

# SIRDA POLYTECHNIC SUNDERNAGAR

Lesson Plan for: **SOCIAL PHARMACY**

year: **1<sup>st</sup>**

Branch: **D.Pharmacy**

S.No	Month	Week	Date	Name of Chapter	Contents to be Taught	Remarks
1	August		10/08/23	Introduction to social pharmacy	Definition and scope	
			10/08/23		Pharmacy as a discipline and its scope in improving the health. Role of pharmacist in public health	
			19/08/23	Concept of health	WHO definition	
			24/08/23		Various dimensions and determination	
			24/08/23		Health indicators	
			26/08/23	National health policy	Indian perspective	
			26/08/23		Public and private health system in India	
	September		02/09/23		National health mission	
			04/09/23		Introduction to millennium developments goals, sustainable developments goal FIP development goal	
			18/09/23		Test	
2			21/09/23	Preventive health care	Role of pharmacist in demography	
			21/09/23		Role of pharmacist in Family planning	
			21/09/23		Role of pharmacist in Family planning	
			22/09/23		Mother and child health	
			23/09/23		Importance of breastfeeding, ill effect of infant milk substitutes and bottle feeding	
			25/09/23		Overview of vaccines	
			28/09/23		Vaccines	
			30/09/23		Type of immunity	
	October		05/10/23		Immunization	
			07/10/23	Effect of environment on health	Water pollution	
			09/10/23		Importance of safe drinking water, waterborne disease	
			12/10/23		Air pollution	
			12/10/23		Noise pollution	
			16/10/23		Sewage and solid waste disposal	
			19/10/23		Occupational illnesses	



## SIRDA POLYTECHNIC SUNDERNAGAR

		21/10/23		Environmental pollution due to pharmaceuticals	
		26/10/23	Psychosocial pharmacy	Drugs of misuse and abuse- psychotropic , narcotics, alcohol, tobacco products	
		31/10/23		Social impacts of these habits on social health and productivity and suicidal behaviors	
3	November	16/11/23	Nutrition and health	Basic of nutrition	
		20/11/23		Macronutrients	
		23/11/23		Micronutrients	
		30/11/23		Importance of water and fibers in diet	
				Balance diet, malnutrition	
				Nutrition deficiency disease, ill effect of junk food	
				Calorific and nutritive value of various foods, fortification of food	
				Introduction of food safety, adulteration of foods, effects of artificial ripening , use of pesticides, genetically modified foods	
				Dietary supplements, nutraceutical , food supplements	
				Drug food interaction	
4			Microbiology	Introduction to microbiology	
				Common microorganism	
				Common microorganism	
			Epidemiology	Introduction to epidemiology and its application, understanding of terms such as epidemic, pandemic, endemic	
				Mode of transmission, outbreak, quarantine, isolation, incubation period, contact tracing, morbidity, motility	
			Respiratory infection	Chickenpox, measles, rubella,	
				Mumps, influenza, avian-flu	
				H1N1, SARS	
				MERS, COVID-19	



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					Diphtheria, whooping cough	
					Meningococcal meningitis, acute respiratory infection	
					Tuberculosis, Ebola	
				Intestinal infection	Poliomyelitis	
					Viral hepatitis	
					Cholera	
					Acute diarrheal disease	
					Typhoid	
					Amebiasis	
					Worm infection and food poisoning	
					Test	
				Arthropod-borne infection	Dengue	
					Malaria	
					Filariasis	
					Chikungunya	
				Surface infection	Trachoma, tetanus	
					Leprosy	
					STDs	
					HIV	
					AIDS	
5				All ongoing National health program	Objective, functions, outcome and the role of pharmacist in national health program	
					All ongoing national health program	
					All ongoing national health program	
					All ongoing national health program	
					All ongoing national health program	
					All ongoing national health program	
					All ongoing national health program	
					All ongoing national health program	
					Test	
6				Pharmacoeconomics	Introduction, basic terminology	
					Importance of pharmacoeconomics	
					Test	



