EDSP 485/683 – Assessment and Instruction in Mathematics in Special Education

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Instructors **Office Hours**

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COURSE OVERVIEW

The goal of this course is to learn methods of teaching ***mathematical literacy*** and supports for accessibility using the principles of ***Universal Design for Learning (UDL)*** for teaching mathematics to students with diverse learning needs. Course format will include in-class activities and discussions, online modules, and guest speakers with content expertise in special education and mathematics education.

The Program for International Student Assessment (PISA) defines ***mathematical literacy*** as "an individual's capacity to identify and understand the role that mathematics plays in the world. Literacy involves making well-founded judgments and using and engaging with mathematics in ways that meet the needs of each individual's life as a constructive, concerned and reflective citizen."

Students need the mathematical knowledge, skills, and dispositions that are critical for meeting the challenges of the world today and tomorrow, problems to which we do not have the existent solutions. Furthermore, mathematics is key in ensuring a fair and inclusive education for *all learners*, which is one of the most powerful levers available to make society more equitable. Therefore, teachers need to know how to plan for and adapt math instruction for all students, including those with mild to moderate disabilities, and how to assess pupil understanding.

As participants in this course, you will have the opportunity to design and reflect upon a Unit Outline Wiki that addresses a domain within the ***Maryland College and Career-Ready Standards*** and includes instructional lessons that integrate the principles of UDL that address multiple options for addressing the needs of students who struggle in mathematics and take into account multicultural and hands-on activities that engage pupils in their learning, ***The goal of UDL is to design flexible instructional materials that reduce barriers to learning and provide robust learning supports to meet the needs of all students.*** Three main principles guide the UDL integration in classroom contexts and will be applied to the Student Support Plan and accompanying modules: (a) provide multiple means of *representation*; (b) provide multiple means

of *action and expression*; and (c) provide multiple means of *engagement* (CAST, 2010). You will have multiple opportunities to design and revise the Unit Wiki with ample workshop time for application and refinement.

This course should prepare you to reflect and continue learning to teach diverse learners (i.e., students from culturally/linguistically diverse backgrounds, students with exceptionalities, and students with difficulties in mathematics) to develop their mathematical literacy.

Learners often face an education with a reduced view of mathematics that focuses on isolated skills, the dismissal of diverse knowledge of underprivileged communities, and an uncritical view of social injustice. Special and Mathematics education need to promote students' creativity to fulfill their highest potential and to have a critical and responsible disposition toward the world (D'Ambrosio, 2007). This course should prepare you to reflect and continue learning to teach diverse learners to develop their mathematical literacy.

LEARNING OUTCOMES/GOALS

Our mission is to realize the capacity of mathematics in assuring the healthy and whole development of *all* children, particularly those with disabilities, so they have the intellect and resiliency to (a) understand a rapidly changing world and (b) successfully learn and apply essential mathematics in their everyday lives and future occupations. To do so, the course addresses three overarching course goals: (1) to establish a community of math learners and world-minded citizens; (2) to uncover and assess students' mathematics understandings to inform our teacher decision making; and (3) to develop a balanced curriculum that is directly linked to the ***Maryland College and Career-Ready Standards*** with inclusive practices for all learners within the UDL framework. Specific course objectives linked to these three goals are below:

Learning Outcomes:

Student Learning Outcomes Students will:	**NCTM NCATE**	**CEC**	**InTASC/MTTD**	**COE**
a) describe the National Council of Teachers of Mathematics (NCTM) Standards for teaching mathematics, the Common Core State Standards in Mathematics (CCSSM), and the Maryland College and Career-Ready Standards and assessments.	8.4; 8.5	Standard 3: Curricular Content Knowledge	InTASC 4	Curriculum
b) discuss difficulties students may experience learning mathematics	7.1, 8	Standard 1: Individual Learning Differences		Learners
c) review different forms of math assessment for students with learning problems	7.1, 7.5, 8.3	Standard 4: Assessment	InTASC 6 MDTTS Standard IV	Educational Goals and Assessment
d) review adapting math instruction	7.1, 8.7	Standard 5:	InTASC 7	EC5

