

MAHARISHI UNIVERSITY OF INFORMATION TECHNOLOGY



**Evaluation Scheme & Syllabus for
Diploma in Pharmacy (D. Pharm.)
(Effective from the Session: 2020-21)**

MAHARISHI SCHOOL OF PHARMACEUTICAL SCIENCES

Evaluation Scheme

D. Pharm. I Year

Sl. No.	Category	Code	Subject	Max. Marks in Theory/Practical		
				Examination	Sessional	Total
1	Theory	DPT101	Pharmaceutics-I	80	20	100
2		DPT102	Pharmaceutical Chemistry-I	80	20	100
3		DPT103	Pharmacognosy	80	20	100
4		DPT104	Biochemistry & Clinical Pathology	80	20	100
5		DPT105	Human Anatomy & Physiology	80	20	100
6		DPT106	Health Education & Community Pharmacy	80	20	100
7	Practical	DPP111	Pharmaceutics-I	80	20	100
8		DPP112	Pharmaceutical Chemistry-I	80	20	100
9		DPP113	Pharmacognosy	80	20	100
10		DPP114	Biochemistry & Clinical Pathology	80	20	100
11		DPP115	Human Anatomy & Physiology	80	20	100
			TOTAL			1100
Qualifying Non-Credit Courses						
12	Self-Development courses/ Science for Consciousness (SOC)	TSC 101	Basics of Transcendental Meditation and Yoga	70	30	100

TEACHING-LEARNING PLAN

Course Title: PHARMACEUTICS I

Course Code: DPT101

Course Objective:

This course is designed to impart basic knowledge on the art and science of formulating and dispensing of different dosage forms.

Course Outcomes: Upon completion of the course, the student shall be able to understand:

- The formulation aspects of different dosage forms
- The evaluation of pharmaceutical dosage form.
- The importance of good manufacturing practices

Course Contents:

Unit- 1:

Introduction of different dosage forms. Their classification with examples-their relative applications. Familiarization with new drug delivery systems. Introduction to Pharmacopoeias with special reference to the Indian Pharmacopoeia. Metrology-System of weights and measures. Calculations including conversion from one to another system. Percentage calculations and adjustment of products .Use of alligation method in calculations .Isotonic solutions. Packaging of Pharmaceuticals-Desirable features of a container and types of containers. Study of glass & plastics as materials for containers and rubber as a material for closure-their merits and demerits. Introduction to aerosol packaging.

Unit- 2:

Size reduction-objectives, and factors affecting size reduction, methods of size reduction- study of Hammer mill, ball mill, Fluid energy mill and Disintegrator.Size separation-size separation by sifting. Official standards for powders. Sedimentation methods of size separation. Construction and working of Cyclone separator.Mixing and Homogenization-Liquid mixing and powder mixing, Mixing of semisolids. Study of silverson Mixer-Homogenizer, planetary Mixer; Agitated powder mixer; Triple Roller Mill; Propeller Mixer, colloid Mill and Hand Homogeniser. Double cone mixer.Clarification and Filtration-Theory of filtration, Filter media; Filter aids and selection of filters. Study of the following filtration equipments-Filter Press, sintered filters, Filter candles, Metafilter.

Unit- 3:

Extraction and Galenicals-Study of percolation and maceration and their modification, continuous hot extraction-Application in the preparation of tinctures and extracts. Introduction to Ayurvedic dosage forms. Heat process-Evaporation-Definition-Factors affecting evaporation-study of evaporating still and Evaporating pan.Distillation-Simple distillation and Fractional distillation, steam distillation and vacuum distillation. Study of vacuum still, preparation of purified water I.P. and water for Injection I.P. construction and working of the still used for the same. Introduction to drying process-Study of Tray Dryers; Fluidized Bed Dryer, Vacuum Dryer and FreezeDryer.

Unit- 4:

Sterilization-Concept of sterilization and its differences from Disinfection-Thermal resistance of microorganisms. Detailed study of the following sterilization process. Sterilization with moist heat, Dry heat sterilization, Sterilization by radiation, Sterilization by filtration and Gaseous sterilization.

Aseptic techniques-Applications of sterilization process in hospitals particularly with reference to surgical dressings and intravenous fluids. Precautions for safe and effective handling of sterilization equipment.

Unit- 5:

Processing of Tablets: Definition; different type of compressed tables and their properties. Processes involved in the production of tablets; Tablets excipients; Defects in tablets; Evaluation of Tablets; Physical standards including Disintegration and Dissolution. Tablet coating-sugar coating; films coating, enteric coating and micro-encapsulation .Processing of Capsules-Hard and soft gelatin capsules; different sizes of capsules; filling of capsules; handling and storage of capsules. Special applications of capsules. Study of immunological products like sera, vaccines, toxoids & their preparations.

Text Book (s) :

1. History of Pharmacy in India by Dr. Harikishan Singh
2. Indian Pharmacopoeia, Govt. of India Publication.
3. A Text book of Pharmaceuticals Formulation by B.M. Mithal, Vallabh Prakashan.
4. Bentley's Text book of Pharmaceutics, 8th Edition, editor E.A. Rawlins, published by Elsevier Int.
5. The Theory and Practice of Industrial Pharmacy. Leon Lachman, Herbert Lieberman and Joseph Kanig, Editors, Lea and Febiger, Philadelphia. Latest edition Varghese Publishing House.

Course Title: PHARMACEUTICS I

Course Code: DPP111

List of Experiments:

The experiments related to following topics shall be performed in the laboratory by the students:

1. Aromatic waters
2. Solutions
3. Spirits
4. Tinctures
5. Extracts
6. Creams
7. Cosmetic preparations
8. Capsules
9. Tables
10. Preparations involving
11. Ophthalmic preparations
12. Preparations involving aseptic techniques

Course Title: PHARMACEUTICAL CHEMISTRY I

Course Code: DPT102

Course Objective:

This course is designed to impart basic knowledge on the chemistry of drugs and pharmaceuticals. The course gives knowledge of chemical structure, storage conditions and medicinal uses of organic and inorganic chemicals and quality control aspects of pharmaceuticals.

Course Outcomes:

Upon completion of the course, the student shall be able to understand-

- the various impurities in pharmaceuticals and tests to identify them
- the chemical nature and medicinal uses of drug substances
- the storage conditions of pharmaceuticals
- the quantitative and qualitative analysis of official compounds

Course Contents:

Unit -1:

General discussion on the following inorganic compounds including important physical and chemical properties, medicinal and pharmaceutical uses, storage conditions and chemical incompatibility. Acids, bases and buffers-Boric acid, Hydrochloric acid, Strong Ammonium hydroxide, Sodium hydroxide and official buffers. Antioxidants- Hypo phosphorous acid, Sulphur dioxide, Sodium bisulphite, Sodium meta-bisulphite, Sodium thiosulphate, Nitrogen and Sodium nitrite. Gastrointestinal agents-Acidifying agents- Dilute Hydrochloric acid. Antacids- Sodium bicarbonate, Aluminum hydroxide gel, Aluminum phosphate, Calcium carbonate, Magnesium carbonate, Magnesium trisilicate, Magnesium oxide, Combinations of antacid preparations. Protective and Adsorbents- Bismuth sub carbonate and Kaolin. Saline cathartics- Sodium potassium tartrate and Magnesium sulphate.

Unit-2:

Topical Agents-Protective- Talc, Zinc Oxide, Calamine, Zinc stearate, Titanium dioxide, silicone polymers. Antimicrobials and Astringents- Hydrogen peroxide, Potassium permanganate, Chlorinated lime, Iodine, Solutions of Iodine, Povidone-iodine, Boric acid, Borax, Silver nitrate, Mild silver protein, Mercury yellow, Mercuric oxide, Ammoniated mercury. Sulphur and its compounds- Sublimed sulphur, Precipitated Sulphur, Selenium Sulphide. Astringents- Alum and Zinc Sulphate.

