Social and Cultural Geography
Please read the instructions given below related to Course "Social and Cultural Geography"

There are 5 sections in this course. All sections are mandatory.

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In Section 1 of this course you will cover these topics:

- Thinking Geographically
- Population
- Migration

You may take as much time as you want to complete the topic covered in section 1. There is no time limit to finish any Section, however you must finish All Sections before semester end date.
**Topic Objective:**
At the end of this topic students will be able to understand:

1. Geography: Historical Trends
2. Branches of geography
3. Challenges to Comprehension

**Topic Introduction:**

**Geography:** Geography is the study of the world and all that is in it: its peoples, its land, air, and water, its plants and animals, and all the connections among its various parts. When you are investigating the world and its events you are dealing with geography.

**The Study of Geography:** Geographers use a variety of methods to collect, organizes, and analyze information about the world.

**Changes within the Earth:** Physical processes that originate within the earth shape the world in which we live.

**Changes on the Earth’s Surface:** The surface forces of weathering and erosion affect the earth's appearance.

In his The Rural Landscape, John Fraser Hart describes three principal components of any landscape:

- the land surface features,
- vegetation, and
- human structures, and he argues that:

> "The student of landscape ... who tries to look at everything may wind up seeing nothing at all. We must be selective. At any given time we must concentrate on a few carefully chosen features, or types of feature, but we must never allow ourselves to forget that the features on which we concentrate are related in various ways, some close and some not so close, to all the other features of the landscape."

Ideas presented here help geographers understand location, environment, and arrangement of human activities in space - the where, why, and significance of human settlement and activities.

**Topic Overview:**

1. **Geography: Historical Trends**
   
   Four historical traditions in geographical research are the spatial analysis of natural and human phenomena (geography as a study of distribution), area studies (places and regions), study of man-land relationship, and research in earth sciences. Nonetheless, modern geography is an all-encompassing discipline that foremost seeks to understand the Earth and all of its human and natural complexities-- not merely where objects are, but how they have changed and come to be.

2. **Branches of geography**
2.1 Physical Geography
Physical geography (or physiogeography) focuses on geography as an Earth science. It aims to understand the physical lithosphere, hydrosphere, atmosphere, pedosphere, and global flora and fauna patterns (biosphere). Physical geography can be divided into the following broad categories:

- Biogeography
- Climatology & paleoclimatology
- Coastal geography
- Env. geog. & management
- Geodesy
- Geomorphology
- Glaciology
- Hydrology & Hydrography
- Landscape ecology
- Oceanography
- Pedology
- Palaeogeography
- Quaternary science

![Fig 1: Classifications of Physical Geography]

2.2 Human Geography
Human geography is a branch of geography that focuses on the study of patterns and processes that shape human interaction with various environments. It encompasses human, political, cultural, social, and economic aspects. While the major focus of human geography is not the physical landscape of the Earth (see physical geography), it is hardly possible to discuss human geography without referring to the physical landscape on which human activities are being played out, and environmental geography is emerging as a link between the two. Human geography can be divided into many broad categories (for a comprehensive list see human geography), such as:

- Cultural geography
- Development geography
- Economic geography
- Health geography
- Historical & Time geog.
- Political geog. & Geopolitics
- Demography
- Religion geography
2.3 Environmental Geography

Environmental geography is the branch of geography that describes the spatial aspects of interactions between humans and the natural world. It requires an understanding of the traditional aspects of physical and human geography, as well as the ways in which human societies conceptualize the environment.

Environmental geography has emerged as a bridge between human and physical geography as a result of the increasing specialization of the two sub-fields. Furthermore, as human relationship with the environment has changed as a result of globalization and technological change a new approach was needed to understand the changing and dynamic relationship. Examples of areas of research in environmental geography include disaster management, environmental management, sustainability, and political ecology.

2.4 Geomatics

Geomatics is a branch of geography that has emerged since the quantitative revolution in geography in the mid 1950s. Geomatics involves the use of traditional spatial techniques used in cartography and topography and their application to computers. Geomatics has become a widespread field with many other disciplines using techniques such as GIS and remote sensing. Geomatics has also led to a revitalization of some geography departments especially in Northern America where the subject had a declining status during the 1950s. Geomatics encompasses a large area of fields involved with spatial analysis, such as Cartography, Geographic information systems (GIS), Remote sensing, and Global positioning systems (GPS).

2.5 Regional geography

Regional geography is a branch of geography that studies the regions of all sizes across the Earth. It has a prevailing descriptive character. The main aim is to understand or define the uniqueness or character of a particular region which consists of natural as well as human elements. Attention is paid also to regionalization which covers the proper techniques of space delimitation into regions. Regional geography is also considered as a certain approach to study in geographical sciences.

3. Challenges to Comprehension

- As you move through space in your everyday life you are observing and interacting with geography and making geographic decisions based on those encounters. You may not be aware of it but you are involved in geographic inquiry. This mode of thinking is not unlike other research-oriented approaches, such as the scientific method; however, it has one big difference: space.
- Knowing where something is, how its location influences its characteristics, and how its location influences relationships with other phenomena are the foundation of geographic thinking. This mode of investigation asks you to see the world and all that is in it in spatial terms.
- Like other research methods, it also asks you to explore, analyze, and act upon the things
you find. It also is important to recognize that this is the same method used by professionals
around the world working to address social, economic, political, environmental, and a range
of scientific issues. They, like you, have geography and GIS as key organizers.
**Topic Objective:**
At the end of this topic students will be able to understand:

1. Study of Population
2. World Population
3. Overpopulation

**Topic Introduction:**

**Population:** In sociology and biology a population is the collection of inter-breeding organisms of a particular species. A population shares a particular characteristic of interest most often that of living in a given geographic area. In taxonomy population is a low-level taxonomic rank.

**World Population:** The world population is the total number of living humans on Earth at a given time. As of November 2008, the world’s population is estimated to be about 6.7 billion (6,700,000,000). In line with population projections, this figure continues to grow at rates that were unprecedented before the 20th century, although the rate of growth has almost halved since its peak of 2.2% per year, which was reached in 1963. The world’s population, on its current growth trajectory, is expected to reach nearly 9 billion by the year 2042.

**Human Populations:** Human populations can be defined by many characteristics such as mortality, migration, family (marriage and divorce), public health, work and the labor force, and family planning. Various aspects of human behavior in populations are also studied in sociology, economics, and geography.

Initial results from Census 2000 reveal the United States population increased 13 percent over 1990 to 281,421,906, representing 32.7 million new Americans. This numerical increase is the largest ever between censuses, while the percentage increase is the largest since the 1970-1980 periods. Moreover, the United Nations recently reported that, alone among major industrial countries, the United States will continue to grow markedly in population during the next half century.

What this means, demographers tell us, is that the world is witnessing a high population shift to the third world, where, by 2050 the population of the less developed countries is expected to grow from 4.9 billion to 8.2 billion, while the more developed countries will hold steady at 1.2 billion. Joseph Chamie, director of the United Nations population division, states that "These changing relationships have enormous economic, social and political consequences. They are basically the foundation for relations among countries and groups with countries. In brief, numbers matter."

**Topic Overview:**

1. Study of Population

1.1 Laws of Probability

Study of populations is almost always governed by the laws of probability, and the conclusions of
the studies may thus not always be applicable to some individuals. This odd factor may be reduced by statistical means, but such a generalization may be too vague to imply anything.

1.2 Demography
Demography is used extensively in marketing, which relates to economic units, such as retailers, to potential customers. For example, a coffee shop that wants to sell to a younger audience looks at the demographics of an area to be able to appeal to this younger audience.

1.3 Population
According to papers published by the United States Census Bureau, the world population hit 6.5 billion (6,500,000,000) on January 25, 2006. The United Nations Population Fund designated October 12, 1999 as the approximate day on which world population reached 6 billion. This was about 12 years after world population reached 5 billion, in 1987. However, the population of some countries, such as Nigeria, is not even known to the nearest million, so there is a considerable margin of error in such estimates.

2. World Population

2.1 Population figures
Censuses taken between 300–400 AD showed over 50 million people living in the combined eastern and Western Roman Empire. Below is a table with historical and predicted population figures shown in millions. The availability of historical population figures varies by region.

<table>
<thead>
<tr>
<th>Region</th>
<th>1750</th>
<th>1800</th>
<th>1850</th>
<th>1900</th>
<th>1950</th>
<th>1999</th>
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<td>978</td>
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<td>408</td>
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<td>729</td>
<td>620</td>
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<td>74</td>
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<td>172</td>
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<td>2</td>
<td>6</td>
<td>13</td>
<td>30</td>
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[Fig 1: World historical and predicted populations (in millions)]

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<thead>
<tr>
<th>Region</th>
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<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
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<td>Africa</td>
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<td>19.9</td>
<td>8.8</td>
<td>8.1</td>
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<td>19.8</td>
<td>23.7</td>
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<td>64.8</td>
<td>64.1</td>
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<td>57.1</td>
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<tr>
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<td>21.9</td>
<td>24.7</td>
<td>21.7</td>
<td>12.2</td>
<td>7.0</td>
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<td>4.5</td>
<td>6.8</td>
<td>8.5</td>
<td>9.1</td>
<td>8.4</td>
</tr>
<tr>
<td>Northern America</td>
<td>0.3</td>
<td>0.7</td>
<td>2.1</td>
<td>5.0</td>
<td>8.8</td>
<td>5.1</td>
<td>4.4</td>
<td>4.1</td>
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<td>0.2</td>
<td>0.2</td>
<td>0.4</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
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[Fig 2: World historical and predicted populations by percentage distribution]

2.2 Rate of increase
Different regions have different rates of population growth. According to the above table, the growth in population of the different regions from 2000 to 2005 was:

- 237.771 million in Asia
- 92.293 million in Africa
- 38.052 million in Latin America
- 16.241 million in Northern America
- 1.955 million in Oceania
- -3.264 million in Europe
- 383.047 million in the whole world

In the unusual case of the 20th century, the world saw the biggest increase in its population in human history due to lessening of the mortality rate in many countries due to medical advances and massive increase in agricultural productivity attributed to the Green Revolution. In 2000, the United Nations estimated that the world's population was growing at the rate of 1.14% (or about 75 million people) per year, down from a peak of 86 million per year in 1987. In the last few
centuries, the number of people living on Earth has increased many times over. By the year 2000, there were 10 times as many people on Earth as there were 300 years ago. According to data from the CIA's 2005–2006 World Factbooks, the world human population increased by 203,800 every day. The 2007 CIA fact-book increased this to 211,090 people every day.

