

MONTHLY LESSON PLAN
B. SC. MEDICAL 1ST SEMESTER
SUBJECT: BOTANY, SESSION 2023-2024

CMG GCW BHOIA KHERA, FATEHABAD

NAME OF THE ASSISTANT PROFESSOR	DR. VIKAS KUMAR JANGU
CLASS AND SECTION:	BSC I (MEDICAL) 1ST SEMESTER
SUBJECT:	BOTANY PAPER- I AND PAPER- II
NOMENCLATURE:	PAPER- I DIVERSITY OF MICROBES PAPER- II CELL BIOLOGY
WEEK	TOPICS
JULY 2023	<p>ORIENTATION FOR NEW COMERS</p> <p>BACTERIA: STRUCTURE, NUTRITION, REPRODUCTION AND ECONOMIC IMPORTANCE: GENERAL ACCOUNT OF CYANOBACTERIA (WITH REFERENCE TO NOSTOC)</p> <p>ALGAE: GENERAL CHARACTERS, CLASSIFICATION (UPTO CLASSES) AND ECONOMIC IMPORTANCE: IMPORTANT FEATURES AND LIFE-HISTORY (EXCLUDING DEVELOPMENT) OF VOLVOX, OEDOGONIUM (CHLOROPHYCEAE), VAUCHERIA (XANTHOPHYCEAE), ECTOCARPUS (PHAEOPHYCEAE) AND POLYSIPHONIA (RHODOPHYCEAE)</p> <p>REVISION AND DOUBTS</p> <p>TEST: BACTERIA</p> <p>TEST: ALGAE</p> <p>ASSIGNMENT DISCUSSION</p>
AUGUST 2023	<p>VIRUSES : GENERAL ACCOUNT OF VIRUSES INCLUDING STRUCTURE OF TMV AND BACTERIOPHAGES.</p> <p>FUNGI: GENERAL CHARACTERS, CLASSIFICATION (UPTO CLASSES) AND ECONOMIC IMPORTANCE; IMPORTANT FEATURES AND LIFE-HISTORY OF PHYTOPHTHORA (MASTIGOMYCOTINA), MUCOR (ZYGOMYCOTINA), PENICILLIUM (ASCOMYCOTINA), PUCCINIA, AGARICUS (BASIDIOMYCOTINA), COLLETOTRICHUM (EUTEROMYCOTINA); GENERAL ACCOUNT OF LICHENS.</p> <p>REVISION AND DOUBTS</p> <p>TEST: VIRUSES</p> <p>TEST : FUNGI</p> <p>ASSIGNMENT DISCUSSION</p>
SEPTEMBER 2023	<p>THE CELL ENVELOPES: STRUCTURE AND FUNCTIONS CELL WALL AND PLASMA MEMBERANE. ULTRASTRUCTURE AND FUNCTION OF NUCLEUS, GOLGI APPARATUS, ENDOPLASMIC RETICULUM, CHLOROPLAST, MITOCHONDRIA, LYSOSOMES, PEROXISOMES AND VACUOLES.</p>
OCTOBER 2023	<p>CELL DIVISION: MITOSIS AND MEIOSIS</p> <p>CHROMOSOME: MORPHOLOGY, ORGANISATION, ULTRASTRUCTURE OF CENTROMERE AND TELOMERE; CHROMOSOMAL ALTERATION-DELETIONS, DUPLICATIONS, TRANSLOCATIONS, INVERSIONS; VARIATIONS IN CHROMOSOME NUMBER-ANEUPLOIDY; POLYPLOIDY; SEX CHROMOSOMES AND SEX DETERMINATION.</p> <p>REVISION AND DOUBTS</p> <p>TEST: CELL DIVISION</p> <p>TEST :CHROMOSOME:</p>
NOVEMBER 2023	<p>TEST:</p> <p>ASSIGNMENTS DISCUSSION: PAPER II</p> <p>REVISION AND DOUBTS OF PAPER- I: COMPLETE SYLLABUS SECTION A</p> <p>REVISION AND DOUBTS OF PAPER- II: COMPLETE SYLLABUS SECTION A</p> <p>REVISION AND DOUBTS: COMPLETE SYLLABUS</p> <p>REVISION AND DOUBTS: COMPLETE SYLLABUS</p> <p>REVISION WORK</p>


DR. VIKAS KUMAR JANGU

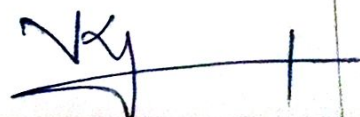
MONTHLY LESSON PLAN
B. Sc. MEDICAL 2nd SEMESTER
SUBJECT: BOTANY, SESSION 2023-2024
CMG GCW BHOJA KHERA, FATEHABAD

