



Math Content and Methodology for the Diverse Learner, P-21
SPED 326 Course Syllabus
Spring Semester 2019

Course Information

Number and title: Math Content and Methodology for the Diverse Learner, P-21, SPED 326

Credit hours: 3

Prerequisites: Admitted Education Majors DHH or SPED only, See Catalog for conditional pre-requisite options

Instructor Information

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Course Description

Math Content and Methodology for the Diverse Learner, P-21. Examination of the pedagogical mathematics content for P-12 students provides a foundation for understanding and implementing mathematics curricula in the pre-kindergarten through twelfth grade based on the Common Core State Standards (CCSS). Included are diagnostic and prescriptive teaching methods, materials, and evaluation of mathematics for diverse learners on all levels pre-school through grade 12. A field experience is required preparing the preservice teacher for implementation of mathematics lesson plans which align to the CCSS. Prerequisite: Math 121, SPED 223. (updated 4/2013) From academic year 2013 on, this section has the IBHE-required elements.

Conceptual Framework: The MacMurray College Education Unit prepares (1) ethical candidates who demonstrate (2) foundational knowledge and (3) 21st Century skills in order to (4) analyze and fulfill pedagogical demands with (5) fairness and the belief that every student can learn.

Knowledge Base of This Course: The contents of this course focus on the fundamental purposes of examination of the pedagogical mathematics content for P-12 students. Candidates explore teaching mathematics through research based practices, problem solving, and developmentally appropriate and effective instructional strategies. Participants will examine assessment techniques, technology tools, instructional leadership, diverse learning needs, and materials management.

Danielson's Framework of Teaching and the 4 Domains of (1) Planning and Preparation, (2) Classroom Environment, (3) Instruction, and (4) Professional Responsibilities will be used as the basic foundation for discussion and lesson development.

Programmatic Learning Outcomes**IPTS-** Illinois Professional Teaching Standards**CF** – MacMurray College Conceptual Framework**edTPA** – Teacher Performance Assessment**SES** – Social Emotional Standards

Specific Candidate Competencies: After successful completion of SPED 326 candidates should be able to:

1. To **examine** and **understand** central concepts of mathematics curriculum (Grades P-12) and how they align to Common Core State Standards. IPTS: b1B, c1A CEC: 3.1
2. To **organize** central concepts of mathematics curriculum to develop meaningful learning progression for individuals with exceptionalities. IPTS: a1C, a2A, a2B, b1G, b2F, d2C, 2dE, e2J CEC: 3.1
3. To **participate, become familiar with** and **establish** various teaching methods, strategies, and representations to accommodate the diverse needs of students. IPTS: a2A, a2C, b2B, b2E, c2J, d1C, e1C, e1E, e2A, e2D CEC:1.2, 2.2, 5.7
4. To **develop an understanding of** and **acquire methods** of gaining knowledge of students interests, background, and prior knowledge to give “purpose”, variation and reinforcement to the mathematics curriculum. IPTS: a1C, a2B, b1G, b2F, c2C, c2D, c2F, e1F CEC: 5.1
5. To **become familiar with** informal assessments to guide and evaluate student learning. IPTS: c1D, c2C, c2F, g2B, f2g CEC: 4.1
6. To **demonstrate** the ability to apply working knowledge of mathematics curriculum and teaching methods by designing and producing a lesson of instruction. IPTS: a2B, a2C, b2B, b2E, b2F, c2D, c2J, d2C, d2E, e2A, e2C, e2D, e2J CEC: 2.2, 3.1, 5.1

Required Texts

Required Textbooks:

-Every Math Learner, A Doable Approach to Teaching Learning Differences in Mind, Grades K-5, Nancy Smith, Corwin Pub., 2017, ISBN 978-1-5063-4073-9.

-Every Math Learner, A Doable Approach to Teaching Learning Differences in Mind, Grades 6-12, Nancy Smith, Corwin Pub., 2017, ISBN978-1-5063-4074-6

Livertext digital portfolio software. Buy a Standard Student Membership with Field Experience component online at www.livertext.com. The cost of membership is around \$113.00 and it will be good for five years after the date the software is activated. If you have already purchased this for another course, you do not need to do so again.

Supplementary Reading:

-The Dyscalculia Tool Kit, Ronit Bird, 3rd Edition,, Sage, ISBN 978-1-47397-425-8

-Handouts. Additional readings will be done in professional journals.

