

## Graduate Module Outline

**Title:** Chemical process in soils- understanding availability, fate and transport of nutrients in soils

**Instructor:** Dr. Mehdi Sharifi

Email address: [MSharifi@NSAC.CA](mailto:MSharifi@NSAC.CA)

Phone: (902) 896-2249

**Timing (month/year module will be offered):** Fall (Oct-Nov) 2009

### Module Description:

This module will provide an over-view of some of the most important chemical reactions and equilibria that control nutrient bioavailability in the soil. This module will focus on the chemistry of phosphorus, potassium, sulfur and micronutrients in soils for better understanding of the dynamics that affect availability, fate and transport of nutrients in soils.

### Format:

This module includes a combination of lectures, discussions and presentations for 1.5 hours/week for 8 weeks. Each student will be expected to participate in discussions with questions and comments related to lectures and distributed readings. The students are also expected to have a written major essay on related topics and to present it to the class. At the end of the module there will be an examination on the content of lectures, discussions and presentations.

### Method of Evaluation:

The module will be assessed by a combination of coursework and examination.

- |                                 |     |
|---------------------------------|-----|
| 1. Essay                        | 40% |
| 2. Presentation of paper        | 20% |
| 3. Participation in discussions | 20% |
| 4. Final examination            | 20% |

### Prerequisites (list undergraduate courses required as prerequisites):

Introductory Soil Science (SOIL2000) or equivalent undergraduate soil science course.