Globally, the population growth rate has been steadily declining from its peak of 2.19% in 1963, but growth remains high in the Middle East and Sub-Saharan Africa. In some countries there is negative population growth (i.e. net decrease in population over time), especially in Central and Eastern Europe (mainly due to low fertility rates) and Southern Africa (due to the high number of HIV-related deaths). Within the next decade, Japan and some countries in Western Europe are also expected to encounter negative population growth due to sub-replacement fertility rates. Population growth which exceeds the carrying capacity of an area or environment results in overpopulation. Conversely, such areas may be considered "under-populated" if the population is not large enough to maintain an economic system; however, many who do not view overpopulation as a serious problem fail to consider the sustainability of economic systems, the environmental degradation caused, and the ecological footprint of the existing population. The United Nations states that population growth is rapidly declining due to the demographic transition. The world population is expected to peak at 9.22 billion in 2075.

3. Overpopulation

Overpopulation (also called over-inhabitation) refers to a condition where an organism's numbers exceed the carrying capacity of its habitat. In common parlance, the term usually refers to the relationship between the human population and its environment, the Earth. Overpopulation is not a function of the size or density of the population. Overpopulation is determined using the ratio of population to available sustainable resources. If a given environment has a population of ten, but there is food or drinking water enough for only nine, then that environment is overpopulated; if the population is 100 individuals but there is enough food, shelter, and water for 200 for the indefinite future, then it is not. Overpopulation can result from an increase in births, a decline in mortality rates due to medical advances, from an increase in immigration, a decrease in emigration, or from an unsustainable biome and depletion of resources. It is possible for very sparsely-populated areas to be overpopulated, as the area in question may have a meager or non-existent capability to sustain human life (e.g. the middle of the Sahara Desert or Antarctica).

The resources to be considered when evaluating whether an ecological niche is overpopulated include clean water, clean air, food, shelter, warmth, and other resources necessary to sustain life. If the quality of human life is addressed, there may be additional resources considered, such as medical care, employment, education, electricity, proper sewage treatment and waste disposal. Overpopulation places competitive stress on these basic life sustaining resources, leading to a diminished quality of life. Some countries have managed to increase their carrying capacity by using technologies such as modern agriculture, desalination and nuclear power. Some economists, such as Thomas Sowell and Walter E. Williams have argued that poverty and famine are caused by bad government and economic policies, not by overpopulation. In his book The Ultimate Resource, economist Julian Simon argued that higher population density leads to more specialization and technological innovation, and that this leads to a higher standard of living. Others argue that overpopulation is an important cause of these problems.

3.1 Population projections from the 1900s to 2050

United Nations reports, such as World Population Prospects state:

- World population is currently growing by approximately 75 million people per year. Net growth by mid-century is predicted by the United Nations' medium variant to be about 33 million per year. The high projection variant is 92 million, while the low is -13 million. And at the constant fertility variant (current rates) there would be 169 million people added each year by 2050, which would result in a total world population of about 11,858 million people.
- Almost all growth will take place in the less developed regions, where today's 5.3 billion population of underdeveloped countries is expected to increase to 7.8 billion in 2050. By contrast, the population of the more developed regions will remain mostly unchanged, at 1.2 billion. The world's population is expected to rise by 40% to 9.1 billion.
- In 2000-2005, fertility at the world level stood at 2.65 children per woman, about half the
level it had in 1950-1955 (5 children per woman). In the medium variant, global fertility is projected to decline further to 2.05 children per woman.

- During 2005-2050, nine countries are expected to account for half of the world's projected population increase: India, Pakistan, Nigeria, Democratic Republic of the Congo, Bangladesh, Uganda, United States of America, Ethiopia, and China, listed according to the size of their contribution to population growth.

- Global life expectancy at birth, which is estimated to have risen from 46 years in 1950-1955 to 65 years in 2000-2005, is expected to keep rising to reach 75 years in 2045-2050. In the more developed regions, the projected increase is from 75 years today to 82 years by mid-century. Among the least developed countries, where life expectancy today is just under 50 years, it is expected to be 66 years in 2045-2050.

- The population of 51 countries or areas, including Germany, Italy, Japan and most of the successor States of the former Soviet Union, is expected to be lower in 2050 than in 2005.

- During 2005-2050, the net number of international migrants to more developed regions is projected to be 98 million. Because deaths are projected to exceed births in the more developed regions by 73 million during 2005-2050, population growth in those regions will largely be due to international migration.

- In 2000-2005, net migration in 28 countries either prevented population decline or doubled at least the contribution of natural increase (births minus deaths) to population growth. These countries include Austria, Canada, Croatia, Denmark, Germany, Italy, Portugal, Qatar, Singapore, Spain, Sweden, United Arab Emirates and United Kingdom.

- The updated United Nations figures project that the world population will reach 9.2 billion around 2050. This is the medium variant figure which assumes a decrease in average fertility from the present level of 2.5 down to 2.

- Birth rates are now falling in many developing countries, while the actual populations in many developed countries would fall without immigration.

- By 2050 (Medium variant), India will have almost 1.7 billion people, China 1.4 billion, United States 400 million, Indonesia 297 million, Pakistan 292 million, Nigeria 289 million, Bangladesh 254 million, Brazil 254 million, Democratic Republic of the Congo 187 million, Ethiopia 183 million, Philippines 141 million, Mexico 132 million, Egypt 121 million, Vietnam 120 million, Russia 108 million, Japan 103 million, Iran 100 million, Turkey 99 million, Uganda 93 million, Tanzania 85 million, and Kenya 85 million.

→ **1900**
  - Africa - 133 million
  - Asia - 946 million
  - Europe - 408 million
  - Latin America & Caribbean - 74 million
  - Northern America - 82 million

→ **2050**
  - Africa - 1.9 billion
  - Asia - 5.2 billion
  - Europe - 664 million
  - Latin America & Caribbean - 769 million
  - Northern America - 445 million
**Topic Objective:**
At the end of this topic students will be able to understand:
1. Migration
2. Different types of migration include

**Topic Introduction:**

**International Migration:** International migration is a constant, not an aberration, in human history. Population movements have always accompanied demographic growth, technological change, political conflict, and warfare. Over the last five centuries mass migrations have played a major role in colonialism, industrialization, (in) the emergence of nation-states and the development of the capitalist world market. However, international migration has never been as pervasive, or as socio-economically and politically significant, as it is today. Never before have had statesmen accorded such priority to migration concerns. Never before has international migration seemed so pertinent to national security and so connected to conflict and disorder on a global scale.

United Nations recently reported, and Census 2000 confirmed, that the United States, alone among major industrial countries, will continue to grow markedly in population during the next half century, a result of the largest intake of immigrants anywhere. United States are a nation unlike any other, a nation other people dream of coming to. Whatever the details of their particular motivation, it eventually comes down to dreams of freedom, of new opportunities, of an ability to care for their loved ones. Native Americans accepted we all come from somewhere else. The US uniqueness springs from our beginnings as a nation of immigrants. This is the root of our heritage and the secret of our strength.

[Fig 1: Net migration rates for 2006: positive (blue), negative (orange) and stable (green).]

**Topic Overview:**

1. Migration
   1.1 Human Migration
   Human migration denotes any movement by humans from one locality to another, sometimes over long distances or in large groups. Humans are known to have migrated extensively throughout history and prehistory.

   1.2 Population Genetics
   Migration (resulting in population isolation) is one of the four evolutionary forces (along with natural selection, genetic drift, and mutation). The discipline of Population genetics is the study of
the distribution of and change in gene variation (allele) frequencies under such influences.

1.3 Movement of Populations
The movement of populations in modern times has continued under the form of both voluntary migration within one’s region, country, or beyond, and involuntary migration (which includes the slave trade, trafficking in human beings and ethnic cleansing). People who migrate are called migrants, or, more specifically, emigrants, immigrants or settlers, depending on historical setting, circumstances and perspective.

1.4 Pressure of Human Migration
The pressures of human migrations, whether as outright conquest or by slow cultural infiltration and resettlement, have affected the grand epochs in history (e.g. the fall of the Western Roman Empire); under the form of colonization, migration has transformed the world (e.g. the prehistoric and historic settlements of Australia and the Americas). Population genetics studied in traditionally settled modern populations have opened a window into the historical patterns of migrations, a technique pioneered by Luigi Luca Cavalli-Sforza.

[Fig 2: DNA-based chart of large human migrations]

1.5 Forced Migration
Forced migration has been a means of social control under authoritarian regimes, yet free initiative migration is a powerful factor in social adjustment (e.g. the growth of urban populations).

1.6 Global Commission on International Migration
In December 2003 The Global Commission on International Migration (GCIM) was launched with the support of Kofi Annan and several countries, with an independent 19-member Commission, threefold mandate and a finite life-span, ending December 2005. Its report, based on regional consultation meetings with stakeholders and scientific reports from leading international migration experts, was published and presented to UN Secretary-General Kofi Annan on 5 October 2005.

