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**MTTM C-106**  
**Tourism Geography and Ecology**

**Unit I**

**Objectives:** This course explores the basic components of geography in relation with tourism. Knowledge of geography shall also give an extra edge to the students in designing the itineraries for the travellers, suggesting them various destinations.

**Unit-I**

Meaning, Scope and contents of Geography. Importance of Geography in tourism, Climatic variations, climatic regions of world, study of maps, longitude & latitude, international date line, Standard time and Day light saving time.

Course Title: Tourism Geography and Ecology

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**Unit I****Introduction.**

Geography is a field of science dedicated to the study of lands, the features, the inhabitants, and the phenomena of earth. A literal translation would be “to describe or write about the earth”. The first person to use the word ‘geography’ was Eratosthenes (276-194 BC).

Geography is largely the study of the interaction of all physical and human phenomena and landscapes created by such interactions.” It is about how, why and where human and natural activities occur and how these activities are interconnected.

Geography is divided into three main branches:

1. Human geography, 2. Physical geography
3. Regional geography.

**Physical geography:** It is a branch of geography which aims to understand the physical problems and issues of lithosphere, hydrosphere, atmosphere, pedosphere, and global flora and fauna patterns (biosphere).

**Human geography:** It is a branch of geography that focuses on the study of pattern and processes that shape the human society. It encompasses the human, political, cultural, social & economic aspects.

**Regional geography:** It is that branch of geography which studies the regions of all sizes across the earth. The main aim is to understand, or define the uniqueness, or characteristics of a particular region that consists of natural as well as human elements.

**Tourism:** The activities of a person travelling outside his or her usual environment for less than a specified period of time and whose main purpose of travel is other than exercise of an activity remunerated from the place visited (WTO).

**Tourism Geography:** Tourism geography is the study of travel and tourism, as an industry and as a social and cultural activity. It is that branch of science which deals with the study of travel and its impact on places. The geography of tourism is dominated by number of key themes, which relate location, place, space, human and cultural characteristics, and the movement of people. The geography of tourism is also concern with the flows of tourism from generating countries to the destinations. These can be heavily influenced by the economic and political factors, with the flows of tourism from traditionally from developed countries to the less developed countries.

### **Scope of Geography.**

Geography has acquired the status of science that explains the arrangements of various natural and cultural features on the earth surface. In general, the natural phenomena like mountains, rivers, lakes etc. change slowly while the cultural elements like buildings, roads, crops, change fast. Travelling from one place to another you notice that the trees number and types of trees change from area to area. All this because of continuous interaction between the environment in which we live in and the way we use it. The study of geography is about observing such patterns.

Another aspect of geography is to understand the factors, how do social, cultural, economic and demographic factors change our physical landscape and create new or altered landscapes by human interventions. For example, human settlements are transformation of forests or barren lands for living purpose by human being.

As earlier, even today geographical information about an area is available through reports, travel diaries and gazetteers. At present maps can be drawn by using satellite images using Geographic Information Systems (GIS) tools.

Thus, the scope of geography is in various disciplines, like armed forces, environment management, water resources, disaster management, meteorology and planning and various social sciences. Apart from that, a geographer can help in day to day life like tourism, housing and health related activities and more.

## **Importance of geography in tourism.**

Geography is fundamental to the study of tourism, because tourism is geographical in nature. Tourism occurs in places, it involves movement and activities between places and it is an activity in which both place characteristics and personal self-identities are formed, through relationships that are created among places, landscapes and people.

Physical geography provides the essential background, against which tourism places are created and environmental impacts and concerns are major issues, that must be considered in managing the development of tourism places.

How characteristics of the tourism system relate to geography?

- Rural tourism : Focused on countryside
- Urban tourism : Focused on town & cities
- Spa tourism : Travel for health & wellness
- Sport tourism: Focused on spectators travelling to sports events.
- Eco tourism : Based on nature
- Heritage tourism: Focused on heritage cities and Heritage buildings.

