



ST. ALOYSIUS' COLLEGE

AUTONOMOUS
JABALPUR- 482001
MADHYA PRADESH, INDIA



CRITERION-1

CURRICULAR ASPECTS

Key Indicator – 1.3

Curriculum Enrichment

Metric No.: 1.3.1

Institution integrates cross-cutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability, and other value frameworks enshrined in Sustainable Development Goals and National Education Policy - 2020 into the Curriculum.

Document Name

List of Topics Addressing Cross-Cutting Issues

ENVIRONMENT AND SUSTAINABILITY



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Programme	Course Title	Relevant description	Link to syllabus
UNDERGRADUATION COURSES			
MANAGEMENT AND COMMERCE			
B.Com III Year	Business Ethics and Human Values	<ul style="list-style-type: none">Moral issues in businessenvironmental protection	https://staloysiuscollege.ac.in/ssr_files/c1/13/131/Business-ethics-and-human-values-environment.pdf
B.Com III Year	Environment & Sustainable Tourism	<ul style="list-style-type: none">Advocating sustainable tourismTourism activities and their linkages to ecology and environmentNaturalist and its roleEco-tourism as a worldwide phenomenonSustainability and destination brandingCarbon management in tourism: Field visit to ecological parks and guest lecture on sustainable tourism	https://staloysiuscollege.ac.in/ssr_files/c1/13/131/Environment-and-sustainable-tourism-environment.pdf
ARTS			
B.A. III Year	Indian Foreign Policy	<ul style="list-style-type: none">India's role in Environment protection	https://staloysiuscollege.ac.in/ssr_files/c1/13/131/INDIA-N-FOREIGN-POLICY-environment.pdf
BA III Year	Development and Environmental Economics	<ul style="list-style-type: none">Environmental problems of the EconomySustainable developmentEnvironmental damagesGreen IndexEnvironment-Economy LinkagePopulation- Environment linkagesMarket failure for environmental goodsThe Common ProblemsConcept of sustainable	https://staloysiuscollege.ac.in/ssr_files/c1/13/131/development-and-environmental-economics-environment.pdf



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		development	
BA II Year	हिन्दी गद्य (प्रश्न पत्र 1) बी.ए. द्वितीय वर्ष	<ul style="list-style-type: none">सौन्दर्य की नदी नर्मदा (अंश- ओंकारेश्वर से खलघाट)अमृतलाल बेंगड़	https://staloyuscollege.ac.in/ssr_files/c1/13/131/HINDI-GADH-ENVIRONMENT.pdf
BA III Year	Foundation Course- English Language	<ul style="list-style-type: none">“The Cherry Tree” by Ruskin Bond & “Tree” by Tina Morris	https://staloyuscollege.ac.in/ssr_files/c1/13/131/FC-III-YEAR-ENGLISH-LANGUAGE.pdf
BA/B.SC III Year	Economics of growth and development	<ul style="list-style-type: none">The Sustainable Development Goals (SDGs) 2030 Agenda	https://staloyuscollege.ac.in/ssr_files/c1/13/131/Economics-of-Growth-and-Development-environment.pdf
BA/B.Sc III Year	Gender economics	<ul style="list-style-type: none">Gender issues and Sustainable development goals.	https://staloyuscollege.ac.in/ssr_files/c1/13/131/gender-economics-environment.pdf
BA I Year	Foundation Course- English Language & Indian Culture	<ul style="list-style-type: none">“The Axe” by R. K. Narayana	https://staloyuscollege.ac.in/ssr_files/c1/13/131/FC-ENGLISH-LANGUAGE-AND-INDIAN-CULTURE-ENVIRONMENT.pdf
B.A.I Year	Idea of Bharat	<ul style="list-style-type: none">Views on Indian history	https://staloyuscollege.ac.in/ssr_files/c1/13/131/IDEA-OF-BHARAT-environment.pdf
BA III Year	International Relations and Contemporary Issues	<ul style="list-style-type: none">Environmental Issues: Climate change	https://staloyuscollege.ac.in/ssr_files/c1/13/131/INTERNATIONAL-RELATIONS-AND-CONTEMPORARY-ISSUES-environment.pdf
SCIENCE			
B.Sc III Year	Agriculture Biotechnology	<ul style="list-style-type: none">Organic farming: Biofertilizers and BiopesticidesBiological N₂ fixation, H₂ production, biofertilizers	https://staloyuscollege.ac.in/ssr_files/c1/13/131/agriculture-biotechnology-environment.pdf