2. Different types of migration include:
- Daily human commuting.
- Seasonal human migration is mainly related to agriculture.
- Permanent migration, for the purposes of permanent or long-term stays.
- Local
- Regional
- Rural to Urban, more common in developing countries as industrialization takes effect (urbanization)
- Urban to Rural, more common in developed countries due to a higher cost of urban living
- International migration
In Section 2 of this course you will cover these topics:

- Folk And Popular Culture
- Language
- Religion

You may take as much time as you want to complete the topic covered in section 2. There is no time limit to finish any Section, however, you must finish all Sections before semester end date.
**Topic Objective:**

At the end of this topic students will be able to understand:

1. Folk Culture
2. American Folk Culture
3. Cultural Icons
4. Europe Court Society
5. Popular Culture

**Topic Introduction:**

**Culture:** Culture is defined as "the sum of attitudes, customs, and beliefs that distinguishes one group of people from another."

Through immigration and the vast process of the development of our modern global system, cultures and traditions have mixed and melded to produce in many places, especially in North America and Europe, new kinds of culture that draw on traditions from all over the planet. The tension between these two positions frequently remains unresolved in those who, like Rushdie, celebrate hybridity. There is very often a strong element of the first - what Tomlinson called the "original purity" position. Consequently, Tomlinson argues that Rushdie, in rhetorically reveling in the "impurity" of cultural mélange might be taken to imply that there were once historically existing pure, original cultures out of which unruly but dynamic "mongrel" forms emerge. Tomlinson further argues that it is extremely likely that, being pressed, Rushdie would readily concede that no culture is ever in this pure original state, but that, of their very nature, cultures are all more or less permeable and in constant flux.

**Topic Overview:**

1. **Folk Culture**
   
   Folk culture refers to the localized lifestyle of a culture. It is usually handed down through oral tradition, relates to a sense of community, and demonstrates the "old ways" over novelty. Folk culture is quite often imbued with a sense of place. If its elements are copied by, or removed to, a foreign locale, they will still carry strong connotations of their original place of creation.

2. **American Folk Culture**
   
   Examples of American folk cultures include:
   - Baptist choral works
   - Bluegrass music
   - The cakewalk
   - Louisiana Creole cuisine, music, and language
   - Dixieland jazz
   - Handmade quilts
   - The islands of Hawaii maintain a traditional culture including the hula, leis, a pantheon of nature gods, and the concept of aloha
   - Powwows
   - Pative tribal regalia
3. Cultural Icons

The above items have entered mainstream consciousness to varying degrees, but none of them have been so distorted from their original form as to have lost their culturally specific sense of place. Blue jeans and McDonald's are cultural icons which have, in contrast, been made so international that they have lost their original sense of place; they are no longer considered folk culture. Similarly, Federalist architecture was created in the United States, but in a style influenced by, and meant to appeal to, outside interests. It is the emphasis on looking inward without reference to the outside that separates folk culture from pop culture.

4. Europe Court Society

However, folk culture has always informed pop culture and even high culture. The minuet dance of European court society was based on the dance of peasants. Similarly, the European courtly rage for pastoral romance was based on an idealized vision of shepherds' lives. More recently, the consciously self-centered culture of the Amish has been portrayed for comic value in Hollywood films and big media reality shows, and the archetypal costume of the cowboy has been reinvented in gleaming silver by disco dancers and strippers.

5. Popular Culture

Pop culture finds its expression in the mass circulation of items from areas such as fashion, music, sport and film. The world of pop culture has had a particular influence on art from the early 1960s on, through Pop Art. When modern pop culture began during the early 1950s, it made it harder for adults to participate. Today, most adults, their kids and grandchildren "participate" in pop culture directly or indirectly.

Popular culture (also known as pop culture) deemed as what is popular within the social context — that of which is most strongly represented by what is perceived to be popularly accepted among society. Otherwise, popular culture is also suggested to be the widespread cultural elements in any given society that are perpetuated through that society's vernacular language or lingua franca. It comprises the daily interactions, needs and desires and cultural 'moments' that make up the everyday lives of the mainstream. It can include any number of practices, including those pertaining to cooking, clothing, consumption, mass media and the many facets of entertainment such as sports and literature. Popular culture often contrasts with a more exclusive, even elitist "high culture," that is, the culture of ruling social groups. The earliest use of "popular" in English was during the fifteenth century in law and politics, meaning "low", "base", "vulgar", and "of the common people" 'til the late eighteenth century by which time it began to mean "widespread" and gain in positive connotation.
**Topic Objective:**
At the end of this topic students will be able to understand:

1. Language
2. Human Languages

**Topic Introduction:**

Language: A language is a dynamic set of visual, auditory, or tactile symbols of communication and the elements used to manipulate them. Language can also refer to the use of such systems as a general phenomenon.

Language, we now realize, is an intrinsic part of being human, and is biologically programmed into the species. This topic discusses language, one of the three traits that best distinguish cultural values. Any human can potentially learn any language. Any American baby adopted by Quechuan speaking parents would grow up speaking fluent Quechuan with no difficulty.

Historians generally agree that this powerful communication system emerged around 100,000 years ago, probably in the east of Africa, according to majority opinion. Humans moved northward into Asia Minor maybe 50,000 years ago, then spread around the world. As humans traveled, languages split and proliferated.

![Fig 1: Some of the areas of the brain involved in language processing: Broca's area(Blue), Wernicke's area(Green), Supramarginal gyrus(Yellow), Angular gyrus(Orange) ,Primary Auditory Cortex(Pink)]

**Topic Overview:**

1. Language

1.1 Properties of Language
A set of agreed-upon symbols is only one feature of language; all languages must define the structural relationships between these symbols in a system of grammar.

- **Properties of Language**
  → Rules of grammar are what distinguish language from other forms of communication. They allow a finite set of symbols to be manipulated to create a potentially infinite number of grammatical utterances.
Another property of language is that its symbols are arbitrary. Any concept or grammatical rule can be mapped onto a symbol. Most languages make use of sound, but the combinations of sounds used do not have any inherent meaning – they are merely an agreed-upon convention to represent a certain thing by users of that language. For instance, there is nothing about the Spanish word nada itself that forces Spanish speakers to convey the idea of “nothing”.

Another set of sounds could equally be used to represent the same concept, but all Spanish speakers have acquired or learned to correlate this meaning for this particular sound pattern. For Slovenian, Croatian, Serbian/Kosovian or Bosnian speakers on the other hand, nada means something else; it means “hope”.

2. Human Languages

Human languages are usually referred to as natural languages, and the science of studying those falls under the purview of linguistics. A common progression for natural languages is that they are considered to be first spoken, and then written, and then an understanding and explanation of their grammar is attempted.

Languages live, die, move from place to place, and change with time. Any language that ceases to change or develop is categorized as a dead language. Conversely, any language that is in a continuous state of change is known as a living language or modern language. Making a principled distinction between one language and another is usually impossible. For instance, there are a few dialects of German similar to some dialects of Dutch. The transition between languages within the same language family is sometimes gradual. Some like to make parallels with biology, where it is not possible to make a well-defined distinction between one species and the next. In either case, the ultimate difficulty may stem from the interactions between languages and populations. The concepts of Ausbausprache, Abstandsprache and Dachsprache are used to make finer distinctions about the degrees of difference between languages or dialects.
**Topic Objective:**
At the end of this topic students will be able to understand:
1. Religious Thought
2. Development of religion
3. Classification

**Topic Introduction:**

Religion: A religion is a set of beliefs and practices, often centered upon specific supernatural and moral claims about reality, the cosmos, and human nature, and often codified as prayer, ritual, and religious law. Religion also encompasses ancestral or cultural traditions, writings, history, and mythology, as well as personal faith and mystic experience. The term "religion" refers to both the personal practices related to communal faith and to group rituals and communication stemming from shared conviction.

People’s core values and beliefs are found in their religion, an essential element of the definition of culture. Some religions are global, designed to appeal to people throughout the world. Other religions are more local, designed to appeal primarily to people in geographically limited areas. Religious values are as much a part of identity as is language. How people organize this landscape is important to geographers.

[Fig 1: Symbols of some of the more common religions. Top to bottom, left to right:
Row 1. Christian, Jewish, Hindu
Row 2. Muslim, Buddhist, Shintoist
Row 3. Sikh, Baha’i, Jain.]

**Topic Overview:**

1. Religious Thought
In the frame of European religious thought, religions present a common quality, the "hallmark of patriarchal religious thought": the division of the world in two comprehensive domains, one sacred, the other profane. Religion is often described as a communal system for the coherence of belief focusing on a system of thought, unseen being, person, or object, that is considered to be supernatural, sacred, divine, or of the highest truth. Moral codes, practices, values, institutions, tradition, rituals, and scriptures are often traditionally associated with the core belief, and these may have some overlap with concepts in secular philosophy.

Religion is also often described as a "way of life" or a Life stance. The development of religion has
taken many forms in various cultures. "Organized religion" generally refers to an organization of people supporting the exercise of some religion with a prescribed set of beliefs, often taking the form of a legal entity. Other religions believe in personal revelation. "Religion" is sometimes used interchangeably with "faith" or "belief system," but is more socially defined than that of personal convictions.

2. Development of religion

There are a number of models regarding the ways in which religions come into being and develop. Broadly speaking, these models fall into three categories:

- Models which see religions as social constructions;
- Models which see religions as progressing toward higher, objective truth;
- Models which see a particular religion as absolutely true.

