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| **PROFESSOR:**        | **PHONE NUMBER:**        |
| **OFFICE LOCATION:**        | **E-MAIL:**        |
| **OFFICE HOURS:**        | **SEMESTER:**        |

1. **COURSE NUMBER AND TITLE, CATALOG DESCRIPTION, CREDITS:**

**EDE 4304C INTEGRATED MATH AND SCIENCE WITH PRACTICUM (4 CREDITS)**

Through this course the teacher candidate will examine the theoretical and practical aspects of teaching mathematics and science to the elementary student. Teacher candidates will become familiar with the National curriculum standards and the Florida Sunshine Standards for K-6 Mathematics and Science instruction. They will develop an understanding of instructional strategies, activities, and materials that will enhance student learning in Math and Science. Emphasis will also be placed on integrating the subject areas across the curriculum. A practicum experience of 35 hours is required with this course.

1. **PREREQUISITES FOR THIS COURSE:**

**ENC 1101, ENC 1102, 3 credits of college level mathematics, EDG 3620, EDG 3410, EDG 4004 all with a grade of “C” or higher**

**CO-REQUISITES FOR THIS COURSE:**

None

1. **GENERAL COURSE INFORMATION:** Topic Outline.

• Foundations, Theories and Research in Elementary Math and Science Education

• Methods of Instruction in Math and Science

• Integration of Math and Science across the Elementary Curriculum

• Assessment of Math and Science Learning

• Adaptive Strategies for ESE and ELL Students

1. **All courses at Florida SouthWestern State College contribute to the general education program by meeting one or more of the following general education competencies:**

**C**ommunicate clearly in a variety of modes and media.

**R**esearch and examine academic and non-academic information, resources, and evidence.

**E**valuate and utilize mathematical principles, technology, scientific and quantitative data.

**A**nalyze and create individual and collaborative works of art, literature, and performance.

**T**hink critically about questions to yield meaning and value.

**I**nvestigate and engage in the transdisciplinary applications of research, learning, and knowledge.

**V**isualize and engage the world from different historical, social, religious, and cultural approaches.

**E**ngage meanings of active citizenship in one’s community, nation, and the world.

**A.**  **General Education Competencies and Course Outcomes**

1. Listed here are the course outcomes/objectives assessed in this course which play an integral part in contributing to the student’s general education along with the general education competency it supports.

 General Education Competency: **Communicate**

 Course Outcomes or Objectives Supporting the General Education Competency Selected:

* The teacher candidate will plan and deliver standards-based math and science lesson plans demonstrating content knowledge and confidence in mathematics and science.
* The teacher candidate will synthesize instructional strategies, activities and materials for effective teaching and learning to create effective math and science unit supplements.
* The teacher candidate will employ appropriate diagnostic and assessment tools for math and science in a K-6 classroom.
* The teacher candidate will design a safe and encouraging classroom environment for learning math.
* The teacher candidate will effectively integrate math and science across the K-6 curriculum.

**2.  Listed here are the course outcomes/objectives assessed in this course which play a *supplemental* role in contributing to the student’s general education along with the general education competency it supports.**

General Education Competency: **Research**

 Course Outcomes or Objectives Supporting the General Education Competency Selected:

* The teacher candidate will analyze and critique research on the cognitive theories of developmental stages in relation to how children learn math and science.
* The teacher candidate will utilize specific adaptive teaching strategies to maximize the learning of students who have difficulty with math and science including ESE and ELL students.

**SPECIFIC COURSE COMPETENCIES:**

**Critical Task Assignments and/or Assessments**

At the conclusion of this course, teacher candidates will demonstrate competency in the following Preprofessional Florida Educator Accomplished Practices (FEAPs), Common core Standards, Professional Educator Competencies and Skills, ESOL Performance Standards, ESOL k-12 Competencies, Reading Competencies and elements of the Uniform Core Curriculum.

