BREE 501. SIMULATION AND MODELLING.

Credits: 3

Offered by: Bioresource Engineering (Faculty of Agric Environ Sci)

Terms offered: Winter 2026

View offerings for Winter 2026 in Visual Schedule Builder.

Description

Philosophical and mathematical principles of computational modelling and simulation: Concepts of verification, parameterization, validation, and sensitivity analysis. Introduction to basic concepts of finite element modelling: Direct stiffness and weighted residual methods. Introduction to software packages for general systems and multiphysics, finite-element-based modeling. Emphasis on biosystems engineering applications, e.g., ecosystem dynamics, material properties, solid and structural mechanics, heat transfer, fluid dynamics, electrical and machinery systems.

- Prerequisite: BREE 252; AEMA 305; or permission of instructor.
- Restrictions: U3 students and above

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