

SEMESTER <i>Third</i>	DEPARTMENT <i>General Engineering</i>	COURSE TITLE <i>Numerical Analysis</i>
COURSE CODE <i>EG308</i>	HOURS: 3 UNITS: 3	COURSE SPECIFICATIONS <i>Theoretical Contents</i>
1. Errors: <ul style="list-style-type: none"> ➤ Round of errors. ➤ Truncation errors. ➤ Absolute errors. ➤ Relative errors. 		
2. Solution of Algebraic Equations: <ul style="list-style-type: none"> ➤ Guass Elimination Algorithm. ➤ Gauss Jordan method. ➤ L-Gauss Siedel method. 		
3. Solution of Non-Linear Algorithm Equations: <ul style="list-style-type: none"> ➤ Newton-Raphson method. ➤ Iterative method. 		
4. Finite- Difference Interpolation: <ul style="list-style-type: none"> ➤ Forward- Backward and central differences. ➤ Linear and quadratic interpolation. ➤ Newton's interpolation formula. ➤ Lagrang interpolation technique. 		
5. Solution of Differential Equations: <ul style="list-style-type: none"> ➤ Linear Differential Equations. ➤ Computational of e^A. ➤ Non linear differential equations. 		
6. Curve Fitting.		
7. Numerical Integration.		

8. Numerical Solution of Differential Equations:

- A simple Runga-Kutta method.
- Rundga-Kutta metion of higher order.

References:

1. *An Introduction to Numerical Analysis for Electrical and Computer Engineers*,
Christopher J. Zarowski.