Program Matrix - Subject Area
Elementary Education (DOE Code 449/496) Dual Cert
University of Florida

Elementary Education (Dual Certification)		Program Requirements																										
Subject Area Competencies and Skills (22nd Edition)		**EEX 3616** Core Classroom Management	**EEX 3070** Teachers and Learners in the Inclusive School	**EEX 3257** Core Teaching Strategies	**EEX6053** Foundations of SE	**EEX 6233** Designing Instruction for Inclusive Classrooms	**EEX 6786** Collaborative Practice in Inclusive Schools	**EEX 6XXX** Math and Writing Strategies for Struggling Learners	**EEX 6661** Teaching and Managing Behavior for Student Learning	**ARE 4314** Art Education For Elementary Schools	**EDF 3115** Child Development for Inclusive Education	**EME 4401** Integrating Technology in the Elementary Curriculum	**LAE 3005** Children's Literature	**LAE 4314** Language Arts for Diverse Learners	**LAE 6616** Content-based Language, Literacy, and Writing	**MAE 3312**Content & Methods for Teaching Math Processes	**MAE 4310** Teaching Mathematics in the Inclusive Elementary School	**MUE 3210** Music For the Elementary Child	**RED 3307** Teaching Reading in Primary Grades	**RED 4324** Reading Intermediate Grades	**RED 6520** Literacy Instruction and Assessment	**SCE 4310** Elementary Science Methods for the Inclusive Classroom	**SCE 4XXX** Foundations of Science Teaching	**SSE 4312** Social Studies for Diverse Learners	**TSL 3526** ESOL: Language and Culture in Classrooms	**EDF3514** History of Education	**EEX6125 / EEX6219** Intervention for Lang and LD; Rdg Assessment & Intervention
Exceptional Student Education K-12																												
1. Knowledge of foundations of exceptional student education																												
1.	Identify state and federal legislation and case law that have affected the education o students with disabilities.		C		C																							
2.	Identify appropriate practices based on legal and ethical standards (e.g., due process, procedural safeguards, confidentiality, access to general education, least restrictive environment, transition planning, free appropriate public education).		C		C	C	C		C																			
3.	Demonstrate knowledge of the required policies and processes for developing individual education plans (IEPs), individualized family service plans (IFSPs), and transition IEPs		C		C	C	C		C																			
4.	Identify the classification systems and eligibility criteria under the current Individual with Disabilities Education Improvement Act.		C		C																							
5.	Compare the development and characteristics (e.g., language, cognitive-academic, socia emotional, sensory, physical-motor) of children with disabilities to the development and characteristics of children without disabilities.				C			C																				
6.	Interpret curriculum information and assessment data for IEP and child study team members.				C	C	C	C	C																			
7.	Identify models of support for assisting students with disabilities in accessing the general education curricula.		C		C		C		C																			
8.	Identify the purposes and functions of professional and advocacy organizations relevan to educating students with disabilities.				C																							
2. Knowledge of assessment and evaluation																												
1.	Identify the purposes of assessment (e.g., early identification, screening, interventions eligibility, diagnosis, identification of relevant instructional content, monitoring the effectiveness of instruction) across disciplines.		C	C			C	C	C																			C
2.	Identify the legal requirements and ethical principles regarding the assessment o students with disabilities (e.g., confidentiality, adherence to test protocols, appropriateness of assessment for student needs).				C		C		C																			C
3.	Identify measurement concepts, characteristics, and uses of norm-referenced, criterion-referenced, and performance-based assessments for students with disabilities.					C			C																			C
4.	Interpret, analyze, and apply the results of norm-referenced, criterion-referenced, an performance-based assessments for students with disabilities.						C	C	C																			C
5.	Identify alternative assessment strategies and procedures (e.g., observations performance-based assessments, ecological assessments, interviews, portfolios) and their appropriate use.	C				C	C	C	C																			C
6.	Identify the factors (e.g., curriculum alignment, cultural bias) that influenc disproportionate representation of students from diverse cultural, linguistic, and socioeconomic backgrounds in programs for students with disabilities and recognize the implications for assessment.		C		C	C																						
7.	Identify and analyze reliable and valid progress-monitoring methods for assessing individual student progress (e.g., curriculum-based assessments, fluency checks, rubrics story retelling, informal reading inventories, porfolios).			C		C	C	C	C																			C

Program Matrix - Subject Area
Elementary Education (DOE Code 449/496) Dual Cert
University of Florida

