Session Title	Recommended Time and NOTES	Session Details
1. Advanced Programming Techniques in MATLAB	2 hours	In this session you will gain an understanding of how different MATLAB data types are stored in memory and how you can program in MATLAB to use memory efficiently. In recent versions, MATLAB introduced several new programming concepts, including new function types. We will illustrate and explore the usage and benefits of the various function types under different conditions. You will learn how using the right function type can lead to more robust and maintainable code. Demonstrations will show you how to apply these techniques to problems that arise in typical applications. Highlights include: • Memory handling in MATLAB • Various function types
3. Programming with MATLAB	1.5 - 2 hours ---- NOTE: this is very similar to Top 10 Productivity Tools - - so please don't use both for the same audience	MATLAB is a high-level language that includes mathematical functions for solving engineering and scientific problems. You can produce immediate results by interactively executing commands one at a time. However, MATLAB also provides features of traditional programming languages, including flow control, error handling, and object-oriented programming (OOP). Attend this seminar to learn more about programming capabilities in MATLAB and to learn how to be more productive working with MATLAB. Topics covered will include: • Basics of the MATLAB programming language • Moving from scripts to functions • Building robust, maintainable functions • Tools for efficient program development • Using and authoring objects in MATLAB Those attending the seminar will be expected to either have a rudimentary knowledge of MATLAB or have knowledge of other programming languages.
6. Top 10 Productivity Tools with MATLAB	1.5 hours	In this technical session, we present the "Top 10 Productivity Tools in MATLAB" – ways to increase your productivity and effectiveness as you use MATLAB to: • Explore, analyze, and visualize data • Develop, test, and maintain MATLAB algorithms and applications • Consolidate and share results with colleagues Using interactive product examples, we demonstrate tips and best practices for: • Importing data into MATLAB from a variety of file formats • Creating and customizing plots to understand your data and to draw conclusions • Analyzing, profiling, and debugging MATLAB code to eliminate errors and to optimize performance • Publishing custom reports to save time and effort in sharing your work • Discovering new MATLAB features to achieve results faster and with less effort MATLAB users who have at least a basic working knowledge of the MATLAB Environment will benefit from this session. Advanced users will learn about newer capabilities introduced in recent releases of MATLAB.

9. What's New in MATLAB	30 min. to 1.5 hours, but longer is MUCH preferable	What's New in MATLAB
		
		Are you using MATLAB to its fullest potential?
		
		MATLAB has changed significantly over the last 3 years to address the growing needs of our users, but we've noticed that even experienced MATLAB users aren't taking advantage of our latest and greatest features.
		
		This seminar will cover the newest MATLAB features and show you how to utilize these features to simplify your work, save time, and increase your productivity.
		
		Highlights include:
		• MATLAB Foundation Updates
		  o Faster execution engine
		  o Graphics system
		  o Live Editor
		• Data handling and language enhancements
		  o Simpler data importing
		  o Improved datatypes
		  o Big data capabilities
		• App building
		  o App Designer
		  o Sharing apps and creating toolboxes
		• Hardware support
		• Other Toolbox enhancements

11. Demystifying deep learning: A practical approach in MATLAB	2 hours Best with internet connection	Are you new to deep learning and want to learn how to use it in your work? Deep learning can achieve state-of-the-art accuracy in many humanlike tasks such as naming objects in a scene or recognizing optimal paths in an environment. The main tasks are to assemble large data sets, create a neural network, to train, visualize, and evaluate different models, using specialized hardware - often requiring unique programming knowledge. These tasks are frequently even more challenging because of the complex theory behind them. In this seminar, we'll demonstrate new MATLAB features that simplify these tasks and eliminate the low-level programming. In doing so, we'll decipher practical knowledge of the domain of deep learning. We'll build and train neural networks that recognize handwriting, classify food in a scene, and figure out the drivable area in a city environment. Along the way, you'll see MATLAB features that make it easy to: • Manage extremely large sets of images • Visualize networks and gain insight into the black box nature of deep networks • Perform classification and pixel-level semantic segmentation on images • Import training data sets from networks such as GoogLeNet and ResNet • Import and use pre-trained models from TensorFlow and Caffe • Speed up network training with parallel computing on a cluster • Automate manual effort required to label ground truth • Automatically convert a model to CUDA to run on GPUs