

SAVEETHA AMARAVATI UNIVERSITY



IST SEMESTER Syllabus for AHS

B.Sc. ALLIED HEALTH SCIENCES - COURSE HOURS DISTRIBUTION

S. No.	Course code	Courses	Teaching hours /Sem		Total hours/ Sem	credits
			Theory	Practical		
Semester – I						
1.		Paper I-Anatomy	100	50	150	7+2
2.		Paper II- Physiology	100	50	150	7+2
3.		Paper III- Behavioral science	55	-	55	2
4.		Disaster Management-NC	30	15	45	NC
5.		Environmental Science-NC	30	15	45	NC
6.		Basic sciences-NC	80	15	95	NC
Total no of hours /semester					540	20
Semester – II						
1.		Paper 1 Microbiology Pathology	160 80 80	30 15 15	190	10
2.		Paper II- Biochemistry	70	30	100	4+1
3.		Paper III-Pharmacology	70	30	100	4+1
4.		English-NC	75	-	75	NC
5.		Computer Science-NC	40	35	75	NC
Total no of hours /semester					540	20

Credit hours: Theory 1 credit hour=15

Practical 1 credit hour=30

NC-Non-Credit Subjects.

AHS TIME TABLE

DAY/HOUR	8.30-10.30	10.30-12.30	12.30-1.30	1.30-2.30	2..30-4.30
Monday	Physiology	Anatomy	L	Environmental science	Library
Tuesday	Sociology	Psychology	U	Diaster management	Mentorship Programme
Wednesday	Physiology	Anatomy	N	Sociology	Library
Thursday	Physics	Physiology	C	Physiology Lab	English
Friday	Physiology	Anatomy	H	Anatomy Lab	Self learning
Saturday	Psychology	Physiology		Yoga/Meditation	Yoga/Meditation

Anatomy : 6 hours/week

Physiology: 8 hours/week,

Psychology: 4 hours/week,

Sociology: 4 hours/week,

NC subjects: Disaster management, Physics, EVS ,English: 2 hours/week

BSc.Allied Health Science- Syllabus

1st semester

ANATOMY

AIM:

- To impart basic knowledge on anatomy to the students.
- To impart basic structural knowledge of various systems of the body
- To provide a firm foundation for the upcoming years of study
- To make them understand practical aspects of dissection and organ demonstration.

THEORY:

- To learn what is anatomy, Emphasis on basics of anatomy
- To learn the terms used in anatomy, planes, axis and movements of different joints in the body
- Basic cell structure with emphasis on different organelles present and its functions
- To understand osteology and different types of bones, the number of bones
- Introduction to the terms axial and appendicular skeleton. Revise the number and types of bones
- To learn what are joints and explain the different types of joints and revise the joints of upper and lower limb, thorax and abdomen.
- To learn what is muscular system and to know the differences between skeletal, smooth and cardiac muscle
- Introduction to connective tissue with emphasis on cartilage
- To learn cardio vascular system with emphasis on structure of heart and differences between arteries and veins
- To learn what is respiratory system with emphasis on structure and differences between upper and lower respiratory tracts. Parts of RS – nose, nasal cavity, larynx, trachea, lungs, bronchopulmonary segments Histology of trachea, lungs and pleura Names of paranasal air sinuses
- To learn what is digestive system, with emphasis on basic structure of various organs and glands in the system. Parts of GIT, oral cavity (lip, tongue – with histology, tonsil, dentition, pharynx, Salivary glands, Waldeyer's ring) Oesophagus, stomach, small and large intestine, liver, gall bladder, pancreas, Radiographs of abdomen
- To learn what is genito urinary system and learn the basic structure of upper and lower urinary tracts
- To learn male and female reproductive system with emphasis on differences between male and female external genitalia
- To learn endocrine system with emphasis on structure of important endocrine glands
- To learn nervous system and differences between central and peripheral nervous systems and also special senses and the structures involved

PRACTICALS:

- To learn the basics of structure of various systems of the human body

Physiology Syllabus

Objective:

The Physiology syllabus is designed to provide the students an understanding of the functioning of the organ systems and acquire a list of practical skills at the introductory level.

