

MESABI RANGE COMMUNITY & TECHNICAL COLLEGE

Course Outline

Course Title: Assisting with Math & Science	Submitted By: Dawn Olson
Semester Course Prefix and Number: TAIA 2212	Approval Date:
Old Quarter Course Prefix and Number: EDAS 2212	Revision Date: October 2009
Number of Credits: 3	Number of Lecture Credits: 3
Semester(s) Offered: Spring	Number of Lab Credits:
	Number of Studio/Demonstration/Internship Credits:
Class Size: 35	
Negotiated by AASC on:	
(date)	

Course Purpose Code:

- 0 – Developmental Courses
- 1 – Non-transferable
- 2 – Technical course related to career programs
- 3 – College course which has the primary goal of applying certain concepts (e.g. vocal ensemble)
- 4 – Other college course not considered a part of MNTC (e.g. computer science, health, physical education)
- 5 – Course which is intended to fulfill the Minnesota Transfer Curriculum (MNTC) requirements or intended for transfer.
- 9 – Continuing Education/Customized Training specialized credit course (not occurring in 0-5)

Catalog Description:

This course will provide students with the basic understanding of teaching methods used in the areas of math and science.

Prerequisites and/or recommended entry skills/knowledge:

Course Prerequisite(s):

Reading Prerequisite:

Composition Prerequisite:

Mathematics Prerequisite:

Career Programs and Transfer Majors Accessing this Course:

Human service professionals, Early Childhood and Elementary Educators, Parent Educators, Paraprofessionals, and Child Care Providers

Minnesota Transfer Curriculum Goal(s) partially met by this course if applicable:

(Notes: No more than two goals may be met by any one course. Curriculum Committee review and the Chief Academic Officer's approval are required.)

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| 0. <input type="checkbox"/> None | 6. <input type="checkbox"/> The Humanities and Fine Arts |
| 1. <input type="checkbox"/> Communications | 7. <input type="checkbox"/> Human Diversity |
| 2. <input type="checkbox"/> Critical Thinking | 8. <input type="checkbox"/> Global Perspectives |
| 3. <input type="checkbox"/> Natural Sciences | 9. <input type="checkbox"/> Ethical and Civic Responsibility |
| 4. <input type="checkbox"/> Mathematical/Logical Reasoning | 10. <input type="checkbox"/> People and the Environment |
| 5. <input type="checkbox"/> History and the Social and Behavioral Sciences | |

Learning Outcomes: (including any relevant competencies listed in the Minnesota Transfer Curriculum)

Upon completion of this course, the student will be able to:

- Compare the following three methods of teaching mathematics and list the advantages of each: algorithms, inquiry-based, and constructivist approach (guided discovery)
- Define the following terms: place value, base-ten number system, whole, ordinal, and cardinal numbers
- Define the meanings and describe the order of operation and how they relate to one another for addition, subtraction, multiplication, and division
- Create three math lessons
- Demonstrate inquiry-oriented science instruction
- Create three inquiry oriented science lessons

Student Assessment Methods:

Examinations
Lesson Plans
Demonstration

Use of Instructional Technology: (includes software, interactive video and other instructional technologies):
D2L Instructional Format
Power Point

Outline or Statement of Major Course Content:

- Algorithm, Inquiry-Based, and Constructivist approaches to teaching mathematics
- Understanding, representing, and showing relationships among numbers
- What is the meaning of the order of operations?
- Developing fluency: conceptual understanding and computational proficiency of addition, subtraction, multiplication, and division
- Using literature to teach mathematics
- Creating a math lesson plan
- Using Inquiry-oriented science instruction
- Developing and restructuring knowledge schemes
- Using a variety of resource including technology to enrich inquiry-oriented teaching
- Creating a science lesson plan

Additional Special Information: (special fees, directives on hazardous materials, etc.)

Transfer Information: (Please list colleges/majors that accept this course in transfer.)

Approvals:

Body	Representative Signatures	Date
Curriculum Committee		
Faculty Association		
Academic Affairs Standards Committee		
Chief Academic Officer		

Distribution: Original – Administrative Office
Copies: Curriculum Committee Chair, AASC Chair, Transfer Specialist, Originating Faculty Member, Scheduler, Records
Revised: May 2009