**FSAC- Florida Subject Area Competencies and Skills**

**FEAP- Florida Educator Accomplished Practices**

**PEC- Professional Education Competencies**

**ESOL T.S.- Florida Teacher Standards for ESOL Endorsement**

**ESOL K-12- English Speakers of Other Languages K-12 Competencies**

***\**** *The numbers and letters in the graph below correspond to the standards, indicators and competencies found above.*

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| **COURSE**  | **FSAC** | **FEAP/****PEC** | **READING** | **ESOL T.S.** | **ESOL K-12** |
| EDE 4304C Integrated Math and Science with Practicum |  | 1a, 1b, 1c | 2.F.12.F.2 | 3.2.a, 3.2.h, 3.3.b |  |
|  |  | 4.19 |  |  |
|  | 4a, 4b, 4f | 3.44.19 |  |  |
|  | 4.31.932.16.3 | 5b, 5e | 2.A.2 |  |  |
|  |  | 2b, 2d |  |  |  |
|  |  | 3a, 3b, 3c, 3d | 2.A.42.A.5 |  |  |
|  | 32.132.2 | 3g | 2.A.42.A.5 |  |  |

**RELATIONSHIP OF COURSE TO PROGRAM GOALS AND NATIONAL SPECIALIZED PROGRAM ASSOCIATION STANDARDS:**

This course is part of the Florida SouthWestern State College, Baccalaureate program in Education, for teacher licensure in the State of Florida in the area of Elementary Education K-6, Secondary Biology or Mathematics. This program Complies with the standards for teacher licensure established by the Florida Department of Education and covers the Preprofessional Florida Educator Accomplished Practices, Common core Standards, Professional Educator Competencies and Skills, ESOL Performance Standards, ESOL K -12 Standards, and Reading Competencies.

1. **DISTRICT-WIDE POLICIES:**

**Programs for Students with Disabilities**

Florida SouthWestern State College, in accordance with the Americans with Disabilities Act and the College’s guiding principles, offers students with documented disabilities programs to equalize access to the educational process. Students needing to request an accommodation in this class due to a disability, or who suspect that their academic performance is affected by a disability should contact the Office of Adaptive Services at the nearest campus. The office locations and telephone numbers for the Office of Adaptive Services at each campus can be found at <http://www.fsw.edu/adaptiveservices>.

**REPORTING TITLE IX VIOLATIONS**

Florida SouthWestern State College, in accordance with Title IX and the Violence Against Women Act, has established a set of procedures for reporting and investigating Title IX violations including sexual misconduct.  Students who need to report an incident or need to receive support regarding an incident should contact the Equity Officer at equity@fsw.edu.  Incoming students are encouraged to participate in the Sexual Violence Prevention training offered online.  Additional information and resources can be found on the College’s website at <http://www.fsw.edu/sexualassault>.

1. **REQUIREMENTS FOR THE STUDENTS:**

**Content Assessment**

A content assessment of elementary math and science will be included as the final exam.

**Journal Article Review: Integrated Math and Science**

Teacher candidates should read at least five (5) journal articles and one must be focused on the developmental stages of children K-6. The other four (4) can be divided between topics of math and science or include articles on the integration of the two subject areas such as:

* Developmental stages of children K-6
* Effective strategies for teaching elementary school math
* Effective strategies for teaching elementary school science
* Managing math manipulatives in the classroom
* Safety issues with science experiments in the classroom
* Gender issues with math and science in elementary school
* Math and/or science anxiety and fears with children
* Parents as partners in the math and science curriculum
* Successful integration of math and science in elementary school

Children in grades K-6 go through definitive developmental phases which are individual in nature and may or may not occur at the same rate for every child. It is important to understand these phases and how they can affect student learning and readiness for certain subject material. Activities and strategies can also be aligned with developmental readiness. An elementary teacher must have a thorough understanding of the developmental phases to create lessons appropriate to the grade level assigned as well as have the ability to adapt and adjust those lessons for individual needs.

