The program that we're dealing with is for Bachelor of Arts for the Semester VI. The Coarse Code is GEC106, The topic is Seasonal winds.

Seasonal Winds

The Monsoons

Monsoons are produced according to seasons. Mausim is an Arabic word which means seasons. The main characteristics of these winds is that the direction of the winds in winter season is opposite to that in summer season. They are blowing in summer from ocean to land and that of winter from land to ocean. Asia has the greatest monsoonal influence.

These wind systems are best developed in India and adjacent south-eastern Asia, where there is a persistent flow from the Indian Ocean onto the land in the summer half of the year and where winds blow out from the continent in winter.

Summer Monsoon Winds

The Sun is vertical at the Tropic of Cancer in summer season. Two Low pressure areas are established in Asia. One is centred on Peking (Now Beijing) and Peshawar in Pakistan. These low pressure areas are so strong that the Equatorial Low Pressure area is overwhelmed by them. As a result, a pressure gradient extends from Southern Sub-tropical High Pressure Belt across the Equator to Peshawar (Pakistan).

The South East Trade winds cross the Equator under the influence of this pressure gradient and becomes southwest winds due to the axial rotation of the Earth according to the Ferrel's Law. These winds are known as South West Monsoon Winds in India and Pakistan.

Winter Monsoon Winds

The Sun is vertical at the Tropic of Capricorn in winter season. The whole of the permanent wind system shifts towards the south. Two centres of high pressure are established in Asia and due to intense cold-one around Baikal lake (Siberia) and the other near Peshawar (Pakistan).' The Seas are comparatively warm and thus became low pressure areas. Cold dry winds blow out of these high pressure areas. They are known as North Easterlies.

Local Winds

Named winds- which blow in narrow areas

Influence the weather, human health and their socio-economic activities
Developed as a result of local temperature, pressure and humidity variations.
Local winds usually affects smaller areas and are confined to the lower levels of troposphere.

Land Breeze

Diurnal wind blowing from the land out to sea. Caused by differential cooling of land and sea. During the night the land cools more rapidly than the water and flow air develops from land to sea.

Sea Breeze

During the day the land warms up more than the water. Warmed air rises over the land, air from the oceans blows in to replace it. The circulation which follows brings cool air onto the land.

Mountain (Katabatic) and Valley (Anabatic) winds

On mountain sides, under a clear night sky, the higher land radiates heat faster and is cooled faster. The cool, denser air then flows down the mountain slopes into the valleys and lowlands- Mountain breeze. (Katabatic). On warm sunny days, the heating of mountain slopes may generate an upslope flow of air called a Valley breeze. (Anabatic). As the warm air moves up the mountain, it is replaced by cooler air from above the valley and surface temperatures are moderated slightly.

Drainage (Gravitational) winds

Cold and warm winds

A. Depression winds: hot winds

Brickfielder, Chili, Gibli, Loo, Sirocco, Khamsin, Harmattan, Karaburn, Leveche, Zonda, etc.

Cold winds:

Blizzard, Bora, Buran, Friagem, Gregale, Levanter, Maestro, Mistral, Nevados, Norte, Norther, Pampero, etc

B. Descending winds- warm winds

Berg, Fohn, Chinook, Norwester, Samoon, Santa Anna, Aandhi (Dust storm), Dust devil, Haboob, Shamal, Siestan, Simmom, etc.

Seasonal Winds make changes in the atmosphere and environment seasonally while local winds can last for few minutes to hours or a day which has mild to severe impact on the environment. Seasonal and local winds are responsible for regional change in the weather and climate and its coverage is limited.