Dental Products- Sodium fluoride, Stannous fluoride, Calcium carbonate, Sodium meta phosphate, Di- calcium phosphate, Strontium chloride, Zinc chloride. Inhalants- Oxygen, Carbon dioxide, Nitrous oxide. Respiratory stimulants- Ammonium carbonate.

Expectorants and Emetics-Ammonium chloride*, Potassium iodide, Antimony potassium tartrate. Antidotes- Sodium nitrite.

Unit-3:

Major Intra and Extra cellular electrolytes-Electrolytes used for replacement therapy- Sodium chloride and its preparations, Potassium chloride and its preparations. Physiological acid-base balance and electrolytes used- Sodium acetate, Potassium Acetate, Sodium bicarbonate Inj., Sodium citrate, Potassium citrate, Sodium lactate injection, Ammonium chloride and its injection. Combination of oral electrolyte powders and solutions. Inorganic official compounds of Iron, Iodine and Calcium, Ferrous Sulphate and Calcium Gluconate.

Unit-4:

Radio pharmaceuticals and contrast media- Radio activity-Alpha; Beta and Gamma Radiations, Biological effects of radiations, Measurement of radio activity, G.M. Counter, Radio isotopes-their uses, Storage and precautions with special reference to the official preparations. Radio opaque contrast media- Barium sulfate.

Unit-5:

Quality control of Drugs and pharmaceuticals-Importance of quality control, significant errors, methods used for quality control, sources of impurities in pharmaceuticals. Limit tests for Arsenic, Chloride, Sulfate, Iron and Heavy metals. Identification tests for cations and anions as per Indian Pharmacopoeia.

Text Book (s):

1. Medicinal & Pharmaceutical chemistry by Harikishan Singh and VK Kapoor.
2. Wilson and Gisvold's Text book of Organic Medicinal and pharmaceutical Chemistry
3. Practical Organic Chemistry by Mann and Saunders.
4. Practical Pharmaceutical Chemistry, Volume- I & II by Beckett and J. B. Stanlake.
5. Indian Pharmacopoeia, Indian Pharmacopoeial Commission.
6. Vogel's text book of Practical Organic Chemistry.

Course Title: PHARMACEUTICAL CHEMISTRY I

Course Code: DPP112

List of Experiments:

The experiments related to following topics shall be performed in the laboratory by the students:

- 1.** Identification tests for inorganic compounds particularly drugs and pharmaceuticals.
- 2.** Limit test for chloride, Sulfate, Arsenic, Iron and Heavy metals.
- 3.** Assay of inorganic pharmaceuticals involving each of the following methods of compounds marked with (*) under theory.
 - i.** Acid-Base titrations(at least 3)
 - ii.** Redox titrations (one each of permanganometry and Iodimetry).
 - iii.** Precipitation titrations (at least 2)
 - iv.** Complex metric titration (Calcium and Magnesium)

Course Title: PHARMACOGNOSY**Course Code: DPT103****Course Objective:**

This course is designed to impart knowledge of medicinal uses of various naturally occurring drugs. It also emphasizes the study of evaluation of crude drugs, alternative system of medicine nutraceuticals and herbal cosmetics.

Course Outcomes: Upon the completion of the course, the student shall be able to-

- Identify the important crude drugs of natural origin
- Know the herbs used as nutraceuticals and cosmeceuticals
- Understand the principles of alternative system of medicines
- Understand the importance of quality control of drugs of natural origin

Course Contents:**Unit -1:**

Definition, history and scope of Pharmacogonosy including indigenous system of medicine, Various systems of classification of drugs and natural origin. Adulteration and drug evaluation; significance of Pharmacopoeia standards.

Unit-2:

Brief outline of occurrence, distribution, outline of isolation, identification tests, therapeutic effects and pharmaceutical application of alkaloids, terpenoids, glycosides, volatile oils, tannins and resins. Occurrence, distribution, organoleptic evaluation, chemical constituents including tests wherever applicable and therapeutic efficacy of following categories of drugs.

- (a) Laxatives- Aloes, Rhubarb, Castor oil, Ispaghula, Senna.
- (b) Cardiotonics- Digitalis, Arjuna.
- (c) Carminatives & G.I. regulators- Umbelliferous fruits, Coriander, Fennel, Ajowan, Cardamom, Ginger, Black pepper, Asafoetida, Nutmeg, Cinnamon, Clove.
- (d) Astringents- Catecheu.
- (e) Drugs acting on nervous system- Hyoscyamus, Belladonna, Aconite, Ashwagandha, Ephedra, Opium, Cannabis, Nux -vomina.
- (f) Antihypertensive- Rauwolfia.
- (g) Antitussives- Vasaka, Tolu balsam, Tulsi.
- (h) Antirheumatics- Guggal, Colchicum.
- (i) Antitumour- Vinca.
- (j) Antileprotics- Chaulmoogra oil.
- (k) Antidiabetics- Pterocarpus, Gymnema sylvestro.
- (l) Diuretics- Gokhru, Punarnava.
- (m) Antidysenterics- Ipecacuanha.
- (n) Antiseptics and disinfectants- Benzoin, Myrrh, Neem, Curcuma.
- (o) Antimalarials- Cinchona.
- (p) Oxytocics- Ergot.
- (q) Vitamins- Shark liver oil and Amla.
- (r) Enzymes- Papaya, Diastase, Yeast.
- (s) Perfumes and flavoring agents- peppermint oil, Lemon oil, Orange oil, lemon grass oil, sandalwood.

Unit-3:

Pharmaceutical aids-Honey, Arachis oil, starch, kaolin, pectin, olive oil. Lanolin, Beeswax, Acacia, Tragacanth, sodium Alginate, Agar, Guar gum, Gelatin.

Unit-4:

Miscellaneous- Liquorice, Garlic, picrorhiza, Dirscorea, Linseed, shatavari, shankhpushpi, pyrethrum, Tobacco. Collection and preparation of crude drugs for the market as exemplified by Ergot, opium, Rauwalfia, Digitalis, senna.

Unit-5:

Study of source, preparation and identification of fibers used in sutures and surgical dressings-cotton, silk, wool and regenerated fibers. Gross anatomical studies of-senna, Datura, cinnamon, cinchona, fennel, clove, Ginger, Nuxvomica & ipecacuanha.

Text Book (s):

1. Text book of Pharmacognosy by C.K. Kokate, S. B. Gokhale, A.P. Purohith, Nirali Prakashan.
2. Text book of Pharmacognosy by C.S. Shah and J. S. Quadry, CBS Publishers & Distributors Pvt. Ltd.
3. Text Book of Pharmacognosy by T. E. Wallis. CBS Publishers & Distributors Pvt. Ltd.
4. Study of crude drugs by M. A. Iyengar, Manipal Press Ltd., Manipal.
5. Powder crude drugs by M. A. Iyengar, Manipal Press Ltd., Manipal.
6. Anatomy of crude drugs by M. A. Iyengar, Manipal Press Ltd., Manipal.

Course Title: PHARMACOGNOSY

Course Code: DPP113

List of Experiments:

The experiments related to following topics shall be performed in the laboratory by the students:

1. Identification of drugs by morphological characters. Physical and chemical tests for evaluation of drugs wherever applicable.
2. Gross anatomical studies (TS) of the following drugs: Senna, Datura, cinnamon, cinchona, coriander, fennel, clove, Ginger, Nux-vomica, Ipecacuanha.
3. Identification of fibers and surgical dressing.

