

ORAL BIOLOGY

MULTI FACULTY

PRE-REQUISITES : Undergraduation

INTENDED AUDIENCE : Undergraduate students who will want to know more about a specific area of biology which blends into many fundamental scientific domains.

INDUSTRIES APPLICABLE TO : Oral healthcare companies (Colgate, Pepsodent, Himalaya, Dr.Reddy's Laboratories)

COURSE OUTLINE :

Oral Biology involves studying about a unique combination of tissues and functions of the mouth and craniofacial complex.

Subject blends fundamental scientific disciplines in unique and fascinating ways to meet the challenges of developing new and highly effective ways to manage, cure or prevent diseases and developmental defects.

ABOUT INSTRUCTOR :

[Click here to see Instructor details](#)

COURSE PLAN :

Week 1: Craniofacial anatomy, Oral microbiome, Basics of Biomaterial Science and Engineering

Week 2: Specialized mucosa, Evaluation of Oral microbiome, Protein mediated biomaterials

Week 3: Hard tissues of the oral cavity, Dysbiosis, Polymers, Surfaces, Colloid Science.

Week 4: Periodontium, Mucosal and regional immunology, Bioinspired materials Bioengineered tissue models

Week 5: Mineralization dynamics, Oral defence mechanisms, Immune response to biomaterials

Week 6: Saliva – Composition and functions, Oral immune dysfunction, Applications in Cancer diagnosis and therapy, implantable devices, drug delivery systems, gene vectors, bionanotechnology and tissue engineering.

Week 7: Stem cells in the oro -dental region, Immunology in Oral cancer, Biocompatibility assays

Week 8: Stem cell isolation, Immunoassay, 3-D Bioprinting