



FAST TRAIN Programs
Center for International Education
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**College of Education and Human Development
George Mason University
Course Syllabus**

**EDUC 514 – Teaching Science K-6 in International Schools
Spring 2012 (CRN 41977)
January 3 – April 17
4:30 – 7:10 PM**

Instructor: Michele K. Lombard, Adjunct Professor

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Course Description: Covers the theory and practices of effective teaching of K-8 science in international schools. Uses laboratory and discovery techniques to design essential science components and integrate them with other disciplines. Introduces students to the design and implementation of activities for developing concepts, solving problems, and strengthening thinking skills in K-8 science.

EDUC 514 is a licensure course in elementary education, as such and upon successful completion of the sequence of licensure courses in FAST TRAIN and 1 year of teaching in an authorized PYP school, you will be eligible to apply for the IB Teacher Award Scheme: Level I.

Course Delivery:

Course delivery will be accomplished in a variety of ways in order to meet the needs and styles of all learners. Methods of instruction will include:

- Presentations assisted by Power Point
- Whole group and small group discussions
- Cooperative learning groups
- Student presentations
- Field projects
- Video presentations
- Textbooks and journal articles
- Blackboard

Course Objectives:

Students completing EDUC 514 will:

- Understand how children learn and develop
- Understand the central concepts, tools of inquiry, applications, and structures of science
- Understand how students differ in their approaches to learning
- Understand the importance of individual and group motivation and behavior to create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation
- Plan instruction based upon knowledge of subject matter, students, the community, and curriculum goals
- Understand the uses of formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social, and physical development of the learner
- Be a reflective practitioner who continually evaluates the effects of his/her choices and actions on others and who actively seeks out opportunities to grow professionally
- Foster relationships with school colleagues, parents, and agencies in the larger community to support students' learning and well-being
- Develop an understanding and appreciation of the organization and excitement of science
- Build a repertoire of science teaching and assessment strategies by reading, writing, observing, participating and reflecting on the teaching of science
- Develop strategies to help students to become scientifically literate, think critically and creatively, and see relationships among science, technology and society
- Create and teach a unit plan (PYP) that contains science lessons/activities that include:
 - learning experiences that make aspects of content meaningful to students (*National Standards, Constructivism, and Experimental Design*)
 - Learning opportunities that support students intellectual, social, and personal development (*Science Process Skills, Constructivism, and Cooperative Learning*)
 - Instructional opportunities that are adapted to diverse learners (*Multiple Intelligences and Science Integration*)
 - Instructional strategies to encourage students' development of critical thinking, problem solving, and performance skills (*Problem Solving & Thinking Skills*)
 - A learning environment that encourages positive social interaction, active engagement in learning, and self-motivation (*Hands-On Learning and Cooperative Learning*)
 - Foster active inquiry, collaboration, and supportive interaction in the classroom (*Questioning Strategies, Classroom Management, and Cooperative Learning*)