Course Title: PHARMACOGNOSY

Course Code: DPT104

Course Objective:

This course is designed to impart basic knowledge on the structure and functions of the human body. It helps in understanding both homeostasis mechanism and homeostatic imbalances of various systems of human body.

Course Outcomes: Upon the completion of the course, the student shall be able to-

- Understand the structure and functions of the various organs of the human body
- Understand the various homeostatic mechanisms and their imbalance
- Perform the hematological tests and also record the blood pressure, heart rate, pulse rate and respiratory volumes

Course Contents:

Unit-1:

Introduction to Biochemistry, brief chemistry and role of proteins, polypeptides and amino acids, classification, Qualitative tests, Biological value, Deficiency diseases.

Unit -2:

Carbohydrates: Brief chemistry and role of carbohydrates, classification, qualitative tests, Diseases related to carbohydrate metabolism. Lipids: Brief chemistry and role of lipids, classification and qualitative tests. Diseases related to lipid metabolism.

Unit -3:

Vitamins: Brief chemistry and role of vitamins and coenzymes. Role of minerals and water in life processes.

Unit -4:

Enzymes: Brief concept of enzymatic action. factors affecting it.

Unit-5:

Therapeutics: Introduction to pathology of blood and urine. Lymphocytes and platelets, their role in health and disease. Erythrocytes-Abnormal cells and their significance. Abnormal constituents of urine and their significance in diseases.

Text Book (s):

1. Essentials of Biochemistry by U. Satyanarayan, Books and Allied (P) Ltd.
2. A Textbook of Biochemistry by A.V.S.S. Rama Rao, UBS Publishers' Distributors Pvt. Ltd.
3. Practical Biochemistry by R.C. Gupta and S. Bhargavan.
4. Laboratory manual of Biochemistry by Pattabiraman and Sitaram Acharya.

Course Title: BIOCHEMISTRY & CLINICAL PATHOLOGY

Course Code: DPP114

List of Experiments:

The experiments related to following topics shall be performed in the laboratory by the students:

1. Detection and identification of proteins. Amino acids, carbohydrates and lipids.
2. Analysis of normal and abnormal constituents of Blood and Urine (Glucose, urea, creatine, creatinine, cholesterol, alkaline phosphatase, acid phosphatase, Bilirubin, SGPT, SGOT, calcium, Diastase, Lipase).
3. Examination of sputum and faeces (microscopic & staining).
4. Practice in injecting drugs by intramuscular, subcutaneous and intravenous routes, withdrawal of blood samples.

Course Title: HUMAN ANATOMY & PHYSIOLOGY
Course Code: DPT105

Course Objective:

This course is designed to impart basic knowledge on the structure and functions of the human body. It helps in understanding both homeostasis mechanism and homeostatic imbalances of various systems of human body.

Course Outcomes: Upon the completion of the course, the student shall be able to-

- Understand the structure and functions of the various organs of the human body
- Understand the various homeostatic mechanisms and their imbalance
- Perform the haematological tests and also record the blood pressure, heart rate, pulse rate and respiratory volumes

Course Contents:

Unit-1:

Scope of Anatomy and physiology. Definition of various terms used in Anatomy. Structure of cell, function of its components with special reference to mitochondria and microsomes.

Elementary tissues: Elementary tissues of the body, i.e. epithelial tissue, muscular tissue, connective tissue and nervous tissue. Skelton System: Structure and function of Skelton. Classification of joints and their function. Joint disorders.

Unit-2:

Cardiovascular System: Composition of blood, functions of blood elements. Blood group and coagulation of blood. Brief information regarding disorders of blood. Name and functions of lymph glands. Structure and functions of various parts of the heart .Arterial and venous system with special reference to the names and positions of main arteries and veins. Blood pressure and its recording. Brief information about cardiovascular disorders. Respiratory system: Various parts of respiratory system and their functions, physiology of respiration.

Unit-3:

Urinary System: Various parts of urinary system and their functions, structure and functions of kidney. Physiology of urine formation. Patho-physiology of renal diseases and edema. Muscular System: Structure of skeletal muscle, physiology of muscle contraction. Names, positions, attachments and functions of various skeletal muscles. physiology of neuromuscular junction.

Unit-4:

Central Nervous System: Various parts of central nervous system, brain and its parts, functions and reflex action. Anatomy and physiology of automatic nervous system. Sensory Organs: Elementary knowledge of structure and functions of the organs of taste, smell, ear, eye and skin. Physiology of pain. Digestive System: names of various parts of digestive system and their functions. structure and functions of liver, physiology of digestion and absorption.

Unit-5:

Endocrine System: Endocrine glands and Hormones. Location of glands, their hormones and functions. pituitary, thyroid. Adrenal and pancreas Reproductive system: Physiology and Anatomy of Reproductive system.

Text Book (s):

1. Human Physiology by C. C. Chatterjee.
2. Human Anatomy and Physiology by S. Chaudhary and A. Chaudhary.
3. Derasari and Gandhi's elements of Human Anatomy, Physiology and Health Education.
4. S.R. Kale and R.R. Kale, Textbook of Practical Anatomy and Physiology.

Course Title: HUMAN ANATOMY & PHYSIOLOGY

Course Code: DPP115

List of Experiments:

The experiments related to following topics shall be performed in the laboratory by the students:

1. Study of the human Skelton.
2. Study with the help of charts and models of the following system and organs:
 - Digestive system.
 - Respiratory system
 - Cardiovascular system
 - Urinary system
 - Reproductive system
 - Ear
 - Eye
3. Microscopic examination of epithelial tissue, cardiac muscle, smooth muscle, skeletal muscle, Connective tissue and nervous tissues.
4. Examination of blood films for TLC, DLC and malaria parasite.
5. Determination of RBCs, clotting time of blood, erythrocyte sedimentation rate and Hemoglobinvalue.
6. Recording of body temperature, pulse, heart-rate, blood pressure and ECG.

Course Title: HEALTH EDUCATION & COMMUNITY PHARMACY**Course Code:** DPT106

Course Objective: This course is designed to impart basic knowledge on public health, safe use of medicines, smoking cessation, health promotion, immunisation, de-addiction, abuse and misuse of drugs.

Course Outcomes: Upon completion of the course, the student shall be able to understand-

- the disease preventive measures
- health promotion and education
- the social responsibility of the pharmacist in public health

Course Contents:**Unit-1:**

Concept of health: Definition of physical health, mental health, social health, spiritual health determinants of health, indicator of health, concept of disease, natural history of diseases, the disease agents, concept of prevention of diseases. Nutrition and health: Classification of foods, requirements, diseases induced due to deficiency of proteins, vitamins and minerals-treatment and prevention. Demography and family planning: Demography cycle, fertility, family planning, contraceptive methods, behavioral methods, natural family planning methods, chemical methods, mechanical methods, hormonal contraceptives, population problem of India.

Unit-2:

First aid: Emergency treatment in shock, snake-bite, burns, poisoning, heart disease, fractures and resuscitation methods, Elements of minor surgery and dressings.

Unit-3:

Environment and health: Source of water supply, water pollution, purification of water, health and air, noise, light-solid waste disposal and control-medical entomology, arthropod borne diseases and their control. rodents, animals and diseases. Fundamental principles of microbiology: Classification of microbes, isolation, staining techniques of organisms of common diseases.

Unit-4:

Communicable diseases: Causative agents, mode of transmission and prevention. Respiratory infections- chicken pox, measles, influenza, diphtheria, whooping cough and tuberculosis. Intestinal infection-poliomyelitis, Hepatitis, cholera, Typhoid, food poisoning, Hookworm infection. Arthropod borne infections-plague, Malaria, filariases. Surface infection-Rabies, Trachoma, Tetanus, Leprosy. Sexually transmitted diseases-Syphilis, Gonorrhoea, AIDS. Non-communicable diseases: causative agents, prevention, care and control.

