

**SIMON FRASER UNIVERSITY**

**EDUCATION 367-4**

**INTEGRATING ESL LEARNERS IN DIFFERENT SCHOOL SUBJECTS:  
SCIENCE AND MATHEMATICS  
(E1.00)**

Fall Semester, 1991  
(September 3 – November 29)  
Tuesdays, 4:30 – 8:20 p.m.  
Location: MPX 7504

Instructor: Prof. Gloria Sampson  
Office: MPX 8671  
Phone: 291-4303

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**PREREQUISITES:** EDUC 401/402, or equivalent or permission of the instructor.

**OBJECTIVES AND TOPICS**

Because the kind of English used in science and mathematics differs greatly in grammar and function from that used in other subjects, a general purpose English as a second language course does not usually provide children and adolescents with the proper language skills to handle science and math in the typical elementary or secondary classroom. This course provides teachers of science and mathematics with specific techniques for helping ESL learners in their classes to cope with the English specific to the sciences and mathematics. This course is designed specifically for science and math teachers with NO background in English literature or English grammar. The following topics will be covered:

1. How to assess the conceptual and linguistic knowledge of children and adolescents with limited proficiency in English.
2. How the English used in talking about and writing about science and mathematics differs from ordinary English.
3. How to structure lessons that have students who speak English as their native language and English as their second language working together on the same content, but on different levels of language.
4. How to create progress files that appropriately assess second language learners in science and math subjects or courses.

**ASSIGNMENTS**

1. Students create a task related to the learning of science or math which will permit them to assess the oral language competence of an ESL learner in comparison to the competence of a native speaker of the same age. (40%)
2. Students rewrite a chunk of text for a math or science lesson so that it is intelligible to an ESL learner, focussing on one syntactic form commonly used in scientific writing. (30%)
3. Students create a sample progress file for an ESL student in a science or math subject. (30%)

All assignments are based on the readings in this course.

## **REQUIRED TEXTBOOKS**

David Pimm. (1987). Speaking Mathematically (Communication in Mathematics Classrooms). London: Routledge.

Patricia Osborn. (1989). How Grammar Works (A Self-Teaching Guide). NY: John Wiley & Sons, Inc.

D.W. Johnson, R.T. Johnson, & E.J. Holubec. (1990). Circles of Learning (Cooperation in the Classroom). 3rd ed. Edina, MN: Interaction Book Co.