Mapping of Virtual Laboratories of Electronics and Communication Engineering

Subject Code	Subject Name	EXpt. No.	List of Experiments	Mapping with V-lab	V-lab Url	Remarks
EC491	Analog Communication	1	Measurement of modulation index of an AM signal.	**Amplitude modulation**	https://www.etti.unibw.de/labalive/experiment/am/	
		3	Measurement of distortion of the demodulated output with varying modulation index of an AM signal (for both DSB-SC & SSB).	**AM transmission - envelope detector**	https://www.etti.unibw.de/labalive/experiment/amtransmissionenvelopedetector/	
		4	Measurement of power of different frequency components of a frequency modulated signal & the measurement of the bandwidth.	**Spectra of FM signals**	https://www.etti.unibw.de/labalive/experiment/fm/	
		7	Measurement of SNR of a RF amplifier.	**Signal-to-noise ratio demonstrator**	https://www.etti.unibw.de/labalive/experiment/snr/	

EC 492	Analog Electronic Circuits	2	Design and set up the following rectifiers with and without filters and to determine ripple factor and rectifier efficiency: (a). Full Wave Rectifier (b). Bridge Rectifier	**Half Wave Rectification**	http://vlabs.iitkgp.ernet.in/be/exp6/index.html	
				Full Wave Rectification	http://vlabs.iitkgp.ernet.in/be/exp7/index.html	
		3	Design and set up the BJT common emitter amplifier using voltage divider bias with and without feedback and determine the gain- bandwidth product from its frequency response.	**Studies on BJT CE Amplifier**	http://vlabs.iitkgp.ernet.in/be/exp13/index.html	
		6	Conduct an experiment on Series Voltage Regulator using Zener diode and power transistor to	**Zener Diode-Voltage Regulator**	http://vlabs.iitkgp.ernet.in/be/exp10/index.html	

			determine line and load regulation characteristics.			
				Study of basic properties of operational amplifier: inverting and non-inverting amplifiers	http://vlabs.iitkgp.ernet.in/be/exp17/index.html	
				Study of differentiator and integrator using operational amplifier	http://vlabs.iitkgp.ernet.in/be/exp18/index.html	
EC 493	Microprocessor and Microcontroller	7	Study of 8051 Micro controller kit and writing programs as mentioned in S/L3. Write programs to interface of Keyboard, DAC and ADC using the kit.	**Microcontroller interfaced with display devices**	http://vlabs.iitb.ac.in/vlabs-dev/labs/8051-Microcontroller-Lab/labs/exp1/index.php	
				Microcontroller interfaced with ADC and DAC	http://vlabs.iitb.ac.in/vlabs-dev/labs/8051-Microcontroller-Lab/labs/exp2/index.php	
EC692(New)	Control System and Instrumentation Lab	2	Determination of transfer function of a given system from its state model and its vice-versa.	**Transfer Function of a Feedback System**	http://209.211.220.205/vlabiitece/exp2.php	Need to download Scilab https://www.s

		4	Determination of root Locus from transfer function and evaluation of system parameters like marginal value of gain, frequency etc. of a given control system.	**Root Locus**	http://209.211.220.205/vlabiitece/exp3.php	cilab.org/
		5	Drawing of Nyquist plot and Bode plot from transfer function of a control system and estimation of relative system parameters like gain margin, phase margin etc.	**Nyquist Plot**	http://209.211.220.205/vlabiitece/exp4.php	
				Bode Plot	http://209.211.220.205/vlabiitece/exp5.php	
		6	Design PI, PD and PID controller for specified system requirements	**PID Controller**	http://209.211.220.205/vlabiitece/exp7.php	
EC691(New)	Computer Network	2	Familiarization with o Networking cables (CAT5, UTP) o Connectors (RJ45, T-connector) o Hubs, Switches	**Fabrication of Cables**	http://vlabs.iitb.ac.in/vlabs-dev/labs_local/computer-networks/labs/exp1/simulation.php	
EC695 A(old)	Object Oriented Programming)		1.Assignments on class, constructor, overloading, inheritance, overriding 2. Assignments on wrapper class, arrays 3. Assignments on developing interfaces- multiple inheritance, extending interfaces 4. Assignments on creating and accessing packages 5. Assignments on multithreaded programming 6. Assignments on applet programming		http://egyankosh.ac.in/bitstream/123456789/11717/1/Section-1%20Java%20Programming%20Lab.pdf	

EC691(old)	Digital Communicat ion		a)Design, implementation and study of all the properties of 7-length and 15-length pn sequences using shift register. b))Study of PAM and demodulation. e)Study of PCM and demodulation. c)Study of line coders: polar/unipolar/bipolar NRZ ,RZ and Manchester. d)Study of delta modulator and demodulator. e)Study of adaptive delta modulator and demodulator. f)Study of BPSK modulator and demodulator. j)Study of BFSK modulator and demodulator. k)Study of ASK modulator and demodulator. g)Study of QPSK modulator and demodulator. m)Simulation study of probability of symbol error for BPSK modulation. n)Simulation study of probability of symbol error for BFSK modulation.		https://www.etti.unibw.de/labaliv e/experiment/qpsk/	
EC692(old)	Digital Signal Processing	1	Sampled sinusoidal signal, various sequences and different arithmetic operations.	**Study of sampling theorem, effect of undersampling.**	http://vlabs.iitkgp.ernet.in/dsp/ex p1/index.html	

		2	Convolution of two sequences using graphical methods and using commands verification of the properties of convolution	**Study of convolution: series and parallel system.**	http://vlabs.iitkgp.ernet.in/dsp/exp5/index.html	
		5	DFTs / IDFTs using matrix multiplication and also using commands.	**Study of Discrete Fourier Transform (DFT) and its inverse**	http://vlabs.iitkgp.ernet.in/dsp/exp6/index.html	
		9	FIR filter design using rectangular, Hamming and Blackman windows.	**Study of FIR filter design using window method: Lowpass and highpass filter.**	http://vlabs.iitkgp.ernet.in/dsp/exp8/index.html	
				Study of FIR filter design using window method: Bandpass and Bandstop filter	http://vlabs.iitkgp.ernet.in/dsp/exp9/index.html	

N.B: Faculties are requested to conduct the experiments themselves before assigning the same to the students.