Field Experience Expectations

For this field experience, you will be assigned to a classroom or school program for 10 observation hours. You must successfully complete the observation hours in order to pass this course, unless there is explicit written approval and permission from the instructor. Refer to Appendix for DRESS CODE and PROFESSIONAL BEHAVIOR guidelines. Students will complete and submit the required observation notes weekly.

If you are unable to attend a classroom observation, you will need to call the school and notify them of your absence. If you do miss an observation and you have not made proper arrangements with the school and/or teacher to be observed, you will not be allowed to continue to observe any more after the second absence.

You will use an observation log on Livetext and you need to ask each teacher observed to provide signatures as an indicator that you did observe that particular classroom.

The teacher candidate should be aware that the field experience is an essential aspect of this course. Failure to successfully complete the field experience will result in a failing grade for the class, unless there is explicit, written approval and permission from the instructor due to extenuating circumstances.

You are expected to act and dress professional. Some examples of inappropriate behaviors include:

- Arriving late to the observation
- Not calling early enough to inform the school/teachers you are not able to observe
- Not paying attention during the observation
- Texting during the observation/Allowing your phone to ring
- Wearing non-professional attire (Refer to the Appendix for DRESS CODE guidelines.)
- Do not, under any circumstances, communicate with a student via any social media or any other form of communication other than general classroom interaction as directed by the host teacher. If it is determined that inappropriate personal communication is made, the candidate will not be allowed to complete the observation hours, resulting in a loss of points and possible failure of the course or removal from the Education Program.

Technology

The teacher will model and students will gain experience integrating educational technology tools such as the Google Education Suite, Microsoft Office tools, multimedia presentation programs and tools, and social media as a tool for learning.

Students are required to upload some assignments to Moodle and Live Text per syllabus and teacher guidelines. Documented papers should follow the guidelines of the American Psychological Association (APA).

Help with technology is available on the IT page of the MacMurray website, https://my.mac.edu/ICS/Resources/Information_Technology/. If you have a question not answered there, please contact the Help Desk at HelpDesk@mac.edu.

Moodle

Much of this course will be conducted on Moodle. Log on to Moodle using the password for your MacMurray email. That will give you access to the Moodle page for this course.

You are expected to visit Moodle for course information often (preferably daily) for announcements and updates and also to fully understand and complete assignments. All assignments will be posted on Moodle and will need to be submitted using the assignment links, as instructed.

Evaluation and Grades **Specific Grading Requirements**

Key Signature Assignment: Lesson Plan 1	30
Key Signature Assignment: Lesson Plan 2	30
Key Signature Assignment: Classroom Observation Analysis	30
Observation Recording Sheets (Required)	10
Discussion Forum “Checking for Understanding” (5 pts each)	15
Test (Pedagogy/Standards/Key Shifts)	25
Collaborative Math Game Unit	25
Participation (30 class periods)	30
Final Exam: Grade Specific Resource Unit	25
TOTAL	220 Total Points

Content Standards

The Education Department at MacMurray College and its teacher preparation programs, including elementary education, must comply with all the content standards in each program area for licensure issued by the Illinois State Board of Education.

Key Signature Assessment Table:

Assignment	IPTS	Social Emotional Standards (SES)	Conceptual Framework	ACEI	edTPA Standards	Assessment	Scoring
Key Assessment 1 Analysis/Reflection of Classroom Observation based on professional readings and evaluation.	a1b, a1c, b1b,b1d, d1a,d1b,d1c, e1a,e1b, g1a,g1b,g1c, g1e, g1f,h1a, h1d, i1d, i2c	1A,1B, 1C, 1D, 2A, 2B, 2C, 2D, 3A, 3B, 3C	1,2,3,4,5	1.0 3.2 3.3	PI1, PI2, PI3, PI4, PI5, IN6, IN, As 11, As12, As 13, as14, As 15	Reflection Analysis	Rubric

Key Signature Assessments (KSA) are required components of this course and may not be deleted or modified in any way. All professors teaching this course must assign the KSAs. All students taking this course must complete the assigned KSAs. Data resulting from the KSAs must be entered into the assessment system. Key Signature Assignments must be demonstrated at a minimal "C" level. Candidates who do not complete Key Signature Assignments must resubmit assignments according to the deadline established by the instructor. (The resubmitted assignment will not receive full point value.)
Students must complete **all** course assignments to receive course credit.

