

## COURSE APPROVAL DOCUMENT

**Southeast Missouri State University**

**Department: Elementary, Early & Special Education**

**Course No. CE 364**

**Title of Course: Methods of Teaching Math, Science and Social Studies in Early Childhood and Elementary Education**

**Date: College Council Approval, Nov. 11, 2014**

**Please check:  New  Revision**

Catalog Description: Research based strategies for implementation of integrated Math, Science, Social Studies curriculum in ECE/Elem. Ed, 37.5 hr. field experience in PreK. (3 hours credit)

Prerequisite: Admission to the Teacher Education Program

Co-requisite: CE 330 Classroom Management and Environmental Organization

CE 365 Observation, Assessment and Data Analysis

CE 366 Curriculum, Theory and Program Management

Purposes or Objectives of the Course:

Teacher Candidates will:

1. Plan and teach lessons (Math, Science and Social Studies) that reflect children's development and learning characteristics including English Language Learners, difficulties in the content, disabilities or developmental delays and exceptional abilities.
2. Uses effective strategies and tools, including technology, based on research and knowledge of the basic concepts, processes, and skills related to Math, Social Studies and Science.
3. Uses a variety of developmentally appropriate teaching and approaches, including technology, that promote children to think critically, problem solve and be motivated to solve problems in Math and Science.
4. Uses developmentally appropriate learning experiences and resources, including technology, for promoting children's understanding of basic concepts and academic language in Math, Social Studies and Science.
5. Apply knowledge of approaches for integration of Math, Social Studies and Science with other content areas, i.e. language and literacy, the arts, and physical activity, based on children's previous experiences and knowledge.
6. Uses appropriate National and State standards, including appropriate early learning standards in lesson plans.
7. Reflect and evaluate developmentally meaningful and challenging curriculum for each child.

**IV Student Learning Outcomes (Minimum of 3):**

1. Plan and teach lessons (Math, Science and Social Studies) that reflect children’s development and learning characteristics including difficulties in the content, disabilities or developmental delays and exceptional abilities.	Measurement : Lesson plan rubric and MEES evaluation
2. Apply knowledge of approaches for integration of Math, Social Studies and Science with other content areas based on children’s previous experiences and knowledge.	Measurement : Lesson plan rubric and MoPTA Task 1 charts rubric
3. Critically evaluate impact of instruction on each child's learning and development.	Measurement: MoPTA lesson plan reflection / rubric

**V. Optional departmental/college requirements: Alignment with MoSPE Quality Indicators and NAEYC Educator Preparation Standards**

<b>Course Objective</b>	<b>MoSPE QIs</b>	<b>NAEYC</b>
1. Plan and teach lessons (Math, Science and Social Studies) that reflect children’s development and learning characteristics including English Language Learners, difficulties in the content, disabilities or developmental delays and exceptional abilities.	2.4, 3.2	1a
2. Uses effective strategies and tools, including technology, based on research and knowledge of the basic concepts, processes, and skills related to Math, Social Studies and Science.	1.2, 1.4	4b, 5a
3. Uses a variety of developmentally appropriate teaching and approaches, including technology, that promote children to think critically, problem solve and be motivated to solve problems in Math and Science.	4.1	4c
4. Uses developmentally appropriate learning experiences and resources, including technology, for promoting children’s understanding of basic concepts and academic language in Math, Social Studies and Science	1.1, 1.2, 4.2	4c, 5b
5. Apply knowledge of approaches for integration of Math, Social Studies and Science with other content areas, i.e. language and literacy, the arts, and physical activity, based on children’s previous experiences and knowledge.	1.4, 2.5	4c
6. Uses appropriate National and State standards, including appropriate early learning standards in lesson plans.	3.1	5c
7. Reflect and evaluate developmentally meaningful and challenging curriculum for each child.	3.3, 8.1	4d, 5c

**VI. Course Content or Outline (Indicate number of class hours per unit or section):**

<b>Topic</b>	<b>Course Hours</b>
Basic concepts, processes and skills in Math, Social Studies and Science	4
Evidenced based math, science, and social studies instructional strategies including Developmentally Appropriate Practices	5
Learning characteristics including English Language Learners, difficulties in the content, disabilities or developmental delays and exceptional abilities	3
Critical thinking and problem solving in math, science and social studies instruction	3
Academic Language in Math, Science and Social Studies	3
Resources, tools, technology in math, science and social studies instruction	4
Integration of content areas (math, science, social studies with language and literacy, the arts, physical activity)	3
National and State Standards including Early Learning Standards in math, science and social studies	3
Reflection and evaluation	2
Field	15 (37.5 clock hours)
<b>Total</b>	<b>45</b>

Please Attach copy of class syllabus and schedule as an example

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Chair

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Dean

*Approved by Academic Council, April 1, 2014 Revision: April 1, 2014*

## COURSE SYLLABUS

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#### **Class Concerns**

Questions, comments or requests regarding this course or program should be taken to your instructor. Unanswered questions or unresolved issues involving this class may be taken to Dr. Julie Ray, Chair of the Department of Elementary, Early and Special Education.