Unit-5:

Epidemiology: Its scope, methods, uses, dynamics of disease transmission. Immunity and immunization: Immunological products and their dose schedule. Principles of disease control and prevention, hospital acquired infection, prevention and control. Disinfection, types of disinfection procedures, for-faces, urine, sputum, room linen, dead-bodies, instruments.

Text Book (s):

1. Social Pharmacy – Innovation and development ed. Geoff Harding, Sarah Nettleton and Kevin Taylor. The Pharmaceutical Press.

2. Text Book of Community Pharmacy Practice. RPSGB Publication.
3. Community Pharmacy Handbook- Jonathan Waterfield.
4. S. Khurana, P. Suresh and R. Kalsi. Health Education & Community Pharmacy. S Vikas & Co.
5. Social Pharmacy: Tayler, Geoffery. Pharmaceutical Press. London.

Course Title: BASICS OF TRANSCENDENTAL MEDITATION AND YOGA

Course Code: TSC101

Pre-requisites, if any: NA

L	T	P	C.U.
2	1	1	4

Course Description:

With the changing environment, it becomes essential for an individual to adapt to the change and cope up with it. The capability of an individual to deal with these challenges with a positive attitude is the need of today which can only be achieved successfully through a holistic approach towards life. As a first step this course starts with basic asanas of Transcendental Meditation (TM) and Yoga.

Course Objectives:

The objective of this course is to enable students to recognize the need of knowledge of the self, as a basis to achievement and fulfillment. They will be introduced to the basics of TM and yoga and practice basic asanas.

Course Outcomes (COs): At the end of this course students will be able to:

CO 1: Define the concept of TM and yoga

CO 2: Recognize the importance of yoga as a means to achieve fulfillment in life

CO 3: Perform basic asana

CO 4: Compare with others as to how his/her life becomes better aligned with the environment

Mapping COs with POs:

	PO 1	PO 2	PO 3	PO 4	PO5
CO 1	M	W			
CO 2			S		
CO 3		M			
CO 4				W	S

Course Contents:

Unit - 1:

Science of Consciousness and Transcendental Meditation

Introduction to Science of Consciousness and its practical aspect, Concept of Knower, Known, Object of Knowing, Introduction to Transcendental Meditation, Scientific Research on Transcendental Meditation, How Transcendental Meditation differs from other forms of meditation, Introducing CBE - Transcendental Meditation around the world, Preparation to start learning Transcendental Meditation

Unit - 2:

Learning Transcendental Meditation

Preparation to learn Transcendental Meditation, Personal Instruction, Supplying Practical Understanding of Correct Meditation, Effects of Transcendental Meditation on Mind and Body, Development of Higher States of Consciousness

Unit - 3:

Consciousness-based Education (CBE)

Introduction to Consciousness-based Education, CBE around the world and in India

Unit - 4:

Enrichment of Experiences I

Follow-up Sessions and Group Checking, Understanding Nature of Life and Natural Tendency of

Transcendental Meditation, Personal Checkings , Refresher of the Practice

Unit – 5:

Maharishi Yoga Asanas

Introduction to Maharishi Yoga Asanas, Practice Yoga Asanas that promote integration of mind and body, Learn about the influence and benefits of each posture on your physiology

Unit – 6:

Basics of Communication

Purpose and process of communication, Communication and self , Types of Communication in relation to environment, Barriers to communication and how TM and yoga helps in overcoming the barriers, Communication and Human Emotions

Text Book(s):

- Denniston Denise. (1986). The TM book. Fairfield Press Inc.
- Truby John. (2008). The Anatomy of Story: 22 Steps to Becoming a Master Storyteller. Farrar, Straus and Giroux

References:

- <https://www.tm.org/>
- <https://indiatm.org/>

Assessment Scheme:

Sl. No.	Component	Weightage (%)
AC 1	Participation in Practice	20
AC 2	Teachers' Evaluation	20
AC 3	Outbound Visit & Report	10
AC 4	Field Based Project	20
AC 5	End Semester Examination	30

Mapping Assessment Components with COs

	CO1	CO2	CO3	CO4
AC 1	X	X	X	X
AC 2	X	X	X	X
AC 3		X	X	
AC 4		X		X
AC 5		X	X	X

Details of Projects/Activities

Dumb Charade story telling competition in the light of Consciousness

The group of 10 students is created and individually they have to tell the story to the whole class without speaking a word by using props, sign language and the class has to guess the story. The group further explains the knowledge behind the story to the rest of the class. The group that performs and articulates in an appropriate manner shall be appreciated and the teacher will conclude the class by connecting the learning to the Maharishi Knowledge.

Ping pong ball and knowledge

- All students will be provided with the one ping pong ball each
- The glasses will be placed on the table at a distance of 10 foot
- The students have to throw the ball towards the glass and it should directly fall into the glass.

The learning behind this activity is that the more you practice or rehearse any skill the more you become efficient and coefficient in that skill, consequently regular practice of any skill leads to perfection.

Each student (individually or in groups of 2-3 students) will undertake a project where they will be working in the external environment (like village community, MSMEs, NGOs, civil authorities etc.) on identified issues. They will work under the guidance of an assigned faculty member and will be assessed on the basis of how they are able to effectively understand their relationship with the external environment. Students will have to prepare the schedule of interaction with the identified external contacts and execute the assigned task keeping in mind the intended learning outcomes. They will maintain a project diary/ register as per following format and this will be scrutinized by the faculty guide weekly/ fortnightly as decided.

Sl. No.	Topic Learnt in Class or Practice of TM	How I applied it during project/ field practice/ Outbound visit	My Understanding	Remarks
1.				
2.				

Outbound Visit/ Activity:

It is mandatory that all students will have to participate in outbound visit/ activity and attend all the planned activities strictly. With the guidance of faculty members, the will participate with clear cut intended learning outcome and submit a report on completion so that attainment of outcomes can be assessed. This assessment will have weightage as mentioned in the assessment scheme.

Class Participation:

Student's participation in practice Sessions: 10 Marks

S.No	Rubrics for Practice Sessions	Marks
1	Student regularly attends the practice session once a day	2
2	Student regularly attends the practice session twice a day	4
3	Student attends the session regularly but does not initiate contribution & needs instructor to solicit input.	6
4	Student's comments are constructive, with signs of insight and relevant to discussion	8
5	Student listens attentively and hears what others say and contributes to the learning and knowledge.	10

Student's participation in the Theory Classes: 10 Marks

S.No.	Rubrics for Theory Sessions	Marks
1	Student regularly attends the class but is quite	2

	disruptive	
2	Student attends the class but does not listen to others, both in groups and in class	4
3	Student attends the class with some participation	6
4	Student attends the class proactively and contributes to the class	8
5	Student attends the class proactively, consistently and add value to the learning process	10

Attendance in all the classes and practice sessions is mandatory. Participation will be evaluated based on attendance, active engagement in discussions and interaction and contribution towards overall learning. This component will have 20% weightage as mentioned in the assessment scheme.

Other Details:

While it is expected that students should attend all classes but to cater to emergencies, illness, unavoidable social commitments and family responsibilities, a relaxation of up to 25% may be considered. Under no circumstances, attendance should fall below 75% else they will be debarred from taking examinations and will be declared fail in the course. Students can meet the faculty/ guide for consultations between 3:30 PM to 4:30 PM or else with prior appointment. Students are expected to be regular and punctual in all activities including completion of work, submission schedules, appointments etc. and should be professionally dressed.

Important Note for faculty: Assessment rubrics will have to be written for each Assessment component.