	Subject Area Competencies and Skills (22nd Edition)	**EEX 3616** Core Classroom Management	**EEX 3070** Teachers and Learners in the Inclusive School	**EEX 3257** Core Teaching Strategies	**EEX6053** Foundations of SE	**EEX 6233** Designing Instruction for Inclusive Classrooms	**EEX 6786** Collaborative Practice in Inclusive Schools	**EEX 6XXX** Math and Writing Strategies for Struggling Learners	**EEX 6661** Teaching and Managing Behavior for Student Learning	**ARE 4314** Art Education For Elementary Schools	**EDF 3115** Chld Development for Inclusive Education	**EME 4401** Integrating Technology in the Elementary Curriculum	**LAE 3005** Children's Literature	**LAE 4314** Language Arts for Diverse Learners	**LAE 6616** Content-based Language, Literacy, and Writing	**MAE 3312**Content & Methods for Teaching Math Processes	**MAE 4310** Teaching Mathematics in the Inclusive Elementary School	**MUE 3210** Music For the Elementary Child	**RED 3307** Teaching Reading in Primary Grades	**RED 4324** Reading Intermediate Grades	**RED 6520** Literacy Instruction and Assessment	**SCE 4310** Elementary Science Methods for the Inclusive Classroom	**SCE 4XXX** Foundations of Science Teaching	**SSE 4312** Social Studies for Diverse Learners	**TSL 3526** ESOL: Language and Culture in Classrooms	**EDF3514** History of Education	**EEX6125 / EEX6219** Intervention for Lang and LD; Rdg Assessment & Intervention
3. Knowledge of instructional practices in exceptional student education																												
1.	Analyze assessment information to identify a student's educational needs and instructional levels in order to select appropriate specialized instructional techniques, strategies, and materials.			C	C	C		C	C																			C
2.	Identify characteristics of reliable sources of scientifically based research related to instructional practices.	C		C	C	C	C	C	C																			C
3.	Identify instructional strategies for acquisition, generalization, and maintenance of skills (e.g., functional and applied academic skills, workplace and career skills, independent living skills) across school, home, work, and community settings.	C			C	C		C	C																			
4.	Select relevant general education and alternate standards and curricula appropriate for a student's age, instructional needs, and functional performance across settings.		C	C	C	C	C	C																				
5.	Identify methods for differentiating, accommodating, and modifying assessment, instruction, and materials in order to meet individual student needs (e.g., related to age, gender, cultural and linguistic background, preferred communication mode).		C	C	C	C		C																				
6.	Identify effective methods of communication, consultation, and collaboration with students, families, parents, guardians, administrators, general education teachers, paraprofessionals, and other professionals, including students, families, and team members from culturally and linguistically diverse backgrounds, as equal members of the educational team.	C	C		C	C	C	C	C																			
7.	Identify effective classroom management and flexible grouping strategies for specific instructional activities.	C		C					C																			C
8.	Identify effective instructional methods (e.g., explicit and systematic instruction scaffolding, modeling) for integrating reading, writing, speaking, listening, viewing, researching, and presenting across the curricula.			C		C		C																				C
9.	Identify instructional strategies that help students comprehend and apply knowledge of informational text structure (e.g., cause and effect, chronological order, compare and contrast) and text features (e.g., index, glossary, subheading).					C		C																				C
10.	Identify criteria for selecting and evaluating both print and nonprint media (e.g. Internet, software, trade books, textbooks, DVDs, videos) for instructional use to match student needs and interests.					C		C																				C
11.	Identify effective instructional methods and supports (e.g., direct instruction, visual supports, manipulatives) for teaching mathematics and integrating mathematics across the curricula.					C		C																				
4. Knowledge of assessing, designing, and implementing positive behavioral supports																												
1.	Analyze the legal and ethical issues pertaining to positive behavior-management strategies and disciplinary actions.	C						C																				
2.	Identify data collection strategies for assessing student behavior.	C						C																				
3.	Analyze individual and group data to select and evaluate proactive interventions that foster appropriate behavior.	C						C																				
4.	Identify and interpret the essential elements of a functional behavior assessment and a behavior intervention plan.	C						C																				
5.	Recognize the various concepts and models of positive behavior management.	C						C																				

Program Matrix - Subject Area
Elementary Education (DOE Code 449/496) Dual Cert
University of Florida

	Subject Area Competencies and Skills (22nd Edition)	**EEX 3616** Core Classroom Management	**EEX 3070** Teachers and Learners in the Inclusive School	**EEX 3257** Core Teaching Strategies	**EEX6053** Foundations of SE	**EEX 6233** Designing Instruction for Inclusive Classrooms	**EEX 6786** Collaborative Practice in Inclusive Schools	**EEX 6XXX** Math and Writing Strategies for Struggling Learners	**EEX 6661** Teaching and Managing Behavior for Student Learning	**ARE 4314** Art Education For Elementary Schools	**EDF 3115** Child Development for Inclusive Education	**EME 4401** Integrating Technology in the Elementary Curriculum	**LAE 3005** Children's Literature	**LAE 4314** Language Arts for Diverse Learners	**LAE 6616** Content-based Language, Literacy, and Writing	**MAE 3312**Content & Methods for Teaching Math Processes	**MAE 4310** Teaching Mathematics in the Inclusive Elementary School	**MUE 3210** Music For the Elementary Child	**RED 3307** Teaching Reading in Primary Grades	**RED 4324** Reading Intermediate Grades	**RED 6520** Literacy Instruction and Assessment	**SCE 4310** Elementary Science Methods for the Inclusive Classroom	**SCE 4XXX** Foundations of Science Teaching	**SSE 4312** Social Studies for Diverse Learners	**TSL 3526** ESOL: Language and Culture in Classrooms	**EDF3514** History of Education	**EEX6125 / EEX6219** Intervention for Lang and LD; Rdg Assessment & Intervention
5. Knowledge of language development, reading, and communication skills																											
1.	Identify the sequence of expressive and receptive language development and th components of language structure.																										C
2.	Identify communication deficits and select appropriate interventions.																										C
3.	Select strategies for integrating communication instruction to meet individual studen needs across educational settings.																										C
4.	Select appropriate assistive technology and alternative communication systems tc facilitate communication.																										C
5.	Identify the sequence of typical reading development (e.g., prereading level, learning to read, reading to learn) and the critical components of reading development (e.g., phonological awareness, phonics, fluency, vocabulary, comprehension).																										C
6.	Identify the terminology and concepts of literacy development (e.g., oral language phonological awareness, concepts about print, alphabet knowledge, decoding, vocabulary, text structures, written language, motivation).																										C
7.	Identify the characteristics and purposes of various reading programs (e.g., core reading program, supplemental reading program, intensive intervention program).																										C
8.	Identify characteristics of reading difficulties.																										C
9.	Identify and select prevention and intervention methods for addressing readin difficulties.																										C
10.	Identify the early phases of word recognition within the decoding process (e.g., pr alphabetic, partial-alphabetic, full-alphabetic, consolidated-alphabetic).																										C
11.	Identify explicit and systematic instructional methods for promoting the development o phonological and phonemic awareness.																										C
12.	Identify the processes and skills (e.g., graphophonemic, morphemic, syntactic, semantic that effective readers use for word recognition.																										C
13.	Identify explicit and systematic instructional methods for developing reading fluenc (e.g., practice with high-frequency words, timed readings, repeated readings, read alouds, choral reading, recorded books).																										C
14.	Identify explicit and systematic instructional methods and strategies for increasin vocabulary acquisition (e.g., appropriate choice of words for instruction; multiple exposures; teaching word learning strategies, such as word analysis and contextual analysis).																										C
15.	Identify explicit and systematic instructional methods and strategies for facilitating students' reading-comprehension and critical-thinking skills (e.g., use of graphic and semantic organizers; use of multiple strategy instruction; teaching summarizing, monitoring comprehension, question answering, question generating, and recognizing story structure as comprehension strategies).																										C
16.	Identify explicit and systematic instructional methods for developing phonics skills.																										C
6. Knowledge of skills related to teaching interpersonal interactions and participation																											
1.	Select appropriate instructional procedures for teaching adaptive life skills based on observations, ecological assessments, family interviews, and other student information.						C																				
2.	Identify methods for evaluating and documenting student progress in acquiring, generalizing, and maintaining skills related to interpersonal interactions and participation in activities across settings (e.g., at school, at home, in the community).						C		C																		
3.	Identify skills necessary for students with disabilities to engage in self-determinatio and self-advocacy.		C				C																				

