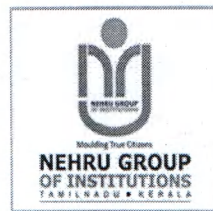




NEHRU COLLEGE OF PHARMACY

Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director
of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program
accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956.
Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India
(Sponsors: Nehru College of Educational and Charitable Trust)



3.1.1 Course Outcomes of All Courses in 2017- 2021

On successful completion of this Course, students will be able to:		
C101: 2017- 2018- Human Anatomy and Physiology I Theory		
SNO	Bloom Level	Statements
C101.1	K1	Know the definition and scope of anatomy and physiology, structure and functions of cell and tissues, general principles of cell communication and Intracellular signaling pathway and cell division.
C101.2	K1	Know the types of bone, salient features and functions of various types of bones and joints, physiology of muscle contraction. Structure and functions of eye, ear, nose and tongue and their disorders.
C101.3	K4	Understand various body fluids, composition and functions of blood, hemopoiesis, formation of haemoglobin, anemia, mechanisms of coagulation, blood grouping, Rh factors and lymphatic system
C101.4	K1	Know the structure and functions of sympathetic and parasympathetic nervous system. Also understand the origin and functions of spinal and cranial nerves.
C101.5	K1	Understand the anatomy of heart, blood circulation, blood vessels. Also know the structure and functions of various blood vessels, cardiac output and cardiac cycle. Knowledge about the regulation of blood pressure and pulse.

On successful completion of this Course, students will be able to:		
C102: 2017- 2018- Pharmaceutical Analysis I Theory		
SNO	Bloom Level	Statements
C102.1	K1	Understand the methods of quality control and assurance.
C102.2	K1, K3	Know and familiarize with principles of different volumetric analysis (neutralization, non-aqueous, precipitation, complex metric, redox).
C102.3	K4	Describe and familiarize with the various methods of different volumetric analysis (neutralization, non-aqueous, precipitation, complexometric, and redox).
C102.4	K5, K6	Develop analytical skills.
C102.5	K3	Understand the electrochemical methods for determination of compounds..



Vijay
Prof. Dr. D. VIJAY KUMAR
Principal
Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY

Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director

of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956.

Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India

(Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:		
C103: 2017- 2018- Pharmaceutics I Theory		
SNO	Bloom Level	Statements
C103.1	K3	Prepare different conventional dosage forms
C103.2	K3	Apply pharmacopoeia standards for the preparation of various dosage forms
C103.3	K1, K3	Classify various dosage forms and apply the principles of pharmaceutical science in formulation and dispensing various dosage forms
C103.4	K1	Handle the prescriptions.
C103.5	K1, K6	Perform pediatric dose calculations

On successful completion of this Course, students will be able to:		
C104: 2017- 2018- Pharmaceutical Inorganic Chemistry Theory		
SNO	Bloom level	Statements
C104.1	K1, K2	Understand importance of impurities ,history of pharmacopoeia, sources and types of impurities, limit test for chloride, sulphate, iron, arsenic, lead and heavy metals and also modified limit test
C104.2	K1,K3	Develop knowledge of acids, bases and buffers in pharmaceutical systems, preparation, calculations and methods of adjusting isotonicity. Functions of major physiological ions, physiological acid base balance, dentifrices, desensitizing agents.
C104.3	K1, K2, K3	Understand the concepts and methods of gastrointestinal agents acidifiers, antacid, cathartics, antimicrobials: mechanism, classification and its preparations
C104.4	K1, K3, K4	Understand about expectorants, emetics , astringents, poison and its antidote
C104.5	K1, K3	Acquire knowledge about radiopharmaceuticals , radio activity, measurement of radioactivity, precautions & pharmaceutical application of radioactive substance




Prof. Dr. D. VIJAY KUMAR
Principal

Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY

Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956. Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India (Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:		
C105: 2017- 2018- Communication skills Theory		
SNO	Bloom level	Statements
C105.1	K1,K2	Describe the way of communication process, illustrate the barriers of communication and how to overcome. Create their own perspectives in communication.
C105.2	K2,K4	Illustrate the elements of communication verbal, nonverbal. Summarize different styles of communication such as direct, spirited, systematic, considerate styles.
C105.3	K1,K5	Identify the basic listening skills such as self-awareness, active listening. Create effective writing methods.
C105.4	K6,K3	Summarize and practice interview skills, dos and don'ts of an interview. Prepare the presentation process such as presentation planning, structuring, delivering techniques etc.
C105.5	K2,K4	Illustrate the knowledge about how to conduct group discussion. Point out do's and don'ts of group discussion.

On successful completion of this Course, students will be able to:		
C106: 2017- 2018- Remedial biology Theory		
SNO	Bloom level	Statements
C106.1	K1	Understand the five kingdom classification and their salient features.
C106.2	K1	Acquire knowledge on plant anatomy and physiology.
C106.3	K1	Develop knowledge on animal anatomy and physiology.
C106.4	K1	Understand diversity of living world.
C106.5	K1	Acquire knowledge on structural and functional systems of plant and animal kingdom.

On successful completion of this Course, students will be able to:		
C106: 2017- 2018- Remedial Mathematics Theory		
SNO	Bloom Level	Statements
C106.1	K1, K3	Know the theory and their application in pharmacy.
C106.2	K3, K6	Solve the different types of problems by applying theory.
C106.3	K1, K3	Appreciate the important application of mathematics.
C106.4	K1	Acquire knowledge about the applications of mathematics in industrial Pharmacy.
C106.5	K1	Understand various methods in solving kinetic problems.