## **Contents of Geography.**

A. Physical Geography:

Physical geography (also known as geosystems or physiography) is one of the two major sub-fields of geography. Physical geography is that branch of natural science which deals with the study of processes and patterns in the natural environment like the atmosphere, hydrosphere, biosphere, and geosphere, as opposed to the cultural or built environment, the domain of human geography.

It has a number of sub-branches which treat different kind of physical phenomena.

1. Geomorphology: Geomorphology: is the field concerned with understanding the surface of the Earth and the processes by which it is shaped, both at the present as well as in the past. Geomorphology as a field has several sub-fields that deal with the specific

landforms of various environments e.g. desert geomorphology etc. Geomorphologists seek to understand why landscapes look the way they do, to understand landform history and dynamics and to predict changes through a combination of field observations, physical experiments and numerical modelling.

2. Hydrology: Hydrology is the scientific study of the movement, distribution, and quality of water on Earth and other planets, including the hydrologic cycle, water resources and environmental watershed sustainability. Thus the field encompasses water in rivers, lakes, aquifers and to an extent glaciers, in which the field examines the process and dynamics involved in these bodies of water.

Similar to most fields of physical geography it has sub-fields that examine the specific bodies of water or their interaction with other spheres e.g. limnology and ecohydrology.

3. Glaciology: Glaciology is the scientific study of glaciers, or more generally ice and natural phenomena that involve ice. Glaciology also has a vast array of sub-fields examining the factors and processes involved in ice sheets and glaciers e.g. snow hydrology and glacial geology.

4. Bio-geography: It is concerned with the biological phenomena in space, especially in terms of the distribution of various kinds of floral and faunal species.

Biogeography may be subdivided into plant or floral geography, animals or faunal geography, and human ecology.

4. Climatology: It is the study of the climate, scientifically defined as weather conditions averaged over a long period of time. Climatology examines both the nature of micro (local) and macro (global) climates and the natural and anthropogenic influences on them. The field is also sub-divided largely into the climates of various regions and the study of specific phenomena or time periods e.g. tropical cyclone rainfall climatology and paleoclimatology.

5. Meteorology: It is the interdisciplinary scientific study of the atmosphere that focuses on weather processes and short term forecasting (in contrast with climatology).

Meteorological phenomena are observable weather events which illuminate and are explained by the science of meteorology. Meteorology phenomena are observable

weather events that illuminate, and are explained by the science of meteorology. Those events are bound by the variables of Earth's atmosphere: temperature, air pressure, water vapour, and the gradients and interactions of each variable, and how they change over time.

6. Pedology: It is the study of soils in their natural environment. It is one of two main branches of soil science, the other being edaphology. Pedology mainly deals with pedogenesis, soil morphology, soil classification.

In physical geography pedology is largely studied due to the numerous interactions between climate (water, air, temperature), soil life (micro-organisms, plants, animals), the mineral materials within soils (biogeochemical cycles) and its position and effects on the landscape such as laterization.

7. Palaeogeography: It is the study of historical geography. The term generally refers to the study of physical landscapes, but it can also refer to the study of human or cultural environments. When the focus is specifically on the study of landforms, the term paleogeomorphology is sometimes used instead.

8. Coastal geography: It is the study of the dynamic interface between the ocean and the land, incorporating both the physical geography (i.e. coastal geomorphology, geology and oceanography) and the human geography of the coast. It involves an understanding of coastal weathering processes, particularly wave action, sediment movement and weathering, and also the ways in which humans interact with the coast.

Coastal geography, although predominantly geomorphological in its research, is not just concerned with coastal landforms, but also the causes and influences of sea level change.

9. Oceanography: It is the branch of physical geography that studies the Earth's oceans and seas. It covers a wide range of topics, including marine organisms and ecosystem dynamics (biological oceanography); ocean currents, waves, and geophysical fluid dynamics (physical oceanography); plate tectonics and the geology of the sea floor (geological oceanography); and fluxes of various chemical substances and physical properties within the ocean and across its boundaries (chemical oceanography).

