National Institute of Technology Meghalaya An Institute of National Importance		**CURRICULUM**

Programme	Bachelor of Technology in Electronics and Communication Engineering	Year of Regulation	**2018-19**
Department	Electronics and Communication Engineering	Semester	**V**

Course Code	Course Name	Credit Structure				Marks Distribution		
		L	T	P	C	CONTINOUS EVALUATION	VIVA/QUIZ	Total
EC 355	**Digital Signal Processing Laboratory**	**0**	**0**	**2**	**1**	**70**	**30**	**100**

Course Objectives		Course Outcomes		
	To develop the student's ability to analyze Digital Signal Processing (DSP) systems		CO1	Able to develop a DSP system using simulation tools
	To develop the student's ability to design DSP systems for various applications		CO2	Apply DSP systems to real world applications
	To develop the student's ability in simulating of the DSP systems before its implementation.		CO3	Work in teams to plan and execute the creation of complex DSP systems.

No.	COs	Mapping with Program Outcomes (POs)												Mapping with PSOs			
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
1	CO1	**3**	**3**	**3**	**3**	**-**	**1**	**-**	**-**	**-**	**-**	**-**	**2**	**-**	**-**	**3**	**-**
2	CO2	**3**	**3**	**3**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3**	**2**	**2**	**2**	**-**
3	CO3	**2**	**1**	**1**	**1**	**-**	**1**	**-**	**-**	**-**	**-**	**-**	**1**	**2**	**2**	**2**	**2**

SYLLABUS

No.	Content	Hours	COs
1	Generation of discrete-time signals in the time domain and performing basic operations	**14**	**CO1, CO2, CO3**
2	Simulation of some simple discrete-time systems on the computer using simulation tool and investigate their time domain properties		
3	Analysis of discrete-time signals using DFT		
4	FIR and IIR filters		
5	Multirate signal processing		
6	Implementation of linear and circular convolution on DSP processor TMS320C6748		
7	Implementation of FIR filters on DSP processor TMS320C6748		
	Total Hours	**14**	

Essential Readings

1. Proakis J. G. and Manolakis D. G., "Digital Signal Processing: Principles, Algorithms and Applications", Pearson Education, 4th Edition,2007.
2. *Oppenhein A. V. and Shafer R. W., "Discrete-Time Signal Processing", Pearson Education India; 3rd edition, 2014.*

Supplementary Readings

1. Padmanabhan K., "A Practical Approach to Digital Signal Processing", New Age International, 2nd Edition, 2013.
2. Mitra Sanjit K., "Digital Signal Processing: A Computer Based Approach", McGraw Hill Education; 4th edition, 2013.