

DESIGN PRACTICE

Course Code	19EC3653	Year	III	Semester	II
Course Category	Program Core	Branch	ECE	Course Type	Lab
Credits	1	L-T-P	0-0-2	Prerequisites	Nil
Continuous Internal Evaluation:	25	Semester End Evaluation:	50	Total Marks:	75

Course Outcomes

Upon successful completion of the course, the student will be able to

CO1	Demonstrate USRP Concepts (L2)
CO2	Develop and Implement Analog Communication Concepts using USRP (L3)
CO3	Develop and Implement Digital Communication Concepts using USRP (L3)
CO4	Build FM Radio Receiver. (L3)

Mapping of course outcomes with Program outcomes (CO/ PO/PSO Matrix)

Note: 1- Weak correlation 2-Medium correlation 3-Strong correlation

* - Average value indicates course correlation strength with mapped PO

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	2	2	2					1		1	2	1
CO2	3	3	2	2	2					1		1	2	1
CO3	3	3	2	2	2					1		1	2	1
CO4	3	3	2	2	2					1		1	2	1
Average* (Rounded to nearest integer)	3	3	2	2	2					1		1	2	1

Syllabus

Expt. No.	Contents	Mapped CO
I	Introduction to the USRP	CO1
II	Develop and Implement AM Transmitter/Receiver using USRP	CO2
III	Implementation of Frequency Division Multiplexing using USRP	CO2
IV	Image Rejection with complex filtering using USRP Modules	CO2
V	Develop and Implement DSBSC modulator/demodulator	CO2
VI	Implementation of FM Transceiver using USRP Modules	CO2
VII	Implementation of ASK Transceiver using USRP Modules	CO3
VIII	Implementation of FSK Transceiver using USRP Modules	CO3
IX	Implementation of PSK Transceiver using USRP Modules	CO3
X	Examine the Impact of Inter Symbol Interference on Eye Diagram	CO3
XI	Implementation of adaptive Equalizers using USRP Modules	CO3
XII	Implementation of QPSK Transceiver using USRP Modules	CO3

Learning Resources**Text Books**

1. Introduction to Analog and Digital Communication System-Simon Haykin, John Wiley and Sons, 3rd Ed., 2009.
2. Fundamentals of Communication Systems - John G. Proakis, Masoud Salehi, PEARSON, 2nd Ed., 2013

Reference Books

1. Principles of Communication Systems – H Taub & D. Schilling, Gautam Sahe, TMH, 3rd Ed.,2007
2. Analog and Digital Communication System-Sam Shanmugam, John Wiley and Sons,3rd Edition,2009