Evaluation Scheme
D. Pharm. II Year

Sl. No.	Category	Code	Subject	Max. Marks in Theory/Practical		
				Examination	Sessional	Total
1	Theory	DPT201	Pharmaceutics-II	80	20	100
2		DPT202	Pharmaceutical Chemistry-II	80	20	100
3		DPT203	Pharmacology & Toxicology	80	20	100
4		DPT204	Pharmaceutical Jurisprudence	80	20	100
5		DPT205	Drug store and Business Management	80	20	100
6		DPT206	Hospital & Clinical Pharmacy	80	20	100
7	Practical	DPP211	Pharmaceutics-II	80	20	100
8		DPP212	Pharmaceutical Chemistry-II	80	20	100
9		DPP213	Pharmacology & Toxicology	80	20	100
10		DPP214	Hospital & Clinical Pharmacy	80	20	100
			TOTAL			1000
Qualifying Non-Credit Courses						
11	Self-Development courses/ Science for Consciousness (SOC)	TSC 201	Basics of Transcendental Meditation and Yoga	70	30	100

TEACHING-LEARNING PLAN

Course Title: PHARMACEUTICS II

Course Code: DPT201

Course Objective:

This course is designed to impart basic knowledge on the art and science of formulating and dispensing of different dosage forms.

Course Outcomes: Upon completion of the course, the student shall be able to understand

- The formulation aspects of different dosage forms
- The evaluation of pharmaceutical dosage form.
- The importance of good manufacturing practices

Course Contents:

Unit- 1:

Prescriptions-Reading and understanding of prescriptions; Latin terms commonly used (Detailed study is not necessary), Modern methods of prescribing, adoption of metric system. Calculations involved in dispensing. Incompatibilities in prescriptions- study of various types of incompatibilities-physical, chemical and therapeutic. Posology- Dose and dosage of drugs, factors influencing dose, calculations of doses on the basis of age, sex, surface area and veterinary doses. Dispensed Medications: (Note: A detailed study of the following dispensed medication is necessary. Methods of preparation with theoretical and practical aspects, use of appropriate containers and closures. special labeling requirements and storage conditions should be high-lighted. Powders-Type of Powders-Advantages and disadvantages of powders, Granules, cachets and tablet triturates. preparation of different types of powders encountered in prescriptions. Weighing methods, possible errors in weighing, minimum weighable amounts and weighing of a material below the minimum weighable amount, geometric dilution and proper usage and care of dispensing balance.

Unit- 2:

Liquid oral Dosage forms: Monophasic-Theoretical aspects including commonly used vehicles, essential adjuvant like stabilizers, colorants and flavors, with examples. Review of the following monophasic liquids with details of formulation and practical methods. Liquids for internal administration Liquids for external administration or used on mucous membranes

Mixtures and concentrates, Gargles

Syrups Mouth washes

Throat-paints

Elixirs

Douches

Ear Drops

Nasal drops

Sprays

Liniments

Lotions.

Biphasic Liquid Dosage Forms: Suspensions (elementary study)-Suspensions containing diffusible solids and liquids and their preparations. Study of the adjuvant used like thickening agents, wetting agents, their necessity and quantity to be incorporated, suspensions of precipitate forming liquids like tinctures, their preparations and stability. suspensions produced by chemical reaction. An introduction to flocculated /non-flocculated suspension system. Emulsions-Types of emulsions, identification of emulsion system, formulation of emulsions, selection of emulsifying agent. Instabilities in emulsions, preservation of emulsions.

Unit- 3:

Semi-Solid Dosage Forms Ointments: Types of ointments, classification and selection of dermatological vehicles. Preparation and stability of ointments by the following processes:

Trituration
chemical reaction

fusion
Emulsification.

Pastes: Differences between ointments and pastes, Bases of pastes. preparation of pastes and their preservation. Jellies: An introduction to the different types of jellies and their preparation. And elementary study of poultice. Suppositories and pessaries-Their relative merits and demerits, types of suppositories, suppository bases classification, properties. preparation and packing of suppositories. Use of suppositories of drug absorption. Dental and cosmetic preparations: Introduction to Dentifrices, facial cosmetics, Deodorants. Anti-per spirants, shampoo, Hair dressings and Hair removers.

Unit- 4:

Sterile Dosage forms: Parenteral dosage Forms-Definition, General requirements for parenteral dosage forms. Types of parenteral formulations, vehicles, adjuvant, processing and personnel, Facilities and quality control. Preparation of Intravenous fluids and Admixtures-Total parenteral nutrition, Dialysis fluids.

Unit- 5:

Sterility testing: particulate matter monitoring- Faculty seal packaging. Ophthalmic products: study of essential characteristics of different ophthalmic preparations. Formulation: additives, special precautions in handling and storage of ophthalmic products.

Text Book (s):

1. Indian Pharmacopoeia.
2. British pharmacopoeia.
3. National formularies(N.F.I.,B.N.P)
4. Remington's pharmaceutical sciences.
5. Martindale's Extra pharmacopoeia.

Course Title: PHARMACEUTICS II

Course Code: DPP211

List of Experiments:

The experiments related to following topics shall be performed in the laboratory by the students:

- Dispensing of at least 100 products covering a wide range of preparations such as –
 - mixtures
 - emulsion
 - solutions
 - liniments
 - E.N.T. preparations
 - Ointments
 - Suppositories
 - Powders
 - Incompatible prescriptions etc.

Course Title: PHARMACEUTICAL CHEMISTRY II

Course Code: DPT202

Course Objective:

1. Introduction to the nomenclature of organic chemical systems with particular reference to hetero-cyclic system containing up to 3 rings.
2. The chemistry of following pharmaceutical organic compounds covering their nomenclature, chemical structure, uses and the important physical and chemical properties(chemical structure of only those compounds marked with asterisk (*). The stability and storage conditions and the different type of pharmaceutical formulations of these drugs and their popular brand names.

Course Outcomes:

Upon completion of the course, the student shall be able to understand-

- the various impurities in pharmaceuticals and tests to identify them
- the chemical nature and medicinal uses of drug substances
- the storage conditions of pharmaceuticals
- the quantitative and qualitative analysis of official compounds

Course Contents:

Unit -1:

Antiseptics and Disinfectants-Proflavine*, Benzalkonium chloride, Cetrimide, Phenol, chloroxylenol, Formaldehyde solution, Hexachlophene, Nitrofurantoin.Sulphonamides-Sulphadiazine, Sulphaguanidine Phthalylsulphathiazol Succinylsulphathiazole, Sulphadimethoxine, Sulphamethoxy pyridazine, Co-trimoxazole, sulfacetamide*Antileprotic Drugs- Clofazimine , Thiambutosine, Dapsone*, solapsone, Anti-tubercular Drugs- Isoniazid*, PAS*, Streptomycin, Rifampicin, Ethambutol*, Thiacetazone, Ethionamide, cycloserine, pyrazinamide*.Antimoebic and Anthelmintic Drugs- Emetine, Metronidazole, Halogenated hydroxyquinolines, Diloxanide furoate, Paromomycin , Piperazine*, Mebendazole ,D.E.C.*

Unit-2:

Antibiotics- Benzyl penicillin*, Phenoxy methyl penicillin*, Benzathine penicillin, Ampicillin*, Cloxacillin, Carbencicillin, Gentamicin, Neomycin, Erythromycin, Tetracycline, Cephalexin, Cephaloridine, Cephalothin, Griseofulvin, Chloramphenicol.Antifungal agents- Udecylenic acid, Tolnaftate, Nystatin, Amphotericin, Hamycin.Antimalarial Drugs-Chloroquine*,Amodiaquine, Primaquine, Proguanil, Pyrimethamine*, Quinine, Trimethoprim. Tranquilizers-Chlorpromazine*,Prochlorperazine, Trifluoperazine, Thiothixene Haloperidol*, Triperidol, Oxypertine, Chlordizepoxide, Diazepam*, Lorazepam, Meprobamate.

