of library/media collections, equipment, and services available for the proposed course? If so, give date of contact and resolution. If not, explain why not.

No	x	Yes		No change.

12. IMPACTS ON PROGRAMS/DEPTS:

What programs/departments will be affected by this proposed action?

Include information on the Programs/Departments contacted (e.g., email, memo)

None other than the School of Education.

13. POSITIVE AND NEGATIVE IMPACTS

Please specify positive and negative impacts on other courses, programs and departments resulting from the proposed action.

None.

JUSTIFICATION FOR ACTION REQUESTED

The purpose of the department and campus-wide curriculum committees is to scrutinize course change and new course applications to make sure that the quality of UAF education is not lowered as a result of the proposed change. Please address this in your response. This section needs to be self-explanatory. If you ask for a change in # of credits, explain why; are you increasing the amount of material covered in the class? If you drop a prerequisite, is it because the material is covered elsewhere? If course is changing to stacked (400/600), explain higher level of effort and performance required on part of students earning graduate credit. Use as much space as needed to fully justify the proposed change and explain what has been done to ensure that the quality of the course is not compromised as a result.

Teacher education programs are under a great deal of scrutiny to assure policy makers and the general public that future elementary teachers have sufficient content knowledge and skills in the areas in which they have teaching responsibilities and that they have clearly defined coursework to assure that they also have opportunities to acquire the methods needed to successfully teach and develop meaningful curriculum in multiple content areas.

UAF elementary teacher education interns (i.e., students in their senior year of the BA in Elementary Education degree and elementary post-baccalaureate students completing their year-long internship) currently DO have these opportunities and requirements but this has not been accurately reflected in the current distribution of credits during their internship year. As an artifact of the process of development of the original BAE degree, the number of hours that interns spend in their elementary classroom placements and in their university methods and curriculum development courses has never been accurately reflected in the course credit allocations.

It is important that we correct these inaccuracies now for the following reasons:

1. *External agencies (political entities and accreditation groups) now want more specific evidence that elementary teacher education students have dedicated coursework and internship requirements to prepare them to teach Reading, Writing, Math, Science, PE/Health and the Arts. This evidence needs to be reflected more directly and more accurately on our program requirements than it has been. Some of the work currently completed by students as part of ED 468 (a 6 credit course currently co-taught by 4 instructors) is being distributed to other courses so that the content of the courses is more clearly evident to reviewers.*

To be eligible for the newly created Alaska Performance Scholarship, university students must be enrolled in 30 credits per academic year. The intern year requirements in the current BA in Elementary Education degree include only 26 credits. These 26 credits are not an accurate representation of the amount of coursework and

fieldwork that students actually complete.

APPROVALS: (Additional signature blocks may be added as necessary.)

Carol Barnhardt	Date	2/17/12
Signature, Chair, Program/Department of: Elementary Education	**Carol Barnhart**	
	Date	2/17/12
Signature, Chair, College/School Curriculum Council for: Education		
Allan Morotti CB	Date	2/17/12
Signature, Dean, College/School of: Education	**Allan Morotti, Interim Dean**	
	Date	
Signature of Provost (if applicable)		

Offerings above the level of approved programs must be approved in advance by the Provost.

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

	Date
Signature, Chair, UAF Faculty Senate Curriculum Review Committee	

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

	Date
Signature, Chair, Program/Department of:	
	Date
Signature, Chair, College/School Curriculum Council for:	

		Date	
Signature, Dean, College/School of:			

F678 Syllabus also attached.

ED 478: Elementary Mathematics Methods (2 credits)
3 credits (2.0 + 0.0 + 1.0)

This is a course that has both lecture (i.e., university course time) and internship (i.e., elementary classroom time) requirements. Specific times for university course meeting times and elementary classroom internship times are included on the year-long internship calendar that is distributed each August by the UAF Department of Elementary Teacher Education.

