

# Course Outline for CE94930

## Introduction to Visual BASIC

### Structure

The course is 10 weeks, three hours per night. Each session will be split roughly in half, with lectures at the beginning of the session (in room MC4040) and hands-on lab work at the end (in room C2 168A).

### Instructor information

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### Week-by-week Curriculum

#### Week 1: Sept. 27

##### Lecture

- Introduction. What is VB? Why use VB instead of something else? Major components of VB (GUI design, programming, project management).
- Installing VB. Machine requirements. Minimal versus full installation.
- Tour of VB windows and tools. Using help.
- Open, run, modify, close. New, etc.
- Simple controls: labels, buttons, text. Properties of controls.
- Changing properties with the design tool.
- A look at VB code. Statements, variables, function libraries.
- Referencing an object and its properties.
- Events. Callbacks (event routines). The click event.

##### Lab

- Watstar procedures. Signon & change password. Etc.
- using help!
- familiarization with components. open, run, modify and save an existing program. play around.
- Exercise: start VB, check environment options (option explicit, save as text, save before run)

- Exercise: modify “colours” demo to display current setting in a label
- Exercise: fetch “movement” program, run it, change it to add a text selector (describe twips in exercise sheet)
- Exercise: new application (create directory first)

#### Week 2: Oct. 4

##### Lecture

- language syntax overview. Data declarations. Environmental options: require variable declarations, save as text, save before run.
- VB development environment: editing, cutting, pasting, new procedures, saving (save as text).
- structure of an application: main form, callbacks, global data. Procedures and functions, code-only forms. Building an executable.
- controls: buttons, textboxes, labels, frame, option (radio), checkbox
- events: click, change, form: load, unload. double-click. keypress.
- properties: caption, text, multiline, wordwrap, autosize, colours & backgrounds, positional: top, left, height, width. passwordchar
- methods: form: minimize & maximize. move, refresh

##### Lab

- lots of simple programs to exercise skills and control familiarization
- Exercise: icon viewer
- Exercise: add sliders (describe) to colour program (demoed version from week1)

#### Week 3: Oct.11

##### Lecture

- VB arrays (brief syntax overview)
- lists: listbox, combobox. Adding, deleting; searching; traversal and accessing; selection: multiple and single. Itemdata uses
- File I/O: textfile, record-based.
- debugging: breakpoint, single-step. Debug window, debug.print

- standard dialogues: msgbox, inputbox. Constants into global data.
- application structure: secondary forms, modal vs modeless forms. creating multi-form applications
- VBxS: common dialogues: fileopen

#### Lab

- text editor (line based)

### Week 4: Oct. 18

#### Lecture

- Picture box: line, circle, rectangles, mouse operations (down, up, move); freehand trace, rubber-banding; background image;
- Autoredraw property, persistent bitmaps.
- Mouseover/dragover

#### Lab

- point & click
- chase-the-cursor

### Week 5: Oct. 25

#### Lecture

- All about menus: menu design window, uses, nesting, design considerations (not too many layers, not used as buttons, checkbox settings, option settings)
- Toggling
- Window design principles and techniques: organization, tab ordering, default & cancel properties, enabling & disabling, form resizing

#### Lab

- Add menus to text editor or other previous application
- automatic resize of form contents (e.g. picturebox)

### Week 6: Nov. 1

#### Lecture

- control arrays: design time -- calculator button pad
- MDI - document model of applications; object variables & new
- run-time control arrays; Window-list menus

#### Lab

- Rolodex (MDI, menu, dynamic forms)
- keyboard assist

### Week 7: Nov. 8

#### Lecture

- drive, Directory and file controls; refresh event
- drag & drop

#### Lab

- text-editor launcher

### Week 8: Nov. 15

#### Lecture

- DDE - simple
- Distributing VB applications: SetupWiz

#### Lab

- adapt keyboard assist to drive application
- setup a distribution

### Week 9: Nov. 22

#### Lecture

To be announced (guest speakers)

#### Lab

### Week 10: Nov. 29

- Review
- What else is there to know about VB? databases, macro language, OLE, DLLs (Windows API)
- VB Standard versus VB professional
- Alternatives to VB for Windows: Borland ObjectVision, CA Realizer, Powersoft Powerbuilder, Asymetrix Toolbook
- Other operating systems: OS/2: VX-Rexx; Unix: Tk/TCL; Portable: Galaxy; Portable environments: Visual c/c++

## Reference Materials