Unit-3:

Hypnotics- Phenobarbitone*, Butobarbitone, Cylobarbitone, Nitrazepam, Glutethimide*, Methyprylon, Paraldehyde, Triclofosodium. General Anaesthetics-Halothane*, Cyclopropane*, Diethyl ether*, Methohexital sodium, Thiopecalsodium, Trichloroethylene .Antidepressant Drugs-Amitriptyline, Nortriptyline, Imperamine*, Phepelzine, Tranlycypromine.Analeptics-Theophylline, Caffeine*, Coramine*, Dextro-amphetamine.

Unit-4:

Adrenergic drugs- Adrenaline*, Noradrenaline, Isoprenaline*, Phenylephrine, Salbutamol, Terbutaline, Ephedrine*, Pseudoephedrine. Adrenergic antagonist- Tolazoline, Propranolol*, Practolol. Cholinergic Drugs- Neostigmine*, Pyridostigmine, Pralidoxime, Pilocarpine, Physostigmine*. Cholinergic Antagonists- Atropine*, Hyoscine, Homatropine, Propantheline*, Benztropine, Tropicamide, Biperiden*. Diuretic Drugs- Furosemide*, Chlorothiazide, Hydrochlorothiazide*, Benzthiazide, Urea*, Mannitol*, Ethacrynic Acid. Cardiovascular Drugs- Ethylnitrite*, Glyceryl trinitrate, Alpha methyl dopa, Guanethidine, Clofibrate, Quinidine. Hypoglycemic Agents- Insulin, Chlorpropamide*, Tolbutamide, Glibenclamide, Phenformin*, Metformin. Coagulants and Anti-coagulants- Heparin, Thrombin, Menadione*, Bisphydroxy-coumarin, Warfarin sodium. Local Anaesthetics- Lignocaine*, Procaine*, Benzocaine. Histamine and anti-Histaminic Agents- Histamine, Diphenhydramine*, Promethazine, Cyproheptadine, Mepyramine*, Pheniramine, Chlorpheniramine*. Analgesics and Anti-pyretics- Morphine, Pethidine, Codeine, Methadone, Aspirin*, Paracetamol, Analgin, Dextropropoxyphene, Pentazocine. Non-steroidal anti-inflammatory agents- Indomethacin*, Phenylbutazone*, Oxyphenbutazone, Ibuprofen. Thyroxine and Antithyroids- Thyroxine*, Methimazole, Methyl thiouracil, Propylthiouracil. Diagnostic Agents- Lopanoic Acid, Propyl iodone, Sulphobromophthalein-sodium, Indigotindisulfonate, Indigo Carmine, Evans blue, Congo Red, Fluorescein sodium.

Unit-5 :

Anticonvulsants, cardiac glycosides, Antiarrhythmic, Antihypertensives & Vitamins. Steroidal Drugs- Betamethasone, Cortisone, Hydrocortisone, Prednisolone, Progesterone, Testosterone, Oestradiol, Nandrolone. Anti-Neoplastic Drugs- Actinomycin, Azathioprine, Busulphan, Chlorambucil, Cisplatin, Cyclophosphamide, Daunorubicin Hydrochloride, Fluorouracil, Mercaptopurine, Methotrexate, Mytomycin.

Text Book (s):

1. Medicinal & Pharmaceutical chemistry by Harikishan Singh and VK Kapoor
2. Wilson and Gisvold's Text book of Organic Medicinal and pharmaceutical Chemistry
3. Practical Organic Chemistry by Mann and Saunders.
4. Practical Pharmaceutical Chemistry, Volume- I & II by Beckett and J. B. Stanlake
5. Indian Pharmacopoeia, Indian Pharmacopoeial commission .
6. Vogel's text book of Practical Organic Chemistry.

Course Title: PHARMACEUTICAL CHEMISTRY II

Course Code: DPP212

List of Experiments:

The experiments related to following topics shall be performed in the laboratory by the students:

- 1.** Systematic qualitative testing of organic drugs involving solubility determination, melting point and/or boiling point, detection of elements and functional groups (10 compounds).
- 2.** Official identification tests for certain groups of drugs included in the I.P. like barbiturates, sulfonamides, Phenothiazine's, Antibiotics etc. (8 compounds).
- 3.** Preparation of three simple organic preparations.

Course Title: PHARMACOLOGY & TOXICOLOGY

Course Code: DPT203

Course Objective: This course is designed to impart basic knowledge on the structure and functions of the human body. It helps in understanding both homeostasis mechanism and homeostatic imbalances of various systems of human body.

Course Outcomes: Upon the completion of the course, the student shall be able to-

- Understand the structure and functions of the various organs of the human body
- Understand the various homeostatic mechanisms and their imbalance
- Perform the hematological tests and also record the blood pressure, heart rate, pulse rate and respiratory volumes

Course Contents:

Unit -1:

Introduction to pharmacology, scope of pharmacology. Routes of administration of drugs, their advantages and disadvantages. Various processes of absorption of drugs and the factors affecting them. Metabolism, distribution and excretion of drugs. General mechanism of drugs action and their factors which modify drugs action. Pharmacological classification of drugs. The discussion of drugs should emphasize the following aspects:

Unit-2:

Drugs acting on the central Nervous system: General anaesthetics- adjunction to anaesthesia, intravenous anaesthetics. Analgesic antipyretics and non-steroidal Anti-inflammatory drugs- Narcotic analgesics. Antirheumatic and anti-gout remedies. Sedatives and Hypnotics, psychopharmacological agents, anticonvulsants, analeptics. Centrally acting muscle relaxants and anti parkinsonism agents. Local anesthetics. Drugs acting on autonomic nervous system. Cholinergic drugs, Anticholinergic drugs, anticholinesterase drugs. Adrenergic drugs and adrenergic receptor blockers. Neurone blockers and ganglion blockers. Neuromuscular blockers, used in myasthenia gravis. Drugs acting on eye: Mydriatics, drugs used in glaucoma.

Unit-3:

Drugs acting on respiratory system: Respiratory stimulants, Bronchodilators, Nasal decongestants, Expectorants and Antitussive agents. Autocoids: physiological role of histamine and serotonin, Histamine and Antihistamines, prostaglandins. Cardio vascular drugs: Cardiotonics, Antiarrhythmic agents, Anti-anginal agents, Antihypertensive agents, peripheral Vasodilators and drugs used in atherosclerosis. Drugs acting on the blood and blood forming organs. Haematinics, coagulants and anticoagulants, Haemostatic, Blood substitutes and plasma expanders

Unit-4:

Drugs affecting renal function- Diuretics and anti-diuretics. Hormones and hormone antagonists- Hypoglycemic agents, Anti--thyroid drugs, sex hormones and oral contraceptives, corticosteroids. Drugs acting on digestive system- carminatives, digest ants, Bitters, Antacids and drugs used in pepticulcer, purgatives, and laxatives, Antidiarrhoeals, Emetics, Anti-emetics, Antispasmodics.

Unit-5 :

Chemotherapy of microbial diseases: Urinary antiseptics, sulphonamides, penicillin, streptomycin,

Tetracyclines and other antibiotics. Anti-tubercular agents, Antifungal agents, antiviral drugs, anti-leprotic drugs. Chemotherapy of protozoal diseases, Anthelmintic drugs. Chemotherapy of cancer.

Text Book (s):

1. Human Physiology by C. C. Chatterjee.
2. Human Anatomy and Physiology by S. Chaudhary and A. Chaudhary.
3. Derasari and Gandhi's elements of Human Anatomy, Physiology and Health Education.
4. S.R. Kale and R.R. Kale, Textbook of Practical Anatomy and Physiology.