After reading the articles teacher candidates will create a summary page with key points from each article as well as the citation of the articles.

**Lesson Plans: Math and Science**

Teacher candidates will create five mathematical or science lesson plans to be taught during the field experience. The teacher candidate should work with their mentor teacher to choose lessons that they will be able to implement. The lesson plans should develop learning experiences that require students to demonstrate a variety of applicable skills and competencies. The lesson plans should minimally contain: goals, objectives which are aligned with the Common Core Standards, materials, activities, assessment practices (actual assessment does not need to be included for all lessons) and adaptations for ELL and ESE students. Students are required to collect an artifact from each lesson taught. For example: student work, picture, or video. Reflection on these lessons will be included.

**Math Interest Inventory**

Teacher candidates will develop a survey that they could use at the beginning of the school year with grade 3-5 students that addresses the interest level and anxiety level of students around math.

**Assessment Project**

During the practicum, teacher candidates (with input from their mentor teacher) will choose a chapter or lesson to pre and post test students to measure specific learning. The chapter or lesson should be one in which the teacher candidate will be conducting most of the teaching. Scores will be recorded and a graph will be created to demonstrate growth.

**Mini Integrated Unit Supplement**

Teacher candidates will create a thematic unit supplement for either K-2 or 3-5. The unit should integrate math and science but may also include language arts, social studies, art, music, PE and health when practical and applicable. A book list with 10 books, resource list, bulletin board, 3 manipulative activities/centers, 3 science inquiries and 2 writing activities will be included.

***\*All Critical Task assignments/exams must be passed with a minimum of 75%.***

1. **ATTENDANCE POLICY:**

After missing three hours of class, teacher candidates will not be admitted to class without

completing the School of Education Attendance Contract, which should be submitted to the

professor. Each absence thereafter will result in a 10% reduction of the overall grade.  Issues of

appeal will be reviewed by the administrative office in the School of Education.

Teacher candidates are expected to be in class on time. Each tardy will be counted as 30 minutes toward an absence.

1. **GRADING POLICY:**

Include numerical ranges for letter grades; the following is a range commonly used by many faculty:

90 - 100 = A

80 - 89 = B

70 - 79 = C

60 - 69 = D

Below 60 = F

(Note: The “incomplete” grade [“I”] should be given only when unusual circumstances warrant. An “incomplete” is not a substitute for a “D,” “F,” or “W.” Refer to the policy on “incomplete grades.)

1. **REQUIRED COURSE MATERIALS:**

(In correct bibliographic format.)

1. **RESERVED MATERIALS FOR THE COURSE:**

Other special learning resources.

1. **CLASS SCHEDULE:**

This section includes assignments for each class meeting or unit, along with scheduled Library activities and other scheduled support, including scheduled tests.

1. **ANY OTHER INFORMATION OR CLASS PROCEDURES OR POLICIES:**

**Academic Integrity**

Cheating/Plagiarism is defined as the intentional misrepresentation of another person's work as one's own work. Academic Dishonesty includes, but is not limited to, cheating, plagiarism, and fabrication of information. Teacher candidates should refer to the policies of the college in the handbook for further information.

**A.** **Cheating** – The improper taking or tendering of any information or material, which shall be used to determine academic credit. Taking of information includes, but is not limited to, copying graded homework assignments from another student, working together with another individual(s) on a take home test or homework when not specifically permitted by the professor; looking or attempting to look at text or notes during an examination when not permitted. Tendering of information includes, but is not limited to, giving your work to another student to be used or copied; giving someone answers to exam questions either when the exam is being given or after having taken an exam' giving or selling a term paper or other written materials to another student, sharing information on a graded assignment.