Theory:

UNIT 1: GENERAL PHYSIOLOGY

- **Introduction to Physiology & Homeostasis:** Definition of Physiology; Organ systems
- **Homeostasis:** Mode of action of homeostatic control – Negative and positive feedback mechanism with examples

Cell Physiology:

- Cell Structure- Fluid mosaic model, Cell Organelles and functions

Transport across Cell Membrane:

- Introduction, types – Active transport, Passive transport, Vesicular transport
- Passive transport: Diffusion, Osmosis, Filtration, Bulk flow, Solvent drag
- Active transport- Primary active transport with examples – Sodium potassium pump
- Secondary active transport with examples
- Vesicular transport - Endocytosis, Exocytosis

Body Fluid Compartments, formation of tissue fluids

- Body fluid compartments – Divisions, volumes, constituents
- Measurement of body fluid compartments
- Applied – Dehydration, Oedema

UNIT 2: NERVE & MUSCLE PHYSIOLOGY

Skeletal Muscle – Structure and functions

- Functional anatomy and organization of a skeletal muscle
- Sarcomere –Light microscopic view

Smooth muscle

- Functional anatomy
- Functions of smooth muscle

Cardiac Muscle

- Functional anatomy and organization of cardiac muscle fibre
- Structural and functional difference between skeletal, smooth and cardiac muscle

Definition: Resting membrane potential, Action Potential in nerve and muscle.

Neuromuscular Junction- Structure & transmission of impulse

UNIT 3: BLOOD

Blood – Introduction & Plasma Proteins

- Introduction
- Functions of blood
- Composition of blood- Cells and plasma
- Plasma – Composition; Serum.
- Plasma proteins- Types and functions

Red Blood Cells

- Morphology of RBC
- RBC count – normal, variations
- Variations in size, shape
- Life span and destruction of RBCs

Anaemia: Definition, types- Iron deficiency anemia

Erythropoiesis

- Definition
- Site of erythropoiesis
- Stages

White Blood Cells

- Classification and functions
- Each leukocyte: Morphology, Production, Life span, Functions, Normal Count
- Defense against infections - Phagocytosis
- Role in immunity

Platelets

- Platelets – morphology, lifespan, normal count and functions, thrombocytopenia

Hemostasis

- Vasoconstriction
- Platelet Plug formation
- Coagulation / Permanent plug formation –
Clotting factors, Intrinsic & Extrinsic Pathway
- Clot retraction

Disorders: Hemophilia- Types

Blood groups

- Landsteiner's law
- Blood group systems – ABO system, Rh system
- Blood grouping – clinical applications
- Rh incompatibility- Erythroblastosis Fetalis

Blood Transfusion – Indications, blood component- whole and component transfusion, Precautions, Complications of mismatched transfusion

UNIT 4: DIGESTIVE SYSTEM

Introduction

- Functional Anatomy – Parts, General structure, Functions
- Nerve supply of GIT – Autonomic, Enteric nervous system,

Salivary secretion

- Salivary glands
- Composition of saliva
- Functions of saliva
- Applied aspects

Deglutition- Stages, regulation

Gastric secretion

- Functional anatomy- Gastric glands
- Gastric juice – composition and functions
- Acid peptic disease

Pancreatic secretion

- Pancreas – Functional anatomy
- Pancreatic juice – composition and functions
- Acute pancreatitis, chronic pancreatitis

Liver

- Functions of Liver
- Hepatitis

Bile

- Composition and functions
- Jaundice

Small intestine

- functions -Small intestine, large intestine
- Motility

Digestion and absorption

- Carbohydrate, protein, fats

GI Hormones

- Gastrin
- Secretin
- Cholecystokinin (CCK)

UNIT 5: CARDIOVASCULAR SYSTEM

Introduction to Cardiovascular System

- Structure of heart- functional anatomy and physiology
- Functional anatomy of heart
- Physiology of cardiac muscle

Conducting system of heart

- Organization of conducting pathway of heart
- Pace maker potential at SA node
- Detailed description of conducting pathway of heart
- Spread of cardiac impulse

Normal ECG

- Introduction
- ECG leads
- Waveforms

Heart Blocks, Myocardial Ischemia, Myocardial Infarction

Cardiac Cycle

- Definition
- Atrial cycle
 - Atrial systole
 - Atrial diastole
- Ventricular Cycle
 - Ventricular systole
 - Ventricular diastole
 - Valvular Events
 - Heart Sounds

Cardiac Output

- Definition of cardiac output, Stroke volume, cardiac index
- Heart Rate
- Name of the methods of measurement of cardiac output
- Variation in cardiac output – Physiological and Pathological

Features of Coronary Circulation

Blood Pressure

- Definition and terminologies
- Variations in blood pressure
 - Physiological
 - Pathological
- Measurement of blood pressure
- Brief description of Regulation of Blood Pressure
 - Short term regulation
 - Intermediate term regulation
 - Long term regulation

Shock: Definition

UNIT 6: RENAL PHYSIOLOGY

Introduction- excretory and non- excretory function of kidney

- Structure of kidney
- Structure of Nephron

Urine formation- GFR, tubular re-absorption, tubular secretion.

