

**Class Name Strategizing for Numeracy in  
Middle School 3 credits**
**Prerequisite(s): Practicing Teacher or  
pre-service teacher with permission**

Class Information		Instructor Information		Important Dates	
<b>Days:</b>	Wednesday	<b>Instructor:</b>	Sessional: Sandra Martin	<b>First day of classes:</b>	Winter, 2018
<b>Time:</b>	5:00-8:00 pm	<b>Email:</b>		<b>Last day to add/drop, or change to audit:</b>	
<b>Room:</b>		<b>Phone:</b>		<b>Last day to request revised exam:</b>	
<b>Lab/ Tutorial:</b>		<b>Office:</b>		<b>Last day to withdraw from course:</b>	
<b>Office Hours:</b>	As arranged	<b>Office Hours:</b>		<b>Last day to apply for coursework extension:</b>	
<b>Final Exam:</b>	None			<b>Last day of classes:</b>	

**Course Description**

An examination of numeracy pedagogy connecting research to present day instruction for middle school educators. Students will build personal and common understandings of how adolescents engage in numeracy through a critical thinking lens. Instruction will build upon a model of co-construction which will culminate in students' application of higher order thinking in numeracy for use in their classrooms. Topics include understanding the progression of the math curriculum and application in number sense, problem-solving, mathematical relationships, geometrical thinking, differentiation and assessment.

**Expected Learning Outcomes**

By the end of the course, students will:

- Design mathematical tasks that comprehensively align the Middle years Alberta Math Program of Studies in a meaningful, measurable, differentiated and constructive manner.
- Develop and sequence abstract reasoning and numeracy practices that promote higher order problem solving skills.
- Construct meaningful tasks that support formative assessment practices and growth mindset in numeracy.
- Interpret curriculum outcomes to connect with formal reporting.
- Create a comprehensive numeracy plan.

**Textbooks**

**Boaler, Jo. (2016). Mathematical Mindsets: Unleashing Students' Potential through Creative Math, Inspiring Messages and Innovative Teaching. San Francisco: Jossey-Bass.**

**Course Schedule:**

Weekly topics will integrate mathematical processes of communication, connections, mental math, estimation, problem-solving, reasoning technology and visualization will be integrated with the key concepts of Number, Patterns and Relations, Shape and Space and Statistics and Probability as appropriate. Each class will begin with students sharing current numeracy practices that they are trying out in their classrooms; these conversations will also inform the task design assignment. Students will be expected to engage in reflective conversation as a part of the course.

**Week One:**

Introduction of course and outline

The Adolescent Brain and Math Learning

Implications for planning for instruction and differentiation

Preparing for task presentations

**Week Two:**

The Power of Struggle and Mathematics instruction

Creating opportunities for “failure” and learning

Assessment for a growth mindset in mathematics

**Week Three:**

Creativity in Mathematics

Problem Solving

The Importance of Flexibility with numbers

**Week Four:**

Developing rich math tasks for growth mindset: Number

**Week Five:**

Developing rich math tasks for growth mindset: Patterns and Relations

**Week Six**

Developing rich math tasks for growth mindset: Shape and Space

**Week Seven**

Developing rich math tasks for growth mindset: Statistics and Probability

**Weeks Eight-Nine**

Identifying problems of practice for numeracy plans

Understanding current research and implications

**Week Ten**

Presentations of Numeracy Plans

**Requirements:**

1. Task Design: Students will develop a rich numeracy task. The task will demonstrate the student's understanding and application of multi-step, higher order thinking and assessment processes that address progression in mathematical competencies. Students will hand in a developed explanation of the task as well as present the task to the class. Presentation: 20% Written: 20%

2. Numeracy Plan: Students will develop a comprehensive numeracy plan in their chosen grade for a particular time frame that focuses on an integrated approach of the numeracy outcomes through a frame that demonstrates an understanding differentiation and assessment. This will also include an informal oral presentation of the plan.

Weighing: 50%

3. Participation: Students will be expected to actively participate in class discussion and activities as is fitting a learning community.

Weighting: 10%

**Attendance:**

Because of the interactive nature of this course, students are expected to regularly attend classes. If the student is absent, they need to ensure the topic of the class missed in addressed in their bi-weekly, reflective journal.

**Grade Summary:**

The available letters for course grades are as follows:

<u>Letter Grade</u>	<u>Description</u>
A+	
A	Excellent
A-	
B+	
B	Good
B-	
C+	
C	Satisfactory
C-	
D+	
D	Minimal Pass
F	Failure

Because of the nature of the Alpha 4.00 system, there can be no uniform University-wide conversion scale. The relationship between raw scores (e.g. percentages) and the resultant letter grade will depend on the nature of the course and the instructor's assessment of the level of each class, compared to similar classes taught previously.

