

THE ART AND SCIENCE OF BLACK TEA
A summer study abroad course offered by
Rutgers Global and SEBS Office of International Programs
Summer Session I, 2019

PROGRAM DETAILS

In-class instructions (does not apply to field visits): (5hr 30 min instruction time per day)

Forenoon:

Class period 1: 9.00 am -10:30am (total instruction time 1.5 hrs)
 Tea break: 10:30-11:00am
 Class period 2: 11.00am-12:30pm (total instruction time 1.5 hrs)
 Lunch break: 12:30-1:30pm

Afternoon:

Class period 3: 1:30pm-3:00pm (total instruction time 1.5 hrs)
 Tea break: 3:00-3:30pm
 Class period 4: 3:30-4:30 pm (total instruction time 1.0 hr)

Syllabus with Daily Schedule of Activities ¹

Day 0 Sun, May 26, 2019	<p>All students arrive on the AAU campus guest house by Sun (this requires students to leave the USA by Friday to arrive at Delhi (DEL) by Sat. All flights to GAU from DEL leaves in the morning of Sunday). AAU will provide transportation from the GAU airport to AAU guest house where students will reside during duration of the program. If arriving RU student(s) miss the AAU provided transportation, he/she/they must make arrangements on his/her/their own to get to the AAU campus by Sunday night (in such cases, students are advised to contact Dr. Bhuyan when they arrive at GAU).</p> <p>Welcome and greetings from AAU; introductions (Briefing of the trip and AAU) and informal dinner together with AAU/THT faculty and support staff</p>
Day 1 (Mon) May 27, 2019	<p>Classes begin.</p> <p>Tea, the plants, its origin and spread world over. Tea industry in Assam and its impact on Assam and India's economy. The tea garden communities and their cultural heritage and their contribution to Assam's culture and society.</p> <p>Visit Experimental Garden for Plantation Crops (EGPC) and Tea Processing Unit (TPU).</p>

¹ Subject to change due to local weather and other local conditions. Interaction with AAU students and faculty is a part of the program.

Day 2 May 28, 2019	Economics of the tea industry, including production, consumption, and export as well as its supply chain. Large scale or commercial tea gardens as agribusinesses-their organization set up of a commercial tea garden, day to day management practices, administrative control of the whole tea estate and their employees under corporate sectors. The concept of small-scale cultivation of tea in Assam and their role in the tea economy and the tea supply chain. Problem, prospects and marketing strategies of small-scale produce.
Day 3 May 29, 2019	Young tea management practices and their importance in building the future of the tea bush. Regulations in the tea industry. Tea as a natural health drink-chemistry of tea. Antioxidant properties and other medicinal properties of tea. Visit to EGPC.
Day 4 May 30, 2019	Land preparation & planting in main field, Drainage requirements, shade trees and their importance in plantations. Origin/soil/climatic requirement for growing tea plant. Planting materials and their propagation. Effects of climate change on tea plantation of Assam. Visit to EGPC.
Day 5 May 31, 2019	Importance of pruning and methods applied in mature tea plants to keep them productive. Importance of nutrient management. Manuring young and mature tea, quality and mode of application of fertilizers. Important pests, diseases & weeds in tea. Plant Protection Codes and other precautions. Economic loss due to pests and diseases. Ways and means of harvesting of tea leaves. Importance of handling of green leaves.
Day 6 (Sat) June 1, 2019	Field visit to commercial tea garden: Visit to Lattakoojan T.E. (near Numaligarh)
Day 7 (Sun) June 2, 2019	Cultural visit: Visit to Aathkhelia Naamghar, Golaghat. Visit a large regional Sunday open market in Titabor. Lunch with Dr. Bhuyan's family.
Day 8 June 3, 2019	Types of processed tea, basic concepts and processes. Manufacturing practices of black tea & its difference from green tea, hands-on demo of black tea manufacturing. Machinery used in black tea processing and variation from those of green tea. Important control parameters, cleanliness and hygiene of tea processing units. Organic cultivation and certification of product. Importance of integrated management practices and ITK (Indigenous Technical Knowledge). Visit to TPU to see manufacturing of tea.
Day 9	World market of different types of tea, Ex-factory and Auction marketing of tea. Role of middlemen in the tea supply chain (tea brokers, warehouses in

June 4, 2019	<p>auction market, Pan India Auction etc. Value addition to tea. Bulk tea and blends, Branding of tea products. Tea tasting and its role in marketing. Tea aroma, flavour etc. Tea bags, Instant tea, cold tea etc.</p> <p>Visit to TPU and see manufacturing tea.</p>
Day 10 June 5, 2019	<p>Field visit: Visit to Tocklai Tea Research Institute (TTRI) and interaction with scientists. Visit North East Institute of Science and Technology (formerly RRL).</p>
Day 11 June 6, 2019	<p>Field visit: Leave for Upper Assam to spend time with small tea growers (STG) – location TBD. Stay overnight.</p>
Day 12 June 7, 2019	<p>With STGs on location. Stay overnight.</p>
Day 13 (Sat) June 8, 2019	<p>Cultural visit: Return to AAU. Visit historical sites in Sivasagar on way back.</p>
Day 14 (Sun) June 9, 2019	<p>Field visit: Visit to Kaziranga Golf Resort at Sangsua T.E. and see the tea tourism.</p> <p>Cultural visit: Visit to Swargadeo Chaolung Siu-Ka-Pha Samannay Kshetra.</p> <p>Last night at AAU campus. Pack up!</p>
Day 15 June 10, 2019	<p>Field visit: Proceed to Shillong, Meghalaya. Visit Meg Tea (state-owned organic tea STG with processing facility) in Umium/Nongpho. Stay overnight in Shillong.</p>
Day 16 June 11, 2019	<p>Cultural visit: Visit the cleanest village in Asia, Cherapunjee, Meghalaya (near to the world's highest rainfall location in Mawsynram). Visit Shillong peak, falls, Wards Lake, etc. Overnight stay in Shillong.</p>
Day 17 June 12, 2019	<p>Leave for Guwahati. River cruise on the Brahmaputra.</p>
Day 18 June 13, 2019	<p>Field visits: Visit M/s J. Thomas Tea Broker's, and the Guwahati Tea Auction Centre.</p> <p>Cultural visit: Visit Sankardeva Kalakhetra (an art and cultural centre which also serves as a museum) to get a glance of the Assamese culture.</p>
Day 19 June 14, 2019	<p>Field visits: Visit to Govt. of India's Inland Container Depot, and a commercial tea blending and packaging firm.</p> <p>Course recap (course evaluation, handing out certificates, etc.).</p>

	Last night in Guwahati/Assam - Pack up!
Day 20 (Sat) June 15, 2019	Students leave for Guwahati airport (GAU) on their way back to the US (AAU provides transportation to the GAU airport). Program concludes.