NAME OF THE ASSISTANT PROFESSOR	DR. VIKAS KUMAR JANGU
CLASS AND SECTION:	BSC I (MEDICAL) 1ST SEMESTER
SUBJECT:	BOTANY PAPER- I AND PAPER- II
NOMENCLATURE:	PAPER- I DIVERSITY OF ARCHGONIATES PAPER- II GENETICS
MONTH	TOPICS
JANUARY 2024	BRYOPHYTE : GENERAL CHARACTERS, CLASSIFICATION (UPTO CLASSES), ALTERNATION OF GENERATIONS, STRUCTURE AND REPRODUCTION (EXCLUDING DEVELOPMENT) OF <i>MARCHANTIA</i> (HEPATICOPSIDA), <i>ANTHOCEROS</i> (ANTHOCEROTOPSIDA) AND <i>FUNARIA</i> (BRYOPSIDA)
FEBRUARY 2024	PTERIDOPHYTA : GENERAL CHARACTERS, CLASSIFICATION (UPTO CLASSES), ALTERNATION OF GENERATIONS, STRUCTURE AND REPRODUCTION (EXCLUDING DEVELOPMENT) OF <i>RHYNIA</i> (PSILOPSIDA), <i>SELAGINELLA</i> (LYCOPSIDA), <i>EQUISETUM</i> (SPHENOPSIDA) AND <i>PTERIS</i> (PTEROPSIDA).
MARCH 2024	GENETIC MATERIAL : DNA THE GENETIC MATERIAL DNA STRUCTURE AND REPLICATION, DNA-PROTEIN INTERACTION, THE NUCLEOSOME MODEL, GENETIC CODE, SATELLITE AND REPETITIVE DNA. GENETIC INHERITANCE : MENDELISM: LAWS OF SEGREGATION AND INDEPENDENT ASSORTMENT; LINKAGE ANALYSIS; ALLELIC AND NON-ALLELIC INTERACTION. GENETIC VARIATIONS : MUTATION-SPONTANEOUS AND INDUCED; TRANSPOSABLE GENETIC ELEMENTS; DNA DAMAGE AND REPAIR.
APRIL 2024	GENE EXPRESSION : MODERN CONCEPT OF GENE; RNA; RIBOSOMES; TRANSFER OF GENETIC INFORMATION-TRANSCRIPTION AND TRANSLATION (PROTEIN SYNTHESIS); REGULATION OF GENE EXPRESSION IN PROKARYOTES AND EUKARYOTES; 1-D, 2D AND 3D STRUCTURE OF PROTEINS. EXTRA NUCLEAR INHERITANCE: PRESENCE AND FUNCTION OF MITOCHONDRIAL AND PLASTID DNA: PLASMIDS. REVISION AND DOUBTS OF PAPER- I: COMPLETE SYLLABUS REVISION AND DOUBTS OF PAPER- II: COMPLETE SYLLABUS REVISION AND DOUBTS: COMPLETE SYLLABUS REVISION WORK