Please note that final grades will be available on student registration system. Printed grade sheets are not mailed out.

## **Ambrose University Academic Policies:**

### **Communication**

All students have received an Ambrose e-mail account upon registration. It is the student's responsibility to check this account regularly as the Ambrose email system will be the professor's instrument for notifying students of important matters (cancelled class sessions, extensions, requested appointments, etc.) between class sessions. If students do not wish to use their Ambrose accounts, they will need to forward all messages from the Ambrose account to another personal account.

### **Registration**

During the **Registration Revision Period** students may enter a course without permission, change the designation of any class from credit to audit and /or voluntary withdraw from a course without financial or academic penalty or record. Courses should be added or dropped on the student portal by the deadline date; please consult the List of Important Dates. After that date, the original status remains and the student is responsible for related fees.

Students intending to withdraw from a course after the Registration Revision Period must apply to the Office of the Registrar by submitting a "Request to Withdraw from a Course" form or by sending an email to the Registrar's Office by the **Withdrawal Deadline**; please consult the List of Important Dates on the my.ambrose.edu website. Students will not receive a tuition refund for courses from which they withdraw after the Registration Revision period. A grade of "W" will appear on their transcript.

Students wishing to withdraw from a course, but who fail to do so by the applicable date, will receive the grade earned in accordance with the course syllabus. A student obliged to withdraw from a course after the Withdrawal Deadline because of health or other reasons may apply to the Registrar for special consideration.

### **Exam Scheduling**

Students, who find a conflict in their exam schedule must submit a Revised Examination Request form to the Registrar's Office by the deadline date; please consult the List of Important Dates. Requests will be considered for the following reasons only: 1) the scheduled final examination slot conflicts with another exam; 2) the student has three final exams within three consecutive exam time blocks; 3) the scheduled final exam slot conflicts with an exam at another institution; 4) extenuating circumstances. Travel is not considered a valid excuse for re-scheduling or missing a final exam.

### **Electronic Etiquette**

Students are expected to treat their instructor, guest speakers, and fellow students with respect. It is disruptive to the learning goals of a course or seminar and disrespectful to fellow students and the instructor to use electronics for purposes unrelated to the course during a class session. Turn off all cell phones and other electronic devices during class. Laptops should be used for class-related purposes only. Do not use iPods, MP3 players, or headphones. Do not text, read, or send personal emails, go on Facebook or other social networks, search the internet, or play computer games during class. Some professors will not allow the use of any electronic

devices in class. The professor has the right to disallow the student to use a laptop in future lectures and/or to ask a student to withdraw from the session if s/he does not comply with this policy. Repeat offenders will be directed to the Dean. If you are expecting communication due to an emergency, please speak with the professor before the class begins.

### **Academic Policies**

It is the responsibility of all students to become familiar with and adhere to academic policies as stated in the Academic Calendar. Personal information (information about an individual that may be used to identify that individual) may be required as part of taking this class. Any information collected will only be used and disclosed for the purpose for which the collection was intended. For further information contact the Privacy Compliance Officer at [privacy@ambrose.edu](mailto:privacy@ambrose.edu).

### **Extensions**

Although extensions to coursework in the semester are at the discretion of the instructor, students may not turn in coursework for evaluation after the last day of the scheduled final examination period unless they have received permission for a course Extension from the Registrar's Office. Requests for course extensions or alternative examination time must be submitted to the Registrar's Office by the deadline date; please consult the List of Important Dates. Course extensions are only granted for serious issues that arise "due to circumstances beyond the student's control."

### **Appeal of Grade**

An appeal for change of grade on any course work must be made to the course instructor within one week of receiving notification of the grade. An appeal for change of final grade must be submitted to the Registrar's Office in writing and providing the basis for appeal within 30 days of receiving notification of the final grade, providing the basis for appeal. A review fee of \$50.00 must accompany the appeal. If the appeal is sustained, the fee will be refunded.

### **Academic Integrity**

We are committed to fostering personal integrity and will not overlook breaches of integrity such as plagiarism and cheating. Academic dishonesty is taken seriously at Ambrose University as it undermines our academic standards and affects the integrity of each member of our learning community. Any attempt to obtain credit for academic work through fraudulent, deceptive, or dishonest means is academic dishonesty. Plagiarism involves presenting someone else's ideas, words, or work as one's own. Plagiarism is fraud and theft, but plagiarism can also occur by accident when a student fails or forgets to acknowledge to another person's ideas or words. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from the university college. Students are expected to be familiar with the policies in the current Academic Calendar that deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean and become part of the student's permanent record.

**Note:** Students are strongly advised to retain this syllabus for their records.