Course Title: Teaching Elementary and Middle Level Math (Requires $69 Math Kit Purchase)

Instructors: Paul Lawrence, Angie Su, Michelle Flaming

Length: 15 hours

Dates: Rolling admissions

Prerequisites: Bachelor Degree

Number of credits: 1

Course Description:
The course will provide teachers with easy-to-implement, well-sequenced activities that promote conceptual understanding and that relate concrete understanding to symbolic interpretation. Teachers will acquire techniques to assess all students' understanding of skills and concepts so that lessons can be adjusted to meet student needs and expand their comprehension. Teachers will be provided with activities that require pattern recognition and descriptions of operational procedures including whole numbers, fractions, and decimals. Teachers will be able to utilize activities that provide creative practice with operational skills.

Through Project MIND Workshops, participants will be introduced to a new way of thinking and problem-solving strategies, utilizing both the decimal system and the binary systems. The unique methods of teaching and demonstrating problem-solving techniques will give teachers the skills they need to be excellent math teachers. These methods can work for all types of students, regardless of their gender, cultural background, and socio-economic status, including alternative, gifted, at-risk, exceptional, and multicultural students. In the Project MIND program, students have the opportunities to create their own projects and math problems based on the content they learn in the classroom so that they can be self-starters in the learning process. Participants are introduced to activities that help make mathematics fun, interesting, and challenging for children.

Participants will be introduced to the building blocks necessary for a child to develop true number sense. Many times in education, we attempt to solve a symptom of number sense, students not knowing their basic facts, when we need to be looking at the core of the problem in order to solve the problem and its symptoms. In this course, participants will become familiar with all the building blocks of developing number sense, the foundational skills, that we often overlook. Additionally, diagnostic strategies will be introduced to determine the concepts that students have mastered as well as those that they have not. Suggested activities to help build upon concepts that are lacking are provided.

Objectives:
1. Knowledge –at the end of this course, the student will be able to understand:
    a. Concepts in a spiral format so that learning occurs when the child is ready
    b. How to use games, puzzles, math stories, math songs, and brainteasers to

help teach mathematical concepts;
    c. How to use effective representations and manipulatives for problem solving
2. Skills –after this course, a student will be able to:
    a. Use investigattion and self-discovery approaches
    b. Utilize games as teaching tools
    c. Encourage competition amongst the students
3. Dispositions – after this course, a student will appreciate:
    a. The use of multiple teaching techniques and strategies to solve problems
    b. Providing multiple formats for homework assignments
    c. Sets high standards and expectations

Session Topics (8):

Developing and Assessing Number Sense	Michelle Flaming
Games and Strategies for Teaching Number Operations	Angie Su
Puzzles, Brainteasers, & Games for Math Education: Part I	Angie Su
Puzzles, Brainteasers, & Games for Math Education: Part II	Angie Su
Division of Fractions	Paul Lawrence
Addition and Subtraction of Decimals	Paul Lawrence
Multiplication and Division of Decimals: Part 1	Paul Lawrence
Multiplication and Division of Decimals: Part 2	Paul Lawrence

Instructor Overview:

Michelle Flaming is a Math/Curriculum/Assessment Specialist for ESSDACK. She was a member of the state writing team for the revised Kansas Curricular Standards for Mathematics and has taught at various levels. Michelle facilitates schools in the implementation process of standards-based math programs, math standards, and improved student learning. Michelle has presented nationally for NCTM and CCSCO. Michelle's goals are to stimulate students' interest, achievement, and confidence in their learning of mathematics; to strengthen leadership and improve and promote excellence in the teaching of mathematics; to be an advocate for children and math education.

Dr. Hui Fang Huang "Angie" Su is a Professor of Mathematics Education for Nova Southeastern University's Fischler Graduate School of Education. She is the creator of Project MIND - Math Is Not Difficult®, a K -12 mathematics enhancement project currently being implemented in several school districts throughout the United States. Project MIND was a multi-million dollar project funded by the South Florida Annenberg

Challenge, the Toppel Family Foundation, the Quantum Foundation, National Science Foundation, JM Family Enterprise, Inc., the School District of Palm Beach County, Broward County Public Schools, Miami-Dade County Public Schools, and the Community Foundation for Palm Beach and Martin Counties. Project MIND is currently a state approved provider for Supplemental Educational Services under the No Child Left Behind Act. Prior to becoming a Professor for Nova Southeastern University, Dr. Su was the K-12 Mathematics Specialist in the division of Academic Programs for the Palm Beach County School District.

Paul Lawrence, a retired administrator/teacher, has been in public education for over 34 years. He believes that every student has the potential to learn and can be successful. His passion is to share ideas he has learned about teaching and learning with other professionals throughout the United States. To help him meet this goal, he has published a book titled *Good Connections for Testing* and offers highly energized, professional, customized workshops for districts and schools throughout the United States. Paul is on the road approximately 200 days per year and is booked up to a year in advance.

Methods of Instruction:
Methods of instruction will include

- Individual sections (8) (15 hours)
- Pre assessments (8)
- Graded post assessments (8)
- Video lectures (8) Polling questions - included in videos
- Study guides (8) (60 to100 pages)
- Handouts
- Final Project

All steps listed under each topic must be completed to receive credit for the course.
No partial credit will be given.
Students must earn a minimum of 70% to pass the course.

Texts (included in program)

- Study guide provided in the program (200 pages)

Assignments

- Pre assignments (40)
- Post assignments (64)
- Final project (1)

Percentage of Course Credit

- Graded post assessments 70%
- Final Project 30%

Due dates of major assignments, projects, and examinations: Online self-running programs can be started and completed at participants' own leisure within two months from the day they begin the course. Participants must complete and turn in the final within two weeks of completing the course.

Grading criteria/system and evaluation activities:
A course administrator will be reviewing students' answers and providing feedback. Students will be evaluated on their creativity and ability to incorporate techniques from the lectures into examples, lesson plans, and the final project.