Program Matrix - Subject Area
Elementary Education (DOE Code 449/496) Dual Cert
University of Florida

	Subject Area Competencies and Skills (22nd Edition)	**EEX 3616** Core Classroom Management	**EEX 3070** Teachers and Learners in the Inclusive School	**EEX 3257** Core Teaching Strategies	**EEX6053** Foundations of SE	**EEX 6233** Designing Instruction for Inclusive Classrooms	**EEX 6786** Collaborative Practice in Inclusive Schools	**EEX 6XXX** Math and Writing Strategies for Struggling Learners	**EEX 6661** Teaching and Managing Behavior for Student Learning	**ARE 4314** Art Education For Elementary Schools	**EDF 3115** Child Development for Inclusive Education	**EME 4401** Integrating Technology in the Elementary Curriculum	**LAE 3005** Children's Literature	**LAE 4314** Language Arts for Diverse Learners	**LAE 6616** Content-based Language, Literacy, and Writing	**MAE 3312**Content & Methods for Teaching Math Processes	**MAE 4310** Teaching Mathematics in the Inclusive Elementary School	**MUE 3210** Music For the Elementary Child	**RED 3307** Teaching Reading in Primary Grades	**RED 4324** Reading Intermediate Grades	**RED 6520** Literacy Instruction and Assessment	**SCE 4310** Elementary Science Methods for the Inclusive Classroom	**SCE 4XXX** Foundations of Science Teaching	**SSE 4312** Social Studies for Diverse Learners	**TSL 3526** ESOL: Language and Culture in Classrooms	**EDF3514** History of Education	**EEX6125 / EEX6219** Intervention for Lang and LD; Rdg Assessment & Intervention
7. Knowledge of the transition process																												
1.	Identify activities relevant to the four stages of career development (i.e., awareness exploration, preparation, and placement).				C																							
2.	Identify the essential domains of transition planning (e.g., personal-social, general community functioning, employment, leisure-recreational) for students with disabilities.				C																							
3.	Demonstrate knowledge of transition planning using student and family characteristics (e.g., socioeconomic status, gender, cultural and linguistic background) to develop desired postschool outcomes.				C																							
4.	Identify resources and strategies for assisting students in functioning in a variety of environments to which they will be transitioning.				C																							
	Elementary Education K-6																											
Language Arts and Reading																												
1. Knowledge of the reading process																												
1.	Identify the content of emergent literacy (e.g., oral language development, phonological awareness, alphabet knowledge, decoding, concepts of print, motivation, text structures, written language development).									C				C					C									
2.	Identify the processes, skills, and stages of word recognition that lead to effective decoding (e.g., pre-alphabetic, partial-alphabetic, full-alphabetic, graphophonemic, morphemic).																		C									
3.	Select and apply instructional methods for the development of decoding skills (e.g. continuous blending, chunking).																		C									
4.	Distinguish among the components of reading fluency (e.g., accuracy, automaticity, rate, prosody).																		C									
5.	Choose and apply instructional methods for developing reading fluency (e.g., practic with high-frequency words, readers theatre, repeated readings).																		C									
6.	Identify and differentiate instructional methods and strategies for increasing vocabulary acquisition across the content areas (e.g., word analysis, author's word choice, context clues, multiple exposures).									C				C					C	C								
7.	Identify and evaluate instructional methods and strategies for facilitating students' reading comprehension (e.g., summarizing, self-monitoring, questioning, use of graphic and semantic organizers, think alouds, recognizing story structure).													C					C	C								
8.	Identify essential comprehension skills (e.g., main idea, supporting details and facts author's purpose, point of view, inference, conclusion).									C									C	C								
9.	Determine appropriate uses of multiple representations of information for a variety of purposes (e.g., charts, tables, graphs, pictures, print and nonprint media).									C					C													
10.	Determine and analyze strategies for developing critical-thinking skills such as analysis synthesis, and evaluation (e.g., making connections and predictions, questioning, summarizing, question generating).									C				C					C	C								
11.	Evaluate and select appropriate instructional strategies for teaching a variety of informational and literary text.									C				C					C	C								
2. Knowledge of literary analysis and genres																												
1.	Differentiate among characteristics and elements of a variety of literary genres (e.g. realistic fiction, fantasy, poetry, informational texts).									C			C															
2.	Identify and analyze terminology and intentional use of literary devices (e.g., simile metaphor, personification, onomatopoeia, hyperbole).												C															
3.	Evaluate and select appropriate multicultural texts based on purpose, relevance, cultural sensitivity, and developmental appropriateness.												C															
4.	Identify and evaluate appropriate techniques for varying student response to texts (e.g., thinkpair-share, reading response journals, evidence-based discussion).									C			C	C						C								