Vijay
Prof. Dr. D. VIJAY KUMAR
 Principal
 Nehru College of Pharmacy
 Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY


Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director
of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program
accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956.
Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India
(Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:		
C107: 2017- 2018- Human Anatomy and Physiology I Practical		
SNO	Bloom Level	Statements
C107.1	K1	Know the microscopic features of epithelial, connective, muscular and nervous Tissue
C107.2	K1	Identify and explain the features and functions of axial and appendicular bones
C107.3	K1	Determine bleeding time, clotting time, hemoglobin content and blood group. Also able to explain associated pathological conditions
C107.4	K4	Determine RBC and WBC content, and explain the associated pathological Conditions
C107.5	K4	Record the blood pressure by various methods

On successful completion of this Course, students will be able to:		
C108: 2017- 2018- Pharmaceutical Analysis I Practical		
SNO	Bloom Level	Statements
C108.1	K5	Describe and familiarize with handling of analytical weights and apparatus. Understand the method of determining impurity level.
C108.2	K6, K4	Develop the skills, evaluate, preparation and standardization of selected compounds
C108.3	K2, K3 K6	Understand assay procedures of selected compounds along with standardization of titrant
C108.4	K6	Know and familiarize with the estimation of compounds
C108.5	K2	Describe and apply laboratory skills in performing the analysis




Prof. Dr. D. VIJAY KUMAR
Principal
Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY

Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956. Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India
(Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:

C109: 2017- 2018- Pharmaceutics I Practical


SNO	Bloom Level	Statements
C109.1	K1	Acquire knowledge on various dosage forms and their preparations.
C109.2	K1	Aware of the importance of packaging, labelling, storing and dispensing of various dosage forms
C109.3	K1, K3	Makes them fit to work in the Industrial as well as in Pharmacy field with improved skills.
C109.4	K1, K3	Develop knowledge of how to use various equipment in the formulation unit
C109.5	K1, K6	Study on various additives/adjuncts used in various preparations

On successful completion of this Course, students will be able to:

C110: 2017- 2018- Pharmaceutical Inorganic Chemistry Practical

SNO	Bloom Level	Statements
C110.1	K1, K2, K3, K6	Perform the Limit test for Chlorides and Sulphates, Iron, Lead, Modified limit test for Chlorides and Sulphates
C110.2	K1, K2, K4	Perform the identification test for Magnesium hydroxide, Ferrous sulphate, Sodium bicarbonate, Calcium gluconate, Copper sulphate.
C110.3	K1, K3, K6	Perform Test for purity of Swelling power of Bentonite, Neutralizing capacity of aluminium hydroxide gel, Determination of potassium iodate and iodine in potassium Iodide.
C110.4	K1, K3, K5, K6	Prepare inorganic pharmaceuticals like Boric acid, Potash alum, Ferrous Sulphate
C110.5	K1, K3	Acquire knowledge in laboratory skills, preparations, testing of raw materials and to attain good laboratory practices.




Prof. Dr. D. VIJAY KUMAR
Principal
Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY


Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director
of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program
accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956.
Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India
(Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:		
C111: 2017- 2018- Communication skill Practical		
SNO	Bloom Level	Statements
C111.1	K3,K4	Perform the basic Communication activities such as Meeting People, Asking Questions, Making Friends, summarize DO's and Don'ts's etc.
C111.2	K1,K4	Describe and Practiced English pronunciation such as consonants, sounds, nouns, vowels etc.
C111.3	K1,K4	Describe and develop comprehension, communication, direct and indirect speech.
C111.4	K1,K5	Develop writing skills and effective writings.
C111.5	K1,K5	Improve interview handling skills, email etiquette and presentation skills.

On successful completion of this Course, students will be able to:		
C112: 2017- 2018- Remedial Biology Practical		
SNO	Bloom Level	Statements
C112.1	K1, K3	Understand the basic laboratory techniques.
C112.2	K1	Acquire knowledge on cell and its inclusions.
C112.3	K1	Develop knowledge on different plant parts & its modification.
C112.4	K1, K6	Understand and perform evaluation of various physiological parameters.
C112.5	K1, K3	Acquire knowledge on using computer models for the evaluation of structure & functions of plant and animal systems.




Prof. Dr. D. VIJAY KUMAR
Principal
Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



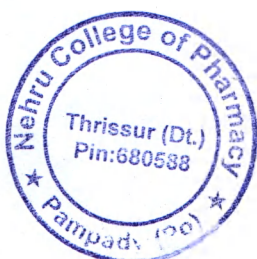
NEHRU COLLEGE OF PHARMACY


Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director
of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program
accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956.
Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India
(Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:		
C201: 2017- 2018- Human Anatomy and Physiology II Theory		
SNO	Bloom Level	Statements
C201.1	K1	Understand organization of nervous system including meninges, ventricles of brain and cerebrospinal fluid, the structure and function of brain.
C201.2	K1	Understand anatomy of GI Tract with special reference to anatomy and functions of stomach, digestion and absorption of nutrients and disorders of GIT. Also an idea on Energetics Formation.
C201.3	K3	Understand organs of respiratory system with special reference to Lungs, resuscitation methods, structure of urinary tract with special reference to anatomy of kidney and nephrons, urinary tract, and physiology of urine formation.
C201.4	K2	Summarize various hormones in the body, mechanism of hormone action, structure and functions of them and their disorders, especially the cause and effects of such disorders and their symptoms.
C201.5	K1	Understand the Anatomy of male and female reproductive system, Functions of male and female reproductive system. Information of genetics.

On successful completion of this Course, students will be able to:		
C202: 2017- 2018- Pharmaceutical Organic Chemistry I Theory		
SNO	Bloom Level	Statements
C202.1	K5	Develop an idea about classification, common and IUPAC system of Nomenclature and structural isomerism in organic compounds.
C202.2	K2	Explain about hybridization in alkanes, alkenes, and alkynes, stability of Conjugated dienes and about elimination reaction.
C202.3	K3	Make familiar with nucleophilic substitution reaction in alkyl halides and about alcohols.
C202.4	K4	Classify different types of named reaction and about nucleophilic addition reaction in carbonyl compounds.
C202.5	K1	Describe about different types of acids and aliphatic amines.




Prof. Dr. D. VIJAY KUMAR
Principal
Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY

Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director
of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program
accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956.
Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India
(Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:

C203: 2017- 2018- Biochemistry Theory

SNO	Bloom Level	Statements
C203.1	K1	Know about biomolecules and bioenergetics.
C203.2	K1	Acquire knowledge on the carbohydrate metabolism.
C203.3	K1	Develop knowledge on the lipids and amino acids metabolism.
C203.4	K1	Improve knowledge on the nucleic acids (DNA and RNA) metabolism and genetic information transfer.
C203.5	K1,K3	Get knowledge on importance of enzymes and their applications in field.

On successful completion of this Course, students will be able to:

C204: 2017- 2018- Pathophysiology Theory

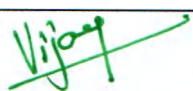
SNO	Bloom Level	Statements
C204.1	K1,K2, K3	Understand the causes and predisposing factors of various disease.
C204.2	K2,K4, K5	Improve knowledge about basic mechanism of various pathological condition.
C204.3	K1,K4	Acquire knowledge on sign and symptoms of various diseased condition.
C204.4	K1,K2	Identify the complication and methods to prevent disease.
C204.5	K3,K4, K6	Increase knowledge on practice medicine safely, rationally and effectively.

