



Ministry of Higher Education and Scientific Research
Mustansiriyah University /College of Science
Department of
(الخطة الدراسية للمساق)
Course Plan



Course No.: Time Division: 3 hr Theoretical and 4 hr Practical
Course Name: Semester & Year: numerical analysis I, 2022 / 2023
Course Website:

Course Description:

This subject presents various fundamental concepts in numerical analysis starting with the sources of errors that illustrate by examples. Then solving the nonlinear equations, firstly using specified the region of roots, bisection method, ..., and ending in the nonlinear equations systems. Continuing in numerically solving linear equations systems by using some methods. In addition to use numerically methods for instance, Lagrange method, divided difference method, ..., etc.

Course Intended Outcomes:

At the end of the Course, students are expected to learn numerically methods to solve equation, which forms a basis for special subjects of mathematical to understand the world which we live.

Course Outline:

Conditions and ord

Week	Description depends on the Timing table(Theoretical & Practical)
1	Errors sources: error analytic, Absolutely error, relatively error
2	solving the nonlinear equations: specified the region of roots, bisection method
3	False position method, iteration method of fixed point
4	Newton Rafson method, conditions and order of convergence method
5	linear equations system: numerically solutions of linear equations system: direct method (Gauss method)
6	Iteration method (Jacobi method, Gauss- Seidel method)
7	Exercises
8	Lagrange method, divided difference method
9	Forward and backward divided difference
10	Central divided difference,
11	Newton formula of divided difference
12	Numerically derivative: Forward and backward approximation of derivative
13	Central approximation of derivative
14	Analytic and discussion of error

Textbooks:

[1]: numerical_analysis_9th Brudin 2021

[2]:

Suggested references:

[1]: Any references from internet

[2]:

Marking:

First Semester				Final Exam
1st exam	2nd exam	Practical	Activity	
١٥	١٥	٨	٢	٦٠

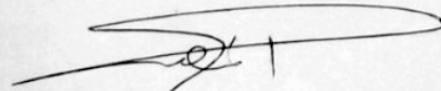
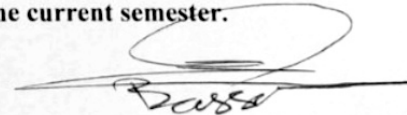
Assignment/ Project	Description	Due Date	Marking
test	written exam	1/12/2018	3
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Instructor(s) information [معلومات الأستاذ]

Section: (Mathematics) ; Lecture Room:[203] , ; Office No.: (11)

Instructor's Name: Asst. Prof. Dr. Anmar Hashim Jasim**E-Mail:** dr.anmar@uomustansiriyah.edu.iq**Office Hours :Sun.:[10:00 –01:30]****Wed.:[10:00–01:30]****NOTES:**

- Office Hour: Other office hours are available by appointment.
- The content of this syllabus not be changed during the current semester.


Lecturer Signature

Chairman Signature