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		<p>and biopesticides</p> <ul style="list-style-type: none">• Solid wastes; sources and management (composting, vermiculture, and methane production). Single-cell protein (Spirulina, yeast, mushroom)• National and International status of organic farming agencies and institutions related to organic agriculture• Organic and Indian National Standards for organic products• Organic food quality and human health	
B.Sc III Year	Ecology, Biodiversity and Evolution	<ul style="list-style-type: none">• Concept of habitat and ecological niche• Freshwater habitat and its conservation• Marine water habitat and its conservation• Estuarine habitat and its conservation• Terrestrial habitat and its conservation	https://staloyusiuscollege.ac.in/ssr_files/c1/13/131/Ecology_Biodiversity-and-Evolution-environment.pdf
B.SC III Year	Environmental Biotechnology	<ul style="list-style-type: none">• Environmental Pollution: definition, principles and scope of ecology types of pollution, oil pollution, methods for the measurement of pollution; methodology of environmental management - the problem-solving approach and its limitations• Solid and Water wastes: sources and management (composting, vermiculture and methane production)• Treatment of waste water, primary, secondary &	https://staloyusiuscollege.ac.in/ssr_files/c1/13/131/Environmental-biotechnology-environment.pdf



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		<p>Assessment of water quality</p> <ul style="list-style-type: none"> • Global environmental problems: Ozone depletion, UV-B, greenhouse effect and acid rain. • Biogas H₂ Production • Degradation of xenobiotics in Environment. • Ecological considerations, decay behaviour & degradative plasmids; Hydrocarbons, substituted hydrocarbons, surfactants, pesticides, microbial leaching. Bioremediation of contaminated soils and waste land. • Techniques and Applications: methods of monitoring pollution; biological methods; detection methods for DO, BOD, pathogen monitoring by heterotrophic plate count; multiple tube method; membrane filtration methods; strategies for controlling pathogen transfer; chemical methods- detection methods for COD, pH, alkalinity, TSS, TDS, total organic carbon, oil, grease etc.; biosensors for pollution 	
BA III Year	Globalization and Politics	<ul style="list-style-type: none"> • Ecological Issues: Historical overview of International environment Agreements • Climate change 	https://staloyusiuscollege.ac.in/ssr_files/c1/13/131/globalisation-and-politics-environment.pdf



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		<ul style="list-style-type: none">• Global common debate• Human displacement and Human security	
B.Sc III Year	Ecology and Applied Zoology	<ul style="list-style-type: none">• Concepts of ecology and habitat ecology.• Inter-relationship between wildlife and the environment• Wild Life Protection Act, National parks and sanctuaries of Madhya Pradesh• Rare, endangered & threatened (RET) species of India	https://stalovsiuscollege.ac.in/ssr_files/c1/13/131/Ecology-and-applied-zoology.pdf
BCA IV Semester	Internet of Things	<ul style="list-style-type: none">• E-Waste management	https://stalovsiuscollege.ac.in/ssr_files/c1/13/131/Internet-of-things-environment.pdf
B.SC III Year	Environmental Biotechnology	<ul style="list-style-type: none">• Membrane filtration methods• Strategies for controlling pathogen transfer	https://stalovsiuscollege.ac.in/ssr_files/c1/13/131/environmental-biotechnology-environment.pdf
BSC III Semester	Organic Qualitative Analysis, reaction and synthesis (Practical)	<ul style="list-style-type: none">• Determination of acetic acid in commercial vinegar using NaOH.• Determination of alkali content- antacid tablet using HCl.• Estimation of calcium content in chalk as calcium oxalate by permagnatometry• Estimation of hardness of water by EDTA	https://stalovsiuscollege.ac.in/ssr_files/c1/13/131/ORGANIC-QUALITATIVE-ANALYSIS.REACTIONS-AND-SYNTHESIS-environment.pdf
B.Sc III Year	Applied Aquaculture	<ul style="list-style-type: none">• Estimation of biological oxygen demand in water• Estimation of chemical oxygen demand in water• Identification and study of aquatic weeds• Azolla, Pistia, Vallisneria Hydrilla , Chara	https://stalovsiuscollege.ac.in/ssr_files/c1/13/131/applied-aquaculture-environment.pdf