Program Matrix - Subject Area
Elementary Education (DOE Code 449/496) Dual Cert
University of Florida

Subject Area Competencies and Skills (22nd Edition)	**EEX 3616** Core Classroom Management	**EEX 3070** Teachers and Learners in the Inclusive School	**EEX 3257** Core Teaching Strategies	**EEX6053** Foundations of SE	**EEX 6233** Designing Instruction for Inclusive Classrooms	**EEX 6786** Collaborative Practice in Inclusive Schools	**EEX 6XXX** Math and Writing Strategies for Struggling Learners	**EEX 6661** Teaching and Managing Behavior for Student Learning	**ARE 4314** Art Education For Elementary Schools	**EDF 3115** Chld Development for Inclusive Education	**EME 4401** Integrating Technology in the Elementary Curriculum	**LAE 3005** Children's Literature	**LAE 4314** Language Arts for Diverse Learners	**LAE 6616** Content-based Language, Literacy, and Writing	**MAE 3312**Content & Methods for Teaching Math Processes	**MAE 4310** Teaching Mathematics in the Inclusive Elementary School	**MUE 3210** Music For the Elementary Child	**RED 3307** Teaching Reading in Primary Grades	**RED 4324** Reading Intermediate Grades	**RED 6520** Literacy Instruction and Assessment	**SCE 4310** Elementary Science Methods for the Inclusive Classroom	**SCE 4XXX** Foundations of Science Teaching	**SSE 4312** Social Studies for Diverse Learners	**TSL 3526** ESOL: Language and Culture in Classrooms	**EDF3514** History of Education	**EEX6125 / EEX6219** Intervention for Lang and LD; Rdg Assessment & Intervention
3. Knowledge of language and the writing process																										
1. Identify and evaluate the developmental stages of writing (e.g., drawing, dictating writing).									C				C													
2. Differentiate stages of the writing process (i.e., prewriting, drafting, revising, editing publishing).									C				C													
3. Distinguish among the modes of writing (e.g., narrative, informative/explanatory argument).									C				C													
4. Select the appropriate mode of writing for a variety of occasions, purposes, and audiences.									C				C													
5. Identify and apply instructional methods for teaching writing conventions (e.g., spelling punctuation, capitalization, syntax, word usage).									C				C													
6. Apply instructional methods for teaching writer's craft across genres (e.g., precise language, figurative language, linking words, temporal words, dialogue, sentence variety).									C				C													
4. Knowledge of literacy instruction and assessments																										
1. Distinguish among different types of assessments (e.g., norm-referenced criterionreferenced, diagnostic, curriculum-based) and their purposes and characteristics.													C							C						
2. Select and apply oral and written methods for assessing student progress (e.g., informal reading inventories, fluency checks, rubrics, story retelling, portfolios).													C							C						
3. Analyze assessment data (e.g., screening, progress monitoring, diagnostic) to guide instructional decisions and differentiate instruction.													C							C						
4. Analyze and interpret students' formal and informal assessment results to inform students and stakeholders.									C				C							C						
5. Evaluate the appropriateness of assessment instruments and practices.									C				C						C	C						
6. Select appropriate classroom organizational formats (e.g., literature circles, small groups, individuals, workshops, reading centers, multiage groups) for specific instructional objectives.									C				C					C								
7. Evaluate methods for the diagnosis, prevention, and intervention of common emergent literacy difficulties.																				C						
5. Knowledge of communication and media literacy																										
1. Identify characteristics of penmanship (e.g., legibility, letter formation, spacing).									C				C					C								
2. Distinguish among listening and speaking strategies (e.g., questioning, paraphrasing eye contact, voice, gestures).									C				C													
3. Identify and apply instructional methods (e.g., collaborative conversation, collaborative discussion, presentation) for developing listening and speaking skills.													C													
4. Select and evaluate a wide array of resources (e.g., Internet, printed material, artifacts visual media, primary sources) for research and presentation.													C													
5. Determine and apply the ethical process (e.g., citation, paraphrasing) for collecting and presenting authentic information while avoiding plagiarism.													C													
6. Identify and evaluate current technology for use in educational settings.											C															
Social Science																										
1. Knowledge of effective instructional practice and assessment of the social sciences																										
1. Select appropriate resources for instructional delivery of social science concepts including complex informational text.																							C			
2. Identify appropriate resources for planning for instruction of social science concepts.																							C			
3. Choose appropriate methods for assessing social science concepts.																							C			
4. Determine appropriate learning environments for social science lessons.																							C			

