VALUE ADDED COURSE

Swarrnim Institute of Technology

Subject Name :- Introduction to MATLAB Software
Subject Code :- VACM

Year: 2019-2020

Semester:- Even

Swarrnim Institute of Technology
Swarrnim Startup & Innovation University
University Campus, Bhoyan Rathod, Near ONGC WSS, Opp. IFCCO, Adalaj Kalol Highway,
Gandhinagar,Gujarat, INDIA 382420 Phone: 095123 43333

Subject: Introduction to MATLAB Software (VACM)

Program:	Bachelor of Engineering	Branch:	All

Hours:- 36 hrs.

Objective:-
- Understand the basics of MATLAB software
- Learn to write MATLAB code and scripts
- Familiarize with MATLAB environment and tools
- Apply MATLAB to solve engineering and scientific problems.

Detail Syllabus

Sr.	Content	Total Hrs
1	**Module 1: Introduction to MATLAB** ✓ Overview of MATLAB software ✓ History and evolution of MATLAB ✓ Features and applications of MATLAB ✓ - Installing and setting up MATLAB	
2	**Module 2: MATLAB Basics** ✓ Variables and data types ✓ Operators and expressions ✓ Control structures (if-else, for loops, while loops) ✓ Functions and scripting	
3	**Module 3: MATLAB Environment and Tools** ✓ MATLAB desktop and workspace ✓ Command window and command history ✓ Editor and debugger ✓ - Plotting and visualization tools	

4	**Module 4: MATLAB Programming** ✓ Writing MATLAB code and scripts ✓ Debugging and error handling ✓ Input/Output operations (reading and writing files) ✓ - Data analysis and visualization	
	Module 5: Applications of MATLAB ✓ Scientific computing (linear algebra, calculus) ✓ Engineering applications (signal processing, control systems) ✓ Data analysis and visualization (statistics, plotting) ✓ Simulink and modeling	
	Module 6 : Project Development ✓ Students will work on individual or group projects ✓ Projects will involve applying MATLAB to a real-world problem or application ✓ Students will present their projects in the final week	

Reference Books:

Sr. No.	Author/s	Name of the Book	Publisher
1	Amos Gilat	"MATLAB: An Introduction with Applications"	-----------
2	Yanggan Wang	MATLAB: A Fundamental Tool for Scientific Computing and Engineering Applications	----------------
3	R. J. Schilling	MATLAB: An Introduction to Programming and Numerical Methods	-------------

Online Resources:

Matlab Software