Theme- Preparing Inquiring Educators: Knowledge, Understanding, Application

1. **Course Title and Credits:** ELCL 626, Adapting Mathematics Instruction for the Inclusive Classroom
   3 graduate credits

2. **Course Description:**
   This course provides general and special education mathematics teachers with an opportunity to explore techniques for adapting mainstream mathematics curricula, instruction, and assessment strategies to meet the learning needs of all students. The course is designed to clearly delineate the role that specific learning difficulties play in meeting expectations for mathematics success in terms of current curricular standards and inclusive educational practices. Students focus on identifying the learning difficulties their own students have in particular mathematics curricular content and collaborative planning of specific methods for adapting instruction for these learners. These cases are analyzed in class using students’ own knowledge of curriculum, readings on relevant psychological and educational theories, as well as current research. The culminating project for the course is the collaborative production of a curriculum and assessment guide for mathematics teachers working in inclusive or heterogeneously grouped classrooms. The course is team-taught by math education and special education faculty.

3. **Prerequisites:**
   This course is appropriate for certified general education and special education mathematics teachers. It is open only to matriculated master’s degree students and post-master’s degree students.

4. **Course Objectives:**
   To enable students to:
   A. identify specific conceptual and behavioral difficulties encountered and exhibited by students with specific learning problems and/or a history of poor performance in mathematics.
   B. identify the essential knowledge, conceptual reasoning, and habits of learning required to understand and utilize particular mathematics concepts and procedures.
   C. analyze the effects of specific conceptual and behavioral difficulties on the learning of particular mathematics concepts and procedures.
   D. construct specific curricular and pedagogical adaptations for redirecting and enriching the mathematics learning and assessment experiences of students in inclusive classrooms with identified mathematics learning difficulties.

5. **Student Learning Outcomes:**
   Through a combination of in-class collaborative oral discussions and presentations as well as written reports produced on paper and through the on-line Blackboard system, students will demonstrate their competence in:
A. identifying specific conceptual and behavioral difficulties encountered and exhibited by students with specific learning problems and/or a history of poor performance in mathematics.
B. identifying the essential knowledge, conceptual reasoning, and habits of learning required to understand and utilize particular mathematics concepts and procedures.
C. analyzing the effects of specific conceptual and behavioral difficulties on the learning of particular mathematics concepts and procedures.
D. constructing specific curricular and pedagogical adaptations for redirecting and enriching the mathematics learning and assessment experiences of students in inclusive classrooms with identified mathematics learning difficulties.

6. **Course Content**
   A. Overview of issues of inclusion and General Education /Special Education collaboration
   B. National and regional mathematics standards in relation to meeting the needs of all students
   C. Overview of Levine’s eight neuropsychological systems and their relationship to learning difficulties
   D. Research on issues of teaching mathematics to students with learning difficulties
   E. Research on pro-active responses to mathematics learning disabilities
   F. Applications of specific neuropsychological system dysfunctions to specific mathematics curricular content
   G. Sample case analysis: Analyzing cases of specific mathematics learning difficulties in classroom contexts
   H. Case analysis of math curriculum in terms of specific learning difficulties: Matching learning difficulties to specific effects in mathematics performance
   I. Case analysis for adapting instruction for diverse learners
   J. Equalizing the playing field: Collaborative classroom case analyses of teachers own cases and making recommendations for adaptations
   K. Formalizing curricular adaptations: Recording case analyses for dissemination

7. **Teaching/Learning Methods**
   A. Assigned readings related to syllabus topic
   B. In-class discussions of mathematics content and its relation to particular neurodevelopmental disabilities
   C. On-line discussions using Blackboard
   D. Case analysis – video and narrative

8. **Evaluation Methods**
   A. Participation in in-person and on-line discussions through Blackboard
   B. Construction of ideal and adapted mathematics lesson plans
   C. Case profile constructions
   D. Action research project involving adapting mathematics instruction for students with special learning or assessment needs.

9. **Recommended Texts/Readings:**
   - New Jersey Core Curriculum Standards for Mathematics (NJDOE, 2002)
students with LD. *Journal of Special Education, 36*(2), 89-101.

10. **Preparer’s Name and Date:** Professor Rochelle Goldberg Kaplan, Fall 2002
    Professor John P. Gangale

11. **Department’s Approval Date:** Fall 2002

12. **Reviser’s Name and Date:** Rochelle Goldberg Kaplan, Fall 2003

13. **Department’s Approval Date for Revisions:** Fall 2003

14. **Bibliography**


Moore, P.R., Rietch, H., & Ebeling, M. (1993). Considerations in Teaching Higher Order Thinking Skills to Students with Mild Disabilities


