**Practical Uses of Different Global Positioning Systems and Arc GIS in Agriculture**

**Time**: **September-October 2009**
**Instructors - Dr. Qamar Zaman and René J.R. Ténière**

**Background**: The module will introduce the practical applications of Different Global Positioning Systems in the field and Arc GIS applications for cropping systems. This graduate module will be available to any graduate student and will be offered for the first time in the fall semester of 2009.

**Content:** The proposed module will consist of the following components:
**Component 1**:
A. Participation in the following 3 classes in ENGN3003 Technology for Precision Agriculture:

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|---|---|
| Introduction to DGPS Systems | (C) |
| Introduction to ArcGIS - Part 1 | (C) |
| Introduction to ArcGIS - Part 2 | (C) |

B. The following practical exercises will be completed:

| | |
|---|---|
| Practical Use of DGPS Systems | (L) |
| Uses of DGPS on Farm Vehicle | (L) |
| Projections, Datums and Transformations | (L) |
| Spatial Data Editing - Part 1 | (L) |
| Spatial Data Editing - Part 2 | (L) |
| Gridding and Interpolation-IDW | (L) |
| Gridding and Interpolation – Kriging | (L) |

**C=class; L=lab**

**Component 2:**
A. Individual research paper in an area of technology for precision agriculture of the graduate student's special interest to be reported to the module supervisor in written form.
B. A short oral presentation of the individual research report, to the undergraduate class.

**Marking Scheme**:
1. Exam at the end of module from Component 1 - 50%.
2. Written Project - 30%.
3. Oral presentation - 20%.

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