M E 345	Professor John M. Cimbala	Lecture 19
<ul> <li>Today, we will:</li> <li>Continue our d</li> <li>Review the pdf</li> </ul>	liscussion about <i>leakage</i> , why it occurs, and <i>what</i> f module: Windowing with FFTs and do an exan	<i>to do about it</i> nple problem





## **Example: FFTs & windowing**

**Given**: Voltage data are acquired with a digital data acquisition system at a sampling frequency of 100 Hz for a total sampling time of 3 s.

**To do**: If **Excel is used for the FFT**, calculate the following:

- Number of *useful* data points for calculation of a frequency spectrum
- The folding frequency of the spectrum
- The frequency resolution of the spectrum
- Generate a frequency spectrum, using the Hanning window
- Summarize the voltage signal i.e., DC offset, frequency component(s), and their amplitudes

## Solution:

[For plots and solution to this example problem, see the Excel file on the course website called "FFT\_Example\_data\_with\_window.xls". It is also solved using Matlab.]