Course Title: PHARMACOLOGY

Course Code: DPP213

List of Experiments:

The experiments related to study of following effects/action shall be performed in the laboratory by the students:

1. Effect of potassium and calcium ions, acetylcholine and adrenaline on frog's heart.
2. Effect of acetyl choline on rectus abdomens muscle of frog and guinea pig ileum.
3. Effect of spasmogens and relaxants on rabbits intestine.
4. Effect of local anaesthetics on rabbit cornea.
5. Effect of mydriatics and miotics on rabbit's eye.
6. To study the action of strychnine on frog.
7. Effect of digitalis on frog's heart.
8. Effect of hypnotics in mice.

Course Title: PHARMACEUTICAL JURISPRUDENCE

Course Code: DPT204

Course Objective:

1. Introduction to the different law related to Pharmaceutical acts.
2. The brief history about the Pharmaceutical acts.

Course Outcomes:

Upon completion of the course, the student shall be able to understand-

- The various Pharmaceutical laws.
- The latest updation in offences and Penalties.
- The legal term used to explain the acts.

Course Contents:

Unit -1:

Narcotic Drugs and psychotropic substances Act,1985-A brief study of the act with special reference to Origin and nature of pharmaceutical legislation in India, its scope and objectives. Evolution of the "Concept of pharmacy" as an integral part of the Health care system. Principles and significance of professional Ethics. Critical study of the code of pharmaceutical Ethics drafted by pharmacy council of India.

Unit-2:

Pharmacy Act, 1948-The General study of the pharmacy Act with special reference to Education Regulations, Working of state and central councils, constitution of these councils and functions, Registration procedures under the Act.

Unit-3:

The Drugs and Cosmetics Act,1940-General study of the Drugs and cosmetics Act and the Rules there under. Definitions and salient features related to retail and whole sale distribution of drugs. The powers of Inspectors, the sampling procedures and the procedure and formalities in obtaining licenses under the rule. Facilities to be provided for running a pharmacy effectively. General study of the schedules with special reference to schedules C, C1, F, G, J, H, P and X and salient features of labeling and storage conditions of drugs.

Unit-4:

The Drugs and Magic Remedies (objectionable Advertisement)Act, 1954-General study of the Act, objectives , special reference to be laid on Advertisements, magic remedies and its objectives, offences and punishment. Brief introduction to the study of the following acts: Latest Drugs (price control) order. Poisons Act 1919

Unit-5 :

Medicinal and Toilet preparations (excise Duties) Act, 1955. Medical Termination of Pregnancy Act, 1971

Text Book (s):

Latest Edition of Searched Material.

Course Title: DRUG STORE & BUSINESS MANAGEMENT

Course Code: DPT205

Course Objective: Introduction to the different aspects of business organization, commerce, import-export etc.

Course Outcomes:

Upon completion of the course, the student shall be able to understand-

- The various business organization strategies.
- The accountancy used in billing of drugs.
- The sales, recruitment and promotions related to employee and drugs respectively .

Part I Commerce

Course Contents:

Unit -1:

Introduction - Trade, Industry and commerce, Functions and subdivision of commerce, Introduction to Elements for Economics and Management. Forms of Business Organizations. Channels of Distribution.

Unit-2:

Drug House Management-selection of site, space Lay-out and legal requirements. Importance and objectives of purchasing, selection of suppliers, credit information, tenders, contracts and price determination and legal requirements thereto.Codification, handling of drug stores and other hospital supplies. Inventory Control-objects and importance, modern techniques like ABC,VED analysis, the lead time, inventory carrying cost, safety stock, minimum and maximum stock levels, economic order quantity,scrap and surplus disposal.

Unit-3:

Sales promotion, Market Research, Salesmanship, qualities of a salesman, Advertising and Window Display. Labeling and storage conditions of drugs.

Unit-4:

Recruitment, training, evaluation and compensation of the Pharmacist.

Unit-5 :

Banking and Finance-Service and functions of bank, Finance planning and sources of finance.

Part II Accountancy

Introduction to the accounting concepts and conventions. Double entry Book Keeping, Different kinds of accounts. Cash Book. General Ledger and Trial Balance. Profit and Loss Account and Balance Sheet. Simple techniques of analyzing financial statements. Introduction to Budgeting.

Text Book (s): (Latest editions)

Course Title: HOSPITAL & CLINICAL PHARMACY

Course Code: DPT206

Course Objective:

Introduction to the different Organization of hospital, types of hospitals, Infrastructure of hospital.

Course Outcomes:

Upon completion of the course, the student shall be able to understand-

- The key responsibility of a Pharmacist.
- The information related to the drugs.
- The different terms used in hospital organization.

PART I –Hospital Pharmacy

Course Contents:

Unit -1:

Hospital-Definition, Function, classifications based on various criteria, organization, Management and health delivery system in India. Hospital Pharmacy: Definition Functions and objectives of Hospital pharmaceutical services. Location, Layout, Flow chart of materials and men. Personnel and facilities requirements including equipments based on individual and basic needs. Requirements and abilities required for Hospital pharmacists.

Unit-2:

Manufacturing: Economical considerations, estimation of demand. Sterile manufacture-Large and small volume parenterals, facilities, requirements, layout production planning, man-power requirements. Non-sterile manufacture-Liquid orals, externals, Bulk concentrates. Procurement of stores and testing of raw materials. Nomenclature and uses of surgical instruments and Hospital Equipments and health accessories.

Unit-3:

P.T.C. (Pharmacy Therapeutic Committee)

Unit-4:

Hospital Formulary system and their organization, functioning, composition. Drug Information service and Drug Information Bulletin.

Unit-5 :

Surgical dressing like cotton, gauze, bandages and adhesive tapes including their pharmacopoeial tests for quality. Other hospital supply eg. I.V. sets, B.G. sets, Ryals tubes, Catheters, Syringes etc. Application of computers in maintenance of records, inventory control, medication monitoring, drug information and data storage and retrieval in hospital retail pharmacy establishment.

PART II Clinical Pharmacy

Unit -1:

Introduction to Clinical Pharmacy practice- Definition, scope. Modern dispensing aspects- Pharmacists and patient counseling and advice for the use of common drugs, medication history. Common daily terminology used in the practice of Medicine.

Unit-2:

Disease, manifestation and patho-physiology including salient symptoms to understand the disease like Tuberculosis, Hepatitis, Rheumatoid Arthritis, Cardio-vascular diseases, Epilepsy, Diabetes, Peptic Ulcer,

Hypertension. Physiological parameters with their significance.

Unit-3:

Drug Interactions: Definition and introduction. Mechanism of Drug Interaction. Drug-drug interaction with reference to analgesics, diuretics, cardiovascular drugs, Gastro-intestinal agents. Vitamins and Hypoglycemic agents. Drug-food interaction.

Adverse Drug Reaction: Definition and significance. Drug-Induced diseases and Teratogenicity

Unit-4:

Drugs in Clinical Toxicity- Introduction, general treatment of poisoning, systemic antidotes, Treatment of insecticide poisoning, heavy metal poison, Narcotic drugs, Barbiturate, Organo-phosphorus poisons.

Unit-5:

Drug dependences, drug abuse, addictive drugs and their treatment, complications. Bio-availability of drugs, including factors affecting.

Text Book (s):

1. The Remington's Book.

Course Title: INCREASING COHERENCE IN SOCIETY BY MAHARISHI'S KNOWLEDGE

Course Code: TSC 201

Pre-requisites, if any: TSC 101

L	T	P	C.U.
2	1	1	4

Course Description:

The course describes the value of wholeness and creating coherence to unfold the full potential of an individual to make the society much more fulfilling, efficient and productive by Maharishi's Knowledge of Transcendental meditation and even a small percentage of people practicing in groups can bring a huge change in the society.

