Principle of Communication Experimental Steps and Requirements

i. Install LabVIEW software at least V12（LabVIEW V12.0 is on ftp://202.120.39.248 -> 软件下载） and USRP driver (NI-USRP Standalone on ftp://202.120.39.248 -> 通信原理实验) before the first experiment lecture.

ii. Learn the method of LabVIEW programming especially the use of control and indicators by reading IV.Programming Demonstration: 1. AM modulation in Analog Modulation.doc.

iii. ***Lab1：***
Write LabVIEW codes of FM modem system according to Analog Modulation.doc. Write report in which the experiment graphs related and LabVIEW VIs should be provided

iv. ***Lab2：***
Write LabVIEW codes of M-sequence as the signal source and AWGN channel simulation model according to M-sequence generation and Channel modeling.doc. Write report in which the experiment graphs related and LabVIEW VIs should be provided.

v. ***Lab3：***
Write LabVIEW codes of pulse shaping and matched filtering modules according to *Pulse_Shaping & Matched Filte*ring.doc. Write report in which the experiment graphs related and LabVIEW VIs should be provided. (Attention: The channel module still has its own program module and shall not be replaced with your own AWGN channel module.) Change related parameters of pulse shaping and matched filtering according to the lab requirement. Answer the questions given.

vi. ***Lab4（functional validation experiment）：***
Run the whole communication system in simulator.vi which can be downloaded from **ftp://202.120.39.248 -> 通信原理实验** and then with USRP according to Channel Estimation and Equalization.doc. (Attention: The channel module still has its own program module and shall not be replaced with your own AWGN channel module.) Change related parameters or connectivity of the channel estimation and equalization modules according to the lab requirement. Answer the questions given.

vii. ***Lab5（functional validation experiment）：***
Run the whole communication system in simulator.vi and then with USRP according to BPSK/QPSK Modem.doc. (Attention: The channel module still has its own program module and shall not be replaced with your own AWGN channel module.) Change related parameters of the BPSK/QPSK modules according to the lab requirement. Answer the questions given.

viii. ***L ab 6：***
Write LabVIEW codes of some modules in packet transceiver system according to packet transceiver.doc. Run the whole system with USRP. Write report in which the experiment graphs related and LabVIEW VIs should be provided.