10. Environmental Geography: It is a branch of geography that analyzes the spatial aspects of interactions between humans and the natural world.

The branch bridges the divide between human and physical geography and thus requires an understanding of the dynamics of geology, meteorology, hydrology, biogeography, and geomorphology, as well as the ways in which human societies conceptualize the environment.

## B. Human Geography.

Human geography is a branch of geography that focuses on the study of patterns and processes that shape the human society. It encompasses the human, political, cultural, social, and economic aspects. It is further divided into various sub-branches.

1. Cultural geography: Cultural geography is the study of cultural products and norms and their variations across and relations to spaces and places. It focuses on describing and analyzing the ways language, religion, economy, government and other cultural phenomena vary or remain constant, from one place to another.

2. Development geography: Development geography is a branch of geography which refers to the standard of living and quality of life of its human inhabitants. In this context, development is a process of change that affects people's lives. It may involve an improvement in the quality of life as perceived by the people undergoing change.

In development geography, geographers study spatial patterns in development. They try to find by what characteristics they can measure development by looking at economic, political and social factors.

3. Economic geography: Economic geography is the study of the location, distribution and spatial organization of economic activities across the world. Economic geography has taken a variety of approaches to many different subject matters, including but not limited to the location of industries, economies of agglomeration (also known as "linkages"), transportation, international trade, development, real estate, gentrification, and the relationship between the environment and the economy and globalization.

4. Health geography: Health geography is the application of geographical information, perspectives, and methods to the study of health, disease, and health care.

5. Political geography: Political geography is a specific field of study within the more general field of human geography that examines how people in specific locations around the world have organized themselves into distinctive political groups, and how they influence and interact with each other.

It is the study of how space is made into territory - that is to say, how political communities divide the world between themselves. It can be summarised as the inter-relationships between people, state, and territory.

6. Demography: Demography is the statistical study of populations, including of human beings. Demography encompasses the study of the size, structure, and distribution of these populations, and spatial and/or temporal changes in them in response to time, birth, migration, ageing, and death. Based on the demographic research of the earth, earth's population up to the year 2050 and 2100 can be estimated by the demographers.

7. Religion geography: Religion geography is the study of the impact of geography, i.e. place and space, on religious belief.

Another aspect of the relationship between religion and geography is religious geography, in which geographical ideas are influenced by religion, such as early map-making, and the biblical geography that developed in the 16th century to identify places from the Bible.

Thus, geographers are less concerned about religion, but are more sensitive to how religion as a cultural feature affects social, cultural, political and environmental systems. The point of focus is not the specifics of religious beliefs and practices, but how these religious beliefs and practices are internalised by adherents, and how these processes of internalization influence, and is influenced by, social systems.

8. Transportation geography: Transportation geography, also transport geography, is a branch of Economic geography that particularly investigates the movement of and connections between things of interest to people: people themselves, vehicles, commodities, information.

At the most basic level, humans move and thus interact with each other by walking, but transportation geography typically studies more complex and regional or global systems of transportation that include multiple interconnected modes like public

transit, personal cars, bicycles, freight railroads, airplanes and more. Transportation geography measures the result of human activity between and within locations. It focuses on things such as travel time, routes chosen, and modes of transport, cost and resource use.

9. Tourism geography: Tourism geography is the study of travel and tourism, as an industry and as a social and cultural activity. Tourism geography covers a wide range of interests including the environmental impact of tourism, the geographies of tourism and leisure economies, answering tourism industry and management concerns and the sociology of tourism and locations of tourism.

Tourism occurs in places, it involves movement and activities between places and it is an activity in which both place characteristics and personal self-identities are formed, through the relationships that are created among places, landscapes and people.

Physical geography provides the essential background, against which tourism places are created and environmental impacts and concerns are major issues that must be considered in managing the development of tourism places.