	using research supported practices using the principles of UDL for student with diverse learning needs		Instructional Planning and Strategies	MDTTS Standard V	Learners, Pedagogy
e)	explore conceptual and procedural approaches towards teaching problem solving, ratios and proportional relationships, number system, expressions and equations, statistics and probability	Standard 1; Standard 2; 7.2; 7.4; Standards 9-15; CCSMP Standard 2	Standard 3: Curricular Content Knowledge	InTASC 8 MDTTS Standard I, V	EC 7 Subject Matter, Pedagogy
f)	*work in groups to design a Student Support Plan in a math curricular area, present the information to the class, provide a visual display of the information and handouts/resources*	NCTM Standard 3; CCSMP Standard 1	Standard 7: Collaboration	InTASC 3 MDTTS Standard II	EC 4 Social and Cultural Contexts
g)	*discuss multicultural connections in math and the implications for meeting the needs of a diverse classroom*	NCTM 7.1, 9.10, 10.6, 11.8, 12.5, 13.4, 14.8, 15.4	Standard 1: Individual Learning Differences	InTASC 3	EC 1 Social and Cultural Contexts
h)	work in groups to design and present an Inservice UDL Presentation that explores the use of digital supports in mathematics that reflect the CCSSM and the UDL guidelines	NCTM Standard 6, 7.6, 8.9, 10.5, 12.4; 13.3	Standard 7: Collaboration	MDTTS Standard V	EC 5 Technology

Council of Chief State School Officers & National Governors' Association. (June, 2010). *Common core state standards for mathematics.* Common core state standards initiative. Retrieved from: http://www.corestandards.org/the-standards/mathematics

Council of Chief State School Officers. (2011, April). Interstate Teacher Assessment and Support Consortium (InTASC) Model Core Teaching Standards: A Resource for State Dialogue. Washington, DC: Author.

Council for Exceptional Children (2012). *CEC Initial level special educator preparation standards*. Retried from: http://www.cec.sped.org/~/media/Files/Standards/Professional%20Preparation%20Standards/Initial%20Preparation%20Standards%20with%20Elaborations.pdf

Interstate Teacher Assessment and Support Consortium (2011). InTASC Model core teaching standards (InTASC)

Maryland State Department of Education. Maryland Teacher Technology Standards (MDTTS). Retrieved [on line] January 2012: http://www.mttsonline.org/standards/

National Council of Teachers of Mathematics (2000). *Principles and standards for school mathematics*. Reston, VA: NCTM.

University of MD College of Education Conceptual Framework (COE)

Required Text/Materials:

Van de Walle, J., Karp, K. S., & Bay-Williams, J. M. (2013). *Elementary and middle school mathematics Methods: Teaching developmentally* (8th edition). New York: Allyn and Bacon.

Additional readings are available on the ELMS course site. You are responsible for downloading the readings and being prepared for class.

COURSE ASSIGNMENTS

Assignment	Description	Percent of Grade
Math Quizzes	Periodic quizzes (announced and/or unannounced) that may contain questions from student tests, PARCC items, activities based on readings/modules, and class discussions.	10%
Wiki Unit Plan	Design a unit that focuses on a particular Domain from the Maryland College and Career Readiness Standards and includes resources for teaching the standards to students with disabilities. For each standard in the domain, you will include the standard, objectives relating to each standard, warm-up and exit ticket, formative assessments, tools/resources to use to help students access the standards, and a big picture/overview web. As part of the Wiki you will make a VIDEOs or SHOW MEs or another alternative media presentation to model how to use the various strategies you find to teach the standards in your unit. The wiki's will be presented to the class at the end of the semester.	35%
Online Modules	Complete the *Reading Reflections* that include questions linked to the module power points, video cases, and/or readings. The modules include specific class topics and readings including reflections on what you read learned through presentations, the mathematical problems that helped you learn to use mathematics for teaching, and tasks related to the core practices of teaching that you are developing. ** These modules are subject to change Module 1: Reflective Memo Module 2: Common Core State Standards in Mathematics (CCSSM) and the Maryland College and Career-Ready Standards Module 3: Math LD Module 4: Introduction to Universal Design for Learning in Mathematics and UDL Guidelines 1,2, 3: Representation, Expression and Engagement Module 5: Chapter 10 & 11 Module 6: Chapter 12 & 13 Module 7: Chapter 15 & 16	50%