Program Matrix - Subject Area
Elementary Education (DOE Code 449/496) Dual Cert
University of Florida

Subject Area Competencies and Skills (22nd Edition)	**EEX 3616** Core Classroom Management	**EEX 3070** Teachers and Learners in the Inclusive School	**EEX 3257** Core Teaching Strategies	**EEX6053** Foundations of SE	**EEX 6233** Designing Instruction for Inclusive Classrooms	**EEX 6786** Collaborative Practice in Inclusive Schools	**EEX 6XXXX** Math and Writing Strategies for Struggling Learners	**EEX 6661** Teaching and Managing Behavior for Student Learning	**ARE 4314** Art Education For Elementary Schools	**EDF 3115** Chld Development for Inclusive Education	**EME 4401** Integrating Technology in the Elementary Curriculum	**LAE 3005** Children's Literature	**LAE 4314** Language Arts for Diverse Learners	**LAE 6616** Content-based Language, Literacy, and Writing	**MAE 3312**Content & Methods for Teaching Math Processes	**MAE 4310** Teaching Mathematics in the Inclusive Elementary School	**MUE 3210** Music For the Elementary Child	**RED 3307** Teaching Reading in Primary Grades	**RED 4324** Reading Intermediate Grades	**RED 6520** Literacy Instruction and Assessment	**SCE 4310** Elementary Science Methods for the Inclusive Classroom	**SCE 4XXX** Foundations of Science Teaching	**SSE 4312** Social Studies for Diverse Learners	**TSL 3526** ESOL: Language and Culture in Classrooms	**EDF3514** History of Education	**EEX6125 / EEX6219** Intervention for Lang and LD; Rdg Assessment & Intervention
2. Knowledge of time, continuity, and change (i.e., history)																										
1. Identify and analyze historical events that are related by cause and effect.																							C			
2. Analyze the sequential nature of historical events using timelines.																							C			
3. Analyze examples of primary and secondary source documents for historica perspective.																							C			
4. Analyze the impacts of the cultural contributions and technological developments of Africa; the Americas; Asia, including the Middle East; and Europe.																							C			
5. Identify the significant historical leaders and events that have influenced Eastern an Western civilizations.																							C			
6. Determine the causes and consequences of exploration, settlement, and growth o various cultures.																							C			
7. Interpret the ways that individuals and events have influenced economic, social, an political institutions in the world, nation, or state.																								C		
8. Analyze immigration and settlement patterns that have shaped the history of the Unitec States.																								C		
9. Identify how various cultures contributed to the unique social, cultural, economic, an political features of Florida.																								C		
10. Identify the significant contributions of the early and classical civilizations.																							C			
3. Knowledge of people, places, and environment (i.e., geography)																										
1. Identify and apply the six essential elements of geography (i.e., the world in spatial terms, places and regions, physical systems, human systems, environment and society, uses of geography), including the specific terms for each element.									C														C			
2. Analyze and interpret maps and other graphic representations of physical and humar systems.																							C			
3. Identify and evaluate tools and technologies (e.g., maps, globe, GPS, satellite imagery) used to acquire, process, and report information from a spatial perspective.																							C			
4. Interpret statistics that show how places differ in their human and physical characteristics.																							C			
5. Analyze ways in which people adapt to an environment through the production and us of clothing, food, and shelter.																							C			
6. Determine the ways tools and technological advances affect the environment.																							C			
7. Identify and analyze physical, cultural, economic, and political reasons for th movement of people in the world, nation, or state.																							C			
8. Evaluate the impact of transportation and communication networks on the economi development in different regions.																							C			
9. Compare and contrast major regions of the world, nation, or state.																									C	
4. Knowledge of government and the citizen (i.e., government and civics)																										
1. Distinguish between the structure, functions, and purposes of federal, state, and loca government.																							C			
2. Compare and contrast the rights and responsibilities of a citizen in the world, nation state, and community.																							C			
3. Identify and interpret major concepts of the U.S. Constitution and other historica documents.																							C			
4. Compare and contrast the ways the legislative, executive, and judicial branches shar powers and responsibility.																							C			
5. Analyze the U.S. electoral system and the election process.																							C			
6. Identify and analyze the relationships between social, economic, and political rights and the historical documents that secure these rights in the United States.																							C			
7. Identify and analyze the processes of the U.S. legal system.																							C			

Program Matrix - Subject Area
Elementary Education (DOE Code 449/496) Dual Cert
University of Florida

