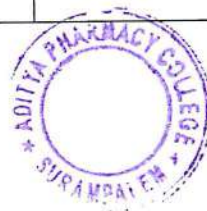


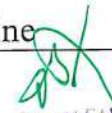
PROGRAM: PHARM D					
S.NO	Course/code	Gender	Environmental and sustainability	Human values	Professional qualification
1.	Human anatomy and physiology (T1101)	Reproductive system a) Male and female reproductive system b) Their hormones – Physiology of menstruation c) Spermatogenesis & Oogenesis d) Sex determination (genetic basis) e) Pregnancy and maintenance and parturition f) Contraceptive devices			Drugs and athletics
2.	Human anatomy and physiology (Practical) (T1108)	1) Reproductive system. 2) To perform pregnancy diagnosis test.			
3.	Pharmaceutics (T1102)			Incompatibilities: Introduction, classification and methods to overcome the Incompatibilities	1. Historical background and development of profession of pharmacy and pharmaceutical Industry in brief. 2. Development of Indian Pharmacopoeia and introduction to



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				s.	other Pharmacopoeias such as BP, USP, European Pharmacopoeia, Extra pharmacopoeia and Indian national formulary.
4.	Pharmaceutics (Practical) (T1109)			Incompatibilities a. Mixtures with Physical b. Chemical & Therapeutic incompatibilities. s. colorless bottles required for dispensing. Paper envelope (white), butter paper and white paper required for dispensing.	
5.	Medicinal biochemistry (T1103)				1. Introduction to clinical chemistry: Cell; composition; malfunction; Roll of the clinical chemistry laboratory. 2. The kidney function tests: Role of kidney; Laboratory tests for normal function includes- a) Urine analysis (macroscopic and physical examination, quantitative and Semiquantitative tests.) b) Test for NPN constituents. (Creatinine /urea clearance, determination of blood and urine




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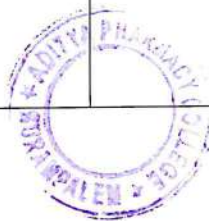
					<p>creatinine, urea and uric acid)</p> <p>c) Urine concentration test</p> <p>d) Urinary tract calculi. (stones)</p> <p>3. Liver function tests: Physiological role of liver, metabolic, storage, excretory, Protective, circulatory functions and function in blood coagulation.</p> <p>a) Test for hepatic dysfunction-Bile pigments metabolism.</p> <p>b) Test for hepatic function test- Serum bilirubin, urine bilirubin, and urine Urobilinogen.</p> <p>c) Dye tests of excretory function.</p> <p>d) Tests based upon abnormalities of serum proteins. Selected enzyme tests.</p> <p>4. Lipid profile tests: Lipoproteins, composition, functions. Determination of serum lipids, total cholesterol, HDL cholesterol, LDL cholesterol and Triglycerides.</p>
6.	Pharmaceutical Inorganic chemistry (T1105)		Dental products Radio pharmaceuticals.	Errors	
7.	Pathophysiology (T2101)			<p>1. Chemical mediators in inflammation,</p> <p>2. Drug hypersensitivity</p> <p>3. Cigarette</p>	<p>Cancer: differences between benign and malignant tumors, Histological diagnosis of malignancy, invasions and metastasis, patterns of spread, disturbances of growth of cells, classification of tumors, general</p>



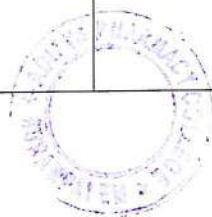
				smoking and its effects 4. Biological effects and its radiation 5. Etiology and hazards of Obesity 6. Complications of obesity 7. Diagnosis of cancer 8. Disorders of vitamins 9. Methods in pathology-laboratory values of clinical significance 10. Pathophysiology of dengue hemorrhagic fever	biology of tumors, spread of malignant tumors, etiology and pathogenesis of cancer.
8.	Pharmaceutical microbiology (T2102)			Study of infectious diseases: Typhoid, Tuberculosis, Malaria, Cholera,	1. Disinfectants- Study of disinfectants, antiseptics, fungicidal and veridical agents factors affecting their activation and mechanism of action. Evaluation of bactericidal, bacteristatic, virucidal activities, evaluation of preservatives