In pre-modern (pre-urban) societies, religion is one defining factor of ethnicity, along with language, regional customs, national costume, etc. As Xenophanes famously comments. Men make gods in their own image; those of the Ethiopians are black and snub-nosed, those of the Thracians have blue eyes and red hair. Ethnic religions may include officially sanctioned and organized civil religions with an organized clergy, but they are characterized in that adherents generally are defined by their ethnicity, and conversion essentially equates to cultural assimilation to the people in question. The notion of gentiles ("nations") in Judaism reflects this state of affairs, the implicit assumption that each nation will have its own religion. Historical examples include Germanic polytheism, Celtic polytheism, Slavic polytheism and pre-Hellenistic Greek religion.

European colonization during the 15th to 19th centuries resulted in the spread of Christianity to Sub-Saharan Africa, the Americas, Australia and the Philippines. The 18th century saw the beginning of secularization in Europe, rising to notability in the wake of the French Revolution. In the 20th century, the regimes of Communist Eastern Europe and Communist China were explicitly anti-religious. A great variety of new religious movements originated in the 20th century, many proposing syncretism of elements of established religions. Adherence to such new movements is limited, however; remaining below 2% worldwide in the 2000s. Adherents of the classical world religions account for more than 75% of the world's population, while adherence to indigenous tribal religions has fallen to 4%. As of 2005, an estimated 14% of the world's population identifies as nonreligious.

3. Classification

Religious traditions fall into super-groups in comparative religion, arranged by historical origin and mutual influence. Abrahamic religions originate in the Middle East, Indian religions in India and Far Eastern religions in East Asia. Another group with supra-regional influence is African diasporic religions, which have their origins in Central and West Africa. Abrahamic religions are by far the largest group, and these consist primarily of Christianity, Islam and Judaism (sometimes the Bahá'í Faith is also included). They are named for the patriarch Abraham, and are unified by the practice of monotheism. Today, around 3.4 billion people are followers of Abrahamic religions and are spread widely around the world apart from the regions around South-East Asia. Several Abrahamic organizations are vigorous proselytizers.

Indian religions originated in Greater India and tend to share a number of key concepts, such as dharma and karma. They are of the most influence across the Indian subcontinent, East Asia, South East Asia, as well as isolated parts of Russia. The main Indian religions are Hinduism, Buddhism, Sikhism, and Jainism. Indian religions mutually influenced each other. Sikhism was also influenced by the Abrahamic tradition of Sufism. Far Eastern religions consist of several East Asian religions which make use of the concept of Tao (in Chinese) or Do (in Japanese or Korean). They include Taoism, Shinto, Chondogyo, Caodaism, and Yiguandao. Far Eastern Buddhism (in which the group overlaps with the "Indian" group) and Confucianism (which by some categorizations is not a religion) are also included. Iranian religions originated in Iran and include Zoroastrianism, Yazdanism and historical traditions of Gnosticism (Mandaeanism, Manichaeism). It has significant overlaps with Abrahamic traditions, e.g. in Sufism and in recent movements such as Bábism and the Bahá'í Faith. African diasporic religions practiced in the Americas, imported as a result of the Atlantic slave trade of the 16th to 18th centuries, building of traditional religions of Central and
Indigenous tribal religions, formerly found on every continent, now marginalized by the major organized faiths, but persisting as undercurrents of folk religion. Includes African traditional religions, Asian Shamanism, Native American religions, Austronesian and Australian Aboriginal traditions and arguably Chinese folk religion (overlaps with Far Eastern religions). Under more traditional listings, this has been referred to as "Paganism" along with historical polytheism. New religious movements, a heterogeneous group of religious faiths emerging since the 19th century, often syncretizing, re-interpreting or reviving aspects of older traditions (Bahá'í, Hindu revivalism, Ayyavazhi, Pentecostalism, polytheistic reconstructionism), some inspired by science-fiction (UFO religions).
In Section 3 of this course you will cover these topics:

- Ethnicity
- Political Geography
- Development

You may take as much time as you want to complete the topic covered in section 3. There is no time limit to finish any Section, however, you must finish All Sections before semester end date.
Topic Objective:
At the end of this topic students will be able to understand:

1. Multicultural Society
2. Ethnicity
3. Concept of Ethnicity
4. Ethnic cleansing
5. Overlapping Of Ethnicities and Nationalities

Topic Introduction:

Ethnicity: "Ethnicity" is defined as a derivative from the Greek word ethnikos, meaning foreign. The word ethnicity is termed as Greek, evolving from the word ethnos meaning a distinct "people."

The dictionary goes on to say: In contemporary usage, ethnicity is seen as both a way in which individuals define their personal identity and a type of social stratification that emerges when people form groups based on their real or perceived common origins. Members of ethnic groups believe that their specific ancestry and culture mark them as different from others. As such, ethnic group formation always entails both inclusionary and exclusionary behavior, and ethnicity is a classic form of the distinction people make between 'us' and 'them.'

Topic Overview:

1. Multicultural Society

The United States is close to a true multicultural society. California no longer has a single ethnic majority—everyone belongs to a minority. Immigrants to the United States have diverse national origins but it is the link with Mexico that defines much of our ethnicity of the late 20th century. Though the full wealth of data collected by the 2000 census will take two years to tabulate, the initial snapshot reveals a remarkable shift in the population’s underlying demographics. Faster-than-expected growth of the nation’s Hispanic population, up nearly 60 percent since 1990, means that that ethnic group is on the verge of surpassing blacks as the nation’s largest minority. The census counted 35.3 million Hispanics, who can be of any race. It also counted 34.7 million blacks who checked off only one race, plus an additional 2 million people who consider themselves both black and of another race.

Hispanics are disproportionately younger and more urban than the rest of the population, and no longer live only in traditionally Latin enclaves. As a census-related Associated Press headline recently put it: "Two Out of Every Five New Nebraskans are Hispanic." The growing Latino influence on the larger culture is evident in everything from foreign-language teaching in schools to pop music’s best-selling charts and people’s eating habits. But over time, Hispanics’ greatest impact on American culture may well come in the form of a challenge to the very concept of what it means to be a minority.

2. Ethnicity

The concept of ethnicity is somewhat multidimensional as it includes aspects such as race, origin
or ancestry, identity, language and religion. It may also include more subtle dimensions such as culture, the arts, customs and beliefs and even practices such as dress and food preparation. It is also dynamic and in a constant state of flux. It will change as a result of new immigration flows, blending and intermarriage, and new identities may be formed.

### 2.1 Measuring Ethnicity

There are fundamental three ways of measuring ethnicity: origin or ancestry, race and identity.

- **Origin or ancestry** attempts to determine the roots or ethnic background of a person. The concept, however, is somewhat ambiguous since it does not usually specify an historical reference point. Given that new ethnic groups may arise over time, it may be difficult for a respondent to answer a question about origins. For example, if one of a respondent's great, great grandfathers was a Scottish fur trader who entered a marital union with a Cree woman then is the respondent Scottish or Cree. Or is the respondent Métis, a group which is recognized in the Canadian constitution as a distinct Aboriginal population? This also illustrates the legitimacy of the reporting of multiple origins. Inasmuch as any individual has two parents, four grandparents, eight great-grandparents and so on it is realized that there is a potential for those ancestors to come from a multiplicity of ethnic groups. The tabulation of the resultant data, therefore, becomes complex. This is usually handled by showing the population that has a single origin and the population that has multiple origins. The display of the combinations, such as French and English, in multiple responses is generally restricted to the dominant or most populous groups in the society. The concept may also suffer from a genuine lack of knowledge on the part of respondents. They may not know their backgrounds. In addition, public opinion may influence reporting under some circumstances. For example, it has been suggested that German origins may have been under-reported in the Census of 1941 which was taken during World War II.

- **Conceptually, race** may be somewhat less ambiguous than origin or ancestry, but it is not without difficulties in terms of measurement. The concept is based primarily upon genetically imparted physiognomic features among which skin color is a dominant, but not the sole, attribute. Nevertheless, it is possible for a person to be of mixed races, some of which, such as the mestizo of Latin America, have become recognized as evolved races in their own right. Furthermore, terminology may be ambiguous. Scholars may prefer to use the term Caucasian rather than white but the former may not be well understood by many respondents. Other terminology evolves over time such as the evolution in America of Afro-Americans from black and earlier from Negro. There may also be terminology very much in usage in the common lexicon which is actually offensive to a group in question. For example, the reference to the Inuit as Eskimo.

- **Identity** has a certain appeal because it attempts to measure how people perceive themselves rather than their ancestors. Nevertheless, it retains certain dimensions of not only origin but race, as well. In addition, it may include aspects of citizenship. A typical question might be, with which ethnic group do you identify? Some respondents may associate the question with citizenship and report Canadian. Others may associate it with origin and report Italian. Others might see it as involving both citizenship and origin and report Italian-Canadian. Others might see racial dimensions and report as black or black-Canadian. Furthermore, in some contexts, ethnicity might be implied but the reference is actually to language. For example, there are frequent references to French Canadians and English Canadians which are not on the basis of ethnicity per se but on the basis of the language spoken.

### 3. Concept of Ethnicity

Given the difficulties in, not only developing appropriate concepts and constructs of ethnicity, but also in attempting to collect unambiguous data, it might be questioned whether the task should be undertaken. However, the international meeting on the Challenges of Measuring an Ethnic World noted that, Ethnicity is a fundamental factor in human life: it is a phenomenon inherent in human experience. Thus, the inherent malleability of ethnicity is not a sufficient reason for statistical agencies to avoid collecting data on ethnicity. Data on ethnicity are also much in demand by a diverse range of data users.

