

## Faculty of Engineering & Technology

### Ordinary Differential Equations

#### Information :

**Course Code :** EMP211

**Level :** Undergraduate

**Course Hours :** 4.00- Hours

**Department :** Structural Engineering & Construction Management

#### Instructor Information :

| Title              | Name                                       | Office hours |
|--------------------|--|--------------|
| Lecturer           | Mahmoud Mohamed Mokhtar Abdulwadud Mohamed | 2            |
| Teaching Assistant | Marco Khair Mehani Hanna                   |              |

#### Description :

Functions of several variables: limits, continuity and partial derivatives, Chainrule, Tangent planes and normal lines, Extrema and constrained extrema, Ordinary differential equations: equations of first order (separable, homogenous, exact, linear and Bernoulli), Orthogonal trajectories, Equations reducible to first order, High order linear equations, The variation of parameters and operation method, Euler's equation, System of linear differential equations, Series and tests of convergence, Taylor and Maclaurin expansion, Multiple integrals: double integral in Cartesian and Polar coordinates, Triple integrals and Jacobians, Line integral, Green's theorem.