				Hepatitis, Meningitis, Syphilis & Gonorrhea and HIV.	in pharmaceutical preparations. 2. Diagnostic tests : Schick's Test, Elisa test, Western Blot test, Southern Blot PCR Widal, QBC, Mantoux Peripheral smear. Study of malarial parasite.
9.	Pharmaceutical microbiology (Practical) (T2107)			Diagnostic tests for some common diseases, Widal, malarial parasite. Indicate minor experiment & indicate major experiment	
10.	Pharmacognosy and phytopharmaceuticals (Practicals) (T2108)			Different methods of adulteration of crude drugs	
11.	Pharmacology-I (T2104)			1.Pre clinical evaluations 2.Drug interactions	
12.	Community pharmacy (T2105)			1. Definition, scope, of community pharmacy Roles and responsibilities of Community pharmacist	1.Community Pharmacy Management a) Selection of site, Space layout, and design b) Staff, Materials- coding, stocking c) Legal requirements d) Maintenance of various registers e) Use of Computers: Business and health care soft wares




			<p>2. Prescriptions – parts of prescription, legality & identification of medication related problems like drug interactions.</p> <p>3. Patient medication adherence Definition, Factors affecting medication adherence, role of pharmacist in improving the adherence.</p> <p>4. Health screening services Definition, importance, methods for screening Blood pressure/ blood sugar/ lung function and Cholesterol</p>	<p>2. Pharmaceutical care Definition and Principles of Pharmaceutical care.</p> <p>3. Patient counseling: Definition, outcomes, various stages, barriers, Strategies to overcome barriers Patient information leaflets- content, design, & layouts, advisory labels</p>
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				testing 5. OTC Medication- Definition, OTC medication list & Counseling 10 Health Education WHO Definition of health, and health promotion, care for children, pregnant & breast feeding women, and geriatric patients. Commonly occurring Communicable Diseases, causative agents, Clinical presentations and prevention of communicable diseases – Tuberculosis,	
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				Hepatitis, Typhoid, Amoebiasis, Malaria, Leprosy, Syphilis, Gonorrhea and AIDS Balance diet, and treatment & prevention of deficiency disorders Family planning – role of pharmacist 6.code of ethics for community pharmacist.	
13	Pharmacology II (T3101)				Recombinant DNA technology: principles. Processes (gene transfer technology) and applications
14.	Pharmaceutical Analysis (T3102)				1. GLP, ISO 9000. 1. Total quality management, quality review and documentation. 2. ICH- international conference for harmonization-guidelines. 3. Regulatory control.
15.	Pharmaco therapeutics II (T3103)			Infectious disease: Guidelines for the rational use	



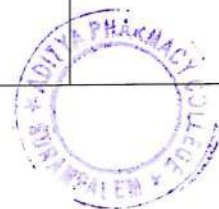

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				of antibiotics and surgical Prophylaxis, Tuberculosis, Meningitis, Respiratory tract infections, Gastroenteritis, Endocarditis, Septicemia, Urinary tract infections, Protozoal infection- Malaria, HIV & Opportunistic infections, Fungal infections, Viral infections, Gonorrhoea and Syphilis	
16.	Pharmaceutical jurisprudence (T3104)		Drugs and Cosmetics Act, 1940, and its rules 1945. Objectives, Legal definition, Study of Schedule's	1. Medicinal and Toilet Preparation Act –1955. Objectives, Legal Definitions, Licensing, Bonded and	




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			with reference to Schedule B, C&C1, D, E1, F&F1, F2, F3, FF, G, H, J, K, M, N, P, R, V, W, X, Y. Sales, Import, labeling and packaging of Drugs And Cosmetics Provisions Relating to Indigenous Systems.	Non Bonded Laboratory, Ware Housing, Manufacture of Ayurvedic, Homeopathic, Patent & Proprietary Preparations. 2. Drug Price control Order & National Drug Policy (Current). 3. Prevention Of Cruelty to animals Act-1960. 4. Patents & design Act-1970. 5. Brief study of prescription and Non-prescription Products.	
17.	Medicinal chemistry (T3105)				Diagnostic agents
18.	Pharmaceutical formulation (T3106)				1. Pharmaceutical dosage form-concept and classification 2. Tablets: Formulation of different types of tablets, tablet excipients,