DR. VIKAS KUMAR JANGU

MONTHLY LESSON PLAN
B. SC. MEDICAL 3RD SEMESTER
SUBJECT: BOTANY, SESSION 2023-2024

CMG GCW BHOIA KHERA, FATEHABAD	
NAME OF THE ASSISTANT PROFESSOR	DR. VIKAS KUMAR JANGU
CLASS AND SECTION:	BSC I (MEDICAL) 3RD SEMESTER
SUBJECT:	BOTANY PAPER- I AND PAPER- II
NOMENCLATURE:	PAPER- I : BIOLOGY AND DIVERSITY OF SEED PLANTS-I PAPER- II : PLANT ANATOMY
WEEK	TOPICS
JULY 2023	ORIENTATION FOR NEW COMERS GENERAL CHARACTERS AND DIVERSITY OF GYMNOSPERMS (SEED PLANTS WITHOUT FRUITS) PILGER AND MELCHIOR'S (1954) SYSTEM OF CLASSIFICATION. GEOLOGICAL TIME TABLE ; EVOLUTION OF SEED HABIT. PALAEOBOTANY-FOSSILS AND FOSSILIZATION (PROCESSES INVOLVED, TYPE OF FOSSILS AND IMPORTANCE OF FOSSILS); RECONSTRUCTION OF THE FOLLOWING FOSSIL PLANTS: LYGINOPTERIS WILLIAMSONIA CYCADEOIDEA (=BENNETTITES) REVISION AND DOUBTS
AUGUST 2023	MORPHOLOGY AND ANATOMY OF ROOT, STEM, LEAF/LEAFLET AND REPRODUCTIVE PARTS INCLUDING MODE OF REPRODUCTION, LIFE-CYCLE AND ECONOMIC IMPORTANCE OF THE FOLLOWING: CYCAS PINUS EPHEDRA GENERAL CHARACTERS OF ANGIOSPERMS INCLUDING PRIMITIVE ANGIOSPERMS (AMENTIFERAE, RANALES, MAGNOLIALES) REVISION AND DOUBTS TEST ASSIGNMENT DISCUSSION: PAPER I
SEPTEMBER 2023	DIVERSITY IN PLANTS FORMS-ANNUALS, BIENNIALS AND PERENNIALS. TISSUES-MERISTEMATIC AND PERMANENT (SIMPLE AND COMPLEX) THE SHOOT SYSTEM-SHOOT APICAL MERISTEM AND ITS HISTOLOGICAL ORGANIZATIONS (MONOCOT AND DICOT STEM) CAMBIUM-STRUCTURE AND FUNCTIONS. SECONDARY GROWTH IN DICOT STEM, CHARACTERISTICS OF GROWTH RINGS; SAP WOOD AND HEART WOOD, PERIDERM; ANAMALOUS SECONDARY GROWTH (DRACAENA, BOERHAAVIA AND ACHYRATHES)
OCTOBER 2023	LEAF-TYPES OF LEAVES (SIMPLE AND COMPOUND) : PHYLLOTAXY. EPIDERMIS-UNISERiate AND MULTISERiate, EPIDERMAL APPENDAGES AND THEIR MORPHOLOGICAL TYPES. ANATOMY OF TYPICAL MONOCOT AND DICOT LEAF AND CELL INCLUSIOND IN LEAVES; LEAF ABSCISSION. STOMATAL APPARATUS AND THEIR MPRPHOLOGICAL TYPES. ROOT SYSTEM-THE ROOT APICAL MERISTEM; THEIR HISTOLOGICAL ORGANISATION (MONOCOT AND DICOT ROOT) SECONDARY GROTH IN ROOT. STRUCTRAL MODIFICATION IN ROOTS-STORAGE (BETA), RESPIRATORY (RHIZOPHORA), EPIPHYTIC (VANDA). REVISION AND DOUBTS TEST ASSIGNMENT DISCUSSION: PAPER I
NOVEMBER 2023	TEST: ASSIGNMENTS DISCUSSION: PAPER II REVISION AND DOUBTS OF PAPER- I REVISION AND DOUBTS OF PAPER- II REVISION AND DOUBTS: COMPLETE SYLLABUS REVISION AND DOUBTS: COMPLETE SYLLABUS REVISION WORK



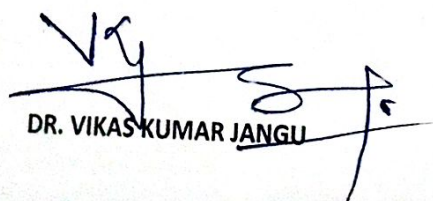
MONTHLY LESSON PLAN
B. SC. MEDICAL 4TH SEMESTER
SUBJECT: BOTANY, SESSION 2023-2024
CMG GCW BHOIA KHERA, FATEHABAD

