

**Engineering Department
Dalhousie Agricultural Campus, Dalhousie University**

C# programming for Precision Agriculture

June-July 2014

Background

The .NET frame will be introduced, their application discussed, and hands-on programming sessions held. Particular topics include applications of programming in Visual C# in GUI development, interfacing and control of devices, image & data acquisition, and real-time process control. The module ends with project work and report submission by each student, aiming at solving a problem related to his/her thesis.

Prerequisite:

"Introductory C language"

Contents:

- Lectures
 1. The Microsoft .NET(C)
 2. .NET GUI controls(C)
 3. .NET Graphics(C)
 4. Interfacing in Visual C# with DLL(C)
 5. Project proposal presentation
 6. Case study: application of Visual C# in device control (C)
- Laboratory
 1. .NET and GUI Design (L)
 2. C# Graphics and Multithreading (L)
 3. Device control with C# (L)
 4. Imaging with C# (L)
 5. Real-time process control with C# (L)

Module delivery and evaluation:

- module will be covered in 6 weeks;
- each lecture and laboratory session will take between 2 and 3 hours, respectively

Evaluation:

laboratory exercise coding (30 %);
individual project work (includes presentation and report) (70 %); and

Instructors:

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