10. Urban geography: Urban geography is the sub-discipline of Geography which concentrates on those parts of the Earth's surface that have a high concentration of buildings and infrastructure. Predominantly towns and cities, these are settlements with a high population density and with the majority of economic activities in the secondary sector and tertiary sectors.

### **C. Regional Geography.**

Regional geography is a branch of geography that studies the world's regions. A region itself is defined as a part of the Earth's surface with one or many similar characteristics that make it unique from other areas.

Regional geography studies the specific unique characteristics of places related to their culture, economy, topography, climate, politics and environmental factors such as their different species of flora and fauna.

1. Macro-region: A macro-region is a geopolitical subdivision that encompasses several traditionally or politically defined regions. The meaning may vary, with the common

denominator being cultural, economical, historical or social similarity within a macro-region.

2. Micro-region: A micro-region can be defined as a territorial area that is smaller than a state to which it belongs, but larger than a municipality. Typical examples of such micro-regions are provinces, districts, departments or even mega-cities.

3. Meso-region: A meso-region is a medium-sized region between the size of a city or district and that of a nation.

### **Climatic Variation.**

Climate is the long-term pattern of weather in a particular area. It is measured by assessing the patterns of variation in temperature, humidity, atmospheric pressure, wind, precipitation, atmospheric particle count and other meteorological variables in a given region over long periods of time. Climate is different from weather, in that weather only describes the short-term conditions of these variables in a given region. A region's climate is generated by the climate system, which has five components: atmosphere, hydrosphere, cryosphere, lithosphere, and biosphere.

The climate of a location is affected by its latitude, terrain, and altitude, as well as nearby water bodies and their currents. Climates can be classified according to the average and the typical ranges of different variables, most commonly temperature and precipitation.

Climatic change: Climate change is the statistical distribution of weather patterns when that change lasts for an extended period of time (i-e., decades to millions of years). Climate change is caused by factors such as biotic processes, variations in solar radiations received by Earth, plate tectonics, and volcanic eruptions. Certain human activities have also been identified as significant causes of recent climate change, often referred to as “global warming”.

Types of climate variation:

Climate although very slowly, keeps evolving. There are many causes behind variation in climate. Climate variations can be categorised into two broad contexts.

Natural Climate Variation.

Human-induced Climate Variation.

A. Natural Climate Variation: There are several natural causes that force climate to change across time and scale. It can be further drilled down into the following categories;

- 1. Natural Forcing of the Climate System.
- 2. Natural Variability of the Climate.
- Natural Forcing of the Climate System.

Natural forcing is of two types.

