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

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

**SCE 3420C TEACHING PHYSICAL SCIENCE IN MIDDLE SCHOOL WITH PRACTICUM (4 CREDITS)**

This course is designed to prepare teacher candidates to teach physical science in the middle grades (5-9). Teacher candidates will apply appropriate strategies in designing and implementing standards-based lessons with a physical science focus. Teacher candidates will integrate relevant technology resources for understanding physical science in their lessons. This course requires thirty-five hours of practicum in a 5-9 classroom setting.

1. **PREREQUISITES FOR THIS COURSE:**

**Admission to the Bachelor of Science in Education program or special permission from the Dean of the School of Education; EDG 4004, EDG 3410, and EDM 3230–all with a grade of “C” or higher; Prior to enrolling in any upper level course (course number beginning with a 3 or 4), students must complete the following courses with a grade of “C” or better: ENC 1101 English Composition I, ENC 1102 English Composition II, and three semester hours of college level mathematics; or permission from the appropriate academic dean.**

**CO-REQUISITES FOR THIS COURSE:**

None

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

* Major bodies of knowledge as identified by the Grade 5-9 Next Generation Standards for Physical Science that include the following Big Ideas:

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| The Nature of Science | * The Practice of Science * The Characteristics of Scientific Knowledge * The Role of Theories, Laws, Hypotheses, and Models * Science and Society |
| Physical Science | * Earth in Space and Time * Earth Structures * Earth Systems and Patterns * Properties of Matter * Changes in Matter * Forms of Energy * Energy Transfer and Transformations * Motion of Objects * Forces and Changes in Motion |

* Current issues and trends in science education, including research that impacts the middle school science curriculum (e.g. TIMSS report; NAEP results; Science FCAT; ethical science research; content area literacy, effective learning environments, technology and electronic resources, etc.)
* Effective research-based assessment procedures and their application in teaching middle school science
* Problem-solving and critical thinking processes; communication and instructional strategies; technology concepts, and their application in the teaching of middle school science

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 construct a middle grades science curriculum that accommodates appropriate bodies of knowledge identified in the Grades 5-9 Florida Standards for Life Science and the Nature of Science.
* The teacher candidate will create and implement effective, research-based assessment procedures for teaching middle grades science.
* The teacher candidate will integrate the following learning opportunities in the middle grades science curriculum: problem solving and critical thinking processes; communication and instructional strategies; and technology concepts and their application.

**B. Other Course Objectives/Standards**

* The teacher candidate will evaluate current issues and trends in science education, including research that impacts the middle grades science curriculum.
* Teacher candidates will create appropriate learning opportunities for students in a program of ongoing professional development.
* The teacher candidate will analyze data from a variety of sources to determine the specific instructional needs of students, including cognitive, social, cultural, linguistic, emotional, developmental, and physical needs.

**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** | **ESOL T.S.** | **ESOL K-12**  **COMP** |
| **SCE 3420** |  | 5e, 6 | 3.3.b, 3.3.c | 3, 4, 6 |
| 1a,1b, 1c, 1d, 1e, 1f |  |  |
| 3a, 3b, 3c |  |  |
| 1a, 1b, 1c |  |  |

**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](mailto: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:**

**Practicum Hours**

Students must successfully complete 35 hours in a middle grades (5-9) classroom. During the 35 hours, the teacher candidate will plan and teach at least five whole class lessons as supervised by the mentor teacher.  Students are required to successfully complete the practicum portion in order to receive a passing grade of “C” or better.  Successful completion of the practicum requires mentor teacher documentation of the 35 hours, submission of the five lesson plans taught, and a successful mentor teacher evaluation. In the event a student does not pass on the first attempt, he or she will only be permitted to retake the course one additional time.  Students may not repeat the course after stepping out of the program for two years.

**Mentor Teacher Evaluation**

Mentor teachers evaluate teacher candidates on their performance and attitude in the field at the mid-term and end of the 35 hours.  The mid-term evaluation should be used by the teacher candidate to set goals for improvement and continued success. The final practicum evaluation equates to 25% of the course grade.

**Reflective Journal**

Teacher candidates will write a brief weekly journal entry based on class activities and discussion, field experiences, and course readings. Entries will be in the style of a reflective journal and no fewer than 250 words in length. Entries should be emailed to the instructor no later than the end of each Friday. Candidates will design (and carry out preliminary components of) an Action Research Plan. The plan topic will derive from the interests/concerns developed while writing the reflective journal entries. Candidates will propose a research topic for instructor approval. Final plans will include components that can be reasonably completed by the end of the course, depending on the nature of the research and accommodation in the field experience.