# SIRDA POLYTECHNIC SUNDERNAGAR

Lesson Plan for: **HUMAN ANATOMY AND PHYSIOLOGY** year: 1<sup>st</sup>

Branch: **D.Pharmacy**

S.No	Month	Week	Date	Name of Chapter	Contents to be Taught	Remarks
1	August		28/08/23	Introduction	Scope of anatomy and physiology	
			31/08/23		Definition of various terminology	
2	September		05/09/23	Structure of cell	Components	
			06/09/23		Functions	
3			13/09/23	Tissues of the human body	Epithelial	
			19/09/23		connective	
			21/09/23		Muscular	
			26/09/23		Nervous tissue	
			27/09/23		Test	
4	October		3/10/23	Osseous system	Structure and function of bone	
			04/10/23		Axial skeleton	
			10/10/23		Appendicular skeleton	
			11/10/23		Classification of joints	
			17/10/23		Types of joints	
			18/10/23		Disorder of joints	
5			19/10/23	Haemopoietic system	Composition of blood	
			25/10/23		function of blood	
			26/10/23		Process of hemopoiesis	
			31/10/23		Characteristics and function of RBCs	
			09/11/23		Characteristics and function of WBCs and platelets	
			21/11/23		Mechanism of blood clotting	
			23/11/23		Importance of blood group	
			23/11/23		Importance of blood group	
					Test	
6				Lymphatic system	Composition of lymph and lymphatic system	
					Function and its formation	
					Structure and function of spleen and lymph node	
7				Cardio vascular system	Anatomy of heart	
					Physiology of hearts	
					Blood vessels and circulation	
					Pulmonary and coronary circulation	
					Systemic circulation	
					Cardiac cycle and heart sound	



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					Basic of ECG	
					Blood pressure and its regulation	
					Test	
8				Respiratory system	Anatomy of respiratory organs	
					Their functions	
					Regulation , mechanism of respiration	
				Definitions	Respiratory volumes and capacities	
9				Digestive System	Anatomy of GIT	
					Anatomy of GIT	
					Anatomy and function of accessory gland	
					Anatomy and function of accessory gland	
					Physiology of digestion and absorption	
					Process of digestive system	
					Absorption of digested food material from GIT	
					Revision	
					Test	
10				Skeletal muscles	Histology and physiology of muscle contraction	
					Disorder of skeletal muscles	
11				Nervous system	Classification of nervous system	
					Anatomy and physiology of cerebrum, cerebellum, mid brain	
					Function of hypothalamus, medulla oblongata and basal ganglia	
					Spinal cord structure and reflexes	
					Spinal cord structure and reflexes	
					Name and functions of cranial nerves	
					Name and functions of cranial nerves	
				ANS	Anatomy and physiology of sympathetic and parasympathetic nervous system	



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# SIRDA POLYTECHNIC SUNDERNAGAR

Lesson Plan for: **PHARMACOGNOSY**

year: **1<sup>st</sup>**

Branch: **D.Pharmacy**

S.No	Month	Week	Date	Name of Chapter	Contents to be Taught	Remarks
1	August		21/08/23	Pharmacognosy	Definition , history	
			22/08/23		Present status and scope of pharmacognosy	
2			23/08/23	Classification of drugs	Alphabetical , taxonomical	
3			29/08/23		Morphological , pharmacological	
	September		04/09/23		Chemical , chemo- taxonomical	
			05/09/23		Test	
3			06/09/23	Quality control of crude drugs	Introduction	
			06/09/23		Different methods of adulteration of crude drugs	
			11/09/23		Different methods of adulteration of crude drugs	
			12/09/23		Evaluation of crude drugs	
			13/09/23		Evaluation of crude drugs	
			13/09/23		Revision	
4			18/09/23	Alkaloids	Brief outline of occurrence Distribution, isolation, Identification test, Therapeutic activity and pharmaceutical application	
			26/09/23	Terpenoids	Brief outline of occurrence Distribution, isolation, Identification test, Therapeutic activity and pharmaceutical application	
			25/09/23	Glycoside	Brief outline of occurrence Distribution, isolation, Identification test, Therapeutic activity and pharmaceutical application	
			26/09/23	Volatile oil	Brief outline of occurrence Distribution, isolation, Identification test, Therapeutic activity and pharmaceutical application	
			27/09/23	Tannins	Brief outline of occurrence Distribution, isolation, Identification test, Therapeutic activity and pharmaceutical	