	Module 8: Chapter 14 & 23 Module 9: Chapter 17 & 18 Module 10: Chapter 19 & 20 Module 11: Chapter 21 & 23	
In-Class Participation	Sharing your ideas and questions with the group, as well as responding to those of your classmates, is critical to our work together. We expect you to attend classes, to arrive on time for a prompt start, and to participate in and contribute to class. If circumstances prevent you from attending class, we ask that you call or send an email in advance and that you make plans for how you will make up the work you will miss.	5%
		100%

COURSE GRADING

Final course grades will be assigned based on the percentage of possible points earned. The scale used in grading will reflect the following guidelines and the bunching and distribution of total point scores (i.e., persons separated by one or two points will receive the same grade). In no case will you receive a grade lower than the scale indicates.

A+ 98 - 100%	B+ 88 – 89%	C+ 78 – 79%	D+ 68 – 69%
A 94 – 97%	B 84 – 87%	C 74 – 77%	D 64 – 67%
A- 90 - 93 %	B- 80 – 83%	C- 70 – 73%	D- 60 – 63%
			F 0 – 59%

POLICIES FOR A BLENDED COURSE

1. Preparing for Success

a) READING THE COURSE MATERIAL IS IMPERATIVE. Students cannot master the content of the course without reading the material. The subject matter is clarified in class and online activities, materials and explanations.

b) Exchange telephone numbers with at least one classmate in order to obtain notes and follow-up assignments missed during an absence.

c) Students are encouraged to ask questions whenever information needs clarifying.

d) When contacting instructors via email, **make sure to put EDSP485/683 in the subject line** so that your email is not treated as spam.

e) Class time requirements - The class is a blended course meaning that some sessions will be face-to-face in the traditional classroom setting and the other sessions will be online.

Some sessions you will spend ~ 3 hours in a traditional face-to- face classroom with additional preparation time for readings and homework ~6 hours.

The online sessions will require at least 8-9 hours of your time to read the required course material and to complete the online modules. We will provide you with a Class Schedule with a list of readings and assignments associated for each module and a recommended timeline for their completion. Hopefully, this will keep you on track.

**These times are estimates based on feedback from previously taught sections and some students may take longer or shorter to complete the work based on the individual.

2. Required Texts and Use of Technology

Online Learning Environment: Course Modules, homework, articles and other course documents will be found at www.elms.umd.edu under this course name. GO TO:

1. https://elms.umd.edu
2. Login with your directory ID and password
3. Go to My Courses (EDSP 485/683)
4. Use the left side to navigate the appropriate documents or directions (e.g., syllabus, weekly readings, modules, announcements, discussion board, etc.)
5. Please go to this link for an orientation to Adobe Connect: http://otal.umd.edu/adobeconnect

3. Guidelines for Submitting Assignments Electronically

The following guidelines should be followed when working on and submitting assignments in this course.

1. ELMS/Canvas accepts only files named using standard characters. Use of a number of special characters as part of the file name may generate an error message, an unavailable post, or a file that does not show up.
2. When creating and submitting docx, pptx or html files please use a naming convention of your last name followed by the name of the assignment **(e.g., miller_module1 or miller.cooper_module2).**
3. For partner or group work only one person needs to submit the assignment but all contributing members must have their name on it so we know who to assign grades to.
4. You should ensure the safety of your work by making regular backups (extra copies) and save your work in multiple places.

4. Course Communication

a. Instructors will respond to all your e-mails within 48 hours.

b. Instructors will give you feedback and grade most assignments within 1 week of receiving them. Grades will be posted to ELMS as soon as the assignments are graded.

c. Instructors will post all modules (in the "Modules" section) with the reading reflections, handouts, and articles on ELMS.