### 4. Ethnic cleansing
Ethnic cleansing is a euphemism referring to the persecution through imprisonment, expulsion, or killing of members of an ethnic minority by a majority to achieve ethnic homogeneity in majority-controlled territory. It is sometimes used interchangeably with the more connotatively severe term genocide. The term entered English and international media in the early 1990s to describe war events in the former Yugoslavia.

4.1 Ethnic cleansing as a military and political tactic
The purpose of ethnic cleansing is to remove the conditions for potential and actual opposition, whether political, terrorist, guerrilla or military, by physically removing any potentially or actually hostile ethnic communities. Although it has sometimes been motivated by a doctrine that claim an ethnic group is literally "unclean" (as in the case of the Jews of medieval Europe), more usually it has been a rational (if brutal) way of ensuring that total control can be asserted over an area.

Ethnic cleansing was a common phenomenon in the Bosnian war. This typically entailed intimidation, forced expulsion and/or killing of the undesired ethnic group as well as the destruction or removal of the physical vestiges of the ethnic group, such as places of worship, cemeteries and cultural and historical buildings. According to numerous ICTY verdicts, Serb and Croat forces performed ethnic cleansing of their territories planned by their political leadership in order to create ethnically pure states (Republika Srpska and Herzeg-Bosnia). Furthermore, Serb forces committed genocide in Srebrenica at the end of the war.

Based on the evidence of numerous Croat forces attacks against Bosnian Muslims (Bosniaks), the ICTY Trial Chamber concluded in the Kordić and Čerkez case that by April 1993 Croat leadership from Bosnia and Herzegovina had a common design or plan conceived and executed to ethnically cleanse Bosniaks from the Lašva Valley in Central Bosnia. Dario Kordić, as the local political leader, was found to be the planner and instigator of this plan. In 1993, during the Georgian-Abkhaz conflict, armed Abkhaz separatist insurgency confronted with large population of ethnic Georgians implemented the campaign of ethnic cleansing directed against ethnic Georgians (Georgians formed the single largest ethnic group in pre-war Abkhazia, with a 45.7% plurality as of 1989) of Abkhazia. As the results, more than 250,000 ethnic Georgians were forced to flee and approximately 30,000 people were killed during separate incidents involving massacres and expulsion. The ethnic cleansing campaign against ethnic Georgians of Abkhazia was recognized by OSCE conventions in Budapest, Lisbon, Istanbul and was also mentioned in UN General Assembly Resolution GA/10708.

As a tactic, ethnic cleansing has a number of significant impact. It enables a force to eliminate civilian support for resistance by eliminating the civilians — recognizing Mao Zedong's dictum that guerrillas among a civilian population are fish in water, it disables the fish by draining the water. When enforced as part of a political settlement, as happened with the forced resettlement of ethnic Germans to Germany after 1945, it can contribute to long-term stability. Some individuals of the large German population in Czechoslovakia and prewar Poland had been sources of friction before the Second World War, but this was forcibly resolved. It thus establishes "facts on the ground" - radical demographic changes which can be very hard to reverse. On the other hand, ethnic cleansing is such a brutal tactic and so often accompanied by large-scale bloodshed that it is widely reviled. It is generally regarded as lying somewhere between population transfers and genocide on a scale of odiousness, and is treated by international law as a war crime.

4.2 Ethnic cleansing as a crime under international law
There is no formal legal definition of ethnic cleansing. However, ethnic cleansing in the broad sense - the forcible deportation of a population - is defined as a crime against humanity under the statutes of both International Criminal Court (ICC) and the International Criminal Tribunal for the Former Yugoslavia (ICTY). The gross human-rights violations integral to stricter definitions of ethnic cleansing are treated as separate crimes falling under the definitions for genocide or crimes against humanity of the statutes.

The UN Commission of Experts (established pursuant to Security Council Resolution 780) held that the practices associated with ethnic cleansing "constitute crimes against humanity and can be assimilated to specific war crimes. Furthermore such acts could also fall within the meaning of the
Genocide Convention." The UN General Assembly condemned "ethnic cleansing" and racial hatred in a 1992 resolution. There are however situations, such as the Expulsion of Germans after World War II, where ethnic cleansing has taken place without legal redress. Timothy V. Waters argue that if similar circumstances arise in the future, this precedent would allow the ethnic cleansing of other populations under international law.

5. Overlapping Of Ethnicities and Nationalities

Nationality is identity with a group of people who share legal attachment and personal allegiance to a particular country. Nationality and ethnicity are similar concepts in that membership in both is defined through shared cultural values. Conflicts can arise when countries contain more than one ethnicity and different groups compete for dominance. Ask students to discuss conflicts from current events that arise between different ethnic groups. Two regions of the world, the Horn of Africa and the Middle East, are discussed as locations where ethnic clashes occur.
**Topic Objective:**
At the end of this topic students will be able to understand:

1. Political Geography
2. State

**Topic Introduction:**
The past thirty years has seen a remarkable transformation in the sub discipline of political geography. Since the late 1960s, political geography has moved from the academic boondocks to center stage of our discipline. Both the sub discipline of political geography and the world political economy themselves have undergone major changes: the world energy crisis of the 1970s; the end of the Vietnam War; the resignation of a U.S. president; the Berlin Wall's falling with the collapse of communism, and the subsequent political restructuring of Europe, NATO, and the world; and the rise of the European Union with its economic bonding of the Euro currency for eleven members in 1998. These are but a few of the significant events that have affected the world and U.S. political economy over the past three decades.

**Topic Overview:**

1. **Political Geography**
   
   Political geography is the field of human geography that is concerned with the study of both the spatially uneven outcomes of political processes and the ways in which political processes are themselves affected by spatial structures. Conventionally political geography adopts a three scale structure for the purposes of analysis with the study of the state at the centre, above this is the study of international relations (or geopolitics), and below it is the study of localities. The primary concerns of the sub-discipline can be summarized as the inter-relationships between people, state, and territory.

   In particular, then, modern political geography often considers:
   - How and why states are organized into regional groupings, both formally (e.g. the European Union) and informally (e.g. the Third World)
   - The relationship between states and former colonies, and how these are propagated over time, for example through neo-colonialism
   - The relationship between a government and its people
   - The relationships between states including international trades and treaties
   - The functions, demarcations and policing of boundaries
   - How imagined geographies have political implications
   - The influence of political power on geographical space
   - The study of election results (electoral geography)

2. **State**
   
   2.1 **Overview**
   
   A state is a political association with effective sovereignty over a geographic area and representing a population. These may be nation states, sub-national states or multinational states. A state usually includes the set of institutions that claim the authority to make the rules that govern the
exercised by coercive violence for the people of the society in that territory, though its status as a
state often depends in part on being recognized by a number of other states as having internal and
external sovereignty over it. In sociology, the state is normally identified with these institutions:
in Max Weber’s influential definition, it is that organization that “(successfully) claims a monopoly
on the legitimate use of physical force within a given territory,” which may include the armed
forces, civil service or state bureaucracy, courts, and police. Recently much debate has surrounded
the issue of State-building with competing schools of thought on how to support the emergence of
capable states.

2.2 States, government types, and political systems
The concept of the state can be distinguished from two related concepts with which it is
sometimes confused: the concept of a form of government or regime, such as democracy or
dictatorship, and the concept of a political system. The form of government identifies only one
aspect of the state, namely, the way in which the highest political offices are filled and their
relationship to each other and to society. It does not include other aspects of the state that may
be very important in its everyday functioning, such as the quality of its bureaucracy. For example,
two democratic states may be quite different if one has a capable, well-trained bureaucracy or civil
service while the other does not. Thus generally speaking the term “state” refers to the
instruments of political power, while the terms regime or form of government refers more to the
way in which such instruments can be accessed and employed.

Some scholars have suggested that the term “state” is too imprecise and loaded to be used
productively in sociology and political science, and ought to be replaced by the more
comprehensive term “political system.” The “political system” refers to the ensemble of all social
structures that function to produce collectively binding decisions in a society. In modern times,
these would include the political regime, political parties, and various sorts of organizations. The
term “political system” thus denotes a broader concept than the state.

2.3 The Modern State
The rise of the “modern state” as a public power constituting the supreme political authority within
a defined territory is associated with Western Europe’s gradual institutional development beginning
in earnest in the late 15th century, culminating in the rise of absolutism and capitalism. As
Europe’s dynastic states — England under the Tudors, Spain under the Habsburgs, and France
under the Bourbons — embarked on a variety of programs designed to increase centralized political
and economic control, they increasingly exhibited many of the institutional features that
characterize the “modern state.” This centralization of power involved the delineation of political
boundaries, as European monarchs gradually defeated or co-opted other sources of power, such as
the Church and lesser nobility. In place of the fragmented system of feudal rule, with its often
indistinct territorial claims, large, unitary states with extensive control over definite territories
emerged. This process gave rise to the highly centralized and increasingly bureaucratic forms of
absolute monarchical rule of the 17th and 18th centuries, when the principal features of the
contemporary state system took form, including the introduction of a standing army, a central
taxation system, diplomatic relations with permanent embassies, and the development of state
economic policy—mercantilism.

Cultural and national homogenization figured prominently in the rise of the modern state system.
Since the absolutist period, states have largely been organized on a national basis. The concept of
a national state, however, is not synonymous with nation-state. Even in the most ethnically
homogeneous societies there is not always a complete correspondence between state and nation,
hence the active role often taken by the state to promote nationalism through emphasis on shared
symbols and national identity. It is in this period that the term “the state” is first introduced into
political discourse in more or less its current meaning. Although Niccolò Machiavelli is often
credited with first using the term to refer to a territorial sovereign government in the modern sense
in The Prince, published in 1532, it is not until the time of the British thinkers Thomas Hobbes and
John Locke and the French thinker Jean Bodin that the concept in its current meaning is fully
developed.

