

اسم المادة	السنة الدراسية	الساعات الأسبوعية			نوع المادة	رمز المادة
Mathematics/1 الرياضيات ١/	الأولى	ن	ع	الوحدات	مساعدة	
	٣٠ أسبوع	٣	---	٦		

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

Week	Syllabus
1 st	Introduction
2 nd , 3 rd , 4 th	<p>Functions Domain, Range</p> <p>Equation of the straight line, Trigonometric functions and their sketches. Domain, Range, Inverse of functions, Absolute value, limits, Limits applications, Polar coordinates (general definition) Conic sections (general definition).</p>
5 th , 6 th , 7 th , 8 th , 9 th , 10 th , 11 th , 12 th , 13 th , 14 th , 15 th , 16 th , 17 th , 18 th	<p>Differential calculus</p> <p>Methods of differentiation, Some applications of differentiation. Rates of change, Velocity and acceleration Differentiation of parametric equations, implicit functions, Logarithmic, hyperbolic functions, inverse trigonometric, and hyperbolic functions. Partial differentiation, Total differential, rates of change and small changes Maxima, minima and saddle points for functions of two variables</p>
19 th , 20 th , 21 st , 22 nd	<p>Determinants and Matrices</p> <p>The theory of matrices and determinants. Properties of matrix operations, matrix transpose, matrix inverse, Applications to linear equations. Cramer's Rule. Eigen values and eigenvectors.</p>
23 rd , 24 th , 25 th , 26 th , 27 th , 28 th , 29 th , 30 th	<p>Integral calculus</p> <p>Standard integration</p> <p>Some applications of integration: Areas under and between curves. Mean and rms values. Volumes of solids of revolution.</p> <p>Integration using algebraic substitutions, trigonometric substitutions, hyperbolic substitutions, and partial fractions.</p> <p>Integration by parts</p> <p>Reduction formula</p> <p>Double and triple integrals</p>