Urinary bladder- Functional Anatomy, innervation

- Micturition reflex
- Abnormal bladder

Dialysis –types: hemo and peritoneal

Diuretics - definition, 2 examples

Skin and body temperature regulation

UNIT 7: RESPIRATORY SYSTEM

Introduction- parts of respiratory system

- Respiratory and Non- respiratory functions of lungs
- Mechanics of respiration- inspiration- inspiratory muscles, expiration, types of breathing, pressure changes
- Compliance, Surfactant

Transport of gases—pulmonary diffusion

- **Oxygen Transport-** uptake and delivery of oxygen to tissues, oxygen hemoglobin dissociation curve
- **Carbon-di-oxide Transport-** uptake and transport of carbon-di-oxide in blood, delivery of CO₂ to lungs

Lung Volumes & Capacities

Applied Physiology:

- Hypoxia
- Artificial respiration, Oxygen therapy

UNIT 8: ENDOCRINE SYSTEM

Introduction- List of endocrine glands, hormones secreted, types of hormones

Pituitary Gland

- Functional anatomy, parts
- List of Pituitary hormones with major function
- **Applied Physiology:** Gigantism, Acromegaly, Dwarfism

Thyroid gland

- Functional anatomy
- List thyroid hormones with major function
- **Applied Physiology:** Hyperthyroidism-Graves , Hypothyroidism- Myxoedema, Cretinism

Endocrine Pancreas

- Functional anatomy
- Insulin actions
- Diabetes Mellitus: Clinical features, types

Adrenal Gland

- Structure
- List of adrenal hormones with major function
- **Applied Physiology:** Hypo secretion-Addison's disease, Hyper secretion-Cushing's

UNIT 9: REPRODUCTIVE SYSTEM

Introduction - puberty changes in male and female

- Functions of testosterone, estrogen, progesterone

Male Reproductive System- organs and their functions

- Spermatogenesis
- Structure of matured sperm

Female reproductive system- organs, Oogenesis

- Menstrual cycle
- Fertilization, Pregnancy test, Lactation

Contraception

- Contraceptive methods in female – Natural, Barrier – mechanical, chemical, IUD, Hormonal– (oral, implant, injection), Permanent
- Contraceptive methods in male – Barrier, chemical, Permanent

UNIT 10: NERVOUS SYSTEM

Introduction to CNS- Brain and Spinal cord

- Structure of neuron, Neuroglia
- Cerebro-Spinal Fluid (CSF) - site of production and functions

Brief description of Peripheral Nervous System & Autonomic Nervous System

- Peripheral Nervous System (PNS)- Somatic
- Autonomic Nervous System (ANS)

Ascending and Descending Tracts – names and major functions

Thalamus- parts and functions

Hypothalamus- nuclei and functions of hypothalamus

Basal ganglia- nuclei and functions of basal ganglia

Cerebellum- divisions and functions

Cerebrum and higher functions

UNIT 11: SPECIAL SENSES

Vision- structure of eyeball, refractive errors, receptor, accommodation & light reflex

- Colour blindness
- Nictalopia, Glaucoma, cataract

Audition- parts of ear, receptors, functions of outer, middle and inner ear.

Gustation- receptor, basic taste, disorders

Olfaction- receptor, primary sensations of smell, disorders

Practical:

UNIT 1: Haematology

1. Microscope
2. Preparation of peripheral smear
3. Differential count
4. Estimation of Hemoglobin
5. Determination of Blood Groups
6. Determination of bleeding time and clotting time
7. Determination of packed cell Volume
8. Erythrocyte sedimentation rate [ESR]

UNIT 2: Clinical Physiology

1. Determination of Radial pulse and Measurement of Blood Pressure
2. Spirometer
3. General Examination
4. Artificial Respiration
5. Determination of vital capacity

PSYCHOLOGY

Course Description:

This course is designed to assist the students to acquire knowledge of fundamentals of psychology and develop an insight into behaviour of self and others. Further it is aimed at helping them to practice the principles of mental hygiene for promoting mental health in clinical practice.