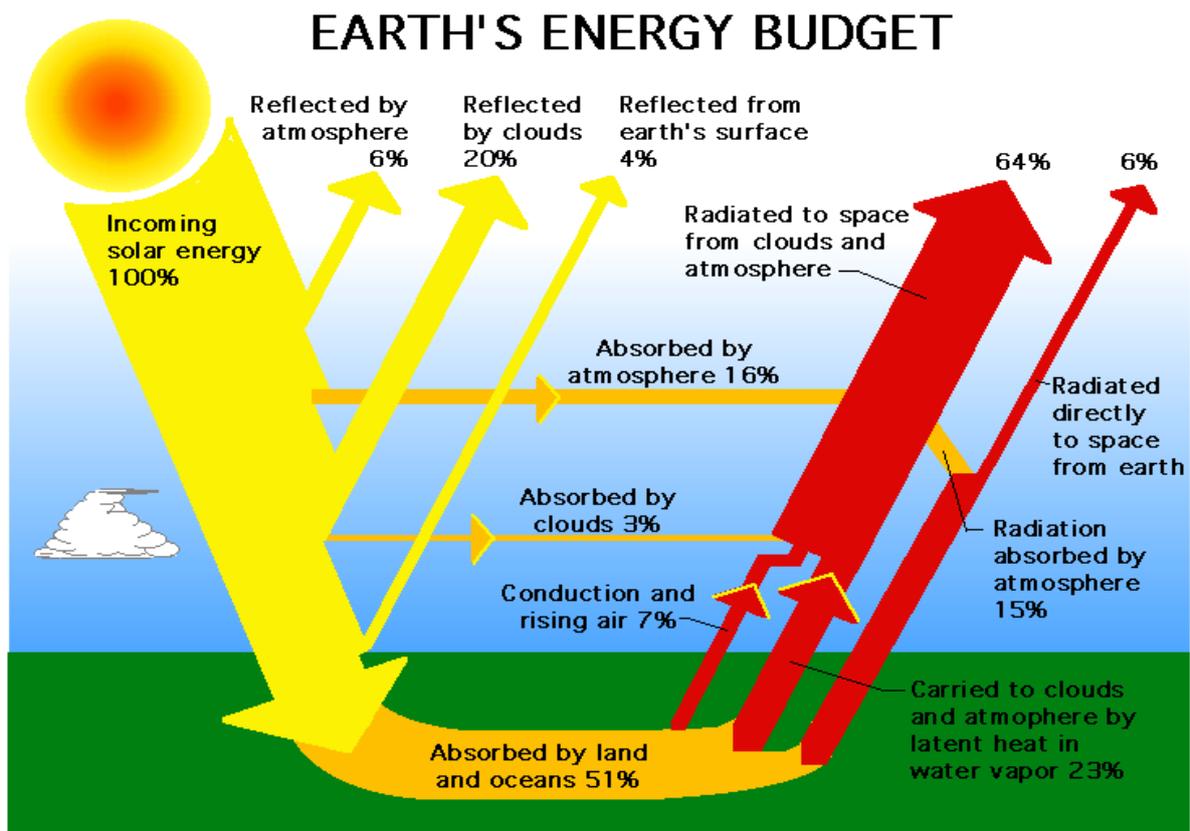
1. External Forcing: these are essential linked to changes in the orbital parameters of the earth that control the intensity and location of incident solar radiation, and fluctuations in solar energy.

2. Internal Forcing: these comprise all those changes that occur within the same system itself, in particular volcanic activity, fluctuations in ocean circulations and large-scale changes in the marine and terrestrial biosphere or in the cryosphere.

The Sun and the Global Energy Balance.

The sun is the prime source of external energy for the earth. Every moment huge amount of energy reaches the earth from the sun. Let us see this from a flow chart that

shows what happens to the solar radiation that reaches the earth.



From this chart, we find that of the total energy that reaches the sun,

- 6% is reflected by atmosphere
- 16% is absorbed by atmosphere
- 20% is reflected by clouds
- 3% is absorbed by clouds
- 51% is absorbed by oceans and land
- 4% is reflected by the surface of the earth.

Of the energy that remains in the earth (absorbed by atmosphere, clouds, and earth's surface)

- 64% is radiated out into the space (atmosphere and clouds)

- 6% is radiated directly into the space by earth's surface
- 7% is utilized in the movement of air
- 23% is utilized in evaporation of water from earth's surface.

This is how the balance of energy is maintained in the environment. The global energy balance is, therefore, the balance between incoming energy from the sun and outgoing heat from the earth.

b. Radiative Forcing: At equilibrium, the average net radiation is zero. However, a change in either the solar radiation or the infra red radiation changes the net radiation. This imbalance is called radiative forcing. A positive radiative forcing tends to warm earth's surface on the average where as a negative radiative forcing tends to cool it. In either case climate system must react to restore the balance.

C. Greenhouse Effect: Greenhouse effect is a phenomenon whereby earth's atmosphere traps solar radiation caused by the presence of gases such as carbon dioxide, water vapour, and methane that allow incoming sunlight to pass through but absorb the heat radiated back from earth's surface. The gases that trap heat radiated from the earth are called greenhouse gases (GHGs).

### **Natural Variability of the Climate.**

There are lots of natural factors that cause significant changes in the climate. These causes can be within the earth or coming outside from the earth. Based on this , natural climate variability can be categorised into two groups.