Today, most Western states more or less fit the influential definition of the state in Max Weber's
Politics as a Vocation. According to Weber, the modern state monopolizes the means of legitimate physical violence over a well-defined territory. Moreover, the legitimacy of this monopoly itself is of a very special kind, "rational-legal" legitimacy, based on impersonal rules that constrain the power of state elites. However, in some other parts of the world states do not fit Weber's definition as well. They may not have a complete monopoly over the means of legitimate physical violence over a definite territory, or their legitimacy may not be adequately described as rational-legal. But they are still recognizably distinct from feudal and absolutist states in the extent of their bureaucratization and their reliance on nationalism as a principle of legitimation.

Since Weber, an extensive literature on the processes by which the "modern state" emerged from the feudal state has been generated. Marxist scholars, for example, assert that the formation of modern states can be explained primarily in terms of the interests and struggles of social classes. Scholars working in the broad Weberian tradition, by contrast, have often emphasized the institution-building effects of war. For example, Charles Tilly has argued that the revenue-gathering imperatives forced on nascent states by geopolitical competition and constant warfare were mostly responsible for the development of the centralized, territorial bureaucracies that characterize modern states in Europe. States that were able to develop centralized tax-gathering bureaucracies and to field mass armies survived into the modern era; states that were not able to do so did not.

- **State and civil society**
  
  The modern state is both separate from and connected to civil society. The nature of this connection has been the subject of considerable attention in both analyses of state development and normative theories of the state. Earlier thinkers, such as Thomas Hobbes emphasized the supremacy of the state over society. Later thinkers, by contrast, beginning with G. W. F. Hegel, have tended to emphasize the points of contact between them. Jürgen Habermas, for example, has argued that civil society forms a public sphere, that is, a site of extra-institutional engagement with matters of public interest autonomous from the state and yet necessarily connected with it. Some Marxist theorists, such as Antonio Gramsci, have questioned the distinction between the state and civil society altogether, arguing that the former is integrated into many parts of the latter. Others, such as Louis Althusser, maintain that civil organizations such as churches, schools, and even trade unions are part of an 'ideological state apparatus.' In this sense, the state can fund a number of groups within society that, while autonomous in principle, are dependent on state support.

  Given the role that many social groups have in the development of public policy and the extensive connections between state bureaucracies and other institutions, it has become increasingly difficult to identify the boundaries of the state. Privatization, nationalization, and the creation of new regulatory bodies also change the boundaries of the state in relation to society. Often the nature of quasi-autonomous organizations is unclear, generating debate among political scientists on whether they are part of the state or civil society. Some political scientists thus prefer to speak of policy networks and decentralized governance in modern societies rather than of state bureaucracies and direct state control over policy. Alfred Stepan also introduced the idea of 'political society' those organisations that move periodically between the state and non-state sectors (such as Political Parties). Whaites has argued that in developing countries there are dangers inherent in promoting strong civil society where states are weak, risks that should be considered and mitigated by those funding civil society or advocating its role as an alternative source of service provision.
**Topic Objective:**
At the end of this topic students will be able to understand:

1. Development Geography
2. Geographic variations in development
3. Sustainable Development

**Topic Introduction:**

**Development Geography:** Development geography is the study of the Earth's geography with reference 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. However, development is not always a positive process. Gunder Frank commented on the global economic forces that lead to the development of underdevelopment. This is covered in his dependency theory.

The World-watch Institute, in the forward to its Publication State of the World, commented that the twentieth century has been extraordinarily successful for the human species--perhaps too successful. The authors note that as Earth's population has grown from one billion to six billion and the economy has exploded to more than 20 times its size since 1900, we have overwhelmed the natural system from which we emerged and created the dangerous illusion that we no longer depend on a healthy environment. As a result, humanity now faces a challenge that rivals any in its history: restoring balance with nature while expanding economic opportunities for the billions of people whose basic needs--for food and clean water, for example--are still not being met.

[Fig 1: High human development, Medium human development, Low human development, Unavailable]

**Topic Overview:**

1. Development Geography

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. They seek to understand both the geographical causes and consequences of varying development. Studies compare More Economically Developed Countries (MEDCs) with Less Economically Developed Countries (LEDCs).

1.1 Quantitative indicators

Quantitative indicators are numerical indications of development.
• **Economic indicators:** include GNP per capita, unemployment rates, energy consumption and percentage of GNP in primary industries. Of these, GNP per capita is the most used as it measures the value of all the goods and services produced in a country, excluding those produced by foreign companies, hence measuring the economic and industrial development of the country. However, using GNP per capita also has many problems. It does not take into account the distribution of the money which can often be extremely unequal as in the UAE where oil money has been collected by a rich elite and has not flowed to the bulk of the country.

• GNP does not measure whether the money produced is actually improving people’s lives and this is important because in many MEDCs where there are large increases in wealth over time but only small increases in happiness. The figure rarely takes into account the unofficial economy, which includes subsistence agriculture and cash-in-hand or unpaid work, which is often substantial in LEDCs. In LEDCs, it is often too expensive to accurately collect this data and some governments intentionally or unintentionally release inaccurate figures.

• **Social indications:** include access to clean water and sanitation (which indicate the level of infrastructure developed in the country) and adult literacy rate, measuring the resources the government has to meet the needs of the people.

• **Demographic indicators:** include the birth rate, death rate and fertility rate, which indicate the level of industrialization.

• **Health indicators** (a sub-factor of demographic indicators) include nutrition (calories per day, calories from protein, percentage of population with malnutrition), infant mortality and population per doctor, which indicate the availability of healthcare and sanitation facilities in a country.

1.2 **Composite indicator**

Composite or qualitative indicators combine several quantitative indicators into one figure and generally provide a more balanced view of a country. Usually they include one economic, one social and one demographic indicator. The HDI (Human Development Index) is now the most widely used composite indicator. A number is calculated between 0 and 1 taking into account the most important measures: GNP per capita, the adult literacy rate, the school enrollment rate and life expectancy. It was started by the United Nations in 1990 to replace GNP as a more accurate way of measuring development. A HDI between 1 and 0.8 is considered high, 0.8 and 0.6 are considered medium and 0.6 to 0.4 is considered low.

<table>
<thead>
<tr>
<th>HDI rank</th>
<th>Country</th>
<th>GDP per capita (PPP US$) 2002</th>
<th>Human development index (HDI value) 2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Australia</td>
<td>29,260</td>
<td>0.916</td>
</tr>
<tr>
<td>72</td>
<td>Brazil</td>
<td>7,770</td>
<td>0.775</td>
</tr>
<tr>
<td>147</td>
<td>Zimbabwe</td>
<td>2,400</td>
<td>0.491</td>
</tr>
</tbody>
</table>

[Fig 2: Data example: Composite indicator]

Other composite measures include the PQLI (Physical Quality of Life Index) which was a precursor to the HDI which used infant mortality rate instead of GNP per capita and rated countries from 0 to 100. It was calculated by assigning each country a score of 0 to 100 for each indicator compared with other countries in the world. The average of these three numbers makes the PQLI of a country.

The HPI (Human Poverty Index) is used to calculate the percentage of people in a country who live in relative poverty. In order to better differentiate the number of people in abnormally poor living
conditions the HPI-1 is used in developing countries, and the HPI-2 is used in developed countries. The HPI-1 is calculated based on the percentage of people not expected to survive to 40, the adult illiteracy rate, the percentage of people without access to safe water, health services and the percentage of children under 5 who are underweight. The HPI-2 is calculated based on the percentage of people who do not survive to 60, the adult functional illiteracy rate and the percentage of people living below 50% of median personal disposable income. The GDI (Gender-related Development Index) measures gender equality in a country in terms of life expectancy, literacy rates, school attendance and income.

2. Geographic variations in development

There is a considerable spatial variation in development rates. The most famous pattern in development is the North-South divide. The North-South divide is the divide which separates the rich North or the developed world, from the poor South. This line of the division is not as straightforward as it sounds and splits the globe into two main parts.

The "North" in this divide is regarded as being the North America, Europe, Russia, Japan, Australia and the New Zealand. The countries within this area are generally the more economically developed. The "South"; therefore, encompasses the remainder of the Southern Hemisphere, mostly consisting of LEDCs. Another possible dividing line is the Tropic of Cancer with the exceptions of Australia and New Zealand. It is critical to understand that the status of countries is far from static and the pattern is likely to become distorted with the fast development of certain southern countries, many of them NICs (Newly Industrialized Countries) including India, Thailand, Brazil, Malaysia, Mexico and others. These countries are experiencing sustained development on the back of growing manufacturing industries and exports.

Most countries are experiencing significant increases in wealth and standard of living. However, there are unfortunate exceptions to this rule. Noticeably the former Soviet Union has experienced major disruption of industry in the transition to a market economy. Many African nations have recently experienced reduced GNPs due to wars and the AIDS epidemic, including Angola, Congo, Sierra Leone and others. Arab oil producers rely very heavily on oil exports to support their GDPs so any reduction in oil's market price (currently unlikely) can lead to rapid decreases in GNP. Countries which rely on only a few exports for much of their income are very vulnerable to changes in the market value of those commodities and are often derogatively called banana republics. Many developing countries do rely on exports of a few primary goods for a large amount of their income (coffee and timber for example), and this can create havoc when the value of these commodities drops, leaving these countries with no way to pay off their debts. Within countries, the pattern is that wealth is more concentrated around urban areas than rural areas. Wealth also tends towards areas with natural resources or in areas that are involved in tertiary (service) industries and trade. This leads to a gathering of wealth around mines and monetary centers such as New York, London and Tokyo.