#### **Accessibility**

Southeast Missouri State University and Disability Support Services remain committed to making every reasonable educational accommodation for students with disabilities. Many services and accommodations which aid a student’s educational experience are available for students with various types of disabilities. It is the student’s responsibility to contact Disability Support Services to become registered as a student with a disability in order to have accommodations implemented.

#### **Civility**

Every student at Southeast is obligated at all times to assume responsibility for his/her actions, to respect constituted authority, to be truthful, and to respect the rights of others, as to respect private and public property. In their academic activities, students are expected to maintain high standards of honesty and integrity and abide by the University’s Policy on Academic Honesty. Alleged violations of the Code of Student Conduct are adjudicated in accordance with the established procedures of the judicial system.

#### **Academic honesty**

Academic honesty is one of the most important qualities influencing the character and vitality of an educational institution. Academic misconduct or dishonesty is inconsistent with membership in an academic community and cannot be accepted. Violations of academic honesty represent a serious breach of discipline and may be considered grounds for disciplinary action, including dismissal from the University. Academic dishonesty is defined to include those acts which would deceive, cheat, or defraud so as to promote or enhance one’s scholastic record. Knowingly or actively assisting any person in the commission of an above-mentioned act is also academic dishonesty. Students are responsible for upholding the principles of academic honesty in accordance with the “University Statement of Student Rights” found in the STUDENT HANDBOOK. The University requires that all assignments submitted to faculty members by students be the work of the individual student submitting

the work. An exception would be group projects assigned by the instructor. In this situation, the work must be that of the group. Academic dishonesty includes:

**Plagiarism.** In speaking or writing, plagiarism is the act of passing someone else’s work off as one’s own. In addition, plagiarism is defined as using the essential style and manner of expression of a source as if it were one’s own. If there is any doubt, the student should consult his/her instructor or any manual of term paper or report writing. Violations of academic honesty include:

1. Presenting the exact words of a source without quotation marks;
2. Using another student’s computer source code or algorithm or copying a laboratory report; or
3. Presenting information, judgments, ideas, or facts summarized from a source without giving credit.

**Cheating.** Cheating includes using or relying on the work of someone else in an inappropriate manner. It includes, but is not limited to, those activities where a student:

1. Obtains or attempts to obtain unauthorized knowledge of an examination’s contents prior to the time of that examination.
2. Copies another student’s work or intentionally allows others to copy assignments, examinations, source codes or designs;
3. Works in a group when she/he has been told to work individually;
4. Uses unauthorized reference material during an examination; or
5. Have someone else take an examination or takes the examination for another

**Grading scale and policies:**

- 90% - 100%    A
- 80% - 89%    B
- 70% - 79%    C
- 60% - 69%    D
- Below 60%    F

Students must obtain a C or better in this course.

**Text:**

**Class content—outline or schedule**

Week	Topic	Readings	Field Work	Assignments
1	Basic concepts, processes and skills in Math, Social Studies and Science			
2	Basic concepts, processes and skills in Math, Social Studies and Science			
3	Evidenced based math, science, and social studies instructional strategies including Developmentally Appropriate Practices			
4	Evidenced based math, science, and social studies instructional strategies including			

	Developmentally Appropriate Practices			
5	Evidenced based strategies and Learning characteristics including English Language Learners, difficulties in the content, disabilities or developmental delays and exceptional abilities			
6	Learning characteristics including English Language Learners, difficulties in the content, disabilities or developmental delays and exceptional abilities			
7	Resources, tools, technology in math, science and social studies instruction			
8	National and State Standards including Early Learning Standards in math, science and social studies			
9	Standards and Critical thinking and problem solving in math, science and social studies instruction			
10	Critical thinking and problem solving in math, science and social studies instruction			
11	Academic Language in Math, Science and Social Studies			
12	Academic Language and Integration of content areas (math, science, social studies with language and literacy, the arts, physical activity)			
13	Integration of content areas (math, science, social studies with language and literacy, the arts, physical activity)			
14	Resources, tools, technology in math, science and social studies instruction			
15	Reflection and evaluation			
16	Final Exam date/time			