On successful completion of this Course, students will be able to:

C205: 2017- 2018-Computer Applications in Pharmacy Theory

SNO	Bloom Level	Statements
C205.1	K1,K3	Describe and classify the Digital number system and Information system software's.
C205.2	K1,K3	Describe the Web Technologies HTML,XML,CSS and Programming Languages and Databases MY SQL,MS ACCESS, Identify Drug databases for Pharmaceutical applications
C205.3	K1,K3	Identify the Computer applications in Drug storage, Pharmacokinetics, Hospital Clinical Pharmacy etc.
C205.4	K3,K1	Acquire knowledge about Bioinformatics.
C205.5	K3,K1	Improve the knowledge of Computer as data analysis in preclinical development.

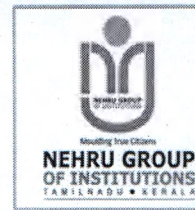



Prof. Dr. D. VIJAY KUMAR
Principal
Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY


Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director
of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program
accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956.
Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India
(Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:		
C206: 2017- 2018- Environmental sciences Theory		
SNO	Bloom Level	Statements
C206.1	K1, K5	Define and develop knowledge of various natural resources including Forest resources, Water resources, Mineral resources, Food resources, Energy resources, Land resource.
C206.2	K1	Study the role of individuals in conservation of natural resources and various methods of conservation of natural resources
C206.3	K1	Study in detail about Concept of an ecosystem, Structure and function of an ecosystem, types, characteristic features of different ecosystem including Forest ecosystem; Grassland ecosystem; Desert ecosystem; Aquatic ecosystems.
C206.4	K2	Understand the various types of Environmental Pollution including Air pollution, Water pollution, soil pollution.
C206.5	K6	Find out the various causes of pollution, their control measures etc.

On successful completion of this Course, students will be able to:		
C207: 2017- 2018- Human Anatomy and Physiology II Practical		
SNO	Bloom Level	Statements
C207.1	K1	Study the integumentary and special senses, nervous system and endocrine system using specimen and models.
C207.2	K4	Demonstrate the function of olfactory nerve, visual acuity, taste sensation colour vision, positive and negative feedback mechanism.
C207.3	K1	Study the digestive, respiratory, endocrine, nervous, urinary and reproductive systems with the help of models, charts.
C207.4	K1	Identify permanent slides of vital organs and gonads which enables student in identification and examination of structures learnt in theory.
C207.5	K3	Develop ability in Recording of body temperature and calculation of basal mass index.




Prof. Dr. D. VIJAY KUMAR
Principal
Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY

Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956. Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India (Sponsors: Nehru College of Educational and Charitable Trust)




On successful completion of this Course, students will be able to:		
C208: 2017- 2018- Pharmaceutical Organic Chemistry I Practical		
SNO	Bloom Level	Statements
C208.1	K5	Develop an idea about preliminary test for compounds(colour, odour, Saturation, unsaturation, solubility etc.).
C208.2	K1	Identify the elements and functional groups by various chemical tests, from that identify the unknown compounds.
C208.3	K1	Describe the preparation suitable solids derivatives from organic compounds and characterize them by suitable methods.
C208.4	K4	Understand the construction of molecular model by simple technique.
C208.5	K4	Analysis of unknown compounds

On successful completion of this Course, students will be able to:		
C209: 2017- 2018- Biochemistry Practical		
SNO	Bloom Level	Statements
C209.1	K4	Analyze the samples whether the patient is having carbohydrate metabolic disorders/diseases.
C209.2	K4	Analyze the samples whether the patient is having protein metabolic disorders/diseases.
C209.3	K4	Analysis the urine sample to know any abnormalities.
C209.4	K4	Analysis the blood sample to know any abnormalities.
C209.5	K1,K4	Acquire knowledge on the enzyme actions in different conditions.

On successful completion of this Course, students will be able to:		
C210: 2017- 2018- Computer Applications in Pharmacy Practical		
SNO	Bloom Level	Statements
C210.1	K3,K4	Describe Word Processing packages
C210.2	K3,K4	Describe Office workshop
C210.3	K1	Describe Webpages creation HTML,XML
C210.4	K1,K3	Perform practical's of Databases MS ACCESS
C210.5	K1,K3	Perform practical's of MY SQL




Prof. Dr. D. VIJAY KUMAR
Principal
Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY

Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director

of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956.

Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India

(Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:		
C301: 2018- 2019- Pharmaceutical Organic Chemistry II Theory		
SNO	Bloom Level	Statements
C301.1	K1	Understand the structure of benzene & its resonance stability with types of reactions electrophilic aromatic substitution reactions such as nitration, sulphonation, halogenation, alkylation, acylation.
C301.2	K2, K1	Explain acidity of phenols & basicity of amines, write the influence of substituents and structure and uses of some important amines & phenols.
C301.3	K1	Explain Polynuclear aromatic hydrocarbons, Synthesis, reactions of polynuclear hydrocarbons, structure & medicinal uses of Naphthalene, Phenanthrene, Anthracene, Diphenylmethane, Triphenylmethane and their derivatives
C301.4	K1, K3	Narrate the types of chemical reactions that affect quality of Fats & oils. Understand the principle & applications of various analytical constants for quality determination such as Acid value, Saponification value, Ester value, Iodine value, Acetyl value, Reichert Meissl (RM) value
C301.5	K1, K4	Classify cycloalkanes with theories explaining the stability.