3. Sustainable Development

Within development geography, sustainable development is also studied in an attempt to understand how to meet the needs of the present without compromising the needs of future generations to meet their own needs.
In Section 4 of this course you will cover these topics:

- Agriculture
- Industry
- Services

You may take as much time as you want to complete the topic covered in section 4. There is no time limit to finish any Section, however you must finish all Sections before semester end date.
**Topic Objective:**
At the end of this topic students will be able to understand:

1. Agriculture
2. Development of Civilization
3. Challenges to Comprehension: Scale

**Topic Introduction:**

*Agriculture*: Agriculture refers to the production of goods through the growing of plants, animals and other life forms. The study of agriculture is known as agricultural science.

Agriculture has played a key role in the human civilization—it is widely believed that the domestication of plants and animals allowed humans to settle and give up their previous hunter-gatherer lifestyle during the Neolithic Revolution. Until the Industrial Revolution, the vast majority of the human population labored in agriculture. Development of agricultural techniques has steadily increased agricultural productivity, and the widespread diffusion of these techniques during a time period is often called an agricultural revolution. A remarkable shift in agricultural practices has occurred over the past century in response to new technologies.

In particular, the Haber-Bosch method for synthesizing ammonium nitrate made the traditional practice of recycling nutrients with crop rotation and animal manure less necessary. Synthetic nitrogen, along with mined rock phosphate, pesticides and mechanization, has greatly increased crop yields in the early 20th century. Increased supply of grains has led to cheaper livestock as well. Further, global yield increases were experienced later in the 20th century when high-yield varieties of common staple grains such as rice, wheat, and corn were introduced as a part of the Green Revolution. The Green Revolution exported the technologies (including pesticides and synthetic nitrogen) of the developed world out to the developing world. Thomas Malthus famously predicted that the Earth would not be able to support its growing population, but technologies such as the Green Revolution have allowed the world to produce a surplus of food.

![Fig 1: Agricultural output in 2005.](image)
Topic Overview:

1. Agriculture

Agriculture encompasses many subjects, including aquaculture, agronomy, animal husbandry, and horticulture. Each of these subjects can be further partitioned: for example, agronomy includes both sustainable agriculture and intensive farming, and animal husbandry includes ranching, herding, and intensive pig farming.

1.1 Agricultural Products

Agricultural products include food (vegetables, fruits, and cereals), fibers (cotton, wool, hemp, silk and flax), fuels (methane from biomass, ethanol, bio-diesel), cut flowers, ornamental and nursery plants, tropical fish and birds for the pet trade, both legal and illegal drugs (biopharmaceuticals, tobacco, marijuana, opium, cocaine), and other useful materials such as resins. Recently, crops have been designed to produce plastic, as well as pharmaceuticals.

1.2 History of Agriculture

The history of agriculture is a central element of human history, as agricultural progress has been a crucial factor in worldwide socio-economic change.

1.3 Militaristic Specializations

Wealth-building and militaristic specializations rarely seen in hunter-gatherer cultures are commonplace in agricultural and agro-industrial societies when farmers became capable of producing food beyond the needs of their own families, others in the tribe/village/City-state/nation/empire were freed to devote themselves to projects other than food acquisition.

2. Development of Civilization

Jared Diamond, among others, has argued that the development of civilization required agriculture. In 2007, an estimated 35 percent of the world's workers were employed in agriculture (from 42% in 1996). However, the relative significance of farming has dropped steadily since the beginning of industrialization, and in 2003 – for the first time in history – the services sector too over agriculture as the economic sector employing the most people worldwide. Despite the fact, that agriculture employs over one-third of the world's population, agricultural production accounts for less than five percent of the gross world product (an aggregate of all gross domestic products).

Many governments have subsidized agriculture to ensure an adequate food supply. These agricultural subsidies are often linked to the production of certain commodities such as wheat, corn, rice, soybeans, and milk. These subsidies, especially when done by developed countries have been noted as protectionist, inefficient, and environmentally damaging. In the past century, agriculture has been characterized by enhanced productivity, the use of synthetic fertilizers and pesticides, selective breeding, mechanization, water contamination, and farm subsidies. Proponents of organic farming such as Sir Albert Howard argued in the early 1900s that the overuse of pesticides and synthetic fertilizers damages the long-term fertility of the soil. While this feeling lay dormant for decades, as environmental awareness has increased recently there has been a movement towards sustainable agriculture by some farmers, consumers, and policymakers. In recent years there has been a backlash against perceived external environmental effects of mainstream agriculture, particularly regarding water pollution, resulting in the organic movement.

One of the major forces behind this movement has been the European Union, which first certified organic food in 1991 and began reform of its Common Agricultural Policy (CAP) in 2005 to phase out commodity-linked farm subsidies, also known as decoupling. The growth of organic farming has renewed research in alternative technologies such as integrated pest management and selective breeding. Recent mainstream technological developments include genetically modified food. As of late 2007, several factors have pushed up the price of grain used to feed poultry and dairy cows and other cattle, causing higher prices of wheat (up 58%), soybean (up 32%), and maize (up 11%) over the year. Food riots have recently taken place in many countries across the world. An epidemic of stem rust on wheat caused by race UG99 is currently spreading across Africa and into Asia and is causing major concern approximately 40% of the world’s agricultural land is seriously degraded. In Africa, if current trends of soil degradation continue, the continent might be able to feed just 25%
of its population by 2025, according to UNU's Ghana-based Institute for Natural Resources in Africa.

3. Challenges to Comprehension: Scale
Many, including professional geographers, confuse large and small scales. The smaller the scale, the larger the area covered. For example, a globe is a very small-scale representation of the Earth. Yet many persist in referring to global issues as occurring at a "large scale."
Social and Cultural Geography > Section 4 > Topic 11: Industry

**Topic Objective:**
At the end of this topic students will be able to understand:
1. Industry

**Topic Introduction:**

*Industry*: Although the industry is a broad term for economic activity and trade, in economics and urban planning industry is a synonym for the secondary sector, which is a type of economic activity, involved in the manufacturing of raw materials into goods and products. The focus of this topic is fully engaged in the globalization process, where American products, for example, are made or assembled in plants throughout the world for sale throughout the world. Locations can change as the labor cost or raw materials change particularly in the textile and clothing industries. How did all of this come about?

An industry or sector is the manufacturing of a good or service within a category.

![GDP Composition By Sector and Labour Force By Occupation](image)

[Fig 1: GDP composition of the sector and labour force by occupation. The green, red, and blue components of the colours of the countries represent the percentages for the agriculture, industry, and services sectors, respectively.]

**Topic Overview:**

1. Industry

1.1 Overview

Industry in the sense of manufacturing became a key sector of production in European and North American countries during the Industrial Revolution, which upset previous mercantile and feudal economies through many successive rapid advances in technology, such as steel and coal production. It is aided by technological advances, and has continued to develop into new types and sectors to this day. Industrial countries then assumed a capitalist economic policy. Railroads and steam-powered ships began speedily establishing links with previously unreachable world markets, enabling private companies to develop to then-unheard of size and wealth. Following the Industrial
Revolution, perhaps a third of the world's economic output is derived from manufacturing industries —more than agriculture's share.

Many developed countries (for example the UK, the U.S., and Canada) and many developing/semi-developed countries (People's Republic of China, India etc.) depend significantly on industry. Industries, the countries they reside in, and the economies of those countries are interlinked in a complex web of interdependence. There are many other different kinds of industries, and they are usually divided into different classes or sectors. The primary sector of industry is agriculture, mining and raw material extraction. The secondary sector of industry is manufacturing - which is what is colloquially meant by the word "industry". The tertiary sector of industry is service production.

Sometimes one talks about a quaternary sector of industry, consisting of intellectual services such as R&D.

- light industry - heavy industry
- labor-intensive industry - capital-intensive industry
- By product: chemical industry, petroleum industry, meatpacking industry, hospitality industry, food industry, fish industry, software industry, paper industry, entertainment industry, semiconductor industry, cultural industry, poverty industry

1.2 Industrial Economic Sectors

There are four key industrial economic sectors:

- The primary sector, largely raw material extraction industries such as mining and farming;
- The secondary sector involving refining and manufacturing;
- The tertiary sector which deals with services (such as law and medicine) and distribution of manufactured goods;
- And the quaternary sector, a relatively new type of knowledge industry focusing on technological research, design and development such as computer programming, and biochemistry.
**Topic Objective:**
At the end of this topic students will be able to understand:

1. Services
2. Labor Intensity
3. Human Factor
4. Demand
5. Buyer Involvement
6. Client-based Relationship

**Topic Introduction:**

**Service:** A service is the non-material equivalent of a good. A service provision is an economic activity that does not result in ownership, and this is what differentiates it from providing physical goods. It is claimed to be a process that creates benefits by facilitating either change in customers, a change in their physical possessions, or a change in their intangible assets. The service sector of the economy is subdivided into three types: Consumer services, business services, and public services.

By supplying some level of skill, ingenuity, and experience, providers of a service participate in an economy without the restrictions of carrying stock (inventory) or the need to concern themselves with bulky raw materials. On the other hand, their investment in expertise does require marketing and upgrading in the face of competition which has equally few physical restrictions. Providers of services make up the Tertiary sector of industry.

![Fig 1: Service output in 2005](image-url)

**Topic Overview:**

1. **Services**

   Services can be described in terms of their main attributes. They are intangible and insubstantial; they cannot be handled, smelled, tasted, heard, etc. There is neither potential nor need for storage and they are said to be inseparable and perishable. Because services are difficult to conceptualize, marketing them requires creative visualization to effectively evoke a concrete image in the customer's mind. From the customer's point of view, this characteristic makes it difficult to evaluate or compare services prior to experiencing the service delivery. They are perishable, unsold service time is a lost economic opportunity. For example, a doctor who is booked for only two hours a day cannot later work those hours—she has lost her economic opportunity. Other service examples are airplane seats (once the plane departs, those empty seats cannot be sold), and...
theatre seats (sales end at a certain point).