Subject Area Competencies and Skills (22nd Edition)	**EEX 3616** Core Classroom Management	**EEX 3070** Teachers and Learners in the Inclusive School	**EEX 3257** Core Teaching Strategies	**EEX6053** Foundations of SE	**EEX 6233** Designing Instruction for Inclusive Classrooms	**EEX 6786** Collaborative Practice in Inclusive Schools	**EEX 6XXXX** Math and Writing Strategies for Struggling Learners	**EEX 6661** Teaching and Managing Behavior for Student Learning	**ARE 4314** Art Education For Elementary Schools	**EDF 3115** Chld Development for Inclusive Education	**EME 4401** Integrating Technology in the Elementary Curriculum	**LAE 3005** Children's Literature	**LAE 4314** Language Arts for Diverse Learners	**LAE 6616** Content-based Language, Literacy, and Writing	**MAE 3312**Content & Methods for Teaching Math Processes	**MAE 4310** Teaching Mathematics in the Inclusive Elementary School	**MUE 3210** Music For the Elementary Child	**RED 3307** Teaching Reading in Primary Grades	**RED 4324** Reading Intermediate Grades	**RED 6520** Literacy Instruction and Assessment	**SCE 4310** Elementary Science Methods for the Inclusive Classroom	**SCE 4XXX** Foundations of Science Teaching	**SSE 4312** Social Studies for Diverse Learners	**TSL 3526** ESOL: Language and Culture in Classrooms	**EDF3514** History of Education	**EEX6125 / EEX6219** Intervention for Lang and LD; Rdg Assessment & Intervention
5. Knowledge of production, distribution, and consumption (i.e., economics)																										
1. Determine ways that scarcity affects the choices made by governments and individuals.																							C			
2. Compare and contrast the characteristics and importance of currency.																							C			
3. Identify and analyze the role of markets from production through distribution to consumption.																							C			
4. Identify and analyze factors to consider when making consumer decisions.																							C			
5. Analyze the economic interdependence between nations (e.g., trade, finance, movement of labor).																							C			
6. Identify human, natural, and capital resources and evaluate how these resources are used in the production of goods and services.																							C			
Science																										
1. Knowledge of effective science instruction																										
1. Analyze and apply developmentally appropriate researched-based strategies for teaching science practices.																					C					
2. Select and apply safe and effective instructional strategies to utilize manipulatives models, scientific equipment, real-world examples, and print and digital representations to support and enhance science instruction.																					C					
3. Identify and analyze strategies for formal and informal learning experiences to provide a science curriculum that promotes students' innate curiosity and active inquiry (e.g., handson experiences, active engagement in the natural world, student interaction).																					C					
4. Select and analyze collaborative strategies to help students explain concepts, to introduce and clarify formal science terms, and to identify misconceptions.																					C					
5. Identify and apply appropriate reading strategies, mathematical practices, and sciencecontent materials to enhance science instruction for learners at all levels.																					C					
6. Apply differentiated strategies in science instruction and assessments based on student needs.																					C					
7. Identify and apply ways to organize and manage a classroom for safe, effective science teaching that reflect state safety procedures and restrictions (e.g., procedures, equipment, disposal of chemicals, classroom layout, use of living organisms).																					C					
8. Select and apply appropriate technology, science tools and measurement units for students' use in data collection and the pursuit of science.																					C					
9. Select and analyze developmentally appropriate diagnostic, formative and summative assessments to evaluate prior knowledge, guide instruction, and evaluate student achievement.																					C					
10. Choose scientifically and professionally responsible content and activities that are socially and culturally sensitive.																					C					

Program Matrix - Subject Area
Elementary Education (DOE Code 449/496) Dual Cert
University of Florida

	Subject Area Competencies and Skills (22nd Edition)	**EEX 3616** Core Classroom Management	**EEX 3070** Teachers and Learners in the Inclusive School	**EEX 3257** Core Teaching Strategies	**EEX6053** Foundations of SE	**EEX 6233** Designing Instruction for Inclusive Classrooms	**EEX 6786** Collaborative Practice in Inclusive Schools	**EEX 6XXX** Math and Writing Strategies for Struggling Learners	**EEX 6661** Teaching and Managing Behavior for Student Learning	**ARE 4314** Art Education For Elementary Schools	**EDF 3115** Chld Development for Inclusive Education	**EME 4401** Integrating Technology in the Elementary Curriculum	**LAE 3005** Children's Literature	**LAE 4314** Language Arts for Diverse Learners	**LAE 6616** Content-based Language, Literacy, and Writing	**MAE 3312**Content & Methods for Teaching Math Processes	**MAE 4310** Teaching Mathematics in the Inclusive Elementary School	**MUE 3210** Music For the Elementary Child	**RED 3307** Teaching Reading in Primary Grades	**RED 4324** Reading Intermediate Grades	**RED 6520** Literacy Instruction and Assessment	**SCE 4310** Elementary Science Methods for the Inclusive Classroom	**SCE 4XXX** Foundations of Science Teaching	**SSE 4312** Social Studies for Diverse Learners	**TSL 3526** ESOL: Language and Culture in Classrooms	**EDF3514** History of Education	**EEX6125 / EEX6219** Intervention for Lang and LD; Rdg Assessment & Intervention
2. Knowledge of the nature of science																											
1.	Analyze the dynamic nature of science models, laws, mechanisms, and theories tha explain natural phenomena (e.g., durability, tentativeness, replication, reliance on evidence).																					C					
2.	Identify and apply science and engineering practices through integrated process skill (e.g., observing, classifying, predicting, hypothesizing, designing and carrying out investigations, developing and using models, constructing and communicating explanations).																					C					
3.	Differentiate between the characteristics of experiments (e.g., multiple trials, contro groups, variables) and other types of scientific investigations (e.g., observations, surveys).																					C					
4.	Identify and analyze attitudes and dispositions underlying scientific thinking (e.g. curiosity, openness to new ideas, appropriate skepticism, cooperation).																					C					
5.	Identify and select appropriate tools, including digital technologies, and units o measurement for various science tasks.																					C					
6.	Evaluate and interpret pictorial representations, charts, tables, and graphs of authentic data from scientific investigations to make predictions, construct explanations, and support conclusions.																					C					
7.	Identify and analyze ways in which science is an interdisciplinary process an interconnected to STEM disciplines (i.e., science, technology, engineering, mathematics).																					C					
8.	Analyze the interactions of science and technology with society including cultura ethical, economic, political, and global factors.																					C					
3. Knowledge of physical sciences																											
1.	Identify and differentiate among the physical properties of matter (e.g., mass, volume texture, hardness, freezing point).																						C				
2.	Identify and differentiate between physical and chemical changes (e.g., tearing, burning rusting).																						C				
3.	Compare the properties of matter during phase changes through the addition and/o removal of energy (e.g., boiling, condensation, evaporation).																						C				
4.	Differentiate between the properties of homogeneous mixtures (i.e., solutions) an heterogeneous mixtures.																						C				
5.	Identify examples of and relationships among atoms, elements, molecules, an compounds.																						C				
6.	Identify and compare potential and kinetic energy.																						C				
7.	Differentiate among forms of energy, transformations of energy, and their real-worl applications (e.g., chemical, electrical, mechanical, heat, light, sound).																						C				
8.	Distinguish among temperature, heat, and forms of heat transfer (e.g., conduction convection, radiation).																						C				
9.	Analyze the functionality of an electrical circuit based on its conductors, insulators, an components.																						C				
10.	Identify and apply the characteristics of contact forces (e.g., push, pull, friction), a adistance forces (e.g., magnetic, gravitational, electrostatic), and their effects on matter (e.g., motion, speed).																						C				