Time and Place:	1-4 p.m. in 150 OUP on these dates: 8/24, 9/7, 9/14, 9/28, 10/12, 10/19. In addition, the week of 9/17 to 9/21 is a week of mathematics teaching in your internship placement and the elementary education seminar on 9/10 from 4:30-6 p.m. will focus on the week of mathematics teaching.
Instructor:	Dr. Anthony Rickard 102 Chapman adrickard@alaska.edu Office hours by appointment.
Course Materials:	*About Teaching Mathematics* (2007; 3rd edition) by Marilyn Burns; additional readings and materials will be used and/or distributed in class, including the *Content and Performance Standards for Alaska Students* (2005), the NCTM *Principles and Standards for School Mathematics* (2000), and excerpts from *Implementing Standards-Based Mathematics Instruction: A Casebook for Professional Development* (2000). NOTE: Bring a copy of your school math text or other math curriculum resource to each class along with your laptop computer for web access and work time.

You are entering the teaching profession at an exciting and challenging time. While K-12 education is more important than ever, public schools are confronted with serious questions about what students should learn, how students, schools, and teachers should be held accountable for achieving specific learning outcomes, and how schools and teachers should meet the needs of all students who come from widely varying communities, backgrounds, and cultures. We will study how to use national and state standards as a guide to teaching and learning K-8 mathematics and about how such standards serve multiple purposes for planning, assessment, and accountability. We will also connect the methods, materials, and manipulatives we will learn about for teaching K-8 mathematics to strategies for meeting the needs of diverse students. Your work in this course is intended to help you develop as a teacher of K-8 mathematics and produce assignments, lessons, and a year-long grade-level mathematics curriculum plan for your internship to demonstrate how you will implement effective mathematics instruction in your

classroom. All four of the assignments you complete for ED 478 may be used in your professional portfolio.

Course Requirements

You will be required to complete four written assignments for ED 478. Each assignment will be evaluated using a rubric that is provided in this syllabus. The four written assignments are described chronologically below and will also be discussed in detail in class:

- Assignment 1 (lesson plan): In consultation with your mentor teacher, select one of the activities from Burns (2007) to teach in your classroom. Decide with your mentor teacher if you will teach the lesson to the whole class or to a small group of students. Plan for teaching the activity carefully, being sure to think through classroom organization and management issues, as well as what materials and assessment will be needed, and how you will modify the activity to meet the needs of your students. You should follow the lesson plan format discussed in the Internship Year Handbook, using the IES format discussed in Burns for your procedure. After teaching the lesson, analyze what happened using the Mathematical Tasks Framework. Your lesson plan and analysis combined should be 3-4 pages in length. Remember that you are adapting a Burns (2007) lesson, not creating an original lesson!

- Assignment 2 (week of math teaching): You will develop a full week of detailed mathematics instruction and a professional reflection as a key assignment for ED 478; your liaison and mentor teachers will provide you with input and evaluation on how you teach these lessons in your internship classroom. Your lesson plans for the week of math teaching should follow the format discussed in the Internship Year Handbook, using the IES format discussed in Burns (2007) for your procedure; a total of five lesson plans are expected for the week of math teaching plus a summative assessment for the entire week. The reflection at the end of the week of math teaching is summative and is in addition to the reflection for each specific lesson plan and should be based on your entire week of math teaching from 9/17 to 9/21. Your daily reflections for your individual lessons should follow the Mathematical Tasks Framework, describing (a) the cognitive level at which your lesson task(s) are intended to engage students, (b) how you set up the task(s) for your students, (c) how your students engaged with the task(s), and (d) what learning occurred and your evidence for this (the MTF will be discussed in detail in class). Your summative reflection for the entire week of mathematics teaching should address the following: (a) How your own conceptions about teaching and learning K-8 mathematics have (not) changed and explain why (not); (b) identify and explain issues you feel present special challenges to implementing the Alaska and/or NCTM standards (e.g., teacher knowledge, curriculum materials, professional support); and, (c) identify 1-2 areas for your own future professional development to continue to develop and refine your teaching of K-8 mathematics (e.g., leading classroom discussions about mathematics, your own knowledge of mathematics). When you hand in this assignment, you should also include copies of any handouts or other materials you use. The write up

of your reflection should be 1-2 pages in length and each lesson plan should be 1-2 pages in length. You should also include copies of samples of your students' work for at least one of the five lessons with your comments; three samples, representing not meeting, meeting, and exceeding expectations, should be provided that include your feedback to the student (students' names should be blanked out for confidentiality).

