

**2018-2019**  
**M.Sc Electronics (1<sup>st</sup> Semester)**  
**Course Title: Linear Integrated Circuits and Applications (LICA)**  
**Course code: ELE-17103C**

S.No.	NAME OF EXPERIMENT	DEMONSTRATOR
1.	Realization of Inverting and non-inverting amplifiers	<i>Er. Tamanna Nazeer</i>
2.	Realization of integrators and differentiators – frequency response.	
3.	Realization of Single op-amp first order and second order LPF and HPF.	
4.	Design of astable and monostable multivibrators using IC 555	
5.	Design of Square wave generator using op-amps	
6.	Design of Triangular wave generator using op-amps	
7.	Design of Ramp generator using op-amps	
8.	Design of comparator and zero crossing detector using 741 Op-Amp	
9.	Design of Wein bridge oscillator.	<i>Er. Shazia Rashid</i>
10.	Design of RC phase shift oscillator.	<i>Er. Shazia Rashid</i>
11.	Design of PLL for given lock and capture ranges & frequency multiplication	<i>Dr. Farooq A. Khanday</i>
12.	Design of Linear sweep generation using IC 555.	<i>Er. Shazia Rashid</i>
13.	Design of Log and Antilog Amplifiers	<i>Dr. Farooq A. Khanday</i>
14.	Design of Analog-to-Digital Converter.	
15.	Design of Digital-to-Analog Converter.	

**M.Sc Electronics (1<sup>st</sup> Semester)**  
**Course Title: Antenna and Wave Propagation.**  
**Course Code: ELE-17102C**

S.No.	NAME OF EXPERIMENT	DEMONSTRATOR
1	Measurement of Antenna Parameters	<i>Dr. Javaid A. Sheikh</i>
2.	Plot of Horizontal Polarization	
3.	Plot of Vertical Polarization	
4.	Design of Dipole Antenna using Waveguide	
5.	Design of Patch Antenna on HFSS	<i>Dr. Mehboobul Amin</i>
6.	Design of Dipole using HFSS	<i>Dr. Javaid A. Sheikh</i>
7.	Calculation of S- Parameters	<i>Er. Sanna Mairaj</i>
8.	Design of Loop Antenna	<i>Dr. Javaid A. Sheikh</i>
9.	Design of MIMO Antenna	<i>Er. Sanna Mairaj</i>
10	Study of tilting of Antenna	<i>Dr. Javaid A. Sheikh</i>

**M.Sc Electronics (1<sup>st</sup> Semester)**  
**Course Title: CMOS VLSI and Nano-Electronics-I (MOSFET THEORY)**  
**Course Code: ELE-17106DCE**

S.No.	NAME OF EXPERIMENT	DEMONSTRATOR
1.	Design and simulate CMOS inverter	<i>Er. Shazia Rashid</i>
2.	Design and simulate CMOS AND gate	
3.	Design and simulate CMOS NAND gate	
4.	Design and simulate CMOS OR gate	<i>Er. Sanna Mairaj</i>
5.	Design and simulate CMOS NOR gate	
6.	Design and simulate CMOS XOR gate	
7.	Design and simulate CMOS XNOR gate	<i>Dr. Faisal Bashir</i>
8.	Study drain characteristics of MOSFET	
9.	Design and simulate Half adder	
10.	Design and simulate Full adder	

**M.Sc Electronics (1<sup>st</sup> Semester)**  
**Course Title: Digital electronics and C- programming lab**  
**Course Code: ELE-17104C**

