

MS in Climate Smart Agriculture
Institute of Climate Smart Agriculture
Patuakhali Science and Technology University, Dumki, Patuakhali

Course Profile

Course Code: CSA 5109

Course Title: Coastal Ecosystems

Credit Hour: 2

Student Level: Level 6, Semester-1

Rationale: Coastal Ecosystems in Bangladesh are highly vulnerable to future climate change due to sea level rise, more extreme events and changes in river sediment transport and water flows. At the same these Coastal Systems deliver important ecosystem services such as flood protection, biodiversity conservation, fisheries, wood and other plant products.

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

- 1) Knowledge of the how climate change affects the vulnerability of coastal ecosystems.
- 2) Knowledge on main ecosystem services of coastal ecosystems
- 3) Knowledge and how to better protects coastal ecosystems

Learning Outcomes	Course Content	Teaching-Learning Strategy	Assessment Strategy
<ul style="list-style-type: none"> - describe the processes that determine species interactions in coastal ecosystems; - demonstrate knowledge of the relationships between organisms and the environment and insight in the mechanisms that drive populations and ecosystems; - identify the principle determinants of ecosystem functioning 	<p>Ecology of Coastal Systems</p> <p>Lectures and reading assignment on the ecology of coastal ecosystems explaining –</p> <ul style="list-style-type: none"> - how species interact - impacts of the environment on species interaction and ecosystems functioning and biodiversity - principle determinant of ecosystem functioning 	<p>Lecture</p> <p>Reading assignment</p> <p>QA</p>	<p>-Short Answer</p> <p>-Essay</p>

<p>-Explain the concept of ecosystem services</p> <p>-Identify the most important ecosystem services of coastal ecosystems in Bangladesh</p>	<p>Ecosystem Services –</p> <p>lecture and reading material on:</p> <ul style="list-style-type: none"> - concept of ecosystem services - ecosystem services of coastal ecosystems <p>Assignment on identifying key ecosystem services of coastal ecosystems</p>	<p>Lecture</p> <p>Reading assignment</p> <p>QA</p>	<p>-Short Answer</p> <p>-Essay</p> <p>-Completion</p>
<p>-Understand the main impacts of climate change impact on coastal ecosystems.</p> <p>- Describe why coastal ecosystems are very vulnerable to climate change</p> <p>-Identify potential adaptation options to reduce the vulnerability of coastal ecosystems</p>	<p>Climate change Impact on Coastal Ecosystems</p> <p>lecture and reading material on:</p> <ul style="list-style-type: none"> - climate change impacts on coastal ecosystems - Vulnerability and adaptation of coastal ecosystems <p>Assignment on identifying important adaptation options to reduce vulnerability of coastal ecosystems</p>	<p>Lecture</p> <p>Reading assignment</p> <p>QA</p>	<p>-Short Answer</p> <p>- essay</p> <p>- completion of assignment</p>
<p>-identify the most important species and components of coastal ecosystems</p> <p>- analyse future threat of coastal ecosystems (including climate change)</p> <p>- Design a plan for the conservation and adaptation plan for a coastal ecosystem</p>	<p>Design of Coastal Ecosystem Conservation Plan</p> <p>Field Trip to Coastal Ecosystem</p> <p>Group assignment on future conservation of a coastal ecosystem.</p> <p>Assignment should include:</p> <ul style="list-style-type: none"> - Future climate change impacts - Other future threats (e.g. pollution, urban expansion, poaching etc.) - Identify the key ecosystem services that need to be protected - Future conservation plan which takes into account future climate change. 	<p>Field Trip</p> <p>Group assignment</p> <p>Presentation</p> <p>Report</p>	<p>-Field trip report</p> <p>- Group presentation</p> <p>Group report</p>

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