



## Signal Processing with MATLAB – A Hands-on Workshop

Signal processing is the enabling technology for the generation, transformation, extraction, and interpretation of information. It comprises the theory, algorithms with associated architectures and implementations, and applications related to processing information contained in many different formats broadly designated as signals. Signal processing uses mathematical, statistical, computational, heuristic, and/or linguistic representations, formalisms, modeling techniques and algorithms for generating, transforming, transmitting, and learning from signals. (Signal Processing Society Constitution, Article II)

This one-day workshop will provide a hands-on introduction to signal processing using MATLAB.

### COURSE OBJECTIVE

On the successful completion of this course, the participants should be able to

- use MATLAB to represent signals and systems,
- use MATLAB to perform time-domain and frequency-domain analysis,
- use MATLAB to design linear filters,
- use the signal processing GUIs available in MATLAB, and
- use the signal processing blockset.

### COURSE OUTLINE

1. Introduction
2. Representation of Signals
3. Representation of Systems (Filters)
4. Time-Domain Analysis
5. Frequency Domain Analysis
6. Filter Design
7. Graphical User Interface
8. Signal Processing Blockset

### TARGET AUDIENCE

undergraduate and postgraduate students,  
academicians and researchers,  
engineers and scientists

### VENUE

BL-3-010, Control Systems Laboratory,  
College of Engineering,  
UNITEN, Putrajaya Campus.

### DATE

Friday April 15, 2016

### REGISTRATION

Contact: [myspsoc@ieee.org](mailto:myspsoc@ieee.org);  
[myspsoc@gmail.com](mailto:myspsoc@gmail.com)

Deadline: Wednesday April 06, 2016

### FEES

	only SP	SP + MATLAB*
Students (IEEE Member)	RM 400	RM 550
Students (Non-IEEE Member)	RM 450	RM 600
IEEE Member	RM 500	RM 700
Non-IEEE Member	RM 600	RM 800

*Course materials will be provided*

*Certificate from IEEE Signal Processing Society Malaysia Section*

*Morning/afternoon refreshments and lunch included*

**\*Not entirely comfortable with MATLAB?** A one-day MATLAB course is available for participants of this workshop at a reduced charge on Thursday April 14, 2016. Please refer "Working with MATLAB" flyer.

## SPEAKERS PROFILE

**Syed Khaleel Ahmed** is a senior lecturer in the Department of Electronics and Communication Engineering at Universiti Tenaga Nasional (UNITEN), Putrajaya campus. He obtained his B.E. in Electrical and Electronics Engineering from the College of Engineering, Guindy, Anna University, Chennai, India, and his M.S. in Electrical and Computer Engineering from the University of Massachusetts at Amherst, USA. His experience spans over 25 years in industry and academia.

His industrial experience includes stints at Thermax Limited, Pune, India, and Quantum Corp., Shrewsbury, Massachusetts. His M.S. thesis was on the design of *Robust Controllers for Flexible Structures*. This was part of a project funded by NASA through Martin Marietta. At Quantum Corporation, he worked on servo control for hard disk drives. One of the projects he completed at Quantum, *Designing a Control Systems Measurement Utility*, was adopted as a standard. An earlier project on *system identification using MATLAB* in both the time-domain and the frequency-domain was accepted and successfully used by Quantum control system engineers.

At UNITEN, he has worked on several projects, both funded and unfunded. He has over 30 publications in the last 3 years. He has also conducted several workshops for participants from industry and academia on topics in *Control Systems, Signal Processing, and Numerical Techniques* including using MATLAB/SIMULINK for implementing these. Currently he is the *Head* of the Center for Signal Processing and Control Systems (CSPaCS).

His areas of specialization and interest are *Robust Control, Fuzzy Logic and Control, Algorithms, Signal & Image Processing, and Numerical Techniques*. He is also interested and active in promoting open source software, especially  $\text{\LaTeX}$  for professional document preparation and publishing.

He is the treasurer of the IEEE Signal Processing Society Malaysia Section, and an executive committee member of the IEEE Control Systems Society Malaysia Section, and the IEEE Education Society Malaysia Section. He is also a member of International Association of Computer Science and Information Technology (IACSIT), Singapore, International Association of Engineers (IAENG), Hong Kong, and Indian Society of Technical Education (ISTE), India.

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