On successful completion of this Course, students will be able to:		
C302: 2018- 2019- Physical Pharmaceutics I Theory		
SNO	Bloom Level	Statements
C302.1	K1,K3,K4	Understand about factors controlling solubility of drugs and their Distribution
C302.2	K3, K4	Explain about different states of matter and their application and physiochemical properties of drugs.
C302.3	K5 , K4	Understand about particle size distribution and flow property of powders
C302.4	K4, K3	Demonstrate the how protein bound to drug an also drug complexation
C302.5	K1 ,K3,K4	Understand about the relation between pH, buffer and isotonic solutions



Vijay
Prof. Dr. D. VIJAY KUMAR
Principal
Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588

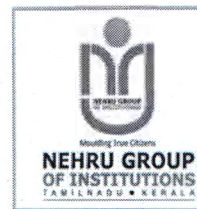


NEHRU COLLEGE OF PHARMACY

Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director

of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956. Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India

(Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:

C303: 2018- 2019- Pharmaceutical Microbiology Theory

SNO	Bloom Level	Statements
C303.1	K1,K3	Understand methods of classification, nutritional requirements, different Isolation methods ,cultivation, identification and preservation of bacteria & microscopes
C303.2	K3,K6	Understand different methods of identification of bacteria and sterilization methods in microbiology. Also learned the evaluation methods of sterilization their application in pharmaceutical industry
C303.3	K2,K3	Learn the morphology, classification, cultivation of fungi & virus. Understand the classification, mode of action, factors and evaluation of disinfectants. Also understand the sterility testing of different pharmaceutical products as per IP.
C303.4	K1,K3,K4	Learn about the classification, different types of contaminants and clean area. Understand the principle and methods of microbiological assay. Standardisation of antibiotics etc.
C303.5	K3,K4,K5	Understand microbial spoilage, different types of contaminant and preservation evaluation of microbial stability of formulations. Learned animal cell culture medias and applications in industry & research.

On successful completion of this Course, students will be able to:

C304: 2018- 2019- Pharmaceutical Engineering Theory

SNO	Bloom Level	Statements
C304.1	K1, K2, K3	Describe the importance of unit operations in pharmaceutical manufacturing, importance of size reduction, powder size and size separation, principle, construction and working of equipment's.
C304.2	K1, K2, K3	Develop knowledge of unit operations, mixing, mass transfer and flow of fluids and theories as well as basic mechanisms; understand principle, construction and working of equipment's used in mixing.
C304.3	K1, K2, K3	Express the concepts and methods of transportations of solids, filtration and centrifugation during pharmaceutical manufacturing. Understand principle, construction and working of equipment's.
C304.4	K1, K2, K3	Build up skill and ability to apply knowledge in drying, evaporation and distillation process in pharmaceutical industry and understand principle, construction and working of equipment's.
C304.5	K5	Develop skills in engineering drawings and different manometers and corrosion control methods in pharmaceutical industry.



Prof. Dr. D. VIJAY KUMAR
Principal

Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY

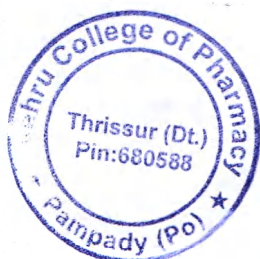
Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956. Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India (Sponsors: Nehru College of Educational and Charitable Trust)




On successful completion of this Course, students will be able to:		
C 305: 2018- 2019- Pharmaceutical Organic Chemistry II Practical		
SNO	Bloom Level	Statements
C305.1	K1, K3	Perform practical experiments to understand the method & applications of recrystallization & steam distillation
C305.2	K3, K4	Determine oil values (including standardization of reagents) such Acid value, Saponification value, Iodine value. Understand the application of analytical constants to determine the quality & standards of oils/fats.
C305.3	K1, K3	Determine & perform methods for the preparation of organic compounds such as Benzanilide, P- Bromoacetanilide, 5-Nitro Salicylic Acid, 1-Phenyl Azo-2-Naphthol, Salicylic Acid, P-Iodo Benzoic Acid
C305.4	K3	Understand the principle & mechanism involved in the preparation of organic compounds.
C305.5	K1	Understand the uses of the prepared organic compounds.

On successful completion of this Course, students will be able to:		
C306: 2018- 2019- Physical Pharmaceutics I Practical		
SNO	Bloom Level	Statements
C306.1	K1,K4,K6	Understand the solubility of drugs in room temperature
C306.2	K1,K3,K5	know about partition coefficient of different drugs
C306.3	K1,K5,K6	Understand about particle size distribution in emulsion, powder by microscopic and sieving method
C306.4	K3,K4,K5	Understand about pKa value which can be find out by different methods
C306.5	K3,K4,K5	Predict the flow property of powder & bulk density, true density & porosity.

On successful completion of this Course, students will be able to:		
C307: 2018- 2019-Pharmaceutical Microbiology Practical		
SNO	Bloom Level	Statements
C307.1	K1	Understand different medias for bacterial nutrition and also know about physical parameters required for growth.
C307.2	K1,K4	Identify the morphology, types, motility and biochemical activity of different microorganisms.
C307.3	K1,K3	Perform different isolation and culture methods
C307.4	K3,K4,K5	Analyze different antibiotics and evaluating its sensitivity by different Methods.
C307.5	K1,K3	Perform sterilization of different materials and medias used in laboratory.




Prof. Dr. D. VIJAY KUMAR
Principal
Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY


Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956. Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India (Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:		
C308: 2018- 2019- Pharmaceutical Engineering Practical		
SNO	Bloom Level	Statements
C308.1	K1, K2, K3	Understand the various factors affecting rate of filtration and evaporation like surface area, concentration, viscosity etc.
C308.2	K3, K4	Know about the particle size distribution by sieving method and decantation method.
C308.3	K1, K4	Know about the rate of drying at different time intervals and to plot drying curves based on the experiments.
C308.4	K4, K6	Know about the different methods to find out humidity of air- water mixture by wet- bulb, dry-bulb method and dew point method and able to construct the psychrometric charts.
C308.5	K3	Understand the various parts of distillation apparatus and can handle it properly in pharmaceutical industry.

On successful completion of this Course, students will be able to:		
C401: 2018- 2019- Pharmaceutical Organic Chemistry III Theory		
SNO	Bloom Level	Statements
C401.1	K1, K2	Draw structure and understand the various stereochemical aspects of the compound. Properties and resolution methods for resolution of racemic modification, methods for the preparation.
C401.2	K1, K2	Draw structure and understand the various stereochemical aspects of the geometric compounds. Nomenclature systems, various conformations & types of reactions
C401.3	K3, K4	Write different types of heterocyclic ring and its derivatives, understand the nomenclature systems, with methods for preparation & understand the characteristic chemical reactions with medicinal uses. Pyrrole, Furan, and Thiophene.
C401.4	K3, K4	Present different types of heterocyclic ring and its derivatives, understand the nomenclature systems, with methods for preparation & understand the characteristic chemical reactions with medicinal uses.
C401.5	K1, K3	Understand the different types of chemical reactions of synthetic importance, mechanism involved in reaction and their synthetic applications.