Unit	Learning Objectives	Content	Teaching Learning Activities
I	History, scope and methods of psychology	Introduction <ul style="list-style-type: none"> • History and origin of science of psychology • Definitions & Scope of Psychology • Relevance to nursing • Methods of Psychology 	Lecture discussion
II	Biology of Human behaviour	Biology of behaviour <ul style="list-style-type: none"> • Body mind relationship- modulation process in health and illness • Genetics and behaviour: Heredity and environment • Brain and behaviour: Nervous System,, Neurons and synapse, • Association Cortex, Rt and Lt Hemispheres • Psychology of Sensations • Muscular and glandular controls of behaviour • Nature of behaviour of an organism/Integrated responses 	Lecture discussion
III	Cognitive processes and their applications	Cognitive processes <ul style="list-style-type: none"> • Attention: Types, determinants, Duration & degree, alterations • Perception: Meaning, Principles, factors affecting, Errors, • Learning: Nature, Types, learner and learning, Factors influencing, laws and theories, process, transfer, study habits • Memory: Meaning, Types, Nature Factors influencing, Development Theories and methods of memorizing and Forgetting Thinking: Types and levels, stages of development, Relationship with 	Lecture Discussion Psychometric assessment: Practice sessions

SOCIOLOGY

Sr. Num	Topic	Didactic Hrs	Practical/laboratory Hrs	Total Hrs
1	Definition of Sociology			
	<ol style="list-style-type: none"> 1. Understanding Sociology 2. Definition and scope of Sociology 3. Its relation to Anthropology and Psychology 4. Sociological understanding and sociological thinking 			
2	Sociology Approaches			
	<ol style="list-style-type: none"> 1. Sociological approaches to health care 2. Main features of positivistic and naturalistic approaches to sociological thinking and theorizing 			
	<ol style="list-style-type: none"> 3. Sociological approaches to health-care 4. Concepts of social groups; influence of formal and informal groups on health and sickness. 5. The SCP [Society-Culture-Personality] Model and the health care 			
3	Social Health			
	<ol style="list-style-type: none"> 1. Social class and health experience 2. Culture types and practices universal and variability's of culture. 3. The role of primary groups and secondary groups in the hospital and rehabilitation. 4. Gender and health issues in India 			
4	Family			
	<ol style="list-style-type: none"> 1. Family 2. The family, meaning and definitions. 3. Functions of types of family 4. Changing family patterns 5. Influence of family on the individuals health, family and nutrition, the effects of sickness in the family and psychosomatic disease and their importance to physiotherapy. 			
5	Community			
	<ol style="list-style-type: none"> 1. Rural community: Meaning and features – Health hazards of ruralities, health hazards to tribal community. 2. Urban community: Meaning and features- Health hazards of urbanities. 			
6	Social worker			
	<ol style="list-style-type: none"> 1. Meaning of Social Work 			

	2. The role of a Medical Social Worker			
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**DISASTER MANAGEMENT
(Non-credit)**

COURSE DESCRIPTION

The course gives an overview of issues related to disaster management including a history of the field, comprehensive emergency management and integrated emergency management, risk reduction and management and current issues in the field.

OBJECTIVES:

At the end of the course, the candidate will be able to:

Cognitive:

- a. Defining disaster and the brief history of disasters and its classification
- b. Understanding the various approaches to disaster risk reduction and disaster management skills.
- c. Comprehending the relationship between disaster and development

Psychomotor

- a. To be able to present various disaster and relate it to development and analyse the same.
- b. Field work on minimizing the disaster and building the culture of safety.
- c. Performing project work, which is creatively designed based on the geographical location and hazard profile of the region where the college is located.

Affective

In the view of disaster, the student should be able to understand and volunteer towards the needs of the society based on the requirements.

The course gives an overview of issues related to disaster management including a history of the field, comprehensive emergency management and integrated emergency management, risk reduction and management and current issues in the field.

OBJECTIVES:

At the end of the course, the candidate will be able to:

Cognitive:

- d. Defining disaster and the brief history of disasters and its classification
- e. Understanding the various approaches to disaster risk reduction and disaster management skills.
- f. Comprehending the relationship between disaster and development

Psychomotor

- d. To be able to present various disaster and relate it to development and analyse the same.
- e. Field work on minimizing the disaster and building the culture of safety.
- f. Performing project work, which is creatively designed based on the geographical location and hazard profile of the region where the college is located.