Course Objectives:

The objective of this course is to enable the students to realize the importance of an Individual and its impact on the society by understanding the concept of Maharishi Effect which is scientifically verified along with Behavioural communication and social responsibility. They will also be introduced to the concepts of World plan of Maharishi for different countries.

Course Outcomes (COs): At the end of this course students will be able to:

CO 1: Identify the concepts of Maharishi Effect in the light of Modern Science verified by scientific research.

CO 2: Illustrate the important role of Maharishi in the contribution of revival of Vedic Knowledge.

CO 3: Employ regular practice of meditation in daily life.

CO 4: Distinguish between various components of Non- Verbal Communication and their application in enhancement of the Behavioral Communication.

Mapping COs with POs:

	PO 1	PO 2	PO 3	PO 4	PO5
CO 1	M	W			
CO 2			S		
CO 3		M			
CO 4				W	S

Course Contents:

Unit - 1:

Increasing Positivity & Coherence in the Society I

Introduction to Maharishi Effect, Maharishi Effect draws parallels with Modern Science, Maharishi Effect verified by Scientific Research

Unit - 2:

Enrichment of Experiences II

Advance Lectures on the Transcendental Meditation Program, Follow-up Sessions and Group Checkings, Personal Checkings

Unit - 3:

Maharishi in the World

Who is Maharishi Mahesh Yogi, Narratives from Maharishi's Life, Timeline of the Achievements, Contribution in the revival of Vedic Knowledge, Maharishi's World Plan

Unit - 4:

Non-Verbal Communication

Gestures : An embodied view of social interaction, Postures related to Yoga and meditation, Role of Facial Expression in social interaction , Eye Contacts, Meeting the self, Body Language with respect to work place morale, Time Language: Space, time and sign language , Silence: Key to true

communication with higher self, Tips for Improving Non- verbal Communication

Text Book (s):

- Gilpin Geoff. (2006). The Maharishi Effect: A Personal Journey through the Movement That Transformed American Spirituality. Penguin Group (USA).Tarcher Perigee
- Aron Elaine &Aron Arthur. (1986). The Maharishi Effect: A Revolution Through Meditation. Stillpoint Publishing, New Hampshire. E P Dutton.
- Burgoon K. J, Floyd Kory &Guerrero Laura. (2009) Non-Verbal Communication. Allyn& Bacon
- McNeill David. (2005). Gesture and Thought. University of Chicago Press

References:

- Halley Susi (2019, March 25). The Maharishi Effect as a Solution to the problem of anti-Semitism in America from <https://www.researchgate.net/publication/333356375>
- Orme-Johnson, D. W., & Fergusson, L. (2018). Global impact of the Maharishi Effect from 1974 to 2017: Theory and research. Journal of Maharishi Vedic Research Institute

Assessment Scheme:

Sl. No.	Component	Weightage (%)
AC 1	Participation in Practice	20
AC 2	Teachers' Evaluation	20
AC 3	Outbound Visit & Report	10
AC 4	Field Based Project	20
AC 5	End Semester Examination	30

Mapping Assessment Components with COs

	CO1	CO2	CO3	CO4
AC 1	X	X	X	X
AC 2	X	X	X	X
AC 3			X	
AC 4			X	X
AC 5	X	X	X	X

Details of Projects/Activities

Dart Game

Dart Game with Balloons: - In this activity balloons are considered as ignorance and students are supposed to write the habits they want to eliminate from their life on the balloons. When a student bursts that balloon, Knowledge comes out in form of Maharishi quotes. The learning was hitting the dart is considered as the action taken to remove the ignorance by gaining the inside knowledge.

Solve the knowledge Puzzles

To start this activity we take 5 students in one group and there can be multiple number of groups created and each group is provided with set of words related to Maharishi's quote to frame exact Maharishi's quote in complete. The learning behind the activity is teamwork and enhancement of communication skills as well as brain storming.

Human Knot Team Building Activity

Starting in a circle, participants connect hands with two others people in the group to form the human knot. As a team they must then try to unravel the "human knot" by untangling themselves without breaking the chain of hands.

1. Get the group to form a circle.
2. Tell them to put their right hand up in the air, and then grab the hand of someone across the circle from them.

3. Then repeat this with the left hand, ensuring they grab a different person's hand.
4. Check to make sure that everyone is holding the hands of two different people and they are not holding hands with someone either side of them.
5. That they must now try to untangle themselves to form a circle without breaking the chain of hands. Allocate a specific time to complete this challenge (generally ten to fifteen minutes)
6. Get participants to take their time in order to limit injuries. Ask the group not to tug or pull on each other and spot participants as they pass over other participants. Monitor throughout the challenge and stop them if you need to.
7. If the chain of hands is broken at any point, they must then start over again.

The Learning outcome behind this activity as the life entangles itself, it can be resolved by having calm and stable mind, and this state of awareness can be easily achieved by diving inward to the level of consciousness by practice of Transcendental Meditation which further leads to better Cooperation, Leadership and Time Management.

Each student (individually or in groups of 2-3 students) will undertake a project where they will be working in the external environment (like village community, MSMEs, NGOs, civil authorities etc.) on identified issues. They will work under the guidance of an assigned faculty member and will be assessed on the basis of how they are able to effectively understand their relationship with the external environment. Students will have to prepare the schedule of interaction with the identified external contacts and execute the assigned task keeping in mind the intended learning outcomes. They will maintain a project diary/ register as per following format and this will be scrutinized by the faculty guide weekly/ fortnightly as decided.

Sl. No.	Topic Learnt in Class or Practice of TM	How I applied it during project/ field practice/ Outbound visit	My Understanding	Remarks
1.				
2.				

Outbound Visit/ Activity:

One Outbound Activity/Visit every month of Institutional, Corporates, Seminars, Conferences or (Guest Lectures (Inside or outside)) to be organized and conducted by Teacher's.

It is mandatory that all students will have to participate in outbound visit/ activity and attend all the planned activities strictly. With the guidance of faculty members, they will participate with clear cut intended learning outcome and submit a report on completion so that attainment of outcomes can be assessed. This assessment will have weightage as mentioned in the assessment scheme.

Class Participation:

Student's participation in practice Sessions: 10 Marks

S.No	Rubrics for Practice Sessions	Marks
1	Student regularly attends the practice session once a day	2
2	Student regularly attends the practice session twice a day	4
3	Student attends the session regularly but does not initiate contribution & needs instructor to solicit input.	6
4	Student's comments are constructive, with signs of insight and relevant to discussion	8
5	Student listens attentively and hears what others say and contributes to the learning and knowledge.	10

Student's participation in the Theory Classes: 10 Marks

S.No	Rubrics for Theory Sessions	Marks
1	Student regularly attends the class but is quite disruptive	2
2	Student attends the class but does not listen to others, both in groups and in class	4
3	Student attends the class with some participation	6
4	Student attends the class proactively and contributes to the class	8
5	Student attends the class proactively, consistently and add value to the learning	10

Attendance in all the classes and practice sessions is mandatory. Participation will be evaluated based on attendance, active engagement in discussions and interaction and contribution towards overall

learning. This component will have 20% weightage as mentioned in the assessment scheme.

Other Details:

While it is expected that students should attend all classes but to cater to emergencies, illness, unavoidable social commitments and family responsibilities, a relaxation of up to 25% may be considered. Under no circumstances, attendance should fall below 75% else they will be debarred from taking examinations and will be declared fail in the course. Students can meet the faculty/guide for consultations between **3:30 PM to 4:30 PM** or **else with prior appointment**. Students are expected to be regular and punctual in all activities including completion of work, submission schedules, appointments etc. and should be professionally dressed.

Important Note for faculty: Assessment rubrics will have to be written for each Assessment component.