There is a lack of transportability as services tend to be consumed at the point of "production" although this does not apply to outsourced business services. Services are regarded as heterogeneity or lack of homogeneity and are typically modified for each consumer or each new situation (consumerized). Mass production of services is very difficult. This can be seen as a problem of inconsistent quality. Both inputs and outputs to the processes involved providing services are highly variable, as are the relationships between these processes, making it difficult to maintain consistent quality.

2. Labor Intensity
There is labor intensity as services usually involve considerable human activity, rather than a precisely determined process. Human resource management is important.

3. Human Factor
The human factor is often the key success factor in service industries. It is difficult to achieve economies of scale or gain dominant market share. There are demand fluctuations and it can be difficult to forecast demand which is also true of many goods.

4. Demand
Demand can vary by season, time of day, business cycle, etc.

5. Buyer Involvement
There is buyer involvement as most service provision requires a high degree of interaction between service consumer and service provider.

6. Client-based Relationship
There is a client-based relationship based on creating long-term business relationships. Accountants, attorneys, and financial advisers maintain long-term relationships with their clients for decades. These repeat consumers refer friends and family, helping to create a client-based relationship.
In Section 5 of this course you will cover these topics:

- Urban Patterns
- Resource Issues

You may take as much time as you want to complete the topic covered in section 5. There is no time limit to finish any Section, however, you must finish all Sections before the semester end date.
**Topic Objective:**
At the end of this topic students will be able to understand:

1. Urbanization

**Topic Introduction:**

**Urban Area:** An urban area is an area with an increased density of human-created structures in comparison to the areas surrounding it. Urban areas may be cities, towns or conurbations, but the term is not commonly extended to rural settlements such as villages and hamlets.

Since the early twentieth century, geographers have been grappling with the subject of urban development, searching for theories that explain the city's internal structure and external relations. No one theory can adequately explain how cities grow, but the questions theories raise and attempt to answer are at the heart of any examination of urbanization. To illuminate the process of urban patterns, we examine the physical layout of the urban centers; changes in that layout, or spatial order, have a major impact on the lives of the city's residents. This examination charts a process of growth and development, decay and transformation.

![Fig 1: A cityscape (an urban area)](image)

**Topic Overview:**

1. **Urbanization**

Urbanization is an increase in the proportion of people living in urban compared to rural areas. Urbanization increases with development and industrialization and is today taking place most rapidly in LEDCs. One way geographers study cities is by looking at different types of land-use within them and constructing models of urban development, such as the Burgess or concentric zone model. In MEDCs there is a tendency for people and businesses to relocate away from city-centers to the urban-rural fringe, which encroaches on the surrounding countryside in a process called urban sprawl.

Urban patterns deals with developing a theoretical understanding of various urban forms and transport networks and their interrelationship, at both city-wide (strategic) and neighborhood (local) scales. This research sets out the rationale for the specification of generic land use and transport options for testing at strategic and local scales and is helpful in generalization of results.
1.1 Urban Areas in United States

In the United States there are two categories of urban area. The term urbanized area denotes an urban area of 50,000 or more people. Urban areas under 50,000 people are called urban clusters. Urbanized areas were first delineated in the United States in the 1950 census, while urban clusters were added in the 2000 census. There are 1371 United States Urban Areas & Urban Clusters with more than 10,000 people. The US Census Bureau defines an urban area as: "Core census block groups or blocks that have a population density of at least 1,000 people per square mile (386 per square kilometer) and surrounding census blocks that have an overall density of at least 500 people per square mile (193 per square kilometer)."

The concept of Urbanized Areas as defined by the US Census Bureau are often used as a more accurate gauge of the size of a city, since in different cities and states the lines between city borders and the urbanized area of that city are often not the same. For example, the city of Greenville, South Carolina has a city population under 60,000 but an urbanized area over 300,000, while Greensboro, North Carolina has a city population over 200,000 but an urbanized area population of around 270,000—meaning that Greenville is actually "larger" for some intents and purposes, but not for others, such as taxation, local elections, etc. About 70% of the population of the United States lives within the boundaries of urbanized area (210 out of 300 million). Combined, these areas occupy about 2% of the United States. The majority of urbanized area residents are suburbanites; core central city residents make up about 30% of the urbanized area population (about 60 out of 210 million).
**Topic Objective:**
At the end of this topic students will be able to understand:
1. Natural Resources
2. Fossil Fuels
3. Coal and Petroleum Combustion

**Topic Introduction:**
Resource Issues has always been and would remain amongst the top issues the world is facing today. Lester Brown, in his 1998 State of the World report on progress toward a sustainable society, noted the urgency with which we are confronted with environmental degradation and the widespread failure to summon the political will needed to solve these problems. Most of us have been aware of the plume of smoke that spread across Southeast Asia during the summer and winter of 1997, turning the skies dark over an area larger than the continental United States. This disaster left at least 20 million people choking on air that became a toxic soup, and killed hundreds outright. The areas affected included Brunei, Indonesia, Malaysia, Papua New Guinea, the Philippines, Singapore, Thailand, and Viet Nam.

A year later, citizens of the Gulf Coast states and Great Plains region were exposed to varying degrees of toxic smoke-filled air emanating from the Southern Mexico-Guatemala region, where thousands of acres of forests burned out of control. The state of Texas had to declare an air quality emergency, while warning children and older people to stay inside, and advising all people to limit any outside exercise. In Mexico itself, scores of people died and at least 50 million were left choking in smoke from nearly 10,000 fires. A cloud of haze and cinders hung over most of southern Mexico and much of Central America through early April, 1998. Airports were closed in Honduras, Nicaragua, Guatemala, and El Salvador, and almost all flights in and out of the region were canceled.

Through these ecological disasters, Brown reminds us of the interconnected dangers we face. Because of El Niño and our growing vulnerability to climatic extremes, the slash and burn practiced by many farmers, as well as the annual burning practiced by many loggers, have the opportunity to get out of control, as we have seen in Southeast Asia and Middle America.

**Topic Overview:**

1. **Natural Resources**

   Natural resources are derived from the environment. Many of them are essential for our survival while others are used for satisfying our wants. Natural resources may be further classified in different ways.

   On the basis of origin, resources may be divided into:
   - Biotic - Biotic resources are the ones which are obtained from the biosphere. Forests and their products, animals, birds and their products, fish and other marine organisms are important examples. Minerals such as coal and petroleum are also included in this category.
because they were formed from decayed organic matter.

- **Abiotic** - Abiotic resources comprise of non-living things. Examples include land, water, air and minerals such as gold, iron, copper, silver etc.

On the basis of the stage of development, natural resources may be called:

- **Potential Resources** - Potential resources are those which exist in a region and may be used in the future. For example, mineral oil may exist in many parts of India having sedimentary rocks but till the time it is actually drilled out and put into use, it remains a potential resource.

- **Actual Resources** are those which have been surveyed, their quantity and quality determined and are being used in present times. For example, the petroleum and the natural gas which is obtained from the Bombay High Fields. The development of an actual resource, such as wood processing depends upon the technology available and the cost involved. That part of the actual resource which can be developed profitably with available technology is called a reserve.

On the basis of renewability, natural resources can be categorized into:

- **Renewable Resources** - Renewable resources are the ones which can be replenished or reproduced easily. Some of them, like sunlight, air, wind, etc., are continuously available and their quantity is not affected by human consumption. Many renewable resources can be depleted by human use, but may also be replenished, thus maintaining a flow. Some of these, like agricultural crops, take a short time for renewal; others, like water, take a comparatively longer time, while still others, like forests, take even longer.

- **Non-renewable Resources** - Non-renewable resources are formed over very long geological periods. Minerals and fossils are included in this category. Since their rate of formation is extremely slow, they cannot be replenished once they get depleted. Out of these, the metallic minerals can be re-used by recycling them. But coal and petroleum cannot be recycled.

### 2. Fossil Fuels

Oil, coal, and natural gas are collectively known as fossil fuels. Today, eighty-five percent of all energy produced in the United States comes from burning these fuels. That energy powers almost two-thirds of our electricity and virtually all of our transportation. One estimate suggests that reusing a glass jar five times at home can save about half of the energy a commercial packager uses to make five disposable containers. There are a number of problems associated with fossil fuels, most of which stem from the by-products created when they are burned to create energy. Chief among those byproducts are carbon dioxide and nitrous oxide, greenhouse gases that are major contributors to global warming.

#### 2.1 Fossil Fuel Dependence

Fossil fuel dependence also damages the health of our nation. In 2004, almost sixty percent of petroleum products used in the United States was imported from other countries. And despite the fact that fossil fuels are limited resources that cannot be replaced, the Department of Energy acknowledges that their usage in the United States is likely only to grow over the next century. This means that unless we dramatically change the way the United States consumes energy, our dependence on foreign sources of fossil fuels will also grow—and increasingly threaten the stability of American government, business, and daily life.

### 3. Coal and Petroleum Combustion

Largely because of coal and petroleum combustion, the amount of carbon dioxide and nitrous oxide in the air today are thirty-five percent and eighteen percent higher, respectively, than they were before the industrial era. Other byproducts of fossil fuel combustion include sulfur oxides and nitrogen oxides, both of which contribute to acid rain, and hydrocarbons, which can react with nitrogen oxides to form smog.

- In addition to their environmental harm, the byproducts of burning fossil fuels can cause health problems for humans. Nitrogen oxides, for instance, irritate the lungs.
- Particulate matter such as soot and dust contribute to respiratory illness and cardiac problems, including arrhythmias and heart attacks.