

B Course (Nov 81 – Feb 82, 10 weeks)

Tests: Weekly, Pass Mark = 60%

B Course Part 1 – Common Fundamentals

Maths Revision: Indices, Logs, Trigonometry, Differentiation, Integration, Quadratic Equations

DC Transients: Capacitance Revision, Inductance Revision, Series CR, Time Constants (Short CR, Medium CR, Long CR), Differentiating, Integrating, DC Coupling, DC Block, Series LR, Vectors & Phasors, Parallel LR, Parallel CR, Complex Number-s, Polar Co-ords, AC Theory, Parallel LCR, Power Factor

Active Devices & Circuits Revision: Transistor Amplification, Voltage Amplification, Bias, Voltage Gain, Emitter Decoupling, Saturated Operation, JFET, MOSFET, FET Amplifier, Thermionic Emission & Triode, Pentode, CRTs, Transistor/FET/Valve Characteristics, Negative Feedback, Input & Output Impedance, Emitter Follower, Darlington Pair, Common Base, HF Amplifiers, DC Amplifier, Differential Amplifier, IC Amplifiers, Power Supplies, IC Regulators, IC Building Blocks: Operational Amplifier, Inverting and Non-Inverting Amplifier, Differential Comparator

DC Circuit Revision: Network Theorems, Kirchoff's Laws, Superposition Theorem, Thevenin's Theory

Three Stage Video Amplifier Constructional Project: Design, Construction, Testing, Assessment

Logic & Boolean Algebra: Types (RDL, RTL, DTL, TTL, CMOS), Basic Logic Gates (Discrete Logic Circuits, Voltage & Logic Truth Tables, XOR & XNOR), Multigate Circuits (Truth Tables, Enabling & Inhibiting, Data Selectors), Boolean Algebra (Manipulating and simplifying expressions, De Morgans Theorem, NAND and NOR, Half and Full Adders, Decimal to Binary Encoding, BCD and 7 segment Displays, Bi-stables (RS, RST, D-type, Clocks, Preset, Clear, Binary Dividers, Waveform Generators).