- Assignment 3 (textbook/resource analysis): You will provide an analysis of how the major curriculum resource for mathematics you are using in your internship placement (e.g., textbook) addresses the six different content strands for school mathematics, as defined by the *Content and Performance Standards for Alaska Students* (2005): Numeration, Measurement, Estimation and Computation, Functions and Relationships, Geometry, and Statistics and Probability. If you are interning in grades K-2, you may need to go to the website for the Alaska Department of Education and Early Development (http://www.eed.state.ak.us/) and download the K-2 Alaska mathematics standards (all other grade levels are included in the 2005 bound volume published by the Alaska State Board of Education, and all are available on the DEED website). For each of the six content strands, provide your assessment of how it is addressed by the text, including two sample problems to support your claim. After your analysis of each of the six content strands, you should also identify the predominant kinds of problems in your major curriculum resource using the Task Analysis Guide and describe if/how you would supplement your major curriculum resource in your own class. Your final write up should be about 5-6 pages in length.

- Assignment 4 (year-long math plan): You will develop a comprehensive mathematics curriculum plan for the entire school year for the grade level at which you are interning. The plan will be organized chronologically for the entire year to show, for each of the 36 weeks of the school year, how you would address Alaska Content Standard A for your grade. Specifically, you will document how you will use your text and/or other curriculum resource(s) to address Alaska Content Standard A by showing how 12 different Performance Standards of your choice are met (this will be done in 1-2 sentences with two accompanying example problems from one of the resources). Your year-long curriculum plan should provide 1-2 sentences for each week describing what you would teach, including page references from your curriculum resource; in addition, for 12 of the weeks, you will also provide the aforementioned explanation of how the six Performance Standards is addressed. Your final write up should be 12-15 pages in length.

NOTE: All assignments should be provided to the instructor in hardcopy form. If you choose to email an assignment to the instructor by attachment, you will receive only a completed rubric back (i.e., it is not the instructor's responsibility to print your assignments for you).

Lesson Plan Format

As a reminder, your lesson plans for ED 478 should follow the format described in the Internship Year Handbook and include the following components:

- Objective(s)
- Alaska Performance Standard and Grade Level Expectation (NOTE: PSs and GLEs should be written out completely)
- Materials or Resources
- Estimated Duration
- Procedures (this will follow the IES format discussed in Burns)
- Assessment
- Differentiation
- Professional Self-Reflection

Grading Distribution

Lesson plan based on Burns activity:	50	pts.
Analysis of text and/or curriculum resource:	50	pts.
Professional reflection (with lesson plans):	120	pts.
Comprehensive mathematics curriculum plan:	120	pts.
Total Points:	340	pts.

Grading Policy

306 – 340 points:	A
272 – 305 points:	B
238 – 271 points:	C
204 – 237 points:	D
203 points or less:	F

Attendance Policy

Attendance will be taken at the beginning of each class meeting. You are encouraged to attend all course meetings. If you need to miss a class, contact me immediately. Assignments due when you are absent should be turned in prior to the due date or, if that is not possible, you will need to document an emergency or extenuating circumstances beyond your control or the assignment will not be accepted.

Collecting Samples of Students' Work

When you teach mathematics for ED 478 (scheduled for the week of 9/17-9/21), you will be required to collect samples of your students' work. The samples of students' work should protect the identity of all students, should only be collected with permission of students' parents, and should represent a range of student achievement, (i.e., advanced, proficient, and nonproficient levels). The samples of students' work should be used to document the impact of your planning and teaching mathematics with your students;

these materials will also provide data that will be used to evaluate the effectiveness of and guide improvements in the UAF Elementary Education Program.

Manipulatives for Teaching Mathematics

Throughout ED 478 we will routinely use mathematics manipulatives in class and investigate how to use them most effectively in your K-8 mathematics teaching. Manipulatives we will use include Cuisenaire rods, geoboards, square tiles, pattern blocks, base 10 blocks, dice, algebra tiles, among others.

Course Calendar

8/24: Introductions, overview of course, review of syllabus. Discuss the Mathematical Tasks Framework, complete activities, discuss Burns and IES format, discuss first assignment due next week.