5. Technical Requirements and Technical Support

For the online components of this blended course you will need a computer with Internet access, one or more Web browsers. Please make sure you have current versions of the Java, flash, ITunes and QuickTime Player plug-ins in order to interact with the course content made available from within ELMS.

If you need immediate technical assistance, particularly as related to authentication, browser issues or a feature of ELMS not working correctly, please contact the OIT Student Help Desk, 301-405-1400 (M-F, 8 a.m. – 6 p.m.). You can also send an email to elms@umd.edu. Don't spend more than 20 minutes trying to fix a problem on your own.

GENERAL COURSE POLICIES

In this blended course your attendance and participation are required and will be evident by your completion of the assignments and online activities. Information about your online activities are logged by the ELMS learning management system, such as the date you last entered the course, the number of discussion board posts you have contributed and which areas of the course space you have visited.

In all cases, it is your responsibility to make up work and content missed in class and work with the instructors to request modifications to assignment deadlines if needed.

Should the University close due to inclement weather or other event, we will contact the class via Announcements to determine what we will do in lieu of a face to face meeting. If we are scheduled to meet online on the day of the campus closure, your online work should continue even if the University is closed.

Assignments are graded one time; students are not allowed to rewrite or redo any assignment unless stated in the syllabus. If you have questions before an assignment is due, send any questions by email, make an appointment, or ask during office hours. Allowing individual students to rewrite assignments after evaluation leads to initial submissions that are sloppy or done at the last minute as well as capricious grading accusations.

No extra points will be given within the course unless stated in the syllabus and available to all students.

Avoid using any identifiable information (names in particular) of students, teachers, other professional staff, principals, schools, programs, counties, etc. on all assignments or projects. For descriptions, use generic terms such as "the student", "the teacher", “the high school”, etc.

Teacher candidates and faculty are not allowed to take pictures or videos of students, parents, teachers, etc. without official documentation; each of our four school district partners (Montgomery, Prince George’s, Howard, and Anne Arundel) have their own required permission form that has to be used and signed by the school's principal.

Late work will not be excepted unless prior arrangements have been approved. Exceptions include a doctor’s note if ill or advance notice of observed religious holidays.

UM POLICIES

Academic Integrity: The Code of Academic Integrity and Honor Pledge prohibits students from cheating on exams, plagiarizing papers, submitting the same paper for credit in two courses without authorization, buying papers, submitting fraudulent documents, and forging signatures. The following UMD Honor Pledge is to be on the front cover of all papers, projects, or academic assignments submitted for evaluation in this course along with your signature:
I pledge on my honor that I have not given or received any unauthorized assistance on this examination (or assignment). Compliance with the code is administered by the Student Honor Council and allegations of academic dishonesty are reported directly to the Honor Council (301-314-8204).

Accommodations for Students with Disabilities: If you have a documented disability, contact Disability Support Services (301-314-7682) to ascertain the specific accommodations that may need to be provided. The rules for eligibility and the types of accommodations a student may request can be reviewed on the DSS web site at
http://www.counseling.umd.edu/DSS/receiving_serv.html
It is the student's responsibility to notify the instructor at the beginning of the semester of any documented disabilities so reasonable accommodations can be made to assist learning and evaluation in the class.

Assistance for Students in Distress: If you feel you are encountering problems that hamper your academic performance or life on campus, you may wish to call the Counseling Center 301-314-7651 or Mental Health Services 301-314-HELP for resources or referrals.

Office of Student Conduct: If a student displays disorderly or disruptive behaviors in class or poses a concern for violence, he or she will be referred to the Office of Student Conduct – this may result in being charged under the University's Code of Student Conduct and/or be referred for counseling or mental health interventions, if appropriate.
301.314.8204 or studentconduct@umd.edu.