**B. Plagiarism** – The attempt to represent the work of another as the product of one's own thought, whether the other's work is published or unpublished, or simply the work of a fellow student. Plagiarism includes, but is not limited to, quoting oral or written materials without citation or with improper citation on an exam, term paper, homework, or other written materials or oral presentations. Plagiarism also includes submitting all or part of a previous assignment without documenting it is original work from another course, semester, or assignment, even if it is one’s own work.

The FSW State College academic integrity policy procedures in the student handbook (<http://www.fsw.edu/academics/catalog1516>) will be followed in the event of academic dishonesty.

**APA 6th Edition:**  All teacher candidates will be expected to follow the guidelines delineated in the American Psychological Association (APA) Publication Manual (6th Edition) when completing writing tasks. Although not required, it is strongly suggested that candidates have a copy of the manual on hand for reference when writing. Numerous resources are available online. Resources will also be provided by the professor. Points will be deducted for incorrect APA 6th formatting for critical tasks.

**Course Participation:** This course requires active participation. Teacher candidates should be prepared to participate during all class activities and complete quizzes/writing assignments based on weekly readings. Participation points will reflect the quality of weekly participation and quizzes/writing assignments.

**Course Technology:** The FSW Canvas portal is an integral part of the curriculum. Teacher candidates will find course content and information, assignment submission links and grades, and other critical information. All online communication should take place within the portal. If the portal is unfamiliar it would be beneficial to work through the Canvas Student Orientation activities. A link can be found on the course welcome page.

In this day of technology, technical issues are not an excuse for late or lost work. Teacher candidates are encouraged to submit their work prior to deadlines to allow for scheduled technical upgrades, weather problems, or personal technology issues. Back up work to a USB Drive or external hard drive so it can be uploaded from any computer even if primary technology develops a virus, crashes, or other issue. If an assignment needs to be submitted via Livetext and/or Canvas and they not available for some reason, the assignment may be emailed to the professor’s school email so that it is date and time stamped then keep trying to submit via the required portal.

**Critical Task Revision Policy:** Any Critical Task receiving a grade less than 75% must be resubmitted to the professor. ***The Critical Task must be revised and resubmitted within two weeks of the Critical Task being returned to the teacher candidate***.  For example, if a Critical Task is returned by the professor to the teacher candidate on October 15th, the Critical Task must be resubmitted by October 29th. Failure to receive a 75% or higher on all assigned Critical Tasks will result in a failing grade for the course regardless of the overall course average. If the two-week revision window expires after the last day of final exams, the professor will issue a grade of “Incomplete” for the course. ***If the Critical Task is not resubmitted within the two-week window, or does not receive a 75% or higher, it will result in a failing grade for the course regardless of the overall course average***. Revising a Critical Task may not necessarily result in a change in the overall course average.

**Field Experience:** Field experience is ***active field experience participation*** (not observation). Teacher candidates will work with the Field Experience Coordinator for placement with a mentor teacher. Mentor teachers will complete an ungraded mid-semester checkpoint as well as a final evaluation. It is strongly suggested that the hours be spread throughout the semester so that mentor teachers can more accurately assess a teacher candidate’s strengths/needs prior to completing the final evaluation. For more information regarding field experience, including the evaluation rubric, please refer to FSW’s field experience handbook.

**Late Assignment Policy:** The penalties for late critical task assignments are as follows:

 1 day late = 10% grade reduction of task

 2-6 days late = 20% grade reduction of task

 7+ days late = zero points earned towards course grade

The critical task must still be completed according to the critical task revision policy.

Non-critical tasks will not be accepted late. If a teacher candidate misses the deadline for a non-critical task, zero points will be awarded for the task.

**Personal Technology:** All personal communication technology should be turned off or silenced during instructional time unless it is being used for a class activity or to access course resources. If a teacher candidate must take/make a call during class, please try to minimize disruption as much as possible by stepping outside until business is finished. There should be no text messaging during instructional time within the classroom setting. Some course activities require technology with Flash capability, notice will be given in advance so teacher candidates may come prepared on those days.