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					granulation techniques quality control and evaluation of tablets. Tablet coating, Type of coating, quality control tests for coated tablet.
19.	Pharmaco therapeutics- III (Practical) (T4107)			Psychiatry disorders: Schizophrenia, Affective disorders, Anxiety disorders, Sleep disorders, Obsessive Compulsive disorders	
20.	Hospital pharmacy (T4102)		1.Continuing professional development programs Education and training 2. Radio Pharmaceutic als – Handling and packaging	1. Hospital pharmacy- Organization and management a) Organizational structure-Staff, Infrastructure & work load statistics b) Management of materials and finance c) Roles & responsibilities	1. Hospital drug policy a) Pharmacy and Therapeutic committee (PTC) b) Hospital formulary c) Hospital committees - Infection committee - Research and ethical committee d) developing therapeutic guidelines e) Hospital pharmacy communication – Newsletter 2. Manufacture of Pharmaceutical preparations a) Sterile formulations – large and small volume parenterals b) Manufacture of Ointments, Liquids, and creams



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				<p>of hospital pharmacist</p> <p>2. Hospital pharmacy services</p> <p>a) Procurement & warehousing of drugs and Pharmaceuticals</p> <p>b) Inventory control Definition, various methods of Inventory Control ABC, VED, EOQ, Lead time, safety stock</p> <p>c) Drug distribution in the hospital</p> <p>i) Individual prescription method</p> <p>ii) Floor stock method</p> <p>iii) Unit dose drug distribution method</p>	<p>c) Manufacturing of Tablets, granules, capsules, and powders</p> <p>d) Total parenteral nutrition</p>
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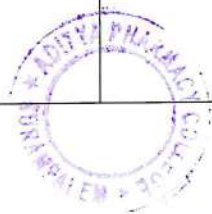



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				d) Distribution of Narcotic and other controlled substances e) Central sterile supply services – Role of pharmacist	
21.	Hospital pharmacy (Practical) (T4108)				1. Pharmacy and Therapeutics committee – Organization, functions, and limitations. 2. Evaluation of prescriptions generated in hospital for drug interactions and find out the Suitable management.
22.	Clinical pharmacy (T4103)			1. Patient data analysis The patient's case history, its structure and use in evaluation of drug therapy & Understanding common medical abbreviations and terminologies used in clinical practices. 2. Clinical	1. Definitions, development and scope of clinical pharmacy 2. Introduction to daily activities of a clinical pharmacist a. Drug therapy monitoring (medication chart review, clinical review, pharmacist interventions) b. Ward round participation c. Adverse drug reaction management d. Drug information and poisons information e. Medication history f. Patient counseling g. Drug utilization evaluation (DUE) and review (DUR) h. Quality assurance of clinical



			<p>laboratory tests used in the evaluation of disease states, and interpretation of test results</p> <p>a. Haematological, Liver function, Renal function, thyroid function tests</p> <p>b. Tests associated with cardiac disorders</p> <p>c. Fluid and electrolyte balance</p> <p>d. Microbiological culture sensitivity tests</p> <p>e. Pulmonary Function Tests</p> <p>3. Drug & Poison information</p> <p>a. Introduction to drug information</p>	<p>pharmacy services</p> <p>3. 6. Pharmacovigilance</p> <p>a. Scope, definition and aims of pharmacovigilance</p> <p>b. Adverse drug reactions - Classification, mechanism, predisposing factors, causality assessment [different scales used]</p> <p>c. Reporting, evaluation, monitoring, preventing & management of ADRs</p> <p>d. Role of pharmacist in management of ADR.</p> <p>4. Communication skills, including patient counseling techniques, medication history interview, presentation of cases.</p> <p>5. Pharmaceutical care concepts</p> <p>6. Critical evaluation of biomedical literature</p> <p>7. Medication errors</p>
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				resources available b. Systematic approach in answering DI queries c. Critical evaluation of drug information and literature d. Preparation of written and verbal reports e. Establishing a Drug Information Centre f. Poisons information-organization & information resources	
23.	Clinical pharmacy (Practical) (T4109)				a. Answering drug information questions (4 Nos). b. Patient medication counseling (4 Nos). c. Case studies related to laboratory investigations (4 Nos). d. Patient medication history interview (3 Nos).




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