الخطة الدراسية

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

المرحلة الدراسية:	الثالثة
التخصص:	شبكات اتصالات الحاسوب
اسم المادة الدراسية باللغة العربية:	التحليلات الهندسية
اسم المادة الدراسية باللغة الإنجليزية:	Engineering Analysis
اهداف المادة:	**تهدف مادة الى مساعدة الطالب على فهم القوانين والمسائل الرياضية اللازمة لغرض حل الدوائر الكهربائية**
وصف المادة:	The description of this course include study the Laplace transform, properties and their application in first six weeks. The **8th,9th,10th,11th,12th,13th,14th** weeks involved study the Z-transform, properties, theorems and applications. Probability (Basic terminology, probability and set notation, law of probability, independent events), Statistics (Graphical representation, measure of central tendency, measure of dispersion) by **15th,16th,17th,18th,19th** week. Numerical computations (bisection method, false position method, Newton-Raphson method, solution of algebraic and transcendental equations, solution of linear simultaneous equations 1) Direct methods a)Gauss elimination B) Gauss Jordan 2)Iterative method in fourth weeks. Solution of nonlinear equation in **24 th,25th** weeks. Numerical solution of ordinary differential equation and Matrices in five final weeks.
عدد الساعات النظرية:	2
عدد الساعات العملية:	2
عدد الوحدات:	6
اسم التدريسي باللغة العربية:	فراس ثائر رؤوف المالكي
اسم التدريسي باللغة الإنجليزية:	Firas Thair Raoof Al-Maliky
اللقب العلمي:	مدرس
عنوان البريد الالكتروني الجامعي:	firas.almaliky@alkafeeluc.edu.iq
رقم الهاتف الجوال (WhatsApp):	07800087621

المنهج المقرر / الجزء النظري:

Week	Syllabus
1st,2nd,3rd,4th,5th,6th,7th	Laplace transform, Properties, theorems and applications
8th,9th,10th,11th,12th,13th,14th	Z-transform, properties, theorems and applications
15th,16th,17th,18th,19th	Probability (Basic terminology, probability and set notation, law of probability, independent events) , Statistics(Graphical representation, measure of central tendency, measure of dispersion)
20th,21th,22th,23th	Numerical computations (bisection method, false position method, Newton-Raphson method, solution of algebraic and transcendental equations, solution of linear simultaneous equations 1)Direct methods a)Gauss elimination B)Gauss Jordan 2)Iterative method a)Jacobi's B)Gauss-seidel iteration)
24 th,25th	Solution of nonlinear equation (Newton-Raphson method)
26th,27th,28th	Numerical solution of ordinary differential equation (Picard's , Euler's method)
29th,30th	Matrices (Matrix operations, related matrices, solution of linear system of equations, linear transformations, Cayley-Hamilton theorem)

المنهج المقرر / الجزء العملي:

Week	Syllabus
1st,2nd,3rd,4th,5th,6th,7th	Laplace transform
8th,9th,10th,11th,12th,13th,14th	Z-transform
15th,16th,17th	Numerical computations (Bisection method)
18th,19th 20th	Numerical computations (Newton-Raphson method)
21th,22th,23th	Numerical solution of ODE (Picard's Method)
24 th,25th 26th	Numerical solution of ODE (Euler's Method)
27th,28th,29th,30th	Numerical solution of ODE (Runge Kutta Method)

المصادر:

المراجع الرئيسية:

[1] Advanced Engineering Mathematics (K. A. Stroud).

[2] Advanced Engineering Mathematics (Alan Jeffrey).

المراجع المساعدة:

[1] Advanced Engineering Mathematics (Erwin Kreyszig).

[2] Advanced Engineering Mathematics (Dean G. Duffy).

[3] Introductory Methods of Numerical Analysis (S.S. Sastry)