CP306: ADVANCED PROGRAMMING LABORATORY
CREDITS = 3 (L=0, T=0, P=3)

Course Objective:

To learn the R Programming and Mat lab and Implement real world application.

Teaching and Assessment Scheme:

Teaching Scheme			Credits	Marks Distribution				Total Marks
L	T	P	C	Theory Marks		Practical Marks		
				ESE	CE	ESE	CE	
0	0	3	3	00	00	60	40	100

Course Contents:

Unit No.	Topics	Teaching Hours
1	**R Programming:** Introduction, Language Constructs, Data Interface (CSV, XML, Json, Web Data, Database), R Statistics.	15
2	**Mat lab 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.	15
3	**Implementation:** Implementation of project based on real-world applications.	15
	TOTAL	**45**

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):

After learning the 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 Mat lab.