**Science Unit**

Teacher candidates will plan and develop a science unit for middle school students based on the Florida Standards. Candidates will select a topic that can be used in their practicum classrooms and obtain approval from the instructor (Unit Proposal). The unit plan will be developed according to planning strategies described in the Gallagher text. The unit should identify all lessons needed to teach the complete unit, and at least five lessons should be fully developed using one of the Learning Cycle formats (Five Es, Seven Es, or Three Phase). One of the developed lessons will be presented in class.

* **Unit Rationale and Overview:** Provide a rationale for teaching this unit at the identified grade level. Unit rationales should be firmly based in the Florida Standards; however, any other justifications for teaching the unit topic should be identified. Provide a descriptive overview of the unit, summarizing lesson objectives and assessment. A concept map can be used to show relationship of unit concepts.
* **Unit and Lesson Objectives:** General unit objectives, as well as specific lesson objectives, should be identified and matched to specific assessment. Objectives should use action verbs (see lists).
* **Assessment:** Formative assessments should be identified for each phase of each developed lesson. Formative assessments should include a) observations, interviews, discussions; b) written assessments; c) performance assessments; d) graphics; and e) self-assessments. Lesson should also include summative assessments when appropriate.
* **Problem-based or Project-based Learning:** At least one developed lesson should include a problem-based learning activity. An alternative to problem-based learning is to develop a project-based learning lesson or unit. A lesson of this type is preferred for class presentation.
* **Differentiated Instruction:** All developed lesson plans should exemplify strategies and techniques for differentiated instruction, such as Gardner’s Multiple Intelligences, Bloom’s Taxonomy, Marzano’s Strategies, etc. Also, accommodations should be identified and incorporated for English Language Learners and Special Needs students.
* **Technology:** At least one of the developed lesson plans should incorporate technology-based instruction.

**Lesson Plans**

Teacher candidates will teach at least five science lessons during the practicum, preferably those developed for the Science Unit. However, candidates should teach their first science lesson as soon as possible, after negotiating an acceptable topic with the practicum teacher. This first lesson does not have to be from the Science Unit; however, a unit topic should be negotiated early before developing the Science Unit and Lesson Plans. Candidates will submit a written reflection on their science teaching experience, describing observed science lessons. For lessons taught, candidates should describe any difficulties in teaching the lessons and how issues were resolved and/or lessons were modified. Also, describe how lessons could be improved for future teaching. Describe the results of formative assessments, as well as any summative assessments. For observed lessons, identify differentiated instructional practices used, assessments (formative and summative), classroom management techniques, levels of questioning, cognitive complexity of the activities, technology integration, and attention to the Florida Standards. Finally, candidates should explain any differences in observed and candidate teaching outcomes.

**Science Resource Portfolio**

Teacher candidates will create a digital portfolio of science resources with the following components. Some resources can and should be used in the Science Unit lessons.

* **Science Starters:** Describe at least 10 starter activities for the opening of class periods that require critical thinking skills. Science Starters should set the tone for the class and should be pertinent to the content being learned each day. Starter activities can be used in lessons developed for the unit.
* **Resource Selection and Evaluation:** Identify and evaluate a variety of at least 20 resources that include books on science content and teaching; articles from the high school science practitioner’s journal (NSTA’s *The Science Teacher,* <http://www.nsta.org/highschool> ) and other articles on science content and teaching; activities for learning science; technology-based resources, such as Webquests, simulations, and online data-collection resources; guest speakers; and possible field trip locations. Find and use an appropriate evaluation format and provide an annotated bibliography of resources with evaluation results.
* **Concept Mapping:** Design at least five concept maps using Inspiration (or other appropriate) software. Concept maps can be used to introduce topics, assess learning, or provide instruction and should be used in at least one developed lesson or in the Unit plan.
* **Parent Involvement:** Candidates will describe at least five resources involving parent/family involvement, especially related to learning science. Consider after-school programs and informal science learning opportunities. Integrate these resources into the Unit lessons when appropriate.

**Assessment Project and Lesson Plan**

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 candidates will be conducting most of the teaching. Candidates will use this data to plan the lesson. Technology should be used to organize and integrate assessment information. Scores should be recorded, and graphs should be created to demonstrate growth.

**Professional Development Plan**

Teacher candidates will create a professional development plan to include realistic and measurable goals. The format for the plan will be provided by the instructor. The PDP will use SMART (specific, measureable, achievable, reliable, time-bound) goals using the template provided.  The PDP will be updated and progress noted each semester before adding new goals.  The PDP will begin at the end of the first practicum, continue at the end of the second practicum and be finalized at the end of internship.

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.