

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري لمادة دوائر كهربائية

	Material Covered
Week 1	Introduction - Difference between Circuit Theory and Field Theory
Week 2	Basics of Network Elements
Week 3	Resistance and Resistivity, Ohm's Law and Inductance, Capacitance
Week 4	Review of Kirchhoff's Laws, Circuit Analysis - Nodal and Mesh
Week 5	Linearity and Superposition, Source Transformations, Thévenin and Norton Equivalents
Week 6	Review of Inductor and Capacitor as Circuit Elements, Source-free RL and RC Circuits, Transient Response
Week 7	Mid-term Exam + Unit-Step Forcing, Forced Response, the RLC Circuit
Week 8	Sinusoidal Forcing, Complex Forcing, Phasors, and Complex Impedance, Sinusoidal Steady State Response
Week 9	Nodal and Mesh Revisited, Average Power, RMS, Introduction to Polyphase Circuits
Week 10	Mutual Inductance, Linear and Ideal Transformers, Circuits with Mutual Inductance
Week 11	Frequency Response of Series/Parallel Resonances, High-Q Circuits
Week 12	Complex Frequency, s-Plane, Poles and Zeros, Response Function, Bode Plots
Week 13	Two Port Networks, Admittance, Impedance, Hybrid, and Transmittance Parameters
Week 14	Two Port Networks, Admittance, Impedance, Hybrid, and Transmittance Parameters
Week 15	Two Port Networks, Admittance, Impedance, Hybrid, and Transmittance Parameters
Week 16	Preparatory week before the final Exam

Week 9	Basic Plotting (Multiple Data Sets in One Graph, Specifying Line Styles and Colors, Multiple Plots in One Figure, Setting Axis Limits). Arguments and return values, M-file, input-output statement
Week 10	Control Statements(Conditional statements: If, Else, Elseif, switch case), Repetition statements: (While statement, For statement)
Week 11	Procedures and Functions(a custom-made Matlab function, define the name of the function, the input and the output variables, Calling Functions).
Week 12	GUI Interface (Attaching buttons to actions, Getting Input, Setting Output), Predefined GUIs and Dialog Boxes.
Week 13	Introduces the LabVIEW environment including windows, menus, and tools.
Week 14	Creating and using LabVIEW projects, The LabVIEW front panel and block diagram Searching for controls, VIs, and functions.
Week 15	Understanding the dataflow programming model of LabVIEW, Recognizing different data types, Tools for developing, cleaning and organizing your Vis, Using Express VIs to build a basic VI.
Week 16	Preparatory week before the final Exam