

الخطة الدراسية

قسم هندسة تقنيات الحاسوب / كلية الهندسة التقنية / جامعة الكفيل / العام الدراسي 2020 – 2021

الأولى	<u>المرحلة الدراسية:</u>
-	<u>التخصص:</u>
الرياضيات I	<u>اسم المادة الدراسية باللغة العربية:</u>
Mathematics (I)	<u>اسم المادة الدراسية باللغة الإنجليزية:</u>
تهدف مادة الى مساعدة الطالب على فهم القوانين والمسائل الرياضية اللازمة لغرض حل الدوائر الكهربائية	<u>اهداف المادة:</u>
The description of this course include study the matrices properties, determinants and Cramer's rule in first three weeks. Fourth and fifth weeks study the functions and graphs also slopes and equation of lines in sixth week. Types of functions, trigonometric functions and absolute value of magnitude will be described in three weeks. Seventh, eighth, ninth and tenth include limits and continuity Scalars, vectors, component of vector algebra, dot product. Orthogonal vectors, cross product, vector calculus in tenth week & Limit theory of derivative, chain rule in 11 th , 12 th weeks. Derivative of trigonometric, inverse trigonometric, hyperbolic, inverse hyperbolic, derivative of logarithmic, exponential and curve sketching by y',y'' in 13 th , 14 th and 15 th week. Application of differentiation, theory of integration (area problem), definite and indefinite integrals, integral of trigonometric, integral of inverse trigonometric, integral of exponential, logarithmic in fourth weeks. twenty- and twenty one-week including integration by parts. Application of definite integrals and Volumes will be described in three weeks. Length of plan curve, approximation (trapezoidal rule) and Simpson's rule in 25, 26 & 27 weeks. Application of approximation and review all , 28 to 30 week.	<u>وصف المادة:</u>
3	<u>عدد الساعات النظرية:</u>
0	<u>عدد الساعات العملية:</u>
4	<u>عدد الوحدات:</u>
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المنهج المقرر:

Week	Syllabus
1	Matrices
2	Determinants
3	Cramer's rule
4 & 5	Functions and their graphs
6	Slopes, and equation of lines
7	Types of functions, trigonometric functions
8	Absolute value of magnitude
9	Limits and continuity
10	Scalars, vectors, component of vector algebra, dot product
11	Orthogonal vectors, cross product, vector calculus
12	Limit theory of derivative, chain rule
13	Derivative of trigonometric, inverse trigonometric, hyperbolic, inverse hyperbolic
14	Derivative of logarithmic, exponential
15	Curve sketching by y' , y''
16	Application of differentiation
17	Theory of integration (area problem)
18 & 19	Definite and indefinite integrals, integral of trigonometric, integral of inverse trigonometric, integral of exponential, logarithmic
20 & 21	Integration by parts
22	Application of definite integrals
23 & 24	Volumes
25	Length of plan curve
26	Approximation (trapezoidal rule)
27	Simpson's rule
28 & 29	Application of approximation
30	Review all

المصادر:

المراجع الرئيسية:

[1]. Thomas Calculus Based on The Original Work by George B. Thomas, Jr., 14th Ed. 2018.

المراجع المساعدة:

[1]. Advanced Engineering Mathematics by Erwin Kreyszig, 10th Ed., 2011.

[2]. Advanced Engineering Mathematics by Alan Jeffrey.