

(5) Mathematics (I)

Technical college	30 Weeks	No . of week hours		
Department: Medical Instrumentation Engineering		Th.	Pr.	Unit
First Year		3	-	6
		Subject: Mathematics (I) .		

أهداف المادة : مساعدة الطالب على تفهم القوانين و المسائل الرياضية اللازمة لغرض حل الدوائر الكهربائية البسيطة و المعقدة .

Week	Syllabus
1 st	Limits and theory of derivative. Derivative of trigonometric function.
2 nd	Chain rules , applications of the derivatives .
3 rd	Derivatives of the inverse trigonometric function .
4 th	Exponential function and logarithmic function .
5 th , 6 th	Plane analytical geometry , parabola & ellipse , hyperbola .
7 th	Polar coordinates .
8 th	Theory of integrations .
9 th	The definite and indefinite integration .
10 th , 11 th , 12 th	Integral of trigonometric and inverse of trigonometric function, integral of exponential and logarithmic functions .
13 th , 14 th , 15 th	Transcendental functions, the trigonometric functions, and inverse trigonometric functions, derivatives of trigonometric and inverse functions, derivatives of the exponential and natural logarithms functions .
16 th	Hyperbolic and inverse hyperbolic functions with derivatives .
17 th	Method of integration and numerical integration . Application of the definite integral .
18 th	Arem of surface .
19 th	Volume of revolution .
20 th	Length of plane curve .
21 st	Determents , properties of determents , solution of
22 nd , 23 rd , 24 th	Linear equations by gramers's rule .

25 th , 26 th	Matrices, inverse of matrix , solution of homogeneous matrices .
27 th	Eigenvalues .
28 th	Eigenvectors .
29 th , 30 th	Vectors analysis , dot products , cross products .