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B.SC III Year	Nutrition and Dietics	<ul style="list-style-type: none">• Food groups• Food guide pyramids• Food in relation to health,• Definition of Nutrition- Assessment of nutritional status, optimum or adequate nutrition, good nutrition, undernutrition, malnutrition• Nutrients Definition, type of nutrients- energy carbohydrate protein fat vitamins and minerals water (sources functions and deficiency symptoms).• Meal planning-definition, principle of meal planning, menu- introduction and concept, format for menu plant	https://stalovsiuscollege.ac.in/ssr_files/c1/13/131/Nutrition-and-dietics-environment.pdf
B.Sc. III Year	Vocational Management of Nutrition in Life Cycle	<ul style="list-style-type: none">• Food and our body: Body composition, choice of food, calorie value of food• Dietary modification• Dietary management for early childhood: nutritional requirements, nutrition-related problems• Feeding patterns• Special deficiency diseases• Dietary management for school going children: Nutritional requirement, Importance of school• Snacks and lunch tiffin, nutrition-related problems• Dietary management for adolescents, adults and old aged <p>(a) Dietary management for adolescence: Physiological changes during adolescent period, nutritional requirement, food</p>	https://stalovsiuscollege.ac.in/ssr_files/c1/13/131/Management-of-nutrition-in-life-cycle.pdf



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		<p>likes and dislikes, factors influencing food habits, nutrition problems related to adolescent</p> <p>(b) Dietary management for adults: nutritional requirement, food adequacy, low cost balanced diet</p> <p>(c) Dietary management for old age: nutritional requirement, food requirement, nutrition related problems for old age.</p> <ul style="list-style-type: none"> • Dietary management for pregnancy and lactation • Diet during pregnancy: nutritional requirement, complications, physiological changes • Diet during lactation: nutritional requirement, food taboo during lactation, lactogenic diets, formula feeding • Weaning: food planning, formula and preparing a formula feed, importance of correct and timely weaning 	
B.COM/B.B. A/B.SC/B.S C/ B.A. I & II Semester	Value Education	Sustainable environmental development	https://staloyuscollege.ac.in/ssr_files/c1/13/131/VALUE-EDUCATION-environment.pdf
B.COM/B.B. A/B.SC/B.S C/ B.A. III Year	Value Education	<ul style="list-style-type: none"> • Global warming • Water conservation 	https://staloyuscollege.ac.in/ssr_files/c1/13/131/VALUE-EDUCATION-2-environment.pdf
POST GRADUATION			
MANAGEMENT AND COMMERCE			
M.Com II Semester	Strategic Marketing	<ul style="list-style-type: none"> • Green marketing strategy 	https://staloyuscollege.ac.in/ssr_files/c1/13/131/Strategic-marketing-



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			environment.pdf
ARTS			
MA III Semester	Environmental Economics	<ul style="list-style-type: none"> • Global warming • Earth summit • Environmental problems of economy • Economics of pollution • Environment impact analysis • Global environmental problems • Constitutional rights and duties regarding environment 	https://staloysiuscollege.ac.in/ssr_files/c1/13/131/environmental-economics-environment.pdf
MA III Semester	Agricultural Economics	<ul style="list-style-type: none"> • Green revolution 	https://staloysiuscollege.ac.in/ssr_files/c1/13/131/Agricultural-economics-environment-pg.pdf
MA III Semester	International Politics and contemporary political issues	<ul style="list-style-type: none"> • Environmental Issues: Rio-Declaration 1992 and Rio-Bio Diversity Agreement. 	https://staloysiuscollege.ac.in/ssr_files/c1/13/131/International-politics-and-contemporary-issues-environment.pdf
MA II Semester	Poetry	<ul style="list-style-type: none"> • "A Poison Tree" by William Blake 	https://staloysiuscollege.ac.in/ssr_files/c1/13/131/POETRY-pg-environment.pdf
MA III Semester	Rural Development	<ul style="list-style-type: none"> • Safe drinking water 	https://staloysiuscollege.ac.in/ssr_files/c1/13/131/RURAL-DEVELOPMENT-environment.pdf
SCIENCE			
M.Sc. III Semester	Microbiology Course Environmental Microbiology	<ul style="list-style-type: none"> • Practical: Isolation of air borne microbes through air sampler 	https://staloysiuscollege.ac.in/ssr_files/c1/13/131/environment-and-sustainability-environment-microbiology.pdf
MSc IV Semester	Environment Chemistry	<ul style="list-style-type: none"> • Industrial pollution • Cement, sugar, distillery, 	https://staloysiuscollege.ac.in/ssr_files/c1/13/131/ENVIR