9/7: Review Mathematical Tasks Framework, go over Burns activities (i.e., contrast different teaching methods used in activities and connect to constructivism and standards-based mathematics teaching), and discuss and hand in first assignment. Discuss week of mathematics teaching and draft lessons due next week. **First assignment due**.

9/10: Elementary education seminar at North Pole Elementary 4:30-6 p.m.. Bring your textbook and/or other planning materials for mathematics so that you and your mentor can plan what you will be teaching for the week of math teaching.

9/14: Discuss the *Content and Performance Standards for Alaska Students* (2005) for mathematics and the NCTM *Principles and Standards for School Mathematics* (2000). Discuss the week of mathematics teaching assignment and hand in draft lessons approved by mentor teacher. Discuss use of manipulatives, including various activities, and use of manipulatives as teaching tools for mathematics. NOTE: Five draft lessons need not include daily reflections nor summative reflection; however, all five lessons should be approved by mentor teacher. **Draft of second assignment due**.

9/17 – 9/21: Teaching mathematics for full week in internship placement. No class meeting this week. NOTE: Your work teaching mathematics, including lesson plans, assessments, and samples of students' work, should form the basis for your reflection (see rubric).

9/28: Hand in final version of lesson plans for week of math teaching, including daily reflections and summative reflection. Clarify and discuss the third assignment on textbook/resource analysis. Various activities to illustrate methods for teaching measurement, algebra and algebraic thinking, geometry, number and operations, and probability and statistics. **Final version of second assignment (week of mathematics teaching) due**.

10/12: Hand in third assignment and discuss teaching mathematics for conceptual and procedural understanding, linking teaching and assessment, and use of curriculum resources. Discuss the Math in a Cultural Context (MCC) curriculum. **Third assignment due**.

10/19: Discuss assessment. Go over additional activities from Burns, MCC curriculum and multicultural education and Alaska Cultural Standards.

Final wrap-up discussion. **Fourth assignment due by 10/29 in instructor's mailbox at 101 Chapman on UAF campus.**

First Assignment: Rubric for lesson plan to teach an activity from Burns (2007) and analysis of lesson using the Mathematical Tasks Framework.

Standard	Does not meet Standard	Meets Standard	Exceeds Standard
2-1 Apply knowledge of developmental abilities of students when assessing student work and make appropriate revisions to instruction based on the demonstrated ability and knowledge level of students			
5-1 Recognize the differences in cultural and linguistic backgrounds of students and demonstrate the ability to build upon the diversity within the classroom in their teaching responsibilities (e.g., lesson and unit development, assignments, assessments, classroom structure and management)			
6-4 Make plans ahead of time (for short term and long term lessons, projects, units, activities, etc.).			

Second Assignment: Rubric for week of math teaching and reflection on teaching (with a brief professional development plan), including five lesson plans (prior approval by mentor teacher required and documented with a signature), summative assessment, copies of handouts provided (with pages from text also provided and/or cited), and summative reflection on entire week of math teaching; samples of students' work should also be included from one of the lessons (three required, with intern's comments/feedback, representing below, at, and above, expectations). Also submit copy of mentor's feedback for the week of math teaching.

Standard	Does not meet Standard	Meets Standard	Exceeds Standard
2-3 Differentiate instruction in the context of a variety of teaching activities to adequately meet the needs of students with different learning styles.			
3-1 Develop and teach a variety of units or lessons that meaningfully incorporate characteristics of the student's and local community culture into instructional strategies that support student learning.			
4-1 Develop and teach a series of lessons (e.g. unit) in each major content area as defined by ACEI that demonstrates knowledge of the content (i.e., reflects accurate information in the subject area), knowledge of central concepts (i.e., focuses on an important area of the subject that is recognized as valuable to teach) knowledge of tools of inquiry (i.e., reflects "best practice" approaches to teaching that subject area).			
4-6 Provide evidence of on-going professional development and a commitment lifelong learning.			
6-2 Prepare a plan for the physical organization/environment of a classroom that provides evidence of understanding of the need to appropriately accommodate the physical, social, and emotional needs of all children.			
8-3 Recognize that self-reflection is one of the key components of the lifelong process of becoming a better teacher and demonstrate a capacity to engage in thoughtful self-reflection.			

