



Technical college\Mosul	30 Weeks	No. of week hours		
Department: Medical Instrumentation Engineering		Th.	App.	Unit
		2	2	6
Third Year	Subject: Electrical Technology.			

**أهداف المادة:-** دراسة أسس تقنية الكهرباء و المحركات الكهربائية و المحولات الكهربائية المختلفة ونظرية عملها و طرق تشغيلها و كيفية إصلاح الأعطال و عمل الصيانة لها .

<b>Week</b>	<b>Syllabus</b>
1 <sup>st</sup> , 2 <sup>nd</sup>	Transformers : single phase transformer and construction .
3 <sup>rd</sup>	Theory of operation , no load and short circuit test .
4 <sup>th</sup> , 5 <sup>th</sup>	Equivalent circuit, auto-transformers, instrument transformers.
6 <sup>th</sup> , 7 <sup>th</sup>	Three phase transformers, constructions methods of connection.
8 <sup>th</sup> , 9 <sup>th</sup>	Electromechanical energy conversion principles, relay operation.
10 <sup>th</sup> , 11 <sup>th</sup> , 12 <sup>th</sup>	D.C machines: e.m.f and torque equation, equivalent circuit , methods of excitation, generator characteristics.
13 <sup>th</sup> , 14 <sup>th</sup> , 15 <sup>th</sup>	Motor characteristics, testing, calculation of losses and efficiency .
16 <sup>th</sup> , 17 <sup>th</sup> , 18 <sup>th</sup>	Induction machines : equivalent circuit , basic equation , simple analysis testing .
19 <sup>th</sup> , 20 <sup>th</sup> , 21 <sup>st</sup>	Single phase induction motor , methods of starting , split phase , capacitor short , capacitor run and shaded pole motors .
22 <sup>nd</sup> , 23 <sup>rd</sup>	Synchronous machines , generators and motors , equivalent circuit , basic equation .
24 <sup>th</sup> , 25 <sup>th</sup>	Special machines: Reluctance motor, hysteresis motor, linear motor, stepper motor, dray cup type motor, servo motor, etc...
26 <sup>th</sup> , 27 <sup>th</sup>	Control switches : pilot switches , push bottoms , limits .
28 <sup>th</sup>	Switches, flost switches , contactors , pressure switches .
29 <sup>th</sup> , 30 <sup>th</sup>	High voltage circuits .