Program Matrix - Subject Area
Elementary Education (DOE Code 449/496) Dual Cert
University of Florida

	Subject Area Competencies and Skills (22nd Edition)	**EEX 3616** Core Classroom Management	**EEX 3070** Teachers and Learners in the Inclusive School	**EEX 3257** Core Teaching Strategies	**EEX6053** Foundations of SE	**EEX 6233** Designing Instruction for Inclusive Classrooms	**EEX 6786** Collaborative Practice in Inclusive Schools	**EEX 6XXX** Math and Writing Strategies for Struggling Learners	**EEX 6661** Teaching and Managing Behavior for Student Learning	**ARE 4314** Art Education For Elementary Schools	**EDF 3115** Chld Development for Inclusive Education	**EME 4401** Integrating Technology in the Elementary Curriculum	**LAE 3005** Children's Literature	**LAE 4314** Language Arts for Diverse Learners	**LAE 6616** Content-based Language, Literacy, and Writing	**MAE 3312**Content & Methods for Teaching Math Processes	**MAE 4310** Teaching Mathematics in the Inclusive Elementary School	**MUE 3210** Music For the Elementary Child	**RED 3307** Teaching Reading in Primary Grades	**RED 4324** Reading Intermediate Grades	**RED 6520** Literacy Instruction and Assessment	**SCE 4310** Elementary Science Methods for the Inclusive Classroom	**SCE 4XXX** Foundations of Science Teaching	**SSE 4312** Social Studies for Diverse Learners	**TSL 3526** ESOL: Language and Culture in Classrooms	**EDF3514** History of Education	**EEX6125 / EEX6219** Intervention for Lang and LD; Rdg Assessment & Intervention
4. Knowledge of Earth and space																											
1.	Identify characteristics of geologic formations (e.g., volcanoes, canyons, mountains) an the mechanisms by which they are changed (e.g., physical and chemical weathering, erosion deposition).																						C				
2.	Identify and distinguish among major groups and properties of rocks and minerals anc the processes of their formations.																						C				
3.	Identify and analyze the characteristics of soil, its components and profile, and th process of soil formation.																						C				
4.	Identify and analyze processes by which energy from the Sun is transferred (e.g. radiation, conduction, convection) through Earth's systems (e.g., biosphere, hydrosphere, geosphere, atmosphere, cryosphere).																						C				
5.	Identify and analyze the causes and effects of atmospheric processes and condition (e.g., water cycle, weather, climate).																						C				
6.	Identify and analyze various conservation methods and their effectiveness in relation t renewable and nonrenewable natural resources.																						C				
7.	Analyze the Sun-Earth-Moon system in order to explain repeated patterns such as day and night, phases of the Moon, tides, and seasons.																						C				
8.	Compare and differentiate the composition and various relationships among the objects of our Solar System (e.g., Sun, planets, moons, asteroids, comets).																						C				
9.	Identify major events in the history of space exploration and their effects on society.																						C				
5. Knowledge of life science																											
1.	Identify and compare the characteristics of living and nonliving things.																						C				
2.	Analyze the cell theory as it relates to the functional and structural hierarchy of all living things.																						C				
3.	Identify and compare the structures and functions of plant and animal cells.																						C				
4.	Classify living things into major groups (i.e., Linnaean system) and compare according t characteristics (e.g., physical features, behaviors, development).																						C				
5.	Compare and contrast the structures, functions, and interactions of human and other animal orga systems (e.g., respiration, reproduction, digestion).																						C				
6.	Distinguish among infectious agents (e.g., viruses, bacteria, fungi, parasites), their transmission and their effects on the human body.																						C				
7.	Identify and analyze the processes of heredity and natural selection and the scientific theory evolution.																						C				
8.	Analyze the interdependence of living things with each other and with their environment (e.g food webs, ecosystems, pollution).																						C				
9.	Identify and analyze plant structures and the processes of photosynthesis, transpiration, an reproduction (i.e., sexual, asexual).																						C				
10.	Predict the responses of plants to various stimuli (e.g., heat, light, gravity).																						C				
11.	Identify and compare the life cycles and predictable ways plants and animals change as the grow, develop, and age.																						C				
Mathematics																											
1. Knowledge of student thinking and instructional practices																											
1.	Analyze and apply appropriate mathematical concepts, procedures, and professional vocabulary (e.g., subitize, transitivity, iteration, tiling) to evaluate student solutions.																C										
2.	Analyze and discriminate among various problem structures with unknowns in al positions in order to develop student understanding of operations (e.g., put-together/tak apart, arrays/area).																C										
3.	Analyze and evaluate the validity of a student's mathematical model or argument (e.g., inventive strategies, standard algorithms) used for problem solving.																C										
4.	Interpret individual student mathematics assessment data (e.g., diagnostic, formative, progress monitoring) to guide instructional decisions and differentiate instruction.																C										
5.	Select and analyze structured experiences for small and large groups of students according to the cognitive complexity of the task.																C										
6.	Analyze learning progressions to show how students' mathematical knowledge, skills and understanding develop over time.																C										
7.	Distinguish among the components of math fluency (i.e., accuracy, automaticity, rate flexibility).																C										

