

1.3.1 Cross cutting issues

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Recognised by Govt. of Maharashtra Vide G. R. No. NGC 2010/247/10 & Affiliated to North Maharashtra University, Jalgaon.

The following table describes some of cross cutting issues addressed in the syllabus content of various programs prescribed by Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon:

Core course	Description
Cross cutting issue: Environment and sustainability	
M.Sc. II (Microbiology); MB-301: Applied and Environmental Microbiology	Microbiological treatment of waste water, Biological conversion of Lignocellulosic waste, Bioremediation and biodegradation of xenobiotics, Biomarkers and Bio-reporters.
M.Sc. II (Biotechnology); BT-303 : Advanced Environmental Biotechnology	Solid waste management, Waste water management, Air pollution management, Bioremediation, Biodegradation, Biodiversity (Global and National), Measurement of biodiversity, Biosensors, Bio-fuels, Bio-safety, Toxicity, Antidotal procedures.
M. Sc. I (Microbiology) MB 101: Microbial Taxonomy and Diversity	Microbial metabolic diversity and Conservation of microbial diversity, Extremophile bacteria (Archaea), algae, fungi, viruses, Biosensors , Nano-biosensors, Biomarkers and Bioreporter
M. Sc. II Microbiology; MB-403: Agricultural Microbiology	Biological conversion of Lignocellulosic waste, Bioremediation and biodegradation of xenobiotics, Biomarkers and Bioreporters, Microbial contamination, Microbial spoilage (Types and factors) and preservation, Biosafety aspects of handling infectious organisms, Microbial ecology, Microbial interactions with plant roots, Microbial Biocontrol Agents, Integrated Plant Nutrition through biofertilizers, Phytoremediation: Rhizodegradation, Rhizosphere engineering, Microbial reclamation of saline and sodic soils.
M.Sc. I (Biotechnology); BT-101 : Microbial Diversity and physiology	Influence of Microbes on the Earth's Environment, Ecological impacts of microbes, Symbiosis (Nitrogen fixation and ruminant symbiosis), Microbes and Nutrient cycles.

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M.Sc. II (Biotechnology); BT-302:Plant Biotechnology	Transgenic plants with reference to Virus and Pest resistances - Herbicidal resistance, Stress tolerance (heat and salt), Cytoplasmic male sterility, Resistance to fungi and bacteria - Delay of fruit ripening, Ecological risk assessment of genetically modified crops.
M.Sc. I (Chemistry); CH-O-1: Organic Chemistry Practical	Green Chemistry Preparations/ Environmental benign synthesis a) Bromination of acetanilide using Ferric ammonium nitrate. b) Preparation of Benzilic Acid using NaOH /KOH under Solvent-free Conditions. c) Photo reduction of benzophenone to benzopinacol in presence of sun light using isopropanol and acetic acid. d) Synthesis of Dibenzalpropanone from Benzaldehyde and Acetone. e) Synthesis of Dihydropyrimidinone from Ethyl acetoacetate, Benzaldehyde and Urea.
Extra curricular activities	Tree plantation
Cross cutting issue: Professional Ethics	
M.Sc. II (Biotechnology); BT-403:Industrial & Business Biotechnology	Concept and Importance of entrepreneurship and self-employment in India, ISO 9000 quality system standards, Biosafety & IPR, CPM and PERT.
M.Sc. II (Biotechnology); BT-302:Plant Biotechnology	Generation of novel plants foods and GMOs, Hazards and impact of genetic engineering on society.
M.Sc. II (Statistics); ST-404 :Technical communications	Technical and official communication skills, Communication/presentation skills of the students.