Environmental Biotechnology (7 days)

Module Content
Orientation Program, General Introduction to Environmental Biotechnology Lab Visit: Proper Demonstration of Instruments and Good Laboratory Practices
Determination Procedure of Physical parameters of water quality testing by HANNA EDGE ● pH ● Temperature ● Electrical conductivity ● TDS ● DO ● Salinity
Determination Procedure of Chemical Parameter of Water Quality Testing ● Determination of acidity ● Determination of alkalinity ● Estimation of the hardness ● Determination of the dissolved oxygen (Manual Method)
Determination Procedure of wastewater quality parameter ● Determination of Chemical oxygen demand ● Determination of Sulphates
Microbiological techniques Enumeration of microbial index by standard plate count method (SPC) Plating methods Streaking methods Staining methods

Environmental Biotechnology (15 days)

Module Content
Orientation Program, General Introduction to Environmental Biotechnology
Lab Visit: Proper Demonstration of Instruments and Good Laboratory Practices

Preparation of Buffers and Reagents and Introduction to Lab Mathematics
Determination Procedure of Physical parameters of water quality testing by HANNA EDGE ● pH ● Temperature ● Electrical conductivity ● TDS ● DO ● Salinity
Determination Procedure of Chemical Parameter of Water Quality Testing ● Determination of acidity ● Determination of alkalinity ● Estimation of the hardness ● Determination of the dissolved oxygen (Manual Method)
Determination Procedure of wastewater quality parameter ● Determination of total, suspended, and dissolved solids ● Estimation of Nitrates Nitrogen ● Determination of Biochemical oxygen demand ● Determination of Chemical oxygen demand ● Determination of Total phosphates ● Determination of Sulphates
Enumeration of microbial index by standard plate count method (SPC)
Microbiological techniques (Environmental Microbiology) ● Plating methods ● Streaking methods ● Staining methods
Enumeration of Total coliforms by Multiple tube Fermentation test (MPN)
Report Writing, final monitoring by Quiz/ Viva/ Presentation

Environmental Biotechnology (30 days)

Module Content
Orientation Program, General Introduction to Environmental Biotechnology
Lab Visit: Proper Demonstration of Instruments and Good Laboratory Practices
Preparation of Buffers and Reagents and Introduction to Lab Mathematics
Determination Procedure of Physical Parameter of water quality testing by HANNA EDGE · pH · temperature · Electrical conductivity · TDS · DO · Salinity
Determination Procedure of Chemical Parameter of Water Quality Testing · Determination of acidity · Determination of alkalinity · Estimation of the hardness · Determination of the dissolved oxygen (Manual Method)
Determination Procedure of wastewater quality parameter · Determination of total, suspended, and dissolved solids · Estimation of Nitrates Nitrogen · Determination of Ammonical Nitrogen · Determination of Biochemical oxygen demand · Determination of Chemical oxygen demand · Determination of Total phosphate · Determination of Sulphate
· Enumeration of microbial index by standard plate count method (SPC)
Microbiological techniques (Environmental Microbiology) · Plating methods · Streaking methods · Staining methods
· Enumeration of Total coliforms by Multiple tube Fermentation test (MPN)
· Exercise based on Bioremediation of Industrial effluent
· Visit of Industrial tour – Saras Dairy · Visit of Vermifiltration Plant- BIBT Campus