

Teaching plan
Academic Year 2015-2016

Class: **B.Sc. II Year**

Semester: **IV**

Subject: **Physics**

Paper No. **XI (PHY-205)** Periods per weeks: Th.: **3** Pract: **1** Weeks (Total):

WEEKS	TOPICS TO BE COVERED
1	Chapter 1: SEMICONDUCTOR: Introduction, Construction, Working & Characteristics of semiconductor diode, Zener diode.
2	Zener characteristics, PNP transistor, NPN transistor, Transistor Characteristics (CE, CB and CC)
3	Construction, Working and Characteristics of FET, MOSFET, MCQ's and revision, Numerical.
4	Chapter 2: TRANSISTOR BIASING AND AMPLIFIERS: Transistor biasing, Selection of operating point, bias stability.
5	Transistor biasing circuits fixed bias or base bias, Collector feedback bias, emitter feedback bias or self bias.
6	Single stage transistor amplifier, frequency response of RC-coupled amplifier, Noise in amplifiers.
7	Feedback in amplifier, Op-Amp characteristics, inverting and non-inverting amplifier.
8	Op-Amp as adder and subtractor. MCQ's and revision, Numerical.
9	Chapter 3: OSCILLATORS AND MULTI VIBRATORS: Two port network representation of a transistor, hybrid parameters or h-parameters, Positive feedback.
10	Basic principle of Oscillators, Requirements of feedback, RC-Oscillator (phase shift oscillator)
11	LC-Oscillator (Hartley Oscillator), Transistorised astable multivibrator, Monostable multivibrator
12	Bistable multivibrator, MCQ's and revision, Numerical. Chapter 4: MODULATION AND DEMODULATION: Modulation, Amplitude modulation.
13	Modulation index, frequency modulation, phase modulation, demodulation.
14	Advantages of frequency modulation over amplitude modulation MCQ's and revision, Numerical.
15	REVISION

Teacher's Signature
(Dr. Shaikh Amjad Afsar)

H.O.D's Signature
(Dr. Gulam Rabbani)

Teaching Plan
Academic Year 2015 – 2016

CLASS – B.Sc.II Year

SEMESTER --IV,

SUBJECT – **Physics,**

Paper- **XII (PHY – 206)**

PERIODS/ WEEK – 3

TOTAL WEEKS – 15

Weeks	Topics to be covered
1	Crystal lattice , Plain lattice, Space lattice, Translation vectors, Unit cell Basis.
2	Symmetry operations, Point groups and space groups, Types of lattice.
3	Lattice directions and planes, Miller indices, Inter planar spacing , Simple crystal structure.
4	Inter atomic forces, Cohesive energy, Primary bonds.
5	Secondary bonds, The Kronig Penny model.
6	Energy versus wave vector relationship, Brillouin zones.
7	Classical theory of lattice heat capacity,.
8	Einstein's theory of lattice heat capacity, Debye's model of lattice heat capacity.
9	Density of modes, Limitations of Debye's model.
10	Drude Lorentz classical theory, Electrical and thermal conductivity, Wiedemann Franz law.
11	Significance of Fermi energy level, Hall effect.
12	Hall voltage and Hall coefficient, Experimental determination of Hall coefficient.
13	Importance of Hall effect, problems.
14	Seminars.
15	Revision and problems.

Teacher's Signature

H.O.D. Signature

Teaching Plan
Academic Year 2014– 2015

Class: **B.Sc. II year**

Semester: **IV**

Subject: **Electronics**

Paper No.: **XI – (ELE-401)**

Period per week:

Weeks (Total):

Week	Topics to be covered
1.	Types of modulation, amplitude modulation, expression for amplitude modulated voltage.
2.	Waveforms of amplitude modulations voltage side band produced in amplitude modulated
3.	Frequency modulations expression for frequency modulated voltage, waveform of frequency modulated.
4.	Sideband produced infrequency modulated wave, phase, modulated comparison, of frequency & phase modulation.
5.	Pulse modulation, introduction, pulse amplitude, modulation.
6.	Pulse code modulation, Pulse frequency modulation, Pulse position modulation
7.	Pulse width modulation, modulation and detection.
8.	Amplitude modulation theory, square law modulation, Class C linear diode detection.
9.	Varactor diode, frequency modulator, Armstrong modulator, phases discriminator.
10.	Am transistor, super heterodynes receiver.
11.	Digital communication, synchronisation, asynchronous transmission, probability error.
12.	Match filter, bit timing recovery, m base biased transistor,
13.	Digital carrier system, amplitude shifts keying.
14.	Frequency shift keying, differential phase shift keying.
15.	Revision.

Teacher's Signature
(Dr. J.M. Pathan)

H. O. D's Signature

Teaching Plan
Academic Year 2015 – 2016

Class: B. Sc. II Year

Semester: IV

Subject: Electronic

Paper No: **XII(A) (ELE-402)** Periods per weeks: **Th.03;Pract.03**

Weeks (Total): **15**

Tutorial Date): 29/1/16

WEEKS	TOPICS TO BE COVERED
1	Semiconductor memory interfacing
2	Static RAM interfacing
3	Dynamic RAM interfacing, Interfacing I/O ports
4	Features of 8255, 8255 pin diagram
5	8255 architecture, modes of operation of 8255
6	Modes of operation of 8255, Interfacing ADC
7	Interfacing of DAC, stepper motor interfacing
8	Features of 8251, Methods of data communication
9	Architecture and signal description, operating modes
10	Interfacing and programming of 8251
11	Features of 8253 and Pin diagram
12	8253 architecture, control word
13	Operating modes
14	Programming and interfacing 8253
15	REVISION

Teacher's Signature

(Dr. Gulam Rabbani)

H.O.D.'s Signature