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					application	
	October		02/10/23	Resins	Brief outline of occurrence Distribution, isolation, Identification test, Therapeutic activity and pharmaceutical application	
			04/10/23		Test	
5			04/10/23	Laxative	Aloe, castor oil	
			09/10/23		Ispaghula, senna	
			10/10/23	Cardiotonic	Digitalis, arjuna	
			11/10/23	Carminatives	Coriander, fennel, cardamom	
			16/10/23	GI regulators	Ginger, clove, black pepper	
			17/10/23		Asafoetida, nutmeg, cinnamon	
			18/10/23	Astringents	Myrobalan, black catechu, pale catechu	
			18/10/23		Test	
			23/10/23	Drugs acting on nervous system	Hyoscyamus, belladonna	
			25/10/23		Ephedra, opium, tea leaves	
			30/10/23		Coffee seeds, coca	
			31/10/23	Antihypertensive	Rauwolfia	
	November		03/11/23	Antitussive	Vasaka, tolu balsam	
			20/11/23	Anti rheumatics	Colchicum seed	
			20/11/23		Test	
			21/11/23	Anti tumour	Vinca	
			22/11/23		Podophyllum	
				Antidiabetic	Pterocarpus, gymnema	
				Diuretics	Gokhru, punarnava	
				antidysenteric	Ipecacuanha	
				Anti-septics & Disinfectants	Benzoin, myrrh, Neem, turmeric	
				Anti-malarial	Cinchona, artemisia	
					Test	
				Oxytocic	Ergot	
				Vitamins	Cod liver oil, shark liver oil	
				Enzymes	Papaya, diastase	
					Pancreatin, yeast	
				Pharmaceutical aids	Kaolin, lanolin	
					Agar, gaurgam, gelatin	
					Beeswax, acacia	
					Tragacanth, sodium alginate	
				Miscellaneous	Squill, galls, ashwagandha	
					Tulsi, guggul	
					Test	
6				Plant fiber used	Cotton, silk	



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				as surgical dressing		
					Wool and regenerated fiber	
				Sutures	Surgical catgut and ligatures	
					Test	
7				Basic principle involved In the traditional system of medicines	Ayurveda	
					Siddha	
					Unani	
					Homeopathy	
				Method of preparation of ayurvedic formulation	Arista and asava	
					Gutika, taila	
					Churna	
					Lehya and bhasma	
					Test	
8				Medicinal plant	Role of medicinal plant in national economy and their export potential	
				Aromatic plant	Role of aromatic plant in national economy and their export potential	
9				Herbs as health food	Nutraceutical, antioxidants	
					Probiotics and prebiotics	
					Dietary fibers , omega 3-fatty acid	
					Spirulina, catotenoids, soya ad garlic	
10				Herbal formulation	Introduction	
					Challenges in herbal formulation	
					Factors affecting safety and quality and constrains of herbal formulation	
					Factor affecting herbal formulation	
					Test	
11				Herbal cosmetics	Lavender oil, aloe vera gel	
					Almond oil, olive oil	
					Rosemary oil	



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# SIRDA POLYTECHNIC SUNDERNAGAR

Lesson Plan for: **PHARMACEUTICAL CHEMISTRY** year: **1<sup>st</sup>**

Branch: **D.Pharmacy**

S.No	Month	Week	Date	Name of Chapter	Contents to be Taught	Remakr
1	August		21/08/23	Introduction to Pharmaceutical Chemistry	Scope and objective	
			26/08/23	Sources and type of error	Accuracy, precision, significance figure	
			28/08/23	Impurities in Pharmaceuticals	Sources and effect of impurities in Pharmacopoeial substance	
	September		01/09/23		Importance of Limits test	
			02/09/23		Principle and procedure of limits test for chlorides	
			04/09/23		Principle and procedure of limits test for sulphate	
			08/09/23		Principle and procedure of limits test for iron	
			13/09/23		Principle and procedure of limits test for heavy metal	
			18/09/23		Principle and procedure of limits test for arsenic	
			23/09/23		Revision	
2			25/09/23	Volumetric analysis	Fundamentals of volumetric analysis	
			29/09/23		Acid-base titration	
			30/09/23		Non aqueous titration	
	October		09/10/23		Precipitation titration	
			13/10/23		Complexometric titration	
			20/10/23		Redox titration	
			27/10/23	Gravimetric analysis	Principle and method	
			30/10/23		Revision	
	November		10/11/23		Test	
3			17/11/23	Inorganic Pharmaceuticals	<b>Haematinics</b> : ferrous sulphate, ferrous fumarate, ferric ammonium citrate, ferrous ascorbate, carbonyl iron	
			20/11/23	Gastrointestinal agents	<b>Anatacids</b> : aluminum hydroxide gel, Magnesium hydroxide, sodiumbicrboate, magalgrate	
			25/11/23		Calcium carbonate, acidifying agents, adsorbents, protectives, cathartics	
				Topical agents	Silver nitrate, ionic silver, chlorhexidine gluconate	



