

**Benha University**  
**Faculty of Engineering-Shoubra**  
**Contents of Courses of Mathematics**

**First Year-Electrical Engineering (Power)**

Mathematics 2 (A): Code No. RFA 171, 4 + 2 Hours, 50 + 100 = 150, (1<sup>st</sup> Term)

- (i) Infinite series and expansion of functions
- (ii) Functions of several variables: partial differentiation, maximum and minimum values, Lagrange's multipliers and conditional extrema, envelopes
- (iii) Ordinary differential equations: first order and higher order equations.
- (iv) Vectors analysis: gradient of scalar fields, divergence and curl of vector fields, Green theorem, Gauss theorem, Stoke theorem
- (v) Functions of complex variable