3CP05: ADVANCED PROGRAMMING LABORATORY
CREDITS - 1 (LTP: 0,0,2)

Course Objective:
To learn the R Programming and Matlab and Implement real world application.

Teaching and Assessment Scheme:

Teaching Scheme (Hours per week)			Credits	Assessment Scheme				Total Marks
				Theory Marks		Practical Marks		
L	T	P	C	ESE	CE	ESE	CE	100
0	0	2	1	00	00	40	60	

Course Contents:

Unit No.	Topics	Teaching Hours
1	**R Programming** Introduction, Language Constructs, Data Interface (CSV, XML, Json, Web Data, Database), R Statistics	16
2	**Matlab Programming** Matlab Introduction, Matlab IDE understanding Programming, User Interface and Plotting, understanding Basics of Various Tools such as parallel, NNtool, Nptool, Data Acquisition, Statistics and Machine Learning	08
3	**Implementation** Implementation of project based on real-world applications.	06
	Total	30

List of References:

1. Amos Gilat, "*MATLAB: An Introduction with Application*", WILEY
2. Stephen J Chapman, "*MATLAB Programming for Engineers*", Cengage
3. Rudra pratap, "*Getting Started with MATLAB: A Quick Introduction for Scientists & Engineers*", Oxford Press
4. Dr. Mark Gardener, "*Beginning R: The statistical Programming Language*", Wiley
5. John Champers, "*Software for Data Analysis, Programming with R*" , Springer

Course Outcomes (COs):
At the end of this course students will be able to …
1. Understand R Programming and Matlab for applications development.
2. Apply statistical API of R Language for engineering problem
3. Apply various tools of Matlab for engineering problem.
4. Develop an application using MATLAB UI.
5. Debug an application in R and MATLAB.
6. Implement solution for engineering problems using R and Matlab.