Course Assignments and Scoring Criteria:

Course Requirements: Academic success for this course will be determined in large part by factors which are in YOUR direct control. These factors include the following:

1. **KEY SIGNATURE ASSIGNMENTS # 1 & # 2– LESSON PLANS :** You will be writing two math lesson plans (select two age groups- primary K-2, intermediate 3-5, middle school 6-8. or high school 9-12) at different times during the semester. You will micro teach this lesson to the class. Using the Lesson Plan Model provided, develop an abbreviated lesson plan including a Big Idea (Central Focus), Content Standard(s), Objective, Mini Lesson, Assessment, ELL strategies, and NFNT (Notes for Next Time) reflection. At least one of your lessons will be video recorded for your own reflection. The Lesson plan will be evaluated according the rubric in the Appendix. Peer and teacher feedback will be provided to help you create a “Notes for Next Time” reflection. (This assignment must be completed at a minimum of a C level.)

2. KEY SIGNATURE ASSESSMENT #3 - STUDENT ANALYSIS FROM CLASSROOM OBSERVATIONS:

1. The candidate will observe ten hours of teaching of mathematics in the elementary school. Using the candidate’s knowledge base from readings and discussions, the candidate will analyze the classroom and write a report reflecting on: *Learning Environment, Classroom Composition, Classroom Management of manipulatives/supplies, ELL strategies observed, List of Questions Observed and Questioning Skills Analysis, and Cooperative Learning experiences. For each subsection, observations must be connected to Framework of Teaching as well as journal and/or theorist research. Analysis must be connected to candidate learning.* Key Signature Assessments must be completed at a minimal "C" level.
2. Students will submit completed “Observation Notes” in required format documenting every classroom observation. These are required in order for your observation hours to be considered complete. Failure to complete observations hours without explicit, written approval from the instructor will result in loss of observation points and possible failure in the course.

3. DISCUSSION FORUM QUESTIONS: For select readings assigned in the textbook and classroom content, you will be asked to respond to a discussion question posted in moodle. These question forum responses should relate to important aspects of the assigned reading or in class content. Due dates will be posted in moodle with each question.

4. MATHEMATICS LEARNING GAME UNIT (COLLABORATIVE ACTIVITY): Candidates will work in a cooperative group to develop an abbreviated math unit with a math game or learning activity. The unit will consist of learning standards, objective, brief research summary supporting your use of math games for learning, supplies to play the game/activity, an assessment, and a NFNT (Notes for Next Time Reflection). The game will be presented in class as a station and groups will rotate through each station, providing peer feedback. Group members will use the peer feedback to assist in writing the NFNT reflection.

5. TEST: One test will be given on pedagogy and instructional practice in the first half of the semester. If you find that you were not as successful on a test as you would have liked, your professor would be very happy to have a conference with you. Anyone receiving a C or below on a test will be encouraged to have this conference.

6. PARTICIPATION/ATTENDANCE: In-class attendance and participation is expected for all enrolled students and will be monitored for points. The materials being covered or the activities you will participate in are for your benefit. If you are absent, you will not receive points for that class period unless explicit, written permission is provided by the instructor.

7. FINAL EXAM - MATH CURRICULUM RESOURCE UNIT: You must complete the project based final exam to pass the course. You will select a grade level of your choice (P-12th grades) and design a math resource unit, based on the guidelines provided in Moodle. For example Kindergarten number sense, 3rd grade money, etc. This unit can be created digitally via a website or other online tool and you will create a physical resource binder. It will include tools and resources, master copies of student handouts, as well as additional resources including but not limited to: instructional strategies, grouping strategies, a pre and post assessment, and types of assessments, lesson plan, ELL strategies, virtual manipulative resource list, and list of math literature/books related to the topic. Students will also lead a brief oral/ media presentation of your unit to the class.

8. STUDENT EVALUATION/REFLECTION OF THE COURSE Your professor will also have you complete an end-of-the-course evaluation so that future enrollees of this course will benefit from your input. You will also respond in a self reflection on your growth during the course.

Late assignments

All work must be completed as scheduled. Students who anticipate any difficulties in this class due to personal circumstances should discuss these matters in advance with the instructor.

Attendance Policy

Attendance is expected. You will be responsible for all content and assignments you miss due to absence. [In this course, you are only permitted three unexcused absences.

The full statement of College policy on attendance is in the student handbook, *The Maggie*, (<https://www.mac.edu/maggie>) on page 22. You are responsible for knowing this policy for any class at MacMurray.

