

VALUE ADDED COURSES (VAC)
On
MATLAB and its Applications

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Course Structure:

Course	Class	No. Of Students	Duration	Starting Date
MATLAB and its Applications	III & IV B.Tech	120	30 hours	01.07.2016

Prerequisite:

1. C Programming, Basics of Engineering Mathematics
2. No prior knowledge of Matlab is required. Basic computer literacy is expected.

Course Objectives:

1. To Impart the Knowledge to the students with MATLAB software.
2. To provide a working introduction to the Matlab technical computing environment.
3. To introduce students the use of a high-level programming language, Matlab.

Topics to be covered:

1. Basics of Matlab and MATLAB Compiler
 - ✓ The Matlab user interface
 - ✓ Working with Matlab data types
 - ✓ Creating matrices and arrays
 - ✓ Operators and control statements
 - ✓ Using scripts and functions
 - ✓ Data import and export
 - ✓ Using the graphical features
2. Programming with simple examples
3. Discussion of Toolboxes with Applications
 - ✓ Signal Processing
 - ✓ Image Acquisition Toolbox
 - ✓ Image Processing
 - ✓ Neural Network
 - ✓ Fuzzy Logic Toolbox

4. Simulink and Hardware Interfacing (Using Kits: Lego, Raspberry Pi, Mind storms etc.)

Learning Resources and References: These are some of the links and books which can help students in increasing their knowledge base and clarification of the doubts. Please visit the links and refer the books to explore the information given:

[1] <http://www.eng-tips.com/threadminder.cfm?pid=575>

[2] <http://www.matlabtutorials.com/mathforum/>

[3] <http://www.mathworks.in/matlabcentral/>

[4] <http://www.cfd-online.com/Forums/tags/matlab.html>

[5] <http://diydrones.com/forum/topic/listForTag?tag=Matlab>

[6] MATLAB Manuals and Handbooks

[7] Duane Hanselman, Bruce Little Field “**Mastering MATLAB 7**” , Pearson Education India

Course outcomes: By the end of this course, the student will be able to

1. Understand the basics of Matlab
2. Break a complex task up into smaller, simpler tasks
3. Case Study (Any two Modules)
4. Tabulate results and Analyse

Assessment:

1. Every student has to give periodic tests consisting of Programming tasks and Objective Questions
2. At the end of the Course each student will give a presentation on a topic covered in the course