S.No.	NAME OF EXPERIMENT	DEMONSTRATOR	
1.	Design basic gates using NAND gate	<i>Er. Essar Farooq</i>	
2.	Design half adder using NAND gate		
3.	Design full adder using basic gates		
4.	Design 2-bit comparator using basic universal gates	<i>Er. Tamanna Nazeer</i>	
	Design of 2 x 1 and 4 x 1 Multiplexers		
5.	Design 4x1 multiplexer circuit Using universal gates		
6.	Design 1x4 Demultiplexer using universal gates	<i>Dr. M. Tariq Bandy</i>	
7.	Implementation of functions using 2x1 multiplexer		
8.	Implementation of functions using 4x1 multiplexer		
9.	Design a BCD to 7 segment display	<i>Er. Essar Farooq</i>	
10.	WAP to compute equivalent resistance of the resistors connected in: 1) Series 2) Parallel		
11.	WAP to compute equivalent capacitance of the capacitors connected in: 1) Series 2) Parallel	<i>Er. Tamanna Nazeer</i>	
12.	WAP to check whether a transistor is NPN or PNP		
13.	WAP to accept parameters of a transformer and calculate its output voltage		
14.	WAP to determine the value of a given resistor from its color code		
15.	Find Sum Of Digits Of A Number		
16.	Find Reverse Of A Number		
17.	Find Sum Of N Numbers		
18.	Find Whether A Number Is Prime Or Not		
19.	Print Binary Equivalent Of An Integer	<i>Er. Essar Farooq</i>	
20.	Reverse A Given Number		
21.	Reverse A Number & Check If It Is A Palindrome		
22.	Find The Sum Of Two Binary Numbers		
23.	Find Multiplication Of Two Binary Numbers		
24.	Generate Fibonacci Series Of N Numbers Using Command-Line Arguments		
25.	Find The Sum Of First 50 Natural Numbers Using For Loop		
26.	Calculate Sum Of All Elements Of An Array		
27.	Find The Largest Number In An Array		
28.	Put Even And Odd Elements Of An Array In 2 Separate Arrays		
29.	Insert An Element In A Specified Position In A Given Array		
30.	Delete The Specified Integer From An Array		
31.	Search For An Element		<i>Dr. M. Tariq Bandy</i>
32.	Search Using Binary Search		
33.	Find The Biggest/Smallest Number In An Array Of Numbers		
34.	Print The Number Of Odd & Even Numbers In An Array		
35.	Print All The Repeated Numbers With Frequency In An Array		
36.	Print The $K^{\text{th}}$ Element In An Array		
37.	Calculate The Mean, Variance & Standard Deviation		
38.	Print The Factorial Of A Given Number		

**M.Sc Electronics (1<sup>st</sup> Semester)**  
**Course Title: Signals and System**  
**Course Code: ELE17107DCE**

S.No.	NAME OF EXPERIMENT	DEMONSTRATOR
1.	Generation of Various Signals using Matlab	<i>Dr. Mehboobul Amin</i>
2.	Computation of Correlation	
3.	Computation of Convolution of various signals	
4.	Sampling and Quantization	<i>Er. Abida Yousuf</i>
5.	Fourier Transform Computation	
6.	Generation of PSD of various Signals	<i>Dr. Shabir Ahamd Parrah</i>
7.	Shifting, Scaling of signal	
8.	Program to obtain response of Low pass Filter	
9.	IIR Filter Design and FIR Filter Design using FDA tool box	
10.	Brief overview of FPGA/CPLD kits and & boards	

**M.Sc Electronics (1<sup>st</sup> Semester)**  
**Course Title: Circuit Analysis and Synthesis**  
**Course Code: ELE-17101C**

S.No.	NAME OF EXPERIMENT	DEMONSTRATOR
1.	Verify Kirchoff's Voltage Law	<i>Er. Shazia Rashid</i>
2.	Verify Kirchoff's Current Law	
3.	Verify Superposition theorem	
4.	Verify Thevenin's Theorem	
5.	Verify Maximum Power Transfer Theorem	<i>Er. Sanna Mairaj</i>
6.	Verify Norton's Theorem	
7.	Evaluate Parameters of the circuit	
8.	Verify Compensation Theorem	<i>Er. Tamanna Nazeer</i>
9.	Design and analyze Low pass filter	
10.	Design and analyze High pass filter	
11.	Design and analyze Band Pass Filter	
12.	Analyze the time response of series and parallel LC circuit	<i>Er. Shazia Rashid</i>
13.	Analyze the time response of series and parallel RC circuit	
14.	Analyze the time response of series and parallel RLC circuit	