1. Externally induced Climate Variability.
2. Internally induced Climate Variability.

Externally Induced Climate Variability: It refers to the impact of some external factor that leads to variability such as the impact of:

- Variations in Solar radiation.
- Solar and Lunar tides.

Internally Induced Climate Variability: It refers to internal interactions between components of the climate system, such as the interaction between:

- Ocean and Atmosphere
- Atmosphere and Biosphere.

B. Human- induced Climate Variation.

Scientists agree that humans very likely bring about changes in climate through various activities. This can happen at an individual level or at a group level. Each individual in today's world plays a role, directly or indirectly, in contributing his or her bit to climate change. Let us see how:

- Electric power is generated mainly by thermal power plants. These releases a huge amount of GHGs.
- Vehicles run on petrol or diesel, both are fossil fuels. These releases a huge amount of GHGs.
- The more people consume luxury goods, essentials, and household goods, the more industry flourishes.
- A great deal of waste that we generate such as plastics, does not get degraded and remains in the environment for many years, causing damage.
- The use of trees in large quantities for construction of houses leads to further depletion of forests.
- High-yield varieties of crops require large quantities of fertilizers. More fertilizer use leads to more emissions of N<sub>2</sub>O.

#### 1. Enhanced Greenhouse Effect:

Most human activities influence the climate by bringing about an increase in the concentration of greenhouse gasses in the atmosphere. An increase in the concentration of greenhouse gases leads to an increase in the magnitude of the greenhouse effect. This is known as Enhanced greenhouse effect. The enhanced greenhouse effect is a direct result of human activities through processes such as the burning of fossil fuels,

industrial operations and forest clearing releasing carbon dioxide, methane and nitrous oxide into the atmosphere. Chlorofluorocarbons or CFCs are also potent greenhouse gases.

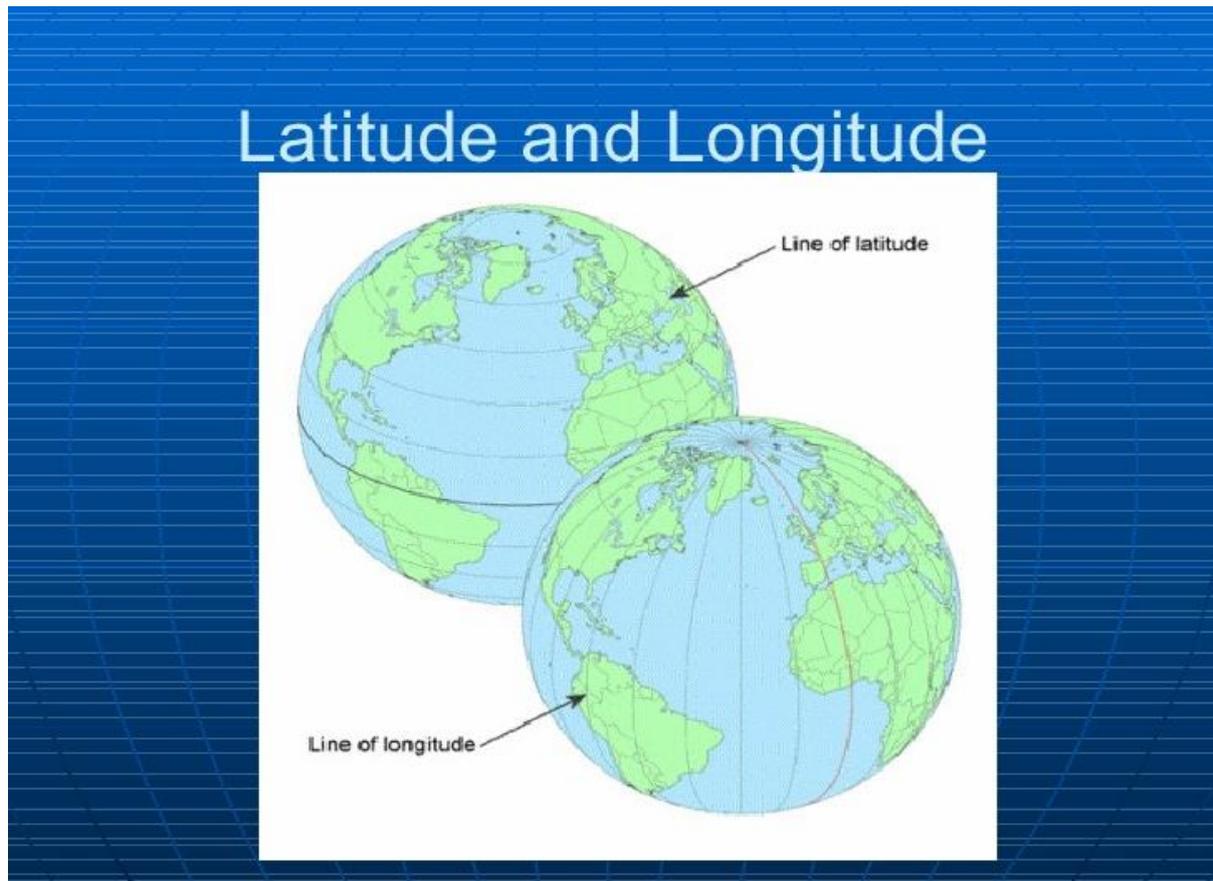
## 2. Land use evolution:

