

# Information on the CPSC 3118 GUI Final Exam

**Date:** Wednesday, May 7, 2014  
**Time and Duration:** 8:00 – 10:00am, 2 hours  
**Format of Exam:** In-class Practical, Open-book  
Multiple Choice Questions (20 pts)  
User Interface Projects (20 pts)  
develop a Windows application using Visual Basic features (160 pts)

## Learning Objectives:

After completing this course,

- Students will demonstrate knowledge of the graphic user interface design and development.
  - Study of graphical user interfaces.
  - Study of programming languages used to implement user interfaces.
- Students will demonstrate ability to program graphical user interfaces using Visual Basic .NET.
  - Study of how to program applications using Visual Basic .NET.

## What to expect:

The exam covers material from

- *The Essential Guide to User Interface Design, 3rd Edition*
  - Ch 1- Importance of UI
  - Ch 2 – Characteristics of Graphical & Web UI
  - Step 1 & 2 – Understand User & Business Function
  - Step 3 & 4 – Principles of Good Design
  - Step 5 & 6 – Windows, Interaction Devices
  - Step 7 & 8 – Screen Controls, Text Messages
  - Step 9 & **10** – Feedback, **Internationalization**
  - **Step 11 & 12 – Graphics, Colors**
  - **Step 13 & 14 – Layout, Testing**
  
- **User Interface Project Presentations**
  - **Android for mobile devices**                      **Kindle (eReaders)**
  - **Windows 8 for mobile**                              **Google Glass**
  - **OS X for Macintosh**                                **Augmented reality (Oculus Rift)**
  
- *Microsoft Visual Basic 2012 for Windows, Mobile, Web, Office, and Database Applications Comprehensive*
  - Ch 1 - Introduction to Visual Basic 2012 Programming
  - Ch 2 - Program and Graphical User Interface Design
  - Ch 3 - Program Design and Coding
  - Ch 4 - Variables and Arithmetic Operations
  - Ch 5 - Decision Structures
  - Ch 6 - Loop Structures
  - Ch 7 - Using Procedures and Exception Handling
  - **Ch 8 - Using Arrays and File Handling**
  - **Ch 9 - Creating Web Applications**
  - **Ch 10 - Incorporating Databases with ADO.NET**
  - **Ch 11 - Multiple Classes and Inheritance**
  - **Ch 12 - Windows Store App**

You'll be tested on the use of Visual Studio controls and concepts including the following:

<ul style="list-style-type: none"><li>• Text boxes</li><li>• Picture boxes</li><li>• Buttons</li></ul>	<ul style="list-style-type: none"><li>• Data types</li><li>• Decision structures (ifs and select-case)</li><li>• Validate input data</li></ul>
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<ul style="list-style-type: none"> <li>• Group boxes</li> <li>• Check boxes</li> <li>• Radio buttons</li> <li>• Labels</li> <li>• <b>Message boxes</b></li> <li>• <b>MenuStrip</b></li> <li>• <b>InputBox</b></li> <li>• <b>ListBox</b></li> <li>• <b>DropDownList</b></li> <li>• <b>Calendar</b></li> </ul>	<ul style="list-style-type: none"> <li>○ RequiredField Validator</li> <li>○ Range Validator</li> <li>○ CompareValidator</li> <li>○ RegularExpressionValidator</li> <li>• Loops (for-Next, Do While, Do-Until)</li> <li>• <b>Try-Catch</b></li> <li>• <b>Procedures and Functions</b> <ul style="list-style-type: none"> <li>○ <b>Call by value</b></li> <li>○ <b>Call by reference</b></li> </ul> </li> <li>• <b>Arrays</b></li> <li>• <b>Text file I/O; comma-delimited files</b></li> <li>• <b>Multiple Forms</b></li> <li>• <b>Connect to a database</b></li> <li>• <b>Create/instantiate/uses classes&amp;subclasses</b></li> </ul>
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**How to submit:** Zip the entire application folder and post it in CougarView in the **Final** drop box. The assignment drop box will close at the end of class! In case of any technical problem (computer or CougarView crash), you must notify me immediately.