



TULSIRAMJI GAIKWAD-PATIL College of Engineering and Technology

Wardha Road, Nagpur - 441108

Accredited with NAAC A+ Grade

Approved by AICTE, New Delhi, Govt. of Maharashtra

(An Autonomous Institution Affiliated to RTM Nagpur University)



Department of Biotechnology

B. Tech Biotechnology

Course Name BBT3609: PE4: Tissue Engineering

BBT3609	Course Outcomes
CO1	Understand the fundamentals of tissue engineering, including stem cell tissue engineering, growth factors, extracellular matrix, mechanical forces on cells, cell adhesion, and migration.
CO2	Explore tissue engineering enabling technologies such as polymer scaffolds, biomimetic materials, nanocomposite scaffolds, bioreactors, and regulatory issues.
CO3	Examine tissue engineering applications in various fields including skin, nerve, musculoskeletal, bone, cartilage, temporomandibular, smooth muscle, esophagus, vascular grafts, cardiac, heart valves, urologic organs, hepatic, renal, dental, and tracheal tissue engineering.
CO4	Evaluate advanced tissue engineering applications in areas such as vascular grafts, cardiac, heart valves, urologic organs, hepatic, renal, dental, and tracheal tissue engineering.
CO5	Analyze emerging trends in tissue engineering including novel biomaterials, 3D bioprinting, organ-on-a-chip technologies, and ethical considerations in regenerative medicine.