Prof. Dr. D. VIJAY KUMAR
Principal
Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY

Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956. Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India (Sponsors: Nehru College of Educational and Charitable Trust)

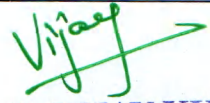


On successful completion of this Course, students will be able to:		
C402: 2018- 2019- Medicinal Chemistry I Theory		
SNO	Bloom Level	Statements
C402.1	K1,K2,K3, K4	Acquire knowledge on drug design and discovery, importance of physicochemical properties and metabolism of drugs.
C402.2	K1, K2, K6	Understand class of drugs SAR and synthesis of certain drugs acting on sympathetic system.
C402.3	K1, K2, K6	Familiar with cholinergic system, classification and SAR of cholinergic drugs & synthesis of selected drugs under this category.
C402.4	K1, K2, K6	Knowledge on various classification, SAR, synthesis of drugs acting on central nervous system.
C402.5	K1, K2, K6	Understand the drugs classification, SAR & synthesis if drugs used as anesthetics and analgesics.

On successful completion of this Course, students will be able to:		
C403: 2018- 2019- Physical Pharmaceutics II Theory		
SNO	Bloom Level	Statements
C403.1	K1,K3,K4	Understand about factors controlling solubility of drugs and their Distribution
C403.2	K3, K4	Get knowledge about different states of matter and their application and physiochemical properties of drugs
C403.3	K5 , K4	Understand about particle size distribution and flow property of powders
C403.4	K4, K3	Demonstrate the how protein bound to dug an also drug complexation
C403.5	K1 ,K3,K4	Understand about the relation between pH, buffer and isotonic solutions

On successful completion of this Course, students will be able to:		
C404: 2018- 2019- Pharmacology I Theory		
SNO	Bloom Level	Statements
C404.1	K1	Describe the scope of pharmacology and signify routes of drug administration with examples
C404.2	K1,k3	Explain the principle of absorption, distribution, metabolism and excretion, and understand the factors affecting the pharmacokinetics of the drug
C404.3	K1	Explain molecular & biochemical aspects of drug actions, receptors, drug receptor interactions, factors modifying drug effects.
C404.4	K1	Understand the application of basic pharmacological knowledge in the prevention and treatment of various diseases.
C404.5	K1	Classify, explain mechanism of action, target receptors, adverse effects, drug interaction, contraindication and therapeutic uses of drugs acting on various systems




Prof. Dr. D. VIJAY KUMAR
Principal
Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY

Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956. Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India (Sponsors: Nehru College of Educational and Charitable Trust)



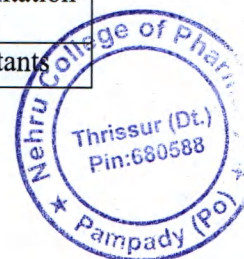
On successful completion of this Course, students will be able to:		
C405: 2018- 2019-Pharmacognosy and Phytochemistry I Theory		
SNO	Bloom Level	Statements
C405.1	K1,K3,K4, K5,K6	Understand the concept of Pharmacognosy, Classification of drugs and develop the skill involved in Quality control of Drugs of Natural Origin.
C405.2	K1, K2, K3,K5,K6	Built up the knowledge about cultivation and production of crude drugs and Conservation of medicinal plants.
C405.3	K1,K3, K5,K6	Build up the skill and able to apply knowledge in plant tissue culture techniques.
C405.4	K1,K3,K6	Understand the important role of Pharmacognosy in various systems of medicine and secondary metabolites.
C405.5	K1,K3, K5,K6	Develop the knowledge about the source, chemical constituent preparation, storage condition of natural drugs, Primary metabolites and Marine Drugs.

On successful completion of this Course, students will be able to:		
C406: 2018- 2019- Medicinal Chemistry I Practical		
SNO	Bloom Level	Statements
C406.1	K5	Develop the skill for synthesis of selected drugs.
C406.2	K1, K3	Understand the method and apply it for percentage purity determination.
C406.3	K5	Able to perform the partition coefficient determination method for any drugs.
C406.4	K4,K5	Capable to handle the drug design software's and determining the various physicochemical properties.
C406.5	K4,K5	Develop and apply the knowledge with biological activity prediction software

On successful completion of this Course, students will be able to:		
C407: 2018- 2019- Physical Pharmaceutics II Practical		
SNO	Bloom Level	Statements
C407.1	K1,K3, K4,K6	Understand the surface tension and viscosity of various liquids by using different methods
C407.2	K4,K5,K6	Know about HLB values of surfactants by saponification method
C407.3	K1,K4,K6	Understand about different adsorption isotherms (Freundlich and Langmuir)
C407.4	K3,K5,K6	Understand about different suspending agents by measuring sedimentation Volume
C407.5	K3,K4,K6	Predict the shelf and half-life of drugs by find out reaction rate constants

Prof. Dr. VIJAY KUMAR
Principal

Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680 588





NEHRU COLLEGE OF PHARMACY

Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director
of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program
accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956.
Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India
(Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:		
C408 : 2018- 2019-Pharmacology I Practical		
SNO	Bloom Level	Statements
C408.1	K1	Know the various animals used in experimental pharmacology, their handling, maintenance, various routes of administration and blood withdrawal techniques
C408.2	K1	Explain the major anesthetics used in experimental pharmacology and Euthanasia
C408.3	K1	Perform the concentration response curve of acetylcholine by using chicken ileum
C408.4	K1,K4	Determine potentiation and antagonistic action of various drugs by CRC of acetylcholine using chicken ileum.
C408.5	K1	Know the various dose calculations in experimental pharmacology.

On successful completion of this Course, students will be able to:		
C409: 2018- 2019- Pharmacognosy and Phytochemistry – I Practical		
SNO	Bloom Level	Statements
C409.1	K1,K3, K4,K6	Apply knowledge in analysis of crude drugs by chemical tests for Tragacanth, Acacia, Agar, Gelatin, Starch, Honey and Castor oil.
C409.2	K2,K4,K5	Understand and able to do the determination of stomatal number and index, vein islet number, vein termination number and palisade ratio.
C409.3	K1,K3, K4,K6	Apply the knowledge in determination of size of starch grains, calcium oxalate crystals and Phloem fibre by eye piece micrometer.
C409.4	K1,K4,K5	Understand and able to determine number of starch grains by Lycopodium spore method, Ash value and Extractive values of crude drugs.
C409.5	K1,K4,K5	Carryout the determination of moisture content, swelling index and foaming index of crude drugs.



