

Programme	BS Botany	Course Code	BOT-319	Credit Hours	3
Course Title	Sustainable Development Goals				
Introduction					
<p>The Sustainable Development Goals (SDGs) are a universal framework adopted by United Nations member states, including Pakistan, aimed at addressing global challenges such as poverty, inequality, and environmental degradation by 2030. Pakistan has committed to integrating these 17 goals into its national policies. At priority basis Pakistan has to minimize hunger and provide improved quality and quantity of food on the basis of climate change.</p>					
Learning Outcomes					
<p>At the end of this course student will be able to:</p> <ul style="list-style-type: none"> • To understand the difference between sustainability, sustainable development, and the sustainable development goals. • Understand the use of Agricultural Biotechnology to meet food security. • Apply the knowledge and techniques in research for the benefit of society. • Live in society positively. • Identify the major issues in population and play a role to solve them. • Analyze the research literature critically 					
Course Contents					
<ul style="list-style-type: none"> • Introduction to Sustainable Development Goals: Definition and types of sustainable goals, SDGs overview and targets, • Pakistan and sustainable goals: Zero hunger and Pakistan, Types of hunger, Climate change and Pakistan, • Agriculture Sector of Pakistan: An overview of agriculture in Pakistan to meet zero hunger, Problems of agriculture in Pakistan, Issues of food security, conventional breeding Vs Molecular breeding, Heat tolerance agricultural crops, Production of crops based on marker assisted selection, Biofertilizers. • Abiotic and Biotic Crops: Drought resistant crops, Salt tolerant crops, High temperature and cold stress, Virus resistant crops, Insect resistant crops, Herbicide resistant crops, Disease resistant crops by the CRISPR-Cas genome editing technology, Insect Control through the application of Nano technology; Use of Chitinase enzyme, Biopesticides, Questions and concerns of food safety and environmental issues related to GM crops. • Valuable Crops: Biofortification, Golden rice 					
Textbooks and Reading Material					
<p>No one text book is suggested. There are several books available in the library and on the Net. Please give your required keywords at library portal of PU to search the library. In addition, several scientific journals are available for reading.</p>					
Teaching Learning Strategies					
<ul style="list-style-type: none"> • Lectures • Group discussion • Presentations / Seminars • Tutorials • Assignments 					
Assignments: Types and Number with Calendar					
<ul style="list-style-type: none"> • Individual assignments (after midterm) • Group Assignments (after midterm) • Group activity (presentations) after midterm 					