Third Assignment: Rubric for analysis of how text/resource(s) for mathematics addresses the six Alaska content strands (Numeration, Measurement, Estimation and Computation, Functions and Relationships, Geometry, and Statistics and Probability) for mathematics, including two sample problems for each content strand to support your claim and an overall assessment of the predominant kinds of problems included throughout the curriculum resource using the Task Analysis Guide.

Standard	Does not meet Standard	Meets Standard	Exceeds Standard
2-2 Differentiate instruction in the context of a variety of teaching activities to adequately meet the needs of students from multiple developmental levels.			
5-2 Develop and use instructional plans (e.g., lessons, units, projects) that are directly aligned with the district's and state's standards and curriculum.			
5-3 Supplement teacher's manuals and textbooks with both modified and original instructional resources and teaching strategies that are relevant to the lives of his/her students and meaningful in the real-world contexts of students' communities.			

Fourth Assignment: Rubric for year-long mathematics curriculum plan, providing 1-2 sentence outline for each of the 36 weeks of the school year for teaching mathematics (also providing page references from major curriculum resource), plus, for ten weeks, showing how a different performance standard for Content Standard A is addressed with a sample problem to support your claim.

Standard	Does not meet Standard	Meets Standard	Exceeds Standard
4-2 Apply knowledge of developmental abilities of students when assessing student work and make appropriate revisions to instruction based on the demonstrated ability and knowledge level of students			
4-3 Use a variety of instructional strategies, and when appropriate, uses technology to support instruction in the content areas (uses technology to promote inquiry and collaboration).			
4-4 Help students make connections within and across disciplines.			
4-5 Connect content in a teaching activity to students' prior knowledge and to practical "real-life" situations encountered outside the school (especially in the students' community).			
5-1 Recognize the differences in cultural and linguistic backgrounds of students and demonstrate the ability to build upon the diversity within the classroom in their teaching responsibilities (e.g., lesson and unit development, assignments, assessments, classroom structure and management)			
5-4 Select instructional resources that directly support students in their ability to develop proficiency in the state's performance standards.			

ED 678: Mathematics Methods and Curriculum Development
3 credits (2.0 + 0.0 + 1.0)

This is a course that has both lecture (i.e., university course time) and internship (i.e., elementary classroom time) requirements. Specific times for university course meeting times and elementary classroom internship times are included on the year-long internship calendar that is distributed each August by the UAF Department of Elementary Teacher Education.

Time and Place:	1-4 p.m. in 150 OUP on these dates: 8/24, 9/7, 9/14, 9/28, 10/12, 10/19. In addition, the week of 9/17 to 9/21 is a week of mathematics teaching in your internship placement and 4:30-6 p.m. on 9/10 is the elementary education seminar that will focus on planning and preparing for the week of math teaching.
Instructor:	Dr. Anthony Rickard 102 Chapman adrickard@alaska.edu Office hours by appointment.
Course Materials:	*Content and Performance Standards for Alaska Students* (2005), available from the Alaska Department of Education and Early Development website: http://www.eed.state.ak.us/ Also required as a reading for ED 678 will be a journal articles by Legaspi and Rickard (2005) and Rickard (2005).
Course Requirements:	ED 678: Mathematics Methods and Curriculum Development is a required course in the Post-Baccalaureate program for elementary education. ED 678 is "stacked" with ED 478, which means all of the requirements for ED 478 must be successfully completed in order to successfully complete ED 678. In addition to all the requirements for ED 478, interns enrolled in ED 678 will be required to complete a year-long multicultural connections project to accompany their year-long mathematics curriculum project developed for ED 478. The year-long multicultural connections project format will be discussed in detail in class. The multicultural connections project will entail outlining a meaningful connection between mathematics and multicultural elements ("multicultural elements" will be defined in our reading and class discussions) for each month of mathematics instruction in your year-long mathematics curriculum project for ED 478.
Course Policies:	ED 678 course policies are the same as for ED 478 (see the ED 478 syllabus).
Final Evaluation:	Final evaluation of your ED 678 multicultural connections project will be conducted using the same rubric included in the ED 478 syllabus for the year-long mathematics curriculum project. One evaluation will be completed (i.e., one rubric) with your

mathematics curriculum project weighted 75% and the multicultural connections project weighted 25%.