Vijay
Prof. Dr. D. VIJAY KUMAR
Principal
Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY


Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956. Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India (Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:		
C501: 2019- 2020- Medicinal Chemistry II Theory		
SL.NO	Bloom level	statements
C501.1	K1, K2, K6	Learn, express and summarize the chemistry, synthesis and SAR of different class of drugs with respect to their pharmacological action.
C501.2	K1, K2, K4	Learn the chemistry of drugs with respect to their pharmacological activity
C501.3	K1, K5	Summarize the drug metabolic pathways, adverse effect and therapeutic value of drugs
C501.4	K1, K3, K4	Express the Structural Activity Relationship (SAR) of different class of drugs
C501.5	K3, K5	Learn the chemical synthesis of some drugs

On successful completion of this Course, students will be able to:		
C502 : 2019- 2020- Formulative Pharmacy Theory		
SNO	Bloom Level	Statements
C502.1	K1, K4,	Explain the pre-formulations studies physical chemical properties and the formulation of Various solid dosage form
C502.2	K1, K4	To gain knowledge about formulation, manufacture and quality control of sterile dosage forms
C502.3	K1, K3	To attain knowledge about surgical sutures and blood products.
C502.4	K1, K5	Understand the fundamentals in cosmetic science and novel drug delivery.
C502.5	K3, K5	Explain the classification, mechanism of action, target receptors, adverse effects, drug interaction, contraindication and therapeutic uses of drugs acting on various systems




Prof. Dr. D. VIJAY KUMAR
Principal
Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY

Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director

of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956.

Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India


(Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:		
C503 : 2019- 2020-Pharmacology II Theory		
SNO	Bloom Level	Statements
C503.1	K1	Understand the scope of pharmacology, basic terminologies, essential drugs concept and routes of drug administration
C503.2	K1,K3	Understand the principle of absorption, distribution, metabolism and excretion, and understand the factors affecting the pharmacokinetics of the drug
C503.3	K1	Understand molecular & biochemical aspects of drug actions, receptors, drug receptor interactions, factors modifying drug effects.
C503.4	K1	Understood the application of basic pharmacological knowledge in the prevention and treatment of various diseases.
C503.5	K1	Explain the classification, mechanism of action, target receptors, adverse effects, drug interaction, contraindication and therapeutic uses of drugs acting on various systems

On successful completion of this Course, students will be able to:		
C504 : 2019- 2020-Pharmacognosy&phytochemistry Theory		
SNO	Bloom Level	Statements
C504.1	K2, K3, K5	Explain the biogenesis, classify, plan and investigate of metabolic pathways (tracer techniques) and occurrence of active ingredients in medicinal plants
C504.2	K1, K3, K4, K6	Explain, classify and summarize morphology, microscopy, chemical, physio-chemical characters, cultivation and collection of medicinal plants containing alkaloids, flavonoids, resins
C504.3	K1, K3, K4, K6	Explain, classify and summarize morphology, microscopy, chemical, physio-chemical characters, cultivation and collection of medicinal plants containing glycosides, terpenoids, irridoids and tannin drugs
C504.4	K1, K5, K6	Explain in detail about the industrial production and utilization of some important phytoconstituents
C504.5	K2, K5, K6	Describe, develop and assess a method for extraction and isolation of active constituents from medicinal plants




Prof. Dr. D. VIJAY KUMAR
Principal
Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY

Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director

of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956.

Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India

(Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:		
C505 : 2019- 2020-Pharmaceutical Jurisprudence Theory		
SNO	Bloom Level	Statements
C 505.1	K1, K3, K4	Enables the students to know various licenses for manufacture, sale and import of drugs.
C 505.2	K1, K3, K4	Enables to know about various schedules, sale of drugs and the administration or regulatory authorities under the Drugs and Cosmetics Act and Rules.
C 505.3	K1, K3,	Provisions related to various laws- Pharmacy Act 1948, Medicinal and Toilet Preparations Act 1955, Narcotic Drugs and Psychotropic substances Act 1985 and Rules.
C 505.4	K1, K3,	Provisions related to various laws- The Drugs and Magic remedies Act, Prevention of cruelty to animals Act 1960 with details on animal handling and breeding, National Pharmaceutical Pricing Authority.
C 505.5	K1, K3,K5	Various Pharmaceutical legislations, Code of Pharmaceutical ethics, Medical Termination of pregnancy act, Right to information act and Intellectual Property Rights

On successful completion of this Course, students will be able to:		
C506 : 2019- 2020-Formulative Pharmacy Practical		
SNO	Bloom Level	Statements
C 506.1	K1	To develop skill in basic understanding of preformulation study, manufacturing, packaging labelling and evaluation of tablets and capsules.
C 506.2	K4	Ability to prepare, packaging and labeling of parenteral and ophthalmic products.
C 506.3	K1	To attain basic knowledge in the preparation and evaluation of controlled drug delivery systems.
C 506.4	K5	Learn about skills involved in the preparation, packaging and labelling of various cosmetics product.
C 506.5	K3	Acquire knowledge about the evaluation studies of different formulations and packaging materials.



Prof. Dr. D. VIJAY KUMAR
Principal

Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY

Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director

of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956.

Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India

(Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:		
C507 : 2019- 2020-Pharmacology II Practical		
SNO	Bloom Level	Statements
C507.1	K1	Demonstrated Basic instruments used in experimental pharmacology. Provided hands on training to instruments used preclinically and isolated tissue preparations
C507.2	K1,K3	Explain the techniques of bioassay with its applications. Conducted Practical exposure of Matching, Interpolation, Three point and Four Point bioassay techniques using isolated tissue preparations.
C507.3	K1	Performed the In vivo techniques on CNS experiments like hepatic microsomal enzyme inducers and study of local anesthetic property using nerve block anesthesia using Ex pharm software.
C507.4	K1	Carried out Diuretic activity in Rats, Experiments on isolated frog heart and test for pyrogens using Ex pharm software
C507.5	K1	Demonstrated the advanced experiments on hypoglycemic effect in Rabbit and saline purgative on frog intestine.

