Liverpool John Moores University

Title:	INTRODUCTION TO LABVIEW
Status:	Definitive
Code:	**4025TECH** (105419)
Version Start Date:	01-08-2016
Owning School/Faculty:	Electronics and Electrical Engineering
Teaching School/Faculty:	Electronics and Electrical Engineering

Team	Leader
Colin Wright	Y

Academic Level:	FHEQ4	**Credit Value:**	12	**Total Delivered Hours:**	48
Total Learning Hours:	120	**Private Study:**	72		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Practical	24
Seminar	24

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	Simple application	25	
Essay	AS2	Simple application	25	
Essay	AS3	Mini project	50	

Aims

To introduce the students to a graphical based programming language that enables the user to program via a CAD style environment enabling them to create virtual instruments as a base for data acquisition and instrument control.

Learning Outcomes

After completing the module the student should be able to:

1 Use LabVIEW to create applications.
2 Understand front panels, block diagrams, and icons and connector panes.
3 Use built-in LabVIEW functions.
4 Create and save programs in LabVIEW so they can be used as subroutines.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

CW	1	2	3	
CW	1	2	3	
CW	1	2	3	4

Outline Syllabus

LabVIEW environment
How LabVIEW differs from traditional programming languages.
Define a VI, how to open, create and save VI's and templates.
Front panels
How they function and what are they used for.
What components make up the front panel.
Block diagrams
How they differ to front panels.
How they are constructed.
Data Flow
What is the dataflow paradigm.
Printing and creating documentation reports
How to print from a file to the printer, HTML, rich text document.
Loops
Different types of loops in LabVIEW.
Controlling execution using loops.
Shift registers
What are the functions of shift registers.
How and when to use them.
Case Structures
How to construct a case structure.
How they differ from other structures in LabVIEW.
Visual Displays: Charts & Graphs
Difference between a chart and graph and what the components for construction are.
Multi-plots
Displaying several signals in the same chart.
Waveform data type.
Composite Data: Arrays & Clusters
Difference between arrays and clusters, when each should be used.

Strings & File I/O
Definition of a string.
String operations and conversions.
Using files to input data into a LabVIEW application.
Saving data from a LabVIEW program.

Learning Activities

By a series of seminars and practical sessions. Students will be encouraged to work independently.

Notes

This module introduces students to a graphical based programming language that enables the user to program via a CAD style environment enabling them to create virtual instruments as a base for data acquisition and instrument control.