Program Matrix - Subject Area
Elementary Education (DOE Code 449/496) Dual Cert
University of Florida

	Subject Area Competencies and Skills (22nd Edition)	**EEX 3616** Core Classroom Management	**EEX 3070** Teachers and Learners in the Inclusive School	**EEX 3257** Core Teaching Strategies	**EEX6053** Foundations of SE	**EEX 6233** Designing Instruction for Inclusive Classrooms	**EEX 6786** Collaborative Practice in Inclusive Schools	**EEX 6XXX** Math and Writing Strategies for Struggling Learners	**EEX 6661** Teaching and Managing Behavior for Student Learning	**ARE 4314** Art Education For Elementary Schools	**EDF 3115** Chld Development for Inclusive Education	**EME 4401** Integrating Technology in the Elementary Curriculum	**LAE 3005** Children's Literature	**LAE 4314** Language Arts for Diverse Learners	**LAE 6616** Content-based Language, Literacy, and Writing	**MAE 3312**Content & Methods for Teaching Math Processes	**MAE 4310** Teaching Mathematics in the Inclusive Elementary School	**MUE 3210** Music For the Elementary Child	**RED 3307** Teaching Reading in Primary Grades	**RED 4324** Reading Intermediate Grades	**RED 6520** Literacy Instruction and Assessment	**SCE 4310** Elementary Science Methods for the Inclusive Classroom	**SCE 4XXX** Foundations of Science Teaching	**SSE 4312** Social Studies for Diverse Learners	**TSL 3526** ESOL: Language and Culture in Classrooms	**EDF3514** History of Education	**EEX6125 / EEX6219** Intervention for Lang and LD; Rdg Assessment & Intervention
2. Knowledge of operations, algebraic thinking, counting and number base ten																											
1.	Interpret and extend multiple representations of patterns and functional relationships by using tables, graphs, equations, expressions, and verbal descriptions.															C											
2.	Select the representation of an algebraic expression, equation, or inequality that models a real-world situation.															C											
3.	Analyze and apply the properties of equality and operations in the context of interpreting solutions.															C											
4.	Determine whether two algebraic expressions are equivalent by applying properties o operations or equality.															C											
5.	Evaluate expressions with parentheses, brackets, and braces.															C											
6.	Analyze and apply strategies (e.g., models, estimation, reasonableness) to solve multistep word problems.															C											
7.	Apply number theory concepts (e.g., primes, composites, multiples, factors, parity, rule of divisibility).															C											
8.	Identify strategies (e.g., compensation, combining tens and ones) based on place valu to perform multidigit arithmetic.															C											
3. Knowledge of fractions, ratios, and integers																											
1.	Compare fractions, integers, and integers with integer exponents and place them on a number line.															C											
2.	Convert among standard measurement units within and between measurement systems (e.g., metric, U.S. customary) in the context of multistep, real-world problems.															C											
3.	Solve problems involving addition, subtraction, multiplication, and division of fractions including mixing whole numbers and fractions, decimals and percents by using visual models and equations to represent the problems and their solutions.															C											
4.	Select the representation (e.g., linear, area, set model) that best represents the problem and solution, given a word problem or equation involving fractions.															C											
5.	Solve real-world problems involving ratios and proportions.															C											
4. Knowledge of measurement, data analysis, and statistics																											
1.	Calculate and interpret statistics of variability (e.g., range, mean absolute deviation) and central tendency (e.g., mean, median).															C											
2.	Analyze and interpret data through the use of frequency tables and graphs.															C											
3.	Select appropriate measurement units to solve problems involving estimates and measurements.															C											
4.	Evaluate the choice of measures of center and variability, with respect to the shape o the data distribution and the context in which the data were gathered.															C											
5.	Solve problems involving distance, time, liquid volume, mass, and money, which ma include units expressed as fractions or decimals.															C											
5. Knowledge of geometric concepts																											
1.	Apply geometric properties and relationships to solve problems involving perimeter area, surface area, and volume.															C											
2.	Identify and locate ordered pairs in all four quadrants of a rectangular coordinate system.															C											
3.	Identify and analyze properties of three-dimensional shapes using formal mathematica terms such as volume, faces, edges, and vertices.															C											
4.	Classify two-dimensional figures in a hierarchy based on mathematical properties.															C											