Affective

In the view of disaster, the student should be able to understand and volunteer towards the needs of the society based on the requirements.

Sr. No.	Topics	Didactic Hours	Practical/ Laboratory Hours	Total Hours
1	Introduction to Disasters	03		03
2	Disasters	05		05
3	Approaches to Disaster Risk reduction	06		06
4	Inter-relationship between Disasters and Development	08		08
5	Disaster Risk Management in India	08		08
6	Project Work: (Field Work, Case Studies)		15	
TOTAL		30	15	45

SYLLABS

Sr. No	Topic	Didactic Hrs	Practical/laborary Hrs	Total Hrs
1	I. Introduction to Disasters			
	Concepts, and definitions (Disaster, Hazard, Vulnerability, Resilience, Risks)			
2	II. Disasters			
	Classification, Causes, Impacts (including social, economic, political, environmental, health, psychosocial, etc.) Differential impacts- in terms of caste, class, gender, age, location, disability Global trends in disasters. urban disasters, pandemics, complex emergencies, Climate Change			
3	III. Approaches to Disaster Risk reduction			
	Disaster cycle - its analysis, Phases, Culture of safety, prevention, mitigation			

	and preparedness community based DRR, Structural- nonstructural measures, roles and responsibilities of- community, Panchayati Raj Institutions/Urban Local Bodies (PRIs/ULBs), states, Centre, and other stake-holders.			
4	IV. Inter-relationship between Disasters and Development			
	Factors affecting Vulnerabilities, differential impacts, impact of Development projects such as dams, embankments, changes in Land-use etc. Climate Change Adaptation. Relevance of indigenous knowledge, appropriate technology and local resources .			
5	V. Disaster Risk Management in India			
	Hazard and Vulnerability profile of India Components of Disaster Relief: Water, Food, Sanitation, Shelter, Health, Waste Management Institutional Arrangements (Mitigation, Response and Preparedness, DM Act and Policy, Other related policies, plans, programmes and legislation).			
6	VI. Project Work: (Field Work, Case Studies)			
	The project /fieldwork is meant for students to understand vulnerabilities and to work on reducing disaster risks and to build a culture of safety. Projects must be conceived creatively based on the geographic location and hazard profile of the region where the college is located.			

ENVIRONMENTAL SCIENCE
(Non-credit)

COURSE DESCRIPTION

The course gives an overview of multi disciplinary nature of environmental studies, natural resources, and ecosystem. The course also deals with issues of environmental pollution, population and human rights.

Sr. No.	Topics	Didactic Hours	Practical/ Laboratory Hours	Total Hours
1	Unit 1 : Multidisciplinary nature of environmental studies			
2	Unit 2 : Natural Resources			
3	Unit 3 : Ecosystems			
4	Unit 4 : Biodiversity and its conservation			
5	Unit 5 : Environmental Pollution			
6	Unit 6 Environment Issues			
7	Unit 7 : Population and Human rights			
8	Unit 8 : Field work			
TOTAL				

SYLLABUS

Sr. Num	Topic	Didactic Hrs	Practical/laboratory Hrs	Total Hrs
1	Unit 1 : Multidisciplinary nature of environmental Studies	02		02
	Definition, scope and importance Need for public awareness.			
2	Unit 2 : Natural Resources	04		04
	Renewable and non-renewable resources : Natural resources and associated problems. a) Forest resources : Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forest and tribal people. b) Water resources : Use and over-utilization of surface and ground water, floods, drought, conflicts over water, dams-benefits and problems. c) Mineral resources : Use and exploitation, environmental effects of extracting and using mineral resources, case studies. d) Food resources : World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies. e) Energy resources : Growing energy needs, renewable and non renewable energy sources, use of alternate energy sources. Case studies. f) Land resources : Land as a resource, land degradation, man induced landslides, soil erosion and desertification. • Role of an individual in conservation of natural resources. • Equitable use of resources for sustainable lifestyles.			
3	Unit 3 : Ecosystems	03		03
	<ul style="list-style-type: none"> • Concept of an ecosystem. • Structure and function of an ecosystem. • Producers, consumers and decomposers. • Energy flow in the ecosystem. • Ecological succession. • Food chains, food webs and ecological pyramids. • Introduction, types, characteristic features, structure and function of the following ecosystem :- <ol style="list-style-type: none"> a. Forest ecosystem b. Grassland ecosystem c. Desert ecosystem d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries) 			

