

UNIVERSITY OF ENGINEERING & MANAGEMENT**LECTURE WISE PLAN****Subject Name : PATHOLOGY**

Subject Code - PAM201

Year - Second Year

Total Hours : 50 Hrs

S.No.	Topics	Hours
1	Aims and objectives of study of pathology.	2H
2	Brief outline of cell injury, degeneration, necrosis and gangrene.	3H
3	Inflammation: Definition, vascular and cellular phenomenon difference between Transudate and exudates. Granuloma.	4H
4	Circulatory disturbances: Hemorrhage, Embolism Thrombosis Infraction, shock, Volkmann's ischemic contracture.	4H
5	Blood disorder: Anemia, Bleeding disorder.	3H
6	CVS: Heart and Blood vessels, Coronary heart disease.	3H
7	Respiratory System: Ch. Bronchitis, Asthma Bronchiectasis, Emphysema, COPD etc.	5H
8	Bones and Muscles: Arthritis & Spondyloarthropathy.	3H
9	PNS and Muscles: Neuropathies, Poliomyelitis & Myopathies etc.	4H
10	CNS: Infection, Demyelinating disease, Degenerative disease etc.	4H
11	Neoplasia.	3H
12	Growth and its disorders like hypertrophy hyperplasia & atrophy.	3H
13	Autoimmune diseases.	3H
14	Healing and repair.	3H
15	Diabetes mellitus and gout	3H

Subject Name : Microbiology

Subject Code - PAM201

Year - Second Year

Total Hours : 50 Hrs

S.No.	Topics	Hours
1	Introduction and History of Microbiology	3H
2	General lectures on Microorganisms (brief).	3H
3	Sterilization and asepsis.	3H
4	Infection- Source of infection and Entry and its Spread	4H
5	Immunity- Natural and Acquired	4H
6	Allergy and hypersensitivity.	3H
7	Outline of common pathogenic bacteria and diseases produced by them.	
	a. Respiratory tract infections.	3H
	b. Meningitis.	2H
	c. Enteric infections.	3H
	d. Anaerobic infections.	3H
	e. Urinary tract infections.	3H
	f. Leprosy, tuberculosis and miscellaneous infections.	3H
	g. Wound infections.	2H
h. Sexually transmitted diseases.	3H	
8	Virology- virus infections with special mention of Hepatitis.	4H
9	Poliomyelitis & rabies.	4H

UNIVERSITY OF ENGINEERING & MANAGEMENT

LECTURE WISE PLAN

Subject Name : Pharmacology (Theory)

Subject Code - PHA201

Year - Second Year

Total Hours : 100 Hrs

S.No.	Topics	Hours
1	General Pharmacology:-Introduction and definitions, Nature and sources of drugs: Dosage forms of drugs. Routes of drug administration, Pharmacokinetics (Absorption, Bioavailability, Distribution, Metabolism Excretion, First order Zero order Kinetics); Pharmacodynamics (sites and mechanisms of drug action in brief, Adverse drug reactions, Margin of safety of drugs and factors influencing dosage and drug response)	12H
2	Drugs Affecting ANS:-General Introduction, Drug affecting parasympathetic nervous system, Drug affecting sympathetic nervous systems.	10H
3	Drugs Affecting Peripheral (Somatic) nervous System:- Skeletal Muscle Relaxants: Local Anesthetics.	10H
4	Renal and CVS:- Diuretics; Renin-angiotension system and its inhibitors, Drug treatment of Hypertension, Angina pectoris, Myocardial infarction Heart failure, and hypercholesterolemia.	10H
5	Anti-inflammatory drugs and related autacoids:- Histamine, Bradykinin, 5-HT and their antagonists; Prostaglandin's and leukotrienes; Nonsteroidal-Anti-inflammatory drug, Antirheumatic drugs and drugs used in gout.	10H
6	Drugs Affecting CNS:-General anesthetics, Anxiolytics and hypnotics; Alcohol, Opioid analgesis Drug dependence and abuse Antiepileptic drugs, Drug therapy for Neurodegenerative disorders.	10H
7	Endocrines:- Parathyroid hormone, Vitamin D, calcitonin and drugs affecting Calcium balance, Thyroid and antithyroid drugs; Adrenocortical and anabolic steroids, Insulins and Oral Hypoglycaemic agents.	10H
8	Drugs Affecting Respiratory System:- Drug therapy of bronchial asthma and chronic obstructive pulmonary disease.	10H
9	Chemotherapy:- Introduction; sulfonamides, Fluoroquinolones, Penicillins, Cephalosporins, newer B-lactam antibiotic, aminoglycosides Macrolides and Newer antibiotics, Tetracyclines Chloramphenicol, Chemotherapy of Tuberculosis and leprosy, antiseptics-disinfectants.	10H
10	Miscellaneous Topics:- Management of stroke, Toxicology and heavy metal poisoning, special aspects of paediatric and geriatric pharmacology; Drug interactions with drugs commonly used by physiotherapists; Hematinics, vitamins and antioxidants.	8H

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LECTURE WISE PLAN

Subject Name : Exercise Therapy-II (Theory)

Subject Code - EXT201

Year - Second Year

Total Hours : 100 Hrs

S.No.	Topics	Hours
1	Therapeutic exercises – impact on physical function, classification, techniques, indications, contraindications, assessment and evaluation of patient.	7H
2	Range of motion & types of ROM exercises	3H
3	Resistance exercises and adaptation of skeletal muscles	5H
4	Principles of aerobic exercises & its physiological response, testing as basis of aerobic program	6H
5	Determinants of exercise program.	4H
6	Stretching Techniques and its determinants.	5H
7	Peripheral and spinal joint mobilization techniques.	7H
8	Individual, group and mass exercises, maintenance exercises, plan of exercise-therapy tables and schemes	3H
9	Functional Re-education- techniques to re-educate ADL functions.	5H
10	Principles of Traction, physiological and therapeutic effects, classification, types, indications, contraindications, techniques of application, operational skills and precautions.	7H
11	Taping and bandaging techniques.	3H
12	P.N.F: Detail theory of proprioceptive-neuro muscular facilitation techniques.	5H
13	Co-ordination Exercises: Definition of coordination movements. Incoordinated movements, Factors for coordinated movements, technique of coordination exercises. Techniques to improve static and dynamic balance.	6H
14	Posture: Types, factors responsible for good posture, factors for poor posture, principles of development of good posture, assessment of Posture.	4H
15	Gait: Analysis of normal gait with muscle work, various pathological gaits.	5H
16	2point, 3point & 4point gait: Introduction, crutch measurement, crutch balance, various types of crutch gait in details	6H
17	Breathing exercises: Physiology of respiration, types of breathing exercises, technique if various types of breathing excises, its effects and uses. Pulmonary exercises & postural drainage	5H

18	Hydrotherapy: Introduction, various types of hydrotherapy units, construction and equipments used in hydrotherapy Principles, indications, contraindication, effects and uses of hydrotherapy. Precautions towards patient, towards therapist, equipment unit etc.	5H
19	Exercises for normal person – Importance and effects of exercise to maintain optimal health and its role in prevention of disease. Exercise prescription for different age groups/ occupational demands etc.	4H
20	Yoga-Definition-History-Principles-Concepts, General effects of yogic posture on the body.	5H

UNIVERSITY OF ENGINEERING & MANAGEMENT

LECTURE WISE PLAN

Subject Name : Exercise Therapy-II (Practical)

Subject Code - EXT291

Year - Second Year

Total Hours : 100 Hrs

S.No.	Topics	Hours
1	Assessment and evaluative procedures including motor, sensory, neuromotor coordination, vital capacity, limb length.	10H
2	Resistive Exercise.	10H
3	Range of motion exercise.	10H
4	Stretching.	10H
5	Traction techniques.	5H
6	Functional re-education.	10H
7	Taping and bandaging techniques.	5H
8	Assessment of Posture using plumb line.	5H
9	Assess and evaluate equilibrium/ balance and techniques to improve balance.	5H
10	Peripheral Joint Mobilization techniques.	10H
11	Breathing exercise and postural drainage	10H
12	Gait and crutch walking	5H
13	Application of PNF techniques and patterns.	5H

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LECTURE WISE PLAN

Subject Name : Electro Therapy-II (Theory)

Subject Code - ELT201

Year - Second Year

Total Hours : 100 Hrs

S.No.	Topics	Hours
1	MEDIUM FREQUENCY CURRENT (interferential current)	10H
	Definition, characteristics, physiological/therapeutic effect of I.F current, indication, technique of application, contraindication and precaution.	
2	HIGH FREQUENCY CURRENT	20H
	a. SHORT WAVE DIATHERMY - Introduction, physiological effect and therapeutic effect of SWD, method of application (capacitor field method and cable method etc.) technique of treatment, indication, contraindication and dangers.	
	b. PULSED SWD - Definition, characteristics, mechanism of work, physiological effect and therapeutic effects, indications, techniques of application, principle of treatment and contraindication.	
	c. MICROWAVE DIATHERMY -	
	· Introduction and characteristics.	
	· Physiological effect.	
	· Therapeutic effect	
	· Techniques of application and principle of treatment.	
· Dangers of microwave diathermy		
3	LASER	10H
	· Introduction and characteristics.	
	· Effect on tissue.	
	· Therapeutic effect	
4	ULTRASONIC THERAPY	15H
	· Introduction and characteristics.	
	· U.S therapy parameters.	
	· Coupling media	
	· Therapeutic effects.	
	· Indications, contraindications and dangers.	
	· Testing of apparatus	
	· Technique of application and dosage	
5	CRYOTHERAPY	10H
	· Introduction, physical principles	
	· Physiological effects	
	· Indication and contraindication	

	· Therapeutic effects and technique of application	
6	BIO-FEEDBACK	15H
	· Introduction, principles of bio-feedback	
	· Therapeutic effects of bio-feedback	
	· Indication and contraindication	
	· Technique of treatment	
7	Electro diagnosis- EMG and ENG studies, techniques etc.	10H
8	ADVANCED ELECTROTHERAPY	10H
	Combined therapy-principle, therapeutic uses and indication like U.S therapy with stimulation or TENS etc.	

UNIVERSITY OF ENGINEERING & MANAGEMENT

LECTURE WISE PLAN

Subject Name : Electro Therapy-II (Practical)

Subject Code - ELT291

Year - Second Year

Total Hours : 100 Hrs

S.No.	Topics	Hours
1	Testing of Electrotherapy apparatus.	10H
2	Technique of application of electrotherapy treatment modalities (demonstration and practice).	50H
3	Electro-diagnosis (demonstration and practice of following electro-diagnostic measures)	20H
	a. F.G test	
4	Observe EMG and NCV- demonstration only	10H
5	Observe Biofeedback Unit.	10H

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LECTURE WISE PLAN

Subject Name : Community Medicine (Theory)

Subject Code - COM201

Year - Second Year

Total Hours : 100 Hrs

S.No.	Topics	Hours
1	General concepts of health diseases, with reference to natural history of disease with pro-pathogenic and pathogenic phases. The role of socio-economic and cultural environment in health and disease. Epidemiology, definition and scope.	10H
2	Public health administration an overview of the health administration set up at Central and state levels.	8H
3	The national health programme -highlighting the role of social, economic and cultural factors in the implementation of the national programme.	8H
4	Health problems of vulnerable groups-pregnant and lactating women, infants and pre-school children, occupational groups.	8H
5	Occupational Health-definition, scope occupational disease prevention of occupational disease and hazards.	6H
6	Social security and other measurement for the protection from occupational hazard accident and diseases. Details of compensation acts.	8H
7	Family planning – objectives of national family planning programmes and family methods. A general idea of advantage and disadvantages of the methods.	8H
8	Mental health emphasis on community aspects of mental, role of Physiotherapy in mental health problems such as mental retardation etc.	6H
9	Communicable disease- an overall view of communicable disease classifies according to principle mode of transmission role of insect and other factors.	8H
10	International health agencies.	6H
11	Community medicine and rehabilitation epidemiology, habitat, nutrition, environment anthropology. a) The philosophy and need of rehabilitation b) Principles of physical medicine c) Basic principles of administration or organization	18H
12	Introduction to community health.	6H

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LECTURE WISE PLAN

Subject Name : Biomechanics & Kinesiology (Theory) Subject Code - BIK201

Year - Second Year

Total Hours : 100 Hrs

S.No.	Topics	Hours
1	Essential Concepts	15H
	a. Motion and forces, Axis and planes, Mechanical lever, lever in Human body.	
	b. Force distribution-linear force, resultant force & equilibrium, parallel forces in one plan concurrent force.	
	c. Newton's law – Gravity and its effects on human body	
	d. Forces and moments in action	
	e. Concepts of static equilibrium and dynamic equilibrium	
	f. Composition and resolution of forces	
	g. Friction	
	i. Pulleys.	
2	Joint Structure and Functions	10H
	a. Basic Principles of joint structure and function.	
	b. Tissues present in and around joints including fibrous tissue, bone cartilage, connective tissue, ligaments, tendons etc.	
	c. Classification of joints.	
3	Muscle Structure and Functions	15H
	a. Mobility and Stability functions of muscle	
	b. Elements of muscle structures and its properties.	
	c. Types of muscle contraction and muscle work.	
	d. Classification of muscles and their functions	
	e. Group action of muscles, coordinated movement.	
4	Kinematics and Kinetics Concepts of	25H
	a. Upper Extremity	
	i) Scapulo-shoulder Joint	
	ii) Elbow Joint	
	iii) Wrist Joint & Hand	
	b. Lower Extremity	
	i) Hip & pelvis	
	ii) Knee joint	
	iii) Patello femoral joint	
	iv) Ankle and foot	
c. Temporomandibular joint		

5	Biomechanics of vertebral column	10H
6	Biomechanics of Gait:	15H
	a. Gait cycle	
	b. Spatio-temporal parameters of gait	
	c. Kinematics and Kinetics of human gait	
	d. Determinants of gait	
e. Gait deviations in various orthopedic/neurological conditions		
7	Posture:	10H
	a. Anatomical aspects of posture	
	b. Factors affecting posture	
	c. Assessment of Posture	
	d. Types of Posture	
e. Postural deviation		