

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

**Mechanical Engineering (production)**

**First Year**

Eng. Mathematics 1: Code No. RFA 191, 4 + 2 Hours, 45 + 105 = 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) Multiple integrals: double integral, triple integral, line integral, surface integral