4	Unit 4 : Biodiversity and its conservation <ul style="list-style-type: none"> • Introduction – Definition : genetic, species and ecosystem diversity. • Biogeographical classification of India • Value of biodiversity : consumptive use, productive use, social, ethical, aesthetic and option values • Biodiversity at global, National and local levels. • India as a mega-diversity nation • Hot-spots of biodiversity. • Threats to biodiversity : habitat loss, poaching of wildlife, man-wildlife conflicts. • Endangered and endemic species of India • Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity. 	04		04
5	Unit 5 : Environmental Pollution <p>Definition</p> <ul style="list-style-type: none"> • Cause, effects and control measures of :- <ul style="list-style-type: none"> a. Air pollution b. Water pollution c. Soil pollution d. Marine pollution e. Noise pollution f. Thermal pollution g. Nuclear hazards • Solid waste Management : Causes, effects and control measures of urban and industrial wastes. • Role of an individual in prevention of pollution. • Pollution case studies. • Diastermanagement : floods, earthquake, cyclone and landslides. 	06		06
6	Unit 6 Environment Issues <ul style="list-style-type: none"> • From Unsustainable to Sustainable development • Urban problems related to energy • Water conservation, rain water harvesting, watershed management • Resettlement and rehabilitation of people; its problems and concerns. Case Studies • Environmental ethics : Issues and possible solutions. • Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case Studies. • Wasteland reclamation. • Consumerism and waste products. • Environment Protection Act. • Air (Prevention and Control of Pollution) Act. • Water (Prevention and control of Pollution) Act • Wildlife Protection Act • Forest Conservation Act • Issues involved in enforcement of environmental legislation. • Public awareness. 	05		05

7	Unit 7 : Population and Human rights <ul style="list-style-type: none"> • Population growth, variation among nations. • Population explosion – Family Welfare Programme. VII <ul style="list-style-type: none"> • Environment and human health. • Human Rights. • Value Education. • HIV/AIDS. • Women and Child Welfare. • Role of Information Technology in Environment and human health. • Case Studies. 	05		05
8	Unit 8 : Field work <ul style="list-style-type: none"> • Visit to a local area to document environmental assetsriver/forest/grassland/hill/mountain • Visit to a local polluted site- Urban/Rural/Industrial/Agricultural • Study of common plants, insects, birds. • Study of simple ecosystems-pond, river, hill slopes, etc. 	1	15	16

BASIC SCIENCE
PHYSICS
(Non-credit)

Course Objectives:

To understand the concept of application and the principles of basic physics applied in electrotherapeutic equipments.

This also enables the student to understand the components involved in the functioning of these equipments and identify the components.

PHYSICS

Electromagnetic waves

Electromagnetic spectrum

Light

Theories of the nature of light

Laws of Reflection of inverse square law

Laws of refraction‘

Interference of light – principle & condition of super position of waves

Interference

Emission and absorption spectrum

Principle of Laws

Characteristics of
laws Laser action

Optical pumping

Conditions to achieve Laser action

Ruby Laser

Application of Laser

Magnetism

Magnetic dipoles

Attraction & repulsion between magnetic poles

Magnetic field – magnetic Inductive /fluse density

Properties of magnet

Electro Statics

Coulomb’s inverse square law

Lines of force

Electric potential – volt

Electrostatic induction

Electrophorus

Distribution of charge on a conductor

Capacitance of conductor

Principle of capacitor

Principle of capacitor

Effect of dielectric

Current electricity

Electric current

Flow of current in metal

Ohm's law

Resistivity

Conductivity

Potentiometer

Thermal effect of current

Heat produced in a conductor due to flow of current

Joule's law of heating

Magnetic effect of current

Magnetic field around current carrying conductor

Magnetic field due to circular loop

Magnetic field due to solenoid

Direction of magnetic field & current

Ampere's swimming rule

Maxwell's right hand cork screw rule

Magnitude of force

Direction of force – Fleming's left hand rule

Definition of Ampere

Electromagnetic Induction & alternating current
Magnetic flux

Electromagnetic induction

Faraday's law

Fleming's Right hand rule

Self-induction

Mutual Inductance

AC and DC generators

Eddy current

Transformer

Power losses

Alternating current

Atomic physics

Production of Cathode rays

X ray spectra

X ray diffraction

Bragg's law

Particle nature of energy

Photo electric effect

Laws of photo electric effect

Bohr's atom model

Microwave

Magnetron oscillator

Properties of microwaves