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		<p>drug, paper and pulp, thermal power plants, nuclear power plants, metallurgy. Polymers, drugs etc.</p> <ul style="list-style-type: none">• Environmental disasters – cherbonyl, three-mile island, seveso and minamata disasters, Japan tsunami	<u>ONMENTAL-CHEMISTRY-environment.pdf</u>
M.Sc II Semester	Environment and Elementary Ecology	<ul style="list-style-type: none">• Sustainable development and Natural Resources• Principles of conservation• Biodiversity and its conservation	<u>https://stalovsiuscollege.ac.in/ssr_files/c1/13/131/environment-and-elementary-ecology-environment.pdf</u>
M.Sc III Semester	Bioprocess engineering and Environmental Biotechnology	<ul style="list-style-type: none">• Environmental pollution• Bioremediation of xenobiotic• Detoxification	<u>https://stalovsiuscollege.ac.in/ssr_files/c1/13/131/Bioprocess-Engineering&Environmental-Biotechnology.pdf</u>
MSc II Semester	Environment & Biodiversity Conservation	<ul style="list-style-type: none">• Environmental monitoring and impact assessment• Environmental legislation• Impact of global warming wsr acid rain and ozone depletion, green-house effect• Biodiversity crisis	<u>https://stalovsiuscollege.ac.in/ssr_files/c1/13/131/environment-and-sustainability-environment-and-biodiversity.pdf</u>
MSc IV Semester	Environment Chemistry	<ul style="list-style-type: none">• Water quality parameters –dissolved oxygen, biochemical oxygen demand, solids, metals, content of chloride, sulphate, phosphate, nitrate and microorganisms. Water quality standards.• Analytical methods of measuring BOD, DO, COD, F, Oils, metals (As, Cd, Cr, Hg, Pb, Se etc.),residual chloride and chlorine demand.	<u>https://stalovsiuscollege.ac.in/ssr_files/c1/13/131/Environmental-chemistry-environment.pdf</u>



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		<p>Purification and treatment of water.</p> <ul style="list-style-type: none">• Aquatic chemistry and water pollution. Redox chemistry in natural waters. Dissolved oxygen, biological oxygen demand, chemical oxygen demand, determination of DO, BOD and COD.• Aerobic and anaerobic reactions of organic sulphur and nitrogen compounds in water acid-base chemistry of fresh water and seawater• Aluminum, nitrate and fluoride in water Petrification• Sources of water pollution. Treatment of waste and sewage. Purification of drinking water, techniques of purification and disinfection	
MSc Semester II	Analytical Chemistry	<ul style="list-style-type: none">• Karl Fischer titration of water• Determination of DO, BOD and COD• Analytical methods of measuring BOD, DO, COD, F, Oils, metals (As, Cd, Cr, Hg, Pb, Se etc.), residual chloride and chlorine demand• Purification and treatment of water	https://staloyiuscollege.ac.in/ssr_files/c1/13/131/environment-Analytical-chemistry.pdf
MSC II Semester Zoology	Environment and Biodiversity Conservation	<ul style="list-style-type: none">• Water conservation: Rain water harvesting and watershed management	https://staloyiuscollege.ac.in/ssr_files/c1/13/131/environment-and-sustainability-environment-and-biodiversity.pdf