

Course Profile: CSA Technology Development

Course Code: CSA 5105

Course Title: CSA Technology Development

Credit Hour: 2

Student Level: Level 5, Semester-2

Rationale:

Climate change is a reality in Bangladesh. Therefore, technologies are needed for coping with the changing climate. The proposed course will focus on the innovation of novel technologies in agriculture while advancement of the indigenous technologies will be equally discussed.

Specifically, the course will offer in-depth understanding and basic research on efficient uses of agricultural resources, e.g., soil, water and environment, climate smart cultivar development and assessment, advanced agricultural practices at a broader scale.

Objectives: At the end of this course, the students will gain considerable-

- (i) Knowledge of the agricultural technologies required to cope climate change
- (ii) Understanding on development of novel CSA techniques
- (iii) Knowledge to redesign indigenous technologies

Learning Outcomes	Course Content	Teaching-Learning Strategy	Assessment Strategy
-Understanding the field of CSA innovation	<p>Chapter 1: CSA innovation: perspective and scopes Lectures on different areas of CSA innovation needed including agricultural resources and their interactions between subsectors.</p>		
-	<p>Chapter 2: CSA technologies on agricultural resources</p> <ul style="list-style-type: none"> • CSA on soil, climate and water resources. • Water management (fresh water harvesting) • Salinity management (utilization of reverse osmosis for growing plants) • Agricultural inputs conservation and utilization strategies particularly during natural hazards and disasters 		
-	<p>Chapter 3: CSA technology in crops sector Technologies for growing crops in difficult conditions-</p> <ul style="list-style-type: none"> -Sorjan cultivation -floating agriculture -bag agriculture -soilless cultivation techniques -Hanging vegetable cultivation -Quick crop establishment methods/CSAT for reduction of field duration -CAST on plant protection -CAST for quick response to crop agriculture -design of homestead for nutritional security -technologies for addressing low-lying ecosystems and short winter -crop variety development -Screening of existing cultivars under elevated temperature and CO₂. 		

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	<p>Chapter 4: CSA technology in fisheries sector -management techniques of fishes under elevated temperature and extreme climatic events</p>		
	<p>Chapter 5: CSA technology in livestock sector -management techniques of fishes under elevated temperature and extreme climatic events</p>		
	<p>Chapter 5: CSA technology at farming systems level (integration of different sub-sectors) -Aquaculture- horticulture -Rice-fish-vegetable culture -Agroforestry</p>		
	<p>Practical or research work: Student attachment with farm families to design a CSA technology, or A short research on a suitable CSA technology development</p>		<p>Report and presentation</p>