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					Hydrogen peroxide, boric acid, bleaching powders, Potassium permagnates	
				Dentals products	Calcium carbonate , sodium fluoride, denture cleaners, denture adhesive, mouth washes	
				Medicinal gases	Carbon dioxide, Nitrous oxide, Oxygen	
4				Nomenclature	Introduction of organic chemical system	
					Heterocyclic compound containing up to three rings	
					Revision	
5				Drugs acting on CNS	<b>Anesthetics:</b> Thiopental sodium, ketamine HCl, propofol	
				Sedatives & hypnotics	Diazepam, alprazolam, nitrazepam, phenobarbital	
				Antipsychotics	Chlorpromazine Hcl, Haloperidol, Risperidone	
					Sulpiride, olanzapine, quetiapine, lurasidone	
				Anticonvulsants	Phenytoin, carbamazepine, clonazepam, valproic acid	
					Gabapentin, topiramate, vigabatrin, lamotrigine	
				Anti-Depressants	Amitriptyline hydrochloride, Imipramate hydrochloride, Fluoxetine	
					venlafaxine, duloxetine, sertraline, citalopram	
					Escitalopram, fluvoxamine, paroxetine	
6				Drug acting on ANS	<b>Sympathomimetic agents:</b> Direct acting: nor-epinephrine, epinephrine, phenyl ephrine, dopamine, Turbiterline	
					Salbulamol, nephazoline, tetrahydrozoline,	
				Indirect acting agents	Hydroxyl amphetamine, pseudoephedrine agents with mixed mechanism: ephedrine, metaraminol	
				Adrenergic antagonist	<b>Alpha adrenergic blocker:</b> tolazoline, phentolamine, phenoxybenzamine, prazosin,	
					<b>Beta adrenergic blocker:</b>	



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					propranolol, atenolol, carbidilol	
				Cholinergic drugs and related agents	<b>Direct acting agents:</b> acetylcholine, carbachol, pilocarpine, <b>cholinesterase inhibitor:</b> neostigmine, edrophonium chloride	
					tacrine Hcl, pralidoxine chloride, echothiopate iodide	
				Cholinergic blocking agents	Atropine sulphate, ipratropium bromide	
				Synthetic cholinergic agents	Tropicamide, cyclopentolate Hcl, clidinium bromide, dicyclomine Hcl.	
7				Drug acting on cardiovascular system	<b>Anti-arrhythmic drugs:</b> Quinidine sulphate, procainamide hydrochloride, verapamil, Phenytoin sodium	
					lidocaine hydrochloride, lorainide Hcl, Amiodarone and sotalol	
				Anti-hypertensive agents	Propranolol, captopril, ramipril, methyldophate Hcl,	
					clonidine Hcl, hydralazineHcl, nifedipine	
				Anti-anginal agents	Iso-sorbide dinitrate	
					Test	
8				Diuretic	Acetazolamide, frusemide, bumetanide, chlorthalidone	
					Benzthiazide, metolazone, xipamide, spironolactone.	
					Test	
9				Hypoglycemic agents	Insulin and its preparation	
					Metformin, glibenclamide, glimepiride	
					Pioglitazone, repaglinide, gliflozins, gliptins	
10				Analgesic & anti-inflammatory agents	Morphine analouges, narcotics antagnostics	
				NSAIDS	Aspirin, diclofenac, ibuprofen, peroxicam	
					Celecoxib, mefenamic acid, paracetamol, aceclofenac	