Course Evaluations (CourseEvalUM): Your participation in the evaluation of courses through CourseEvalUM is a responsibility you hold as a student member and feedback is confidential and important to improve teaching and learning at UMD as well as to the tenure and promotion process. Go to www.courseevalum.umd.edu to complete your evaluations.

Religious Observances/Illness: University policy excuses the absences of students for illness (self or dependent), religious observances, participation in University activities at the request of University authorities, and compelling circumstances beyond the student's control. The University provides students with excused absences the opportunity to reschedule significant assessments, except in cases where the nature of the assessment precludes the possibility of rescheduling, OR to perform a substitute assignment without penalty. The student must notify his or her instructor of the reason for absence as soon as possible. ***Where the reason for absence from a scheduled assessment is known well in advance (for example, in cases of religious observance or participation in university activities at the request of University authorities****), the student must inform the instructor by the end of the schedule adjustment period*.

COURSE SCHEDULE

This is a tentative schedule and is subject to change.

Additional readings in the form of journal articles will be added as appropriate to the topics covered in addition to the listed book chapters

Week	Topic	Assignments due Following Week
Prior to the first class	• What does mathematics mean to you? • Review Syllabus • Read: Chapters 1 and 2 in Text (Van De Walle)	• Work on Module #1 Reflective Memo due 1/27 by 8pm • Read: Chapters 1 & 2 Text
Week 1: 1/29 Face-to-Face F2F	• Introduction to Course, requirements, tech • Standards (NCTM, CCSS, State) Discourse • PARCC • Introduce Unit Wiki	• Module #2 CCS Standards • Read: Chapters 3 & 5 Text
Week 2: 2/5 F2F	• Constructivism • PARCC Assessments • PARCC Items	• Module #3 LD • Read: Chapters 4 & 6 Text
Week 3: 2/12 F2F	• Diagnosing LD Case studies (RTI vs. Discrepancy) • LD simulations • Strategies – CRA, SI, Peer Tutoring	• Module #4 UDL
Week 4: 2/19 **ONLINE**	**Online Module #4 UDL** • UDL Math Representation, Expression and Engagement in the Mathematics Classroom	• Read: Chapter 9
Week 5: 2/26 F2F	• Assessment of Student Understanding • Creating formative/summative assessments • Diagnosing Errors	• Module #5 • Read: Benny article Chapters 15 & 16
Week 6: 3/5 F2F	• Fractions • Work Session Unit Wiki/Module • Unit outline due and end of class (EOC)	• Module #6 • Read: Chapters 12 & 13
Week 7: 3/12 F2F	• Strategies for +, -, x, ÷ • Work Session Unit Wiki/Module	• Read Chapters 14 & 23
Week 8: 3/19	Spring Break	
Week 9: 3/26 F2F	• CRA, Integers, Algebraic reasoning • Work Session Unit Wiki/Module • Lesson 1 outline and components due EOC	• Module #7 • Read Chapters 19 & 20
Week 10: 4/2 **ONLINE**	• NOT MEETING ON CAMPUS. TIME TO MEET WITH GROUPS TO FINISH UNIT PROJECT ASSESSMENTS AND LESSON 2	• Module #8 • Read Chapters 21 & 22
Week 11: 4/9 F2F	• Data Analysis & Probability • Measurement & Geometry	• Module #9 • Read Chapters 17, 18
Week 12: 4/16 F2F	• Decimals, Percentages, & Proportions • Work Session Unit Wiki/Module	• Module #10 • Read Chapters 10, 11

Week 13: 4/23 F2F	• Basic Facts & Place Value • Lesson 2 outline and components due EOC • Start presentations of Units (Fractions) o Naughton, Hodge… o Amaya, Aliya…	
Week 14: 4/30 F2F	• Assessments for Unit Project Due EOC • Presentation of units (Algebraic Thinking) o Wofford, French… o Graciano, Ra, Foret o Akpan, Ludema… o Eisenstein, Morris, Hadley…	
Week 15: 5/7 F2F	• Presentations of Units (Measurement & Data) o Jordan, Turner… o Adler, Messano… o McCloskey, McPartland… o Beckley, Waters Josing	