

Course Syllabi

1. MAES-00092 NUMÉRIC ANALYSIS

2. Instructor:

- Edgar Paul Alvarez Lloret

3. Bibliography

- Analisis Numerico y Visualizacion Grafica con Matlab, Nakamura., 2005
- Metodos Numericos para Ingenieros, Chapra Canale, 2009

4. Specific Course Information

- a. The subject of Numerical Methods tries to demonstrate in the student the need to design algorithms for, through simple mathematical numbers and rules, simulate more complex physical, chemical and mathematical processes applied to Chemical Engineering, such as reactions, heat transfer processes, the science of materials and unitary operations.

- b. Prerequisites:

- MAES-00098 Statistics
- MAES-00097 Differential equations

5. Learning Objectives of the Course

- a. To train students in the knowledge on the development of algorithms that allow solving mathematical models in approximate form and in the elaboration of programs using some programming language - To train students in the area of resolution of nonlinear Equations, interpolation, numerical linear algebra, integration and numerical differentiation and differential Equations, using numerical methods implemented in the computer.

- b. Learning Outcomes

1. Analyze forms of interpolation
2. Analyze the resolution of differential equations
3. Apply numerical linear algebra to system resolution of linear equations
4. Analyse and apply problem solving for numerical differentiation and integration
5. Analyze the resolution of nonlinear equations

6. Course Topics

1. Polynomial interpolation
2. Solution of non-linear equations
3. Numerica integration
4. Numberica difference
5. Numeric linear algebra
6. Adjustment of curves
7. 7. problems of differential equations with initial value or condition