General MacMurray Information **Disability Services**

If you need accommodations in this course because of a disability, please do the following: (1) contact me privately to discuss your specific needs for this course and (2) contact the Director of Disability Services, Misty Eisfelder, at 217-479-7176 or misty.eisfelder@mac.edu to review your needs and coordinate reasonable accommodations. Necessary accommodations must be made prior to the first exam/writing assignment due date.

Henry Pfeiffer Library

Librarians at the [Henry Pfeiffer Library](#) can help with all stages of the research process, from brainstorming and refining topics to finding, evaluating and citing sources. Give us a call, drop in, or make an appointment for a one-on-one research consultation. Call 479-7110 or e-mail Adam adam.cassell@mac.edu or Susan susan.eilering@mac.edu.

Library Hours:

Mon.-Thu. 7:30 am – midnight

Fri. 7:30 am – 4:30 pm

Sat. 1 – 5 pm

Sun. 3 – 9 pm

Center for Learning Excellence (CLE)

The Center for Learning Excellence, located on the 2nd floor of the Henry Pfeiffer Library offers *free* tutoring in a variety of subjects, including writing and math. It is a great place to go to study because help is available right when you need it! Students doing group work find plenty of room to work together with access to computers and printing. If you are interested in joining a study group, contact the staff in the Center for assistance. You may find our schedule of tutors here:

<http://www.mac.edu/cle/tutoring.asp> For more information, contact Director, Jenny Briney at 217-479-7178 or Assistant Director, Tasha Morwell at 217-479-7131.

Monday	Tuesday	Wednesday	Thursday	Friday	Sunday
7:30am-9:00 pm	7:30am-9:00 pm	7:30am-9:00 pm	7:30am-9:00 pm	7:30am-4:30 pm	3:00pm-9:00 pm

Academic Dishonesty and Plagiarism

Action shall be taken against students who engage in conduct aimed at making false representation with respect to academic performance. Such conduct includes but is not limited to the following examples:

1. Cheating on an examination.
2. Collaborating with others in work to be presented contrary to the stated rules of the course.
3. Plagiarizing, including the submission of another person's ideas and papers, even unintentionally (whether purchased, borrowed, or otherwise obtained) as one's own.
4. Stealing examination or course materials.
5. Falsifying records, laboratory data, and other data.
6. Submitting work previously presented in another course, if contrary to the rules of a course.

Judgment as to the fact of academic dishonesty resides with the course instructor.

The instructor shall assign a grade of "F" for the work or the course at his or her discretion. A written report of academic dishonesty, including the circumstances and penalty assigned, shall be given by the

instructor to the Academic Standards Committee. If the case warrants, the Committee may then write a letter to the student which would be made a permanent part of the student's record. In cases considered by the Committee to be particularly egregious, such as multiple offenses, the Academic Standards Committee may suspend or dismiss the student from the College. If a student disagrees with the Committee's decision- a written appeal can be submitted to the Provost Office with and additional supporting documentation. The Provost will review the case within 10 business days. The decision of the Provost is final.

Course Calendar

Class Date	Topic	Activities	Assignments/Due Dates
Week 1 - Tuesday, Jan 22	*Intro to Course/Syllabus *Assessing Student Interests	Intro/Syllabus - "Knowing Your Learner's Learning Profile" Video -Sternberg's Triachic Theory: Create a graphic that reps Sternberg's theory -Learning Profile Descriptions and Structures Activity and Resources	-Read "Every Math Learner" Ch. 2: Strategies for Determining Who Each of Your Students Is a Math Learner" - Discussion Question #1 in Moodle: Pre-Assessment/Readiness , Due Jan 24th
Week 1 - Thur, Jan. 24	*Standards for Math Practice	-Common Core Standards -Illinois/Texas state Standards -NCTM Principles to Actions	- Discussion Question 1 Due today -Review the Illinois State Standards for Math (link in moodle) -Add state standards and NCTM Principles to your resource binder
Week 2 - Tues, Jan 29	*Six Shifts in Math Practice	-Six Key Shifts in Math Practice Jigsaw -Penny a Day Rigor ex. activity	-Discussion Question 2: Math Standards, Due Wed
Week 2 - Thur, Jan 31	*Lesson Planning *Making Sense of Rigorous Content	-Lesson Plan format -Lesson Expectations -KUD-Know, Understand, Do (p. 57-8 (6-12) -Try It: pg. 61 (k-5)	- Discussion Question 2: Math Standards, Due Today -Read Ch. 3 "Every Math Learner"