# SIRDA POLYTECHNIC SUNDERNAGAR

11				Anti-infective agents	<b>Anti-fungal agents:</b> amphotericin-B, griseofulvin, miconazole	
					Ketoconazole, itraconazole, fluconazole, naftifine Hcl	
				UTI agents	Norfloxacin, ciprofloxacin, ofloxacin, moxifloxacin	
				Anti-tubercular agents	INH, ethambutol, PASA, pyrazinamide, rifampicin, bedaquiline, delamanid, pretomanide	
				Anti-viral agents	Amantadine Hcl, idoxuridine, acyclovir, foscarnet, zidovudine, ribavirin, remdesivir, favipravir	
				Antimalarial	Quinine sulphate, chlorquinine phosphate, primaquine phosphate	
					mefloquine, cycloguanil, pyrimethamine, artemisine	
				Sulphonamides	Sulphanilamide, sulfadiazine, sulfamethoxazole, sufacetamide, mafenide acetate, cortimoxazole, dapsone	
12				Antibiotics	Penicillin G,	
					Amoxicillin, Cloxacillin, streptomycin	
				Tetracyclines	Doxycycline	
					minocycline	
				Macrolides	Erythromycin	
					azithromycin	
				Miscellaneous	Chloramphenicol, clindamycin	
					Test	
13				Anti-neoplastic agents	Cyclophosphamide, busulfan, mercaptopurine	
					Fluorouracil, methotrexate, dactinomycin, doxorubicin Hcl	
					Vinblastine sulphate, cisplatin, dromostanolone propionate.	



# SIRDA POLYTECHNIC SUNDERNAGAR

Lesson Plan for: **PHARMACEUTICS**

year: 1<sup>st</sup>

Branch: **D.Pharmacy**

S.No	Month	Week	Date	Name of Chapter	Contents to be Taught	Remark
1	August		25/08/23	Introduction	History of Pharmacy In India in relation to Pharmacy education, Industry	
			26/08/23		Pharmacy practice and various professional associations.	
			29/08/23		Pharmacy as a career	
			31/08/23	Pharmacopoeia	Introduction to IP, BP	
	September		01/09/23		NF and extra Pharmacopoeia.	
			02/09/23		Salient feature of Indian Pharmacopoeia.	
			03/09/23		Revision	
2			19/09/23	Packaging Materials	Types , selection criteria	
			22/09/23		Advantages and disadvantages of glass	
			26/09/23		Plastic , Metal	
			30/09/23		Rubber as packages materials	
	October		06/10/23		Revision	
3			7/10/23	Pharmaceutical Aids	Organoleptic agents	
			10/10/23	Preservatives	Definition, Types	
			13/10/23		Examples and uses	
			17/10/23		Test	
4			20/10/23	Unit Operations	Definition , Objectives / applications	
			27/10/23		Principle , construction , working	
	November		18/11/23	Size reduction	Hammer mill & Ball mill	
			21/11/23	Size Separation	Classification of powders acc. To IP	
			24/11/23		Cyclone Separator , sieves and of sieves.	
			25/11/23	Mixing	Double cone blender, turbine mixture, triple roller mill and silverson mixture homogenizer .	
			28/11/23	Filtration	Theory of filtration, membrane filter and sintered glass filter	
				Drying	Working of fluidized bed dryer and process of freeze drying.	
				Extraction	Definition, classification, method and application.	
					Test	



# SIRDA POLYTECHNIC SUNDERNAGAR

5				Tablets	Introduction, Coated tablets	
					Uncoated tablets	
					Introduction to various modified tablets	
					Sustained release tablets	
					Extended release tablets	
					Fast dissolving tablets	
					Multi-layered tablets.	
					Revision	
					Test	
				Capsules	Hard gelatin capsules	
					Hard gelatin capsules	
					Soft gelatin capsules	
					Soft gelatin capsules	
					Test	
				Liquid Oral Preparation	Solution	
					Syrup, Elixir	
					Emulsion	
					Suspension	
					Dry powder for reconstitution	
					Revision	
					Test	
				Topical Preparation	Ointments	
					Creams	
					Pastes	
					Gels	
					Liniments	
					Lotion	
					Suppositories	
					Pessaries	
					Test	
					Nasal Preparation	
					Ear preparation	
					Test	
				Powders and granules	Insufflations	
					dusting powder	
					effervescent powders, effervescent granules	
					Test	
				Sterile formulation	Introduction, Injectable	
					Injectable	
					Eye drops	



Lesson Plan for: **PHARMACEUTICS**

Branch: D.Pharmacy

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