On successful completion of this Course, students will be able to:		
C508 : 2019- 2020-Pharmacognosy & phytochemistry Practical		
SNO	Bloom Level	Statements
C508.1	K1	Apply the knowledge to execute the systematic pharmacognostic study of crude drugs containing glycosides, alkaloids which include biological source, morphology, microscopy (ts, powder).
C508.2	K1,K3	Utilize the knowledge of qualitative preliminary phytochemical screening and analysis for the evaluation of herbal drugs and its derived products
C508.3	K1	Applying the principles of various chromatographic techniques in the separation and identification of phytoconstituents in medical plant research
C508.4	K1	Execute the knowledge of crude drugs which includes the biological source, family, morphological identity, chemical constituents, uses and utility of those drugs in Herbal drug Based Industries of cosmetic value
C5038.5	K1	Utilize the knowledge of isolation of volatile oil useful in Herbal Drug Industries



Prof. Dr. D. VIJAY KUMAR

Principal

Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY

Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director
of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program
accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956.
Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India
(Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:		
C601 : 2019- 2020-Medicinal Chemistry III Theory		
SNO	Bloom Level	Statements
C601.1	K1, K2, K6	Learn, express and summarize the chemistry, synthesis and SAR of different class of drugs with respect to their pharmacological action.
C601.2	K1, K2, K4	Learn chemistry of drugs with respect to their biological activity
C601.3	K1, K5	Know about and develop the concept of prodrug, QSAR and docking
C601.4	K1, K3, K4	Recognize and analyses the knowledge on the importance of drug design and classify the techniques of drug design
C601.5	K3, K5	Know the metabolism, adverse effects and therapeutic value of drugs

On successful completion of this Course, students will be able to:		
C602 : 2019- 2020-Pharmacology III Theory		
SNO	Bloom Level	Statements
C602.1	K1	Describe the scope of pharmacology, basic terminologies, essential drugs concept and routes of drug administration
C602.2	K1,K3	Explain the principle of absorption, distribution, metabolism and excretion, and understand the factors affecting the pharmacokinetics of the drug
C602.3	K1	Explain molecular & biochemical aspects of drug actions, receptors, drug receptor interactions, factors modifying drug effects.
C602.4	K1	Understood the application of basic pharmacological knowledge in the prevention and treatment of various diseases.
C602.5	K1	Classify, explain mechanism of action, target receptors, adverse effects, drug interaction, contraindication and therapeutic uses of drugs acting on various systems



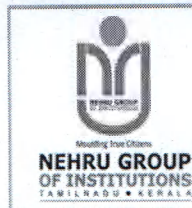
Vijay
Prof. Dr. D. VIJAY KUMAR
Principal

Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY

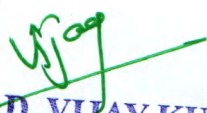
Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director
of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program
accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956.
Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India
(Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:		
C603 : 2019- 2020-Herbal drug technology Theory		
SNO	Bloom Level	Statements
C603.1	K1, K3, K4, K5, K6	Understand the general aspects of Herbal medicinal product, herbal drug preparations and the processing of raw materials. Understand the concept of good agricultural practices in cultivation, organic Farming, pest management in medicinal plants.
C603.2	K1, K2, K3, K5, K6	Built up the knowledge about the Indian system of medicine. It includes the basic principles involved in Ayurveda, Siddha, Unani and Homeopathy. And also the concept of preparation and standardization of Ayurvedic formulations.
C603.3	K1, K3, K5, K6	Build up the skill and able to apply knowledge in Herbal cosmetics
C603.4	K1, K3, K6	Understand the important role of Herbal formulations and Herbal excipients.
C603.5	K1, K3, K5, K6	Develop the knowledge about General introduction to Herbal Industry and Schedule T–Good Manufacturing Practices of Indian System of Medicine

On successful completion of this Course, students will be able to:		
C604 : 2019- 2020- Biopharmaceutics and Pharmacokinetics Theory		
SNO	Bloom Level	Statements
C604.1	K1	Understand the basic concepts in biopharmaceutics and pharmacokinetics.
C604.2	K2	Use plasma data and derive the pharmacokinetic parameters to describe the process of drug absorption, distribution, metabolism and elimination.
C604.3	K4	Critically evaluate biopharmaceutic studies involving drug product equivalency.
C604.4	K5	Design and evaluate dosage regimens of the drugs using pharmacokinetic and biopharmaceutic parameters.
C604.5	K3	Detect potential clinical pharmacokinetic problems and apply basic pharmacokinetic principles to solve them.




Prof. Dr. D. VIJAY KUMAR
Principal
Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY


Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956. Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India (Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:		
C605 : 2019- 2020 Pharmaceutical Biotechnology Theory		
SNO	Bloom Level	Statements
C605.1	K1, K2, K3	Acquire knowledge in basic principles of genetic engineering and enzyme technology. Apply the principles of biosensors and protein engineering in Pharmaceutical Industry
C605.2	K1, K2, K3	Explain the concepts of rDNA technology and its applications
C605.3	K3, K5	Describe the concept of immunity and production of vaccine. Define hybridoma technology and understand hypersensitivity reactions.
C605.4	K1, K3, K4	Knowledge on genetic multiplication and biotransformation.
C605.5	K3, K5	Discuss the principles of fermentation its design and production of pharmaceutical products. Describe various blood products, plasma collection and processing of it.

On successful completion of this Course, students will be able to:		
C606 : 2019- 2020- Quality Assurance Theory		
SNO	Bloom Level	Statements
C606.1	K1, K2, K5	Explain the concept of quality assurance and quality management, define and demonstrate CGMP, TQM.ICH guidelines. Summarize QSEM guidelines with special emphasis on Q-series followed by ICH stability guidelines.
C606.2	K1,K2,K6	Discuss about organization and personnel, premises, equipment and raw materials. Explain the equipment selection, purchase specification and maintenance of raw materials as follows.
C606.3	K2, K6	Attain knowledge and compare the quality control test for containers, rubber closures and secondary packaging. Discuss The detailed concept of Good laboratory practices, protocol for conduct of a nonclinical laboratory study.
C606.4	K2, K4	Summarize the fundamentals of Complaints and its evaluation, Handling of return good, recalling and waste disposal. Categorize the Document maintenance in pharmaceutical industry including Batch Formula Record, Master Formula Record, SOP, Quality audit, Quality Review and Quality documentation, Reports and documents, distribution records.
C606.5	K3, K6	Create basic knowledge and make use of it about packaging materials and process validation and its evaluation procedures.