		together, pg 62 (6-12) independent practice	
Week 3 - Tues, Feb 5	*Blooms Taxonomy	-Questioning -Think Dots activities, Ch. 4	-Read CH. 4 “Every Math Learner”
Week 3 - Thur, Feb 7	*Differentiation	-Station/Learning Centers -Sternberg Aligned Tasks	-Read Ch. 5 - Test #1: Standards, Differentiation (Link in Moodle)
Week 4 - Tues, Feb 12	*Assessment/Evaluation	-Assessment Types -Standardized Tests	- Discussion Question #3 Due: Assessment -Add assessment types to resource unit
Week 4 - Thur, Feb 14	Additional Strategies	Growth Mindset UNRAAVEL Method STOP Sign Strategy	
Week 5 - Tues, Feb 19	Investigations: Let’s Do Math!	K-2: Classroom Routines and materials, patterns, counting/comparing, add/sub, 5/10 relationships	-Submit lesson plan 1 idea
Week 5 - Thur, Feb 21	Investigations: Let’s Do Math!	K-2: Geometry, tens/ones, measurement, data/graphs	-Work on lesson plan 1
Week 6 - Tues, Feb 26	Investigations: Let’s Do Math!	K-2: Hundreds chart, place value	-Discussion forum assessment question on K-2 (scenario)
Week 6 - Thur, Feb 28	*Lesson Planning/Instruction	-KSA Lesson Plan 1 Presentations in class	- KSA Lesson Plan #1 Due, Presentations
Week 7 - Tues, Mar 5	*Lesson Planning/Instruction	-KSA Lesson Plan Presentations in class continue	- KSA Lesson Plan #1 Due, Presentations continue
Week 7 - Thur, Mar 7	Investigations: Let’s Do Math!	3-5th: number sense, add/sub, mult, div	

Week 8 - Tues, Mar 11	Investigations: Let's Do Math!	3-5th: geometry, data/graphs, probability, fractions, decimals	
Week 8 - Thur, Mar 14	Investigations: Let's Do Math!	3-5th: measurement, time	-Discussion forum assessment question on 3-5 (scenario)
Week 9 - Mar. 16-24th	Spring Break		Enjoy Break!
Week 10- Tues, Mar 26	Investigations: Let's Do Math!	6-8: ratios, number system, equations, geometry, stats, probability, functions	
Week 10- Thur, Mar 28	Investigations: Let's Do Math!	6-8: ratios, number system, equations, geometry, stats, probability, functions	
Week 11 - Tues, Apr 2	-Lesson Planning/Instruction	KSA #2: Lesson Plan 2 Due/Presentation	KSA #2: Lesson Plan 2 Due/Presentation
Week 11 - Thur, Apr 4	-Lesson Planning/Instruction	KSA #2: Lesson Plan 2 Due/Presentations continue	KSA #2: Lesson Plan 2 Due/Presentations continue
Week 12 - Tues, Apr 9	Investigations: Let's Do Math!	9-12: algebra, functions, modeling, geometry, stats and prob	
Week 12 - Thur, Apr 11	Investigations: Let's Do Math!	9-12: algebra, functions, modeling, geometry, stats and prob	
Week 13 - Tues, Apr 16	*Learning math through games	-Intro to math game lesson -Research "Why Games"	-Begin work on group Math Game Lesson
Week 13 - Thur, Apr 18	*Learning through games	-Groups will participate in math game and provide peer feedback	-Collaborative math game lesson due today/presentation (add NFNT after feedback)

Week 14 - Apr 23	Investigations: Let's Do Math!	Additional strategies	
Week 14 - Apr 25	Investigations: Let's Do Math!	Additional Strategies	-KSA Classroom Observation Analysis Due
Week 15 - Apr 30	Lesson Planning/Instruction	Begin Resource Unit Presentations	-Final Exam Project Unit Due, Begin Presentations
Week 15 - May 2	Lesson Planning/Instruction	Resource Unit Presentations continue	-Final Exam Project: Resource Unit Presentations continue
Week 16 -Monday, May 13, 12 -2 pm	*Teaching with technology	-Virtual tools/manipulatives	Final Exam Session-Required Attendance

Week 16: Final exam in regular classroom. Consult the final exam schedule posted by One-Stop Student Services. Students can petition to move a final before a specific date.