## ***Potential Readings and Resources***

- Buyse, V. & Wesley, P.W. (2006). Evidence-based practice in the early childhood field. Washington, DC: ZERO TO THREE Press. [1]
- Clements, D.H., Sarama, J., DiBiase, A.M. (2004). Engaging young children in mathematics: Standards for early childhood mathematics education. Mahwah, NJ: Lawrence Erlbaum. [5]
- Copley, J. (2010) *The Young Child and Mathematics*. Washington, DC: NAEYC
- Copple, C. (2010). *Developmentally Appropriate Practice* (3<sup>rd</sup> Ed.), Washington, DC: NAEYC.
- Darling-Hammond, L. (2007). We need to invest in math and science teachers. *The Chronicle Review*, 54 (17), Page B20. Online: <http://chronicle.com/weekly/v54/i17/17b02001.htm>
- DEC (2007). Promoting positive outcomes for children with disabilities: Recommendations for curriculum, assessment, and program evaluation. Missoula, MT: Author. Online: <http://www.naeyc.org/about/positions/pdf/PrmtgPositiveOutcomes.pdf> [3]
- DEC & NAEYC (2008). Early childhood inclusion: Joint position statement of the Division for Early Childhood (DEC) and National Association for the Education of Young Children (NAEYC). Online: [http://www.naeyc.org/about/positions/pdf/DEC\\_NAEYC\\_EC.pdf](http://www.naeyc.org/about/positions/pdf/DEC_NAEYC_EC.pdf) [2]
- Essa, E. L., & Burnham, M. M. (2009). Informing our practice: Useful research on young children's development. Washington, DC: NAEYC [1,4]
- Gartrell, D. *Guidance Matters Democratic Skill*. Nov. 2013. Retrieved October 6, 2014 from: [http://www.naeyc.org/yc/files/yc/file/201311/YC1113\\_Guidance\\_Matters\\_Democratic\\_Skill\\_4\\_Gartrell.pdf](http://www.naeyc.org/yc/files/yc/file/201311/YC1113_Guidance_Matters_Democratic_Skill_4_Gartrell.pdf)
- Ginsburg, H.P., Lee, J.S., & Boyd, J.S. (2008). Mathematics education for young children: What it is and how to promote it. *Social Policy Report*, 22(1), 3-11 & 14-22. [5]
- Gonzales-Meña, J. (2005). Resources for observation and reflection to accompany foundations of early childhood education. New York: McGraw Hill [3]
- Harowitz, F.D., Darling Hammond, F., Bransford, J. et al. (2005). Educating teachers for developmentally appropriate practice. In *Preparing teachers for a changing world: What teachers should learn and be able to do*, eds. L. Darling-Hammond & J. Bransford, 88-125. San Francisco: Jossey-Bass. [4]
- Hendrick, J. & Weissman, P. (2009). *The Whole Child: Developmental Education for the Early Years*. New Jersey: Prentice Hall Publishing [1]
- Hyson, M. (2008). *Enthusiastic and engaged learners: Approaches to learning in the early childhood classroom*. New York: Teachers College. [4]

Mindes, G. (2005). Social studies in today's early childhood curricula. *Young Children*, 60 (5), 12-18. [5]

Missouri Department of Elementary & Secondary Education. (2013). *Missouri standards for the preparation of educators (MoSPE)*. Retrieved Aug. 11, 2014 from:  
<http://dese.mo.gov/sites/default/files/MoSPEStandards.pdf>

Mouza, C. (2005). Using technology to enhance early childhood learning: The 100 Days of School project. *Educational Research and Evaluation*, 11(6), 513-528. [4]

NAEYC & SRCD (2008). Using research to improve outcomes for young children: A call for action. Final report of the Wingspread Conference, September 18-20, 2007. *Early Childhood Research Quarterly*, 23 (4), 591-596.

National Association for the Education of Young Children. (2012). *2010 NAEYC standards for initial & advanced early childhood professional preparation programs: For use by associate, baccalaureate and graduate degree programs*. Retrieved Sept. 21, 2014 from:  
[http://www.naeyc.org/ncate/files/ncate/NAEYC%20Initial%20and%20Advanced%20Standards%2010\\_2012.pdf](http://www.naeyc.org/ncate/files/ncate/NAEYC%20Initial%20and%20Advanced%20Standards%2010_2012.pdf)

National Association for the Education of Young Children. (1996). *Technology and Young Children – Ages 3 through 8, Position Statement*. Author. [6]

National Mathematics Advisory Panel. *Foundations for Success: The Final Report of the National Mathematics Advisory Panel*, U.S. Department of Education: Washington, DC, 2008. [5]

Saracho, O.N., & Spodek, B. (2008). *Contemporary perspectives on science and technology in early childhood education*. Charlotte, NC: IAP [4, 5]

Tabors, P. O. (2008). *One child, two languages: A guide for early childhood educators of children learning English as a second language*. Baltimore, MD: Paul H. Brookes Publishing Co. [1, 4]

Weiss, H. B., Caspe, M., & Lopez, M. E. (2006). *Family involvement in early childhood education*. Cambridge, MA: Harvard Family Research Project. [2]

Websites:

Institute of Educational Sciences: What Works Clearinghouse.  
<http://ies.ed.gov/ncee/wwc/findwhatworks.aspx>

<http://dese.mo.gov/sites/default/files/TeacherStandards.pdf>

[http://www.naeyc.org/ncate/files/ncate/NAEYC%20Initial%20and%20Advanced%20Standards%2010\\_2012.pdf](http://www.naeyc.org/ncate/files/ncate/NAEYC%20Initial%20and%20Advanced%20Standards%2010_2012.pdf)