Prof. Dr. D. VIJAY KUMAR
Principal
Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY


Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956. Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India (Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:		
C607 : 2019- 2020 Medicinal Chemistry III Practical		
SNO	Bloom Level	Statements
C607.1	K5	Synthesis of selected drugs involving two or more steps and study spectral analysis of drugs synthesized.
C607.2	K1, k3	Establishing the Pharmacopoeia Standards of drugs synthesized.
C607.3	K5	Determination of percentage purity of drugs in relation to the Pharmacopoeia
C607.4	K4,K5	Developing chemical structures using software's
C607.5	K4,K5	Workshop on drug design software's.

On successful completion of this Course, students will be able to:		
C608 : 2019- 2020 Pharmacology III Practical		
SNO	Bloom Level	Statements
C608.1	K1, K2, K3	Demonstrated Basic instruments used in experimental pharmacology. Provided hands on training to instruments used preclinically and isolated tissue preparations
C608.2	K1, K2, K3	Explain the different screening methods and its applications , techniques by using ex-pharm software's.
C608.3	K3, K5	Performed the biochemical estimation of serum by chemical analysis.
C608.4	K1, K3, K4	Carried out anti-inflammatory activity by paw edema method.
C608.5	K3, K5	Demonstrated the different instruments which is used for screening methods




Prof. Dr. D. VIJAY KUMAR
Principal
Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY


Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director
of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program
accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956.
Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India
(Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:		
C609 : 2019- 2020 Herbal Drug Technology Practical		
SNO	Bloom Level	Statements
C609.1	K1, K2, K3	Apply knowledge in Physicochemical analysis which includes ash values, moisture content, extractive values, swelling index and foaming index of crude drugs
C609.2	K1, K2, K3	Understand and able to do the determination of alcohol content of Arista and asava
C609.3	K3, K5	Apply the knowledge in analysis of fixed oils like acid value, saponification value and ester value
C609.4	K1, K3, K4	Understand and able to Formulation and evaluation of Herbal cosmetics
C609.5	K3, K5	Able to carry out the Preliminary phytochemical screening and Monograph analysis of crude drugs

On successful completion of this Course, students will be able to:		
C701 : 2020- 2021 Instrumental method of analysis Theory		
SNO	Bloom Level	Statements
C701.1	K1,K2,K5, K6	Discuss about the concept of UV vis spectroscopy
C701.2	K2,K3,K5	Demonstrate fundamental modes IR and other techniques
C701.3	K2,K5,K6	Explain the Methodology of basic chromatographic techniques
C701.4	K2,K5,K6	Summarize the theory, instrumentation, of chromatographic techniques
C701.5	K2,K3,K6,	To create basic knowledge Ion exchange chromatography- Gel chromatography & Affinity chromatography




Prof. Dr. D. VIJAY KUMAR
Principal
Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588



NEHRU COLLEGE OF PHARMACY

Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956.
Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India
(Sponsors: Nehru College of Educational and Charitable Trust)




On successful completion of this Course, students will be able to:

C702 : 2020- 2021 Industrial pharmacy Theory

SNO	Bloom Level	Statements
C702.1	K3	Classify and collect the information regarding significance of personnel requirements, space requirements, raw materials, Pilot plant scale up considerations for solids, liquid orals, semi solids and relevant documentation,
C702.2	K2	Summarize Technology development and transfer: WHO guidelines for Technology Transfer(TT): Terminology, Technology transfer protocol, Quality risk management, Transfer from R & D to production (Process, packaging and cleaning), Granularity of TT Process (API, excipients, finished products, packing materials)
C702.3	K2	Explain Regulatory affairs: Introduction, Historical overview of Regulatory Affairs, Regulatory authorities, Role of Regulatory affairs department, Responsibility of Regulatory Affairs Professionals Regulatory requirements for drug approval: Drug Development Teams, Non-Clinical Drug Development, General considerations of Investigational New Drug (IND) Application, Investigator's Brochure (IB) and New Drug Application(NDA), Data Presentation for FDA Submissions.
C702.4	K3	Make the idea about Indian Regulatory Requirements: Central Drug Standard Control Organization (CDSCO) and State Licensing Authority: Organization, Responsibilities, Common Technical Document (CTD), Certificate of Pharmaceutical Product (COPP), Regulatory requirements and approval procedures for New Drugs.
C702.5	K1	Define and describe Industrial Safety: Plant Location & layout, utility services, Mechanical hazards, Chemical hazards, Electrical hazards, Fire Hazards, Pharmaceutical hazards and their safety. Accident record




Prof. Dr. D. VIJAY KUMAR
Principal
Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt), 680588



NEHRU COLLEGE OF PHARMACY

Approved by Pharmacy Council of India, New Delhi Affiliated to Kerala University of Health Sciences, Kerala and Director of medical education(DME)(an ISO 9001-2015 Certified Institution) UG-B. Pharm Program accredited with NBA, New Delhi Recognized by UGC under section 2(f) of the UGC act 1956. Nila Gardens, Pampady, Thiruvilwamala, Thrissur Dist – 680 588, Kerala, India (Sponsors: Nehru College of Educational and Charitable Trust)



On successful completion of this Course, students will be able to:

C704:2020-2021 Pharmacy Practice Theory

SNO	Bloom Level	Statements
C704.1	k1	Students have knowledge about scope and advancement of pharmacy profession
C704.2	k1,k5	Students have the understanding of organizing and functioning of hospital, hospital pharmacy and community pharmacy
C704.3	K1,k4, k5	Have knowledge on management of drug therapy controversies
C704.4	K1	Students were able to identify patient specific parameters relevant in monitoring therapy
C704.5	K1, k2	Students have ability to understand the therapeutic approach to management of diseases

On successful completion of this Course, students will be able to:

C705 : 2020- 2021 Instrumental method of analysis Practical

SNO	Bloom Level	Statements
C705.1	K4	Identification of components by chromatographic method
C705.2	,K3,K5	Determine the amount and percentage purity of substances by UV visible spectroscopic methods
C705.3	K3,K5	Understanding the fluorimetric techniques and their concepts
C705.4	K3,k5	Demonstration of flame photometry and nephlo turbidimetry
C705.5	K3	Interpretation of IR and NMR interpretation



Vijay
Prof. Dr. D. VIJAY KUMAR
Principal
Nehru College of Pharmacy
Pampady (Po) Thrissur (Dt.) 680588