By replacing forests with arable lands or the natural vegetation by asphalt and concrete, humanity modifies the way in which terrestrial surface reflects sunlight and releases heat. All these changes can also modify the regional configuration of evaporation, streaming and rains.

## 3. Atmospheric aerosols:

Due to its agricultural and industrial activities, humanity adds great quantities of fine particles called aerosols to the atmosphere. Most of the aerosols are quickly falling due to gravity and precipitations, but they do not less influence the atmosphere radiative absorption. It is the quantity and the nature of these particles as well as the nature of underneath surface (land or water) that determines if this have a heating effect or not.

## Latitude and Longitude.



Lines of Latitude and Longitude are the imaginary lines that encircle the earth in either an east-west direction or in a north-south direction. Together they form a grid which can be used to identify the locations on the earth surface. When using these lines to find a location the coordinates are always given latitude first and then longitude.

Latitude: Latitude is the name for a group of imaginary lines that run parallel to the equator. The equator is the 0 degree line and splits the earth into two equal halves- Northern and Southern hemispheres. Each hemisphere is divided into 90 degrees, from the equator to the pole.

Lines of latitude get smaller as they get further north because the distance around the earth decreases. At the poles the latitude is 90 degrees and the circular distance is 0 km, each pole being just a single point

Longitude: Lines of longitude run north-south around the planet. They begin at the prime meridian and split the Earth into East and West hemispheres. There are 180 degrees in each hemisphere. All lines of longitude are the same length. There is only one important line of longitude other than Prime Meridian-the International Date Line. This is the 180 degree line in both directions.

International Date Line.

It is the imaginary line on the Earth that separates two consecutive calendar days. The date in the eastern hemisphere, to the left of line, is always one day ahead of the date in the western hemisphere. It has been recognized as a matter of convenience and has no force in international law.

Day Light Saving Time.

Daylight saving time (DST) or summer time is the practice of advancing clocks during summer months by one hour so that in the evening hours day light is experienced later, while sacrificing normal sunrise times. Typically, users in regions with summer time adjust clocks forward one hour close to the start of spring and adjust them backward in the autumn to standard time.

New Zealander George Hudson proposed the modern idea of daylight saving in 1895. Germany and Austria-Hungary organized the first implementation, starting on 30 April 1916.

Standard Time.

Standard time is the synchronization of clocks within a geographical area or a region to a single time standard, rather than using solar time or a locally chosen meridian (longitude) to establish a local mean time standard. Historically, the concept was established during the 19<sup>th</sup> century to aid weather forecasting and train travel.