NAME OF THE ASSISTANT PROFESSOR	DR. VIKAS KUMAR JANGU
CLASS AND SECTION:	BSC I (MEDICAL) 4TH SEMESTER
SUBJECT:	BOTANY PAPER- I AND PAPER- II
NOMENCLATURE:	PAPER- I BIOLOGY AND DIVERSITY OF SEED PLANTS- II PAPER- II PLANT EBBRYOLOGY
MONTH	TOPICS
JANUARY 2024	TAXONOMY AND SYSTEMATICS, FUNDAMENTAL COMPONENTS OF TAXONOMY (IDENTIFICATIN, CLASSIFIVATION DESCRIPTION, NOMENCLATURE AND PHYLOGENY). ROLE OF CHEMOTAXY, CYTOTAXONOMY AND TAXIMETRICS IN RELATION TO TAXONOMY. BOTANICAL NOMENCLATURE, PRINCIPLES AND RULES, PRINCIPLE OF PRIORITY. TYPE CONCEPT, TAXONOMIC RANKS. KEYS TO IDENTIFICATION OF PLANTS. FLOWER AND TYPES OF INFLORESCENCE.
FEBRUARY 2024	SALIENT FEATURES OF THE SYSTEMS OF CLASSIFICATION OF ANGIOSPERMS PROPOSED BY BENTHAM AND HOOKER AND ENGLER AND PRANTL. DIVERSITY OF FLOWERING PLANTS : DIAGNOSTIC FEATURES AND ECONOMIC IMPORTANCE OF THE FOLLOWING FAMILIES: RANUNCULACEAE, BRASSICACEAE, MALVACEAE, EUPHORBIACEAE, RUTACEAE, LEGUMINOSAE, APIACEAE, ASCLEPIADACEAE, LAMIACEAE, SOLANACEAE, ASTERACEAE, LILIACEAE AND POACEAE.
MARCH 2024	FLOWER-A MODIFIED SHOOT; FUNCTIONS OF VARIOUS FLORAL PARTS. MICROSPORANGIUM, ITS WALL AND DEHISCENCE MECHANISM. POLLEN-PISTIL INTERACTION; SELF INCOMPATIBILITY. POLLINATION (TYPE AND AGENCIES); POLLEN GERMINATION (MICROGAMETOGENESIS). MALE GAMETOPHYTE. STRUCTURE OF MEGASPORANGIUM (OVULE), ITS CURVATURE, MEGASPOROGENESIS AND MEGAGAMETOGENESIS. FEMALE GAMETOPHYTE (MONO-,BI- AND TETRASPORIC). DOUBLE FERTILIZATION. ENDOSPERM TYPES AND ITS BIOLOGICAL IMPORTANCE. EMBRYOGENESIS IN DICOT AND MONOCOT; POLYEMBRYONY. STRUCTURE OF DICOT AND MONOCOT SEED. FRUIT TYPES; DISPERSAL MECHANISM IN FRUITS AND SEEDS
APRIL 2024	FEMALE GAMETOPHYTE (MONO-,BI- AND TETRASPORIC). DOUBLE FERTILIZATION. ENDOSPERM TYPES AND ITS BIOLOGICAL IMPORTANCE. EMBRYOGENESIS IN DICOT AND MONOCOT; POLYEMBRYONY. STRUCTURE OF DICOT AND MONOCOT SEED. FRUIT TYPES; DISPERSAL MECHANISM IN FRUITS AND SEEDS CLASS TEST AND ASSIGNMENTS REVISION AND DOUBTS OF PAPER- II: COMPLETE SYLLABUS REVISION WORK


Dr. VIKAS KUMAR JANGU

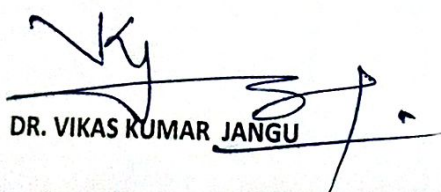
MONTHLY LESSON PLAN
B.SC. MEDICAL 5TH SEMESTER
SUBJECT: BOTANY, SESSION 2023-2024

CMG GCW BHOIA KHERA, FATEHABAD	
NAME OF THE ASSISTANT PROFESSOR	DR. VIKAS KUMAR JANGU
CLASS AND SECTION:	BSC III (MEDICAL) 5TH SEMESTER
SUBJECT:	BOTANY PAPER- I AND PAPER- II
NOMENCLATURE:	PAPER- I : PLANT PHYSIOLOGY PAPER- II : ECOLOGY
WEEK	TOPICS
JULY 2023	ORIENTATION FOR NEW COMERS PLANT-WATER RELATIONS ABSORPTION OF WATER TRANSLOCATION OF WATER TRANSPIRATION MINERAL NUTRITION UPTAKE OF MINERAL NUTRITION TRANSLOCATION OF ORGANIC SUBSTANCES PHOTOSYNTHESIS-I (INTRODUCTION) REVISION AND DOUBTS
AUGUST 2023	PHOTOSYNTHESIS-II (LIGHT PHASE) PHOTOSYNTHESIS-III (DARK PHASE) RESPIRATION-I (INTRODUCTION) RESPIRATION- II (MECHANISM OF RESPIRATION) SEED GERMINATION AND DORMANCY SENESCENCE AND FRUIT RIPENING PHYSIOLOGY OF FLOWERING PLANT MOVEMENTS REVISION AND DOUBTS TEST ASSIGNMENT DISCUSSION: PAPER I
SEPTEMBER 2023	AN INTRODUCTION OF ECOLOGY CLIMATIC FACTORS TOPOGRAPHIC FACTORS BIOTIC FACTORS ECOLOGICAL ADAPTATIONS POPULATION ECOLOGY COMMUNITY ECOLOGY PLANT SUCCESSION ECOSYSTEM REVISION AND DOUBTS TEST
OCTOBER 2023	BIOGEOCHEMICAL CYCLES PHYTOGEOGRAPHY AIR POLLUTION WATER POLLUTION
NOVEMBER 2023	TEST ASSIGNMENT DISCUSSION: PAPER II REVISION AND DOUBTS OF PAPER- I REVISION AND DOUBTS OF PAPER- II REVISION AND DOUBTS: COMPLETE SYLLABUS REVISION WORK


DR. VIKAS KUMAR JANGU

MONTHLY LESSON PLAN
B.SC. MEDICAL 6TH SEMESTER
SUBJECT: BOTANY, SESSION 2023-24

CMG GCW BHOIA KHERA, FATEHABAD	
NAME OF THE ASSISTANT PROFESSOR	DR. VIKAS KUMAR JANGU
CLASS AND SECTION:	BSC III (MEDICAL) 6TH SEMESTER
SUBJECT:	BOTANY PAPER- I AND PAPER- II
NOMENCLATURE:	PAPER- I : BIOCHEMISTRY AND PLANT BIOTECHNOLOGY PAPER- II : ECONOMIC BOTANY
WEEK	TOPICS
JANUARY 2024	ORIENTATION FOR NEW COMERS BASICS OF ENZYMOLOGY: DISCOVERY AND NOMENCLATURE; CHARACTERISTICS OF ENZYMES; CONCEPT OF HOLOENZYME, APOENZYME, COENZYME AND CO-FACTORS; REGULATION OF ENZYME ACTIVITY; MECHANISM OF ACTION. GROWTH AND DEVELOPMENT : DEFINATION; PHASES OF GROWTH AND DEVELOPMENT; PLANT HORMONES-AUXINS, GIBBERELLIN, CYTOKININS, ABSCISSIC ACID AND ETHYLENE, HISTORY OF THEIR DISCOVERY, MECHANISM OF ACTION LIPID METABOLISM : STRUCTURE AND FUNCTION OF LIPIDS; FATTY ACID BIOSYNTHESIS; B-OXIDATION; SATURATED AND UNSATURATED FATTY ACIDS; STORAGE AND MOBILIZATION OF FATTY ACIDS. REVISION AND DOUBTS
FEBRUARY 2024	NITROGEN METABOLISM: BIOLOGY OF NITROGEN FIXATION; IMPORTANCE OF NITRATE REDUCTASE AND ITS REGULATION; AMMONIUM ASSIMILATION. GENETIC ENGINEERING AND BIOTECHNOLOGY : TOOLS AND TECHNIQUES OF RECOMBINANT DNA TECHNOLOGY; CLONING VECTORS; GENOMIC AND CDNA LIBRARY, TRANSPOSABLE ELEMENTS; ASPECTS OF PLANT TISSUE CULTURE; CELLULAR TOTIPOTENCY, DIFFERENTIATION AND MORPHOGENESIS; BIOLOGY OF AGRO-BACTERIUM; VECTORS FOR GENE DELIVERY AND MARKER GENES. REVISION AND DOUBTS TEST ASSIGNMENT DISCUSSION: PAPER I
MARCH 2024	ORIGIN, DISTRIBUTION, BOTANICAL DESCRIPTION, BRIEF IDEA OF CULTIVATION AND USES OF THE FOLLOWING : FOOD PLANTS- CEREALS (RICE, WHEAT AND MAIZE) PULSES (GRAM, ARHAR AND PEA) VEGETABLES (POTATO, TOMATO AND ONION). FIBRES- COTTON, JUTE AND FLAX OILS- GROUNDNUT, MUSTARD, SUNFLOWER AND COCONUT. REVISION AND DOUBTS TEST
APRIL 2024	MORPHOLOGY OF PLANT PART USED, BRIEF IDEA OF CULTIVATION AND USES OF THE FOLLOWING : SPICES-CORIANDER, FERULA, GINGER, TURMERIC, CLOVES MEDICINAL PLANTS – CINCHONA, RAUWOLFIA, ATROPA, OPIUM, CANNABIS, NEEM. BOTANICAL DESCRIPTION AND PROCESSING OF : BEVERAGES-TEA AND COFFEE; RUBBER-HEVEA; SUGAR-SUGARCANE. GENERAL ACCOUNT AND SOURCES OF TIMBER; ENERGY PLANTATIONS AND BIO-FUELS. TEST ASSIGNMENT DISCUSSION: PAPER I REVISION AND DOUBTS OF PAPER- II REVISION AND DOUBTS